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Strategies Small Construction Business Managers Use to Reduce Safety Incidents in Their Organization

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Walden University
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MSW, Western Michigan University, 1992

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Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

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Abstract

Globally the construction industry struggles to prevent injurious and fatal safety incidents. The purpose of this single case study was to explore strategies used by construction business managers that had significantly reduced the occurance of safety incidents in a Northwest Ohio construction company. Data were collected from organizational records and interviews with 6 construction managers. The conceptual framework for this research was the concept of safety management systems. Data were compiled and organized, disassembled into fragments, grouped, and then interpreted for meaning. Methodological triangulation and member checking were used to enhance reliability and validity. Four themes emerged from the data: senior management's commitment to a culture of safety, comprehensive safety training, safety accountability, and the importance of engaged employees. These findings indicate that senior managers established a safety-oriented culture by systematically implementing the safety management systems principles and practices in every organizational process and procedure. Safety training ensured that workers have the necessary skills to perform safely. All leaders, at every level of the organization, were held accountability for monitoring and measuring safety performance. Engaged workers were receptive to and compliant with safety rules. The positive social implications of these findings include the potential of contributing to the efforts to establish safer and healthier workplaces that protect workers from injuries and fatalities, thereby contributing to overall safety and health of communities.

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Dedication

I thank God for giving me the inspiration and strength to complete this extremely challenging, often frustrating journey. I dedicate this research to all the workers who want to return home safely. Finally, I dedicate this study to my grandchildren, Terrin, Jordan, and Spirit. I did this for you!

Acknowledgments

I gratefully acknowledge my chair, Dr. Gregory Washington, my second committee member, Dr. Jorge Gaytan, and my university research reviewer, Dr. Douglas Campbell. Your extraordinary guidance and support played a crucial role in helping me achieve the highest level of performance. I appreciate your expeditious reviews and exceptional expertise. Most of all, you never gave up on me, Thank You!

I would like to thank Marcus (You should be able to do this by now) Lemon, Derek (you need a typing class) Lawrence, and my posse, Pam, Donna, Brenda, Joyce, Tamara, and Patti for their continuous support. Special acknowledgments to Raybon White, who believed in this research and wouold not let mw quit, Dale Grech, for always being himself and Billy Lewis, who always let me be myself.

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Section 1: Foundation of the Study

Sousa, Almeida, and Dias (2014) reported that the construction industry has the highest rate of accidents. In addition, Janackovic, Savic, and Stankovic (2013) contended that, in the European Union, the fishing industry is the only industry with a higher rate of accidents and fatalities than the construction industry. Organizations with superior occupational health and safety policies provide enhanced environmental and social performance (Amponsah-Tawiah & Mensah, 2016). Accidents affect an organization's ability to compete globally (Boileau, 2016).

Background of the Problem

According to data from the U.S. Bureau of Labor Statistics (2015), 4,821 workers died in U.S. workplaces because of workplace incidents in 2014. In 2015, the U.S. Bureau of Labor Statistics reported 4,836 fatal injuries occurred, which was the highest increase in fatal injuries since the 5,214 fatal injuries reported in 2008. Workplace incidents place a financial burden on U.S. employers (Liberty Mutual Research Institute for Safety, 2017). The estimated cost of fatal and nonfatal workplace injuries was $59.9 billion in 2014 (Liberty Mutual Research Institute for Safety, 2017).

Hoffmeister et al. (2014) suggested that leadership styles affect safety compliance and participation differently. Hoffmeister et al. claimed that there is a relationship between leadership styles and the way these styles influence employee behavior. Gressard (2014) indicated that the efficiency level of managers to construct ways to transfer worker knowledge as a deterrent to safety errors might contribute to the reoccurrence of workplace errors with high-risk tasks.

The U.S. Bureau of Labor Statistics (2015) reported that in 2014, 2,905,900 workers suffered nonfatal injuries in the workplace. Lebeau, Duguay, and Boucher (2014) conducted a study in Canada and found that safety incidents represent a social and economic burden for businesses. The costs associated with occupational safety incidents influence the competitiveness, productivity, and reputations of businesses in Quebec (Boileau, 2016; Lebeau et al., 2014). Moreover, Jaafar et al. (2017) conducted a study in Malaysia and found an effective occupational safety and health management approach is necessary to prevent hazards on construction sites.

Problem Statement

According to Raheem and Hinze (2014), the construction industry globally employs 10% of the workforce but is responsible for 20 to 40% of the fatal occupational health and safety incidents. Occupational Safety and Health Administrators (OSHA; 2016) reported that 937 of the 4,379 worker fatalities occurred in the construction industry in 2015. The general business problem is that safety incidents negatively affect small business profitability and long-term sustainability. The specific business problem is that some small construction business managers lack strategies to reduce safety incidents in their organizations.

Purpose Statement

The purpose of this qualitative single case study was to explore the strategies small construction business managers use to reduce safety incidents in their organizations. The study's target population consisted of six managers in a small construction business who have used strategies successfully to reduce safety incidents in

Northwest Ohio. The study may contribute to positive social change by reducing the negative communal effects of safety incidents in the workplace. When an employee is injured, the incident affects the employee's quality of life due to lost wages and benefits (Michaels, 2015). The burden of workplace incidents, such as injuries and deaths, caused by safety incidents affect employees and their families (Michaels, 2015). The burden of care and subsequent rehabilitation associated with the injury of a low wage earner often impact their family relationships (Michaels, 2015).

Nature of the Study

Qualitative, quantitative, and mixed methods were the three research methods considered for this study. According to Onwuegbuzie and Denham (2015), researchers use qualitative methodology to explore, examine, or describe a phenomenon in context through an array of data sources. The qualitative research methodology was appropriate for exploring strategies small construction business managers use to reduce safety incidents in their organizations. Quantitative research is numerical and used to determine the relationship between data variables in research (Makrakis & Kostoulas-Makrakis, 2016). A quantitative research method was not appropriate for the study because numerical data would not have allowed me to explore strategies small construction business managers use to reduce safety incidents in their organizations. Tariq and Woodman (2015) indicated that explaining the *how* and *why* questions with a numerical analysis are difficult. A mixed-methods research methodology is a combination of qualitative and quantitative data (Zou, Sunindijo, & Dainty, 2014). A mixed-methods

research methodology was not appropriate for this study because a numerical analysis would not describe circumstances in which safety incidents occur.

Case study, ethnography, and phenomenological were three research designs considered for this study. Researchers use a case study design to uncover practical insights and to answer the how and why research questions (Tariq & Woodman, 2015). I selected a case study research design because I conducted an in-depth analysis of the practical insights and data that prevent safety compliance. Phenomenological researchers attempt to understand people's lived experiences in their natural setting (Padilla-Diaz, 2015). A phenomenological research design was not appropriate because this research study was not about the lived experiences of individuals in their natural setting. Qualitative researchers use an ethnographic design to examine the behaviors and patterns of cultural activities among groups in various settings (Mannay & Morgan, 2015). An ethnographic design was not appropriate for this study because I did not investigate behaviors and patterns of cultural activities among groups in various settings.

Research Question

Researchers use the research study to answer the overarching research question (Yin, 2014). In this study, the overarching research question was as follows: What are the strategies small construction business managers use to reduce safety incidents in their organizations?

Interview Questions

1. What strategies do you use to reduce safety incidents?
2. How do you identify and evaluate safety hazards?

3. How do you and your managers correct deviations from safety rules?
4. What is unique about your safety program?
5. What additional information related to safety incidents can you share that might be helpful?

Conceptual Framework

I selected the safety management systems conceptual model (SMSCM) as the conceptual framework for this qualitative study. Heinrich (1959) developed the SMSCM in 1931. The basis of Heinrich's model is the domino theory. Heinrich found that a sequence of events resulted in safety incidents. Heinrich surmised that unsafe acts and unsafe conditions were the root cause of workplace safety incidents. Heinrich premised that if the manager removes the unsafe behavior or condition, safety incidents are preventable. Thus, Heinrich used the safety management system concept to suggest that many events cause safety incidents. Therefore, identifying, correcting, and educating the workforce is key to preventing occupational health and safety incidents (Heinrich, 1959).

The SMSCM was appropriate for this study because managing workplace safety requires creating a connection between management, organizational operations, and the employees (see Heinrich, 1959). I used the SMSCM as a conceptual reference and vehicle to identify the strategies small construction business managers use to reduce safety incidents in their organizations. I used the SMSCM as the conceptual framework for this study to understand strategies small construction business managers use to reduce OSHA safety incidents in the workplace.

Operational Definitions

Incident protection: Incident protection occurs when organizations focus on protecting employees from illness and injury in the workplace (Kasirossafar & Shakbodaghlou, 2015).

Safety: Safety is protection from danger or harm (Ajator, Ezezue, & Agu, 2017).

Safety culture: Safety culture is the shared organizational perceptions regarding the safety policies and procedures and how these perceptions impact the employees (Griffin & Curcuruto, 2016).

Safety incident: A safety incident is a result of an injury or damage to equipment or property that could have caused an injury or fatality (Canadian Center for Occupational Health and Safety, (2017).

Safety management system program: A safety management system program consists of policies and standards that explain and regulate the safety rules the employees must follow (Federal Aviation Administration, 2016).

Workplace safety: Workplace safety is the protection of employees in the workplace from danger or harm (Ajator et al., 2017).

Assumptions, Limitations, and Delimitations

Assumptions are beliefs not verified but assumed truthful (Simon, 2011). Limitations are the potential weaknesses that influence the quality of the study and are out of the control of the researcher (Simon, 2011). Limitations are tools used to state the uncertainties in the data (Lingard, 2015). Delimitations are the boundaries a researcher makes in a study and are within the researcher's control (Simon, 2011).

Assumptions

The first assumption was that the participants would answer the research questions honestly and candidly. I used the informed consent process to ensure the participants' understanding of the risks and benefits of the study and their role as a participant concerning the interview questions. The second assumption was that the inclusion criteria of the sample were appropriate and ensured all the participants had experienced some of the same phenomena of the study. I used the participant criteria to ensure the participants were well qualified in safety compliance and successful in the reduction of safety incidents in the workplace.

Limitations

A limitation of this study was the restricted underpinning theories, understanding and research on what strategies small construction business managers use to reduce safety incidents in their organization. The second limitation was that there might have been unknown conditions or workplace cultures that could bias the responses of the participants.

Delimitations

The first delimitation was that the participants in the study were small construction business managers having successful experiences in reducing safety incidents in small construction businesses. I chose successful managers from a small construction business for their ability to share the skills needed to provide an effective foundation for health and safety systems. Because access to its members is easy, the

second delimitation was that participation was exclusive to members of the Better Business Bureau of Northwest Ohio.

Significance of the Study

Incorporating the strategies that emerged in this study could benefit small construction businesses. I explored strategies small construction business managers use to reduce safety incidents in the workplace. The use of this study's findings may reduce workplace injuries and increase organizational effectiveness. The failure of small construction business managers to integrate safe working environments affects profitability and sustainability (Mosly, 2016).

Contribution to Business Practice

The use of this research study may contribute to small construction managers' business practices. The contribution of strategies small construction business managers use to reduce safety incidents could add new knowledge regarding the factors of safety compliance behavior and their effects on the reduction of OHSA safety incidents. Small construction business managers could generate effective business practices by examining safety strategies to reduce OSHA safety incidents related to the risk of injuries and fatalities associated with the workplace. The use of the results of this research study may contribute to future development of effective proactive strategies, which might improve safety compliance and, in turn, improve business practice.

The Midwest Economic Policy Institute (2017) reported that each avoided occupational fatality saves a construction organization $5.3 million. The findings from this study may help small business leaders to understand the importance of investing

proactive safety procedures as part of the business plan (Park et al., 2013). Nationally, the 868 average of construction worker fatalities cost the U.S. $5 billion each year in the costs and suffering associated to the fatalities and the reduced quality of life (Midwest Economic Policy Institute, 2017). Knowing how much occupational injuries and fatalities cost, may help small construction business managers recognize the importance of reducing safety incidents.

Implications for Social Change

The study may contribute to positive social change by reducing the negative communal effects of workplace safety incidents. The implications for positive social change include a safe and healthy workplace that protects workers from injuries and fatalities but also reduces the burden that impacts the families and communities related to occupational safety incidents (National Institute for Occupational Safety and Health 2015). The study may also contribute to positive social change by small construction business managers reading the study and providing training for all employees on the awareness of safety hazards and how to reduce OSHA safety incidents at work and in the communities.

Review of the Professional and Academic Literature

A researcher uses a professional and academic literature review to give a critical analysis and synthesis of the literature content and its various sources (Paulasso, 2013). The purpose of this literature review was to explore the strategies small construction business managers use to reduce safety incidents in their organizations. A literature

review is a tool used to evaluate the existing literature and help the researcher educate the reader on what is prevalent and what is not (Paulasso, 2013).

The organization of this literature review is in chronological order. The literature review includes the history, mission, and standards of the OSHA and issues related to small businesses and safety. Included in the literature review are the fundamental issues of safety, for example, safety management systems, safety incidents, and safety incident prevention.

This literature review contains 211 references; 202 (97%) are peer-reviewed, with 190 (91%) of the total sources published less than 5 years from the anticipated date of the CAO's approval. I used research databases and libraries, including Walden University Library, ProQuest, Google Scholar, Science Direct, Safety Science, and EBSCO in my literature search. In the literature review, there were articles from national, state and federal government agencies, dissertations, peer-reviewed articles, books, and industry journals. I retrieved the literature with the following keywords: *safety*, *safety incidents, workplace safety, safety culture, safety management system program,* and *incident protection.*

The purpose of the qualitative single case study was to explore the strategies some small construction business managers use to reduce safety incidents in their organizations. While conducting a study in India, Unnikrishnan, Ishal, and Kimkar (2015) concluded that the majority of small and medium companies's lacked the lacked the safety procedures needed to reduce the workplace risks associated with safety issues.

Safety Management Systems Conceptual Model

Safety incidents on construction sites are the unintentional, random incidents that occur when managers combine employee's activities with materials and moving equipment (Hosseinian & Torghabeh, 2012). According to Heinrich (1959), the majority of safety incidents occur due to unsafe acts and unsafe working environments. Hosseinian and Torghabeh (2012) proposed that it is impossible to identify and eliminate all the hazards in a working environment; however, they found safety incidents in construction are preventable by identifying the root causes of safety incidents through investigation.

According to Pillay (2014), safety management systems have evolved through five different eras. Pillay reported the first era as a technical, management system of practices and procedures used to control unsafe acts. Pillay reported the second era as a behavior-based, human error age, the third as a sociotechnical era, the fourth as a cultural era, and the fifth as a resilience era. Heinrich (1959) based the first safety management system on his accident causation model, the domino effect. He insisted that accidents were the result of unsafe acts and unsafe conditions (Heinrich, 1959). Heinrich proposed that investigating these accidents using the standards and practices of a safety managed system would prevent future safety incidents.

Oswald, Smith, and Sherratt (2014) agreed with Heinrich's concept that safety management systems traditionally center around unsafe acts and unsafe conditions as the cause of many of the safety incidents on construction sites. However, they found that construction managers focused more on unsafe conditions or equipment at the construction site when 90% of safety incidents are a result of unsafe acts (Oswald et al.,

2014). Oswald et al. concluded that changing unsafe behaviors of the construction workers is an important factor towards improving health and safety on construction sites.

While many improvements exist in workplace safety, small construction businesses are still having a disturbing amount of serious safety incidents. The Bureau of Labor Statistics (2015) reported that 415 construction workers died at work in 2014, 25 construction maintenance painters, 42 roofers, 48 electricians, and 108 laborers. Van der Molen and Frings-Dresen (2014) determined that 80% of Dutch construction sites with violated fall hazard standards related to working from heights. Mohd Kamar et al. (2014) concluded from a study conducted in Kelantan that many small construction business managers lack safety awareness in their organizations.

Before organizations were federally required to reveal workplace hazards, managers insisted that it was the organization's responsibility to provide information regarding the health and welfare of the employees (Rosner & Markowitz, 2016). Industry managers were against government regulation because the industries were responsible for informing the workers and were already doing that (Rosner & Markowitz, 2016). The American people and the labor movement were not satisfied with the industries responsibility performance, and by the late 1960s, unions and public outcry for federal regulation led to the formation of the OSHA (Rosner & Markowitz, 2016).

According to Frieden (2013), federal laws and public opinion are used to support the enforcement of the protection of health and safety as a government role. Federal lawmakers use regulations to ensure that the industries inform their organizations of unique hazards and risks related to the materials the employees encountered (Rosner &

Markowitz, 2016). The creation of OSHA was innovative because there was a new law used to ensure that employers were responsible for the safety and welfare of their employees (OSHA, 2016).

Safety management systems are tools used to promote the continual enhancement of workplace safety using specific systems to prevent injuries and predict hazards. (FAA, 2016). The overview of construction safety implies that all the stakeholders should focus on the complexities of the work environment and the need for a managed approach to health and safety strategies in the workplace (Guo, Yiu, & Gonzalez, 2015). Heinrich (1959) described safety management systems as an organizational and systematic approach to managing hazards and risks in the workplace.

The SMSCM is a worldwide standard of the FAA (2016). Included in the safety management system is safety risk management. The FAA (2013) used safety risk management to evaluate the need for and the effectiveness of new or renewed risk controls based on the risk control assessment. Risk management monitors the organization's risk level and identifies new hazards (FAA, 2013).

Heinrich (1959) formed his approach to safety with the philosophy that unsafe acts or unsafe conditions were the primary causes of accidents in the workplace. Heinrich supported his theory by researching the causes of 75,000 employee insurance claims. He found the cause of 88% of the accidents were unsafe acts (Heinrich, 1959). Heinrich implied that the personal characteristics and actions of the employees were the cause of accidents.

Heinrich (1959) described employees as having inherited or learned mindsets or traits that predisposed them to take risks and commit unsafe acts. Heinrich used this portion of his work to create the dominoes effect of accident causation. The domino factors were ancestry, social environment, unsafe acts or conditions, accident, and injury (Heinrich, 1959). The basis of Heinrich's causation model was preventing accidents by removing one of the domino factors. Heinrich concluded that employees could choose whether to work safely or not to work safely, and management could recognize individual characteristics and develop safety systems and procedures to improve workplace performance.

Heinrich (1959) concluded that management could control the employees' behavior related to unsafe acts and may control mechanical hazards and guarding. Controlling mechanical hazards include installing guarding on machines and tools, providing personal protection equipment, and replacing or repairing tools and machinery. Heinrich used the theory to support teaching employees how to work safely and how to recognize hazards. He also used the theory to encourage discipline if the employees could not improve their work performance (Heinrich, 1959).

The OSHA administrators (2016) defined accountability as the condition of being responsible for one's behavior when it comes to safety. The General Duty Clause of Occupational Health and Safety Act 1970 lists five elements employers are accountable for, including (a) compliance with OSHA standards, (b) resources that provide employees with a safe operating procedure and a work environment that is free from hazards, (c)

training for all employees, (d) supervision of employees in safety practices, and (e) accountability – taking the steps to ensure employee safety compliance (OSHA, 2016).

Ozmec, Karlsen, Kines, Andersen, and Nielsen (2015) concluded that small construction businesses have a higher rate of safety incidents and barriers that challenge incident prevention. According to Ozmec et al., the communication between the owner of small businesses and the employees rarely influences how the employees view safety. In this study, I examined safety management systems and strategies that reduce safety incidents in the small construction business.

By studying actual records and engineering reports, Heinrich (1959) determined that 98% of occupational incidents are preventable. Heinrich proposed that while past circumstances were undesirable, an important fact remains: Management can prevent unsafe acts. Wachter and Yorio (2014) contended that safety management systems and employee engagement help reduce the barriers managers face during the enforcement of safety systems and the safety performance indicators.

Pillay (2015) suggested that the costs associated with reducing safety incidents in construction is a challenge that managers and the small construction industry face. Pillay concluded that the reason for the challenges is that technology changes quickly, and safety strategies have not kept up. Small construction businesses might improve their safety systems by looking at why accidents occur, what prevented safety incidents in the past, and what might work presently (Pillay, 2015).

The prevention of safety incidents depends on predicting the probability of a safety incident and the causes under certain circumstances (Hola & Szostak, 2014).

Heinrich (1959) found that workplace injuries and fatalities are preventable if management encouraged and enforced behavioral changes. Hola and Szostak (2014) suggested that the construction industry should embrace the importance of analyzing what causes safety incidents on construction sites and develop safety training and educational opportunities that enhance worker skills and create a safety system focused on reducing safety incidents.

Lee, Tse, and Ma (2016) found that poor decision making regarding crane work on Hong Kong construction sites leads to safety incidents that impact the organization's occupational safety and health performances. Lee et al. (2016) reported that construction contractors are responsible for the safety of workers on construction sites and must develop systematic measures to prevent safety incidents. Lee et al. (2016) found that virtual prototyping is a visualization of construction activities computing simulation by enabling a range of *what if* questions and analyzing what the implication means for the safety and health of the workers on the construction project.

Vasconcelos and Barkokebas (2015) reported that 7% of serious injuries and fatalities are preventable when managers add safety measures to equipment design. After investigating a safety incident in Brazil, Vasconcelos and Barkokebas (2015) found that the omission of safety elements in project planning result in workplace safety incidents. The causes of workplace safety incidents are diverse. Thus, safety incident investigations are difficult (Vasconcelos & Barkokebas, 2015). Therefore, organizations must accumulate mass amounts of data regarding safety incidents (Vasconcelos & Barkokebas, 2015).

Heinrich's safety management systems concept focused on human error as the major cause of accidents (Heinrich, 1959). Choudhry (2014) observed that behavioral causes of accidents are reduced on construction sites when management commits to providing effective safety behavior measures. Sinclair et al. (2013) found that intermediary organizations can help the negative effect of resource deficiency.

Occupational injuries and diseases cost Quebec averaged $4.6 billion between 2005 and 2007 (Lebeau et al., 2014). Wachter and Yorio (2014) suggested safety management systems are used to influence employee behaviors, attitudes, and motivation. Wachter and Yorio (2014) suggested effective safety management systems that promote organizational performance include employee engagement.

Love (2016) implied that managing workplace safety is a global challenge. Love (2016) suggested that workers work unsafely due to construction manager's inability to provide safety strategies. Ozmec et al. (2015) reported that small construction companies have different operating issues from larger companies because in small companies the owner is usually the manager. Ozmec et al. (2015) concluded that safety managers in small companies are not as regulated as large companies, so the employees are left to figure out safety for themselves. When management recognizes the importance of health and safety issues, the investment in health and safety increases (Park et al., 2013).

An organization operating with an effective safety management system focuses on employee's safety performance measurements and how to influence their behavior through safety management (Jazayeri & Dadi, 2017). South Korean construction safety investigators suggest the safety climate would not only improve organizational safety

performance, but it should also reduce the cost associated the accident rate (Hi, Dong, Rose, Li, Cao, & Yin, 2016). A safety management system reduces risks to the organization and their employees by identifying risks, understanding the risks, and managing them appropriately (Nidhu & Abinaya, 2017).

Feng (2013) investigated how safety investments impacted the safety performance of contract workers. Researchers found that improving the safety performance on construction sites included adding health and safety in the development of business management (Nidhu & Abinaya, 2017). Wacher and Yorio (2014) argued that managers can use safety management systems to predict worker engagement levels. Thus, managers often see worker engagement levels as mediators between the safety management system and the safety performance outcomes.

SMSCM proponents argue that managing cost in safe prevention is difficult because technology advances faster. Further development of health and safety are needed to meet this challenge (Pillay, 2015). Jazayeri and Dadi (2017) found that the construction industry as three unique characteristics, these include fragmentation, a dynamic work environment, and safety culture. Guo et al. (2015) determined that the characteristics of construction sites and the lack of resources make it hard for small construction businesses to manage safety.

Feng (2013) added that the organizational safety culture might impact the project's safety performance due to low levels of safety systems management investments. Nielson (2014) argued that organizations need to clarify what culture means in their organizational plan to help translate the culture concept. Jazayeri and Dadi (2017)

reported that each organization has its definition and elements used for implementing a safety management system.

The International Civil Aviation Organization (ICAO) defined safety management systems as a systematic approach to managing safety, including the necessary organizational structures, accountabilities, and procedures (ICAO, 2014). The Civil Aviation Safety Authority (CASA) defined safety management systems as a systematic and explicit approach defining the activities an organization uses with safety management to prevent incident and accidents in the workplace (2017). The Federal Aviation Administration (FAA) defined safety management as the formal, top-down business management approach to the safety risk, which includes a systematic approach to safety (FAA, 2016). Safety management systems have many disciplines and what is needed is a unifying approach to develop a framework that integrates the layers of safety management (Pillay, 2015). Yorio et al. (2014) suggested organizations have an obligation to their employees to share the elements of their safety management system with every employee at each level.

Choudhry et al. (2014) found that construction sites using the elements of a behavior-based safety management system benefit by reducing the number of injuries to the employees due to the prevention and control of construction site activities. According to Jazayeri and Dadi (2014), safety management systems have three components: a. administrative management elements, b. operational, technical elements, and c. cultural/behavioral elements.

Elements of safety management described by Heinrich (1959) included (a) close supervision, (b) safety policies, (c) employee training, (d) hazard identification, (e) safety audits, (f) accident investigation, (g) job analysis, (h) method safety analysis, (i) identification of accident analysis sheets, (j) approval processes for new construction and the installation of new equipment, (k) an approval process for changes in work procedures, and (l) establishment of safety committees and arrangements for emergencies and first aid. Successful managers use the safety management systems elements to make health and safety an important process in an organization's business activities.

The Federal Aviation Administration (2016) reported four components used to implement a safety management system. These include the safety policy, safety assurance, safety risk management, and safety promotion. Other vital elements in the Federal Aviation Administration safety management system includes a commitment by senior management; establishing clear safety objectives; defining methods and processes to meet safety goals under the safety policy; education and training; safety awareness communication; justifying competency requirements to system requirements and developing a positive safety culture using safety promotion

An effective safety management system uncovers the biases resulting from the employee's perception to assess the safety management system (Yorio et al., 2014). Improved safety management systems allow organizations to engage employees (Wachter & Yorio, 2014). Safety management systems and employee engagement are used to reduce accidents and improve organizational safety performance (Wachter & Yorio, 2014).

There should be specific elements included in the safety management system (OSHA, 2016). Included in the safety management system is safety risk management. Ding, Zhong, Wu, and Luo (2016) conducted a study on a construction site in Wuhan China. Ding et al. determined that construction risk knowledge is made up of safety records, safety regulations, best practices and the experiences of the subject matter experts. Ding et al. suggested that retrieving this information is time-consuming and error-prone. Ding et al. concluded that in real practice the lack of experience and being unfamiliar with the correct elements of the regulations makes it hard for the engineers to share risk knowledge.

Jorgensen (2016) suggested there was a need to go back and review occupational accidents to understand better why accidents still occur. Machfudiyanto, Latief, Arifuddin, and Yogiswana (2017) argued that in Indonesian construction companies measuring the safety culture is important to the reduction of unsafe working conditions. Wachter and Yorio (2014) proposed using human performance based safety management systems and employee engagement to reduce or eliminate hazards in the workplace.

Safety management systems combined with employee engagement can predict safety performance (Wachter & Yorio, 2014). Wu et al. (2016) proposed a demonstrated management commitment and role modeling is important in a safety system. Wu et al. (2016) contended commitment from senior leadership is essential for frontline supervisors to be effective and effective frontline supervisors are critical to employee engagement. Wacher and Yorio (2014) maintained that managers use safety management systems to enhance worker engagement levels. Thus, worker engagement levels are

evaluation tools used to evaluate the safety management system and the safety performance outcomes.

Khosravi et al. (2014) suggested the research on safety in construction should focus on the many facets and complexities involved with the construction site environment. Accident prevention is critical to organizations because it is used to increase organizational sustainability and decrease the negative effects associated with workplace injuries (Ajator, Ezezue, & Agu, 2017). Health and safety education and training are elements of a successful safety system (Ajator et al., 2017). Employees need to know how to perform their jobs safely, and they need to know what hazards exist in the workplace and how to avoid those hazards, this leads to an increase in employee morale (Ajator et al., 2017). Tucker, Diekrage, Turner, and Killaway (2014) suggested that young employees in Canada may not understand the importance of reporting safety incidents. Research has shown that employees do not often report lost-time injuries despite a legal requirement that employees must notify an employer when a lost-time work-related injury occurs (Tucker et al., 2014).

Safety interview observations audits are an opportunity to identify any hazards and to ensure existing hazard controls are working. Safety meetings, investigations, and audits are the basis of safety management practices (Karanikas, 2017). However, Karanikas (2017) contended safety management should not use safety incident investigations as a measurement tool. A more effective measurement would come from the responses of organizational members (Yorio et al., 2015). Organizational perception is a true measurement of how well a safety system is performing (Yorio et al., 2015).

To eliminate safety incidents in any organization, investigating or identifying any inadequately controlled or unidentified hazards is crucial (Ajator et al., 2017). Research is increasingly stressing the importance of integrating activities to improve employee health and safety (Sauter, 2013). Programs that help improve the health and well-being of the workers include wellness programs, employee assistance and health and safety programs (Sauter, 2013). Ajator et al. (2017) suggested the formation of a health and safety committee that conducted regular safety audits would allow the employees to participate in recognizing hazards.

Jazayeri and Dadi (2014) found that the purpose of measuring safety performance is to evaluate the current safety situation while observing the progress of the current safety management systems. Jazayeri and Dadi contend that safe performance measurement is a critical part of the safety management system. Construction managers use performance measures as the foundation for continual safety performance improvement (Jazayeri & Dadi, 2014).

Heinrich (1959) proposed there are five events in an accident sequence, concluding that a series of events led to safety incidents. These were events related to the employees because of unsafe acts or a mechanical or physical hazard (Heinrich, 1959). Heinrich stated that since accidents happen in a series of events, the removal of unsafe acts or hazards would prevent accidents.

Dabrowski (2015) determined that the construction industry is a highly hazardous industry in Poland and Europe. Dabrowski (2015) contended that because of the environment that construction workers work in placed the employees at high risk for

injuries and health issues. According to Dabrowski (2015), construction contributes significantly to the economy. However, occupational safety and health are in an unsatisfactory position.

Fall protection is the number one OSHA violation in construction, which resulted in 937 fall fatalities in 2015 (OSHA, 2016). In 2015, 21% of the 4379 deaths in the private industry were due to construction sites (OSHA, 2016). According to OSHA (2016), other safety incidents on construction sites include getting struck by objects, getting caught between objects, and electrocution. Slipping, tripping, and get hit by vehicles are different safety incidents found on a construction site (OSHA, 2016).

Blair (2014) suggested numerous interventions that organizations can use to reduce safety incidents. Interventions are costly to an organization, and may not solve a hazard permanently. Blair (2014) suggested that safety professionals need to consider their organization and its needs before making safety guidance suggestions. According to Nielsen (2014), when managers recognize the value of the safety culture in an organization, managers accept safety as an integrated part of the organization. Nielson (2014) determined that organizations should assess the perceptions of the stakeholders before initiating a cultural change.

According to Fass, Yousef, Liginlal, and Vyas (2017), the principal cause of construction incidents the Arabian Gulf, includes risk perception, worker training, worker experience, personal protective equipment and safety violations. Fass et al. (2017) suggested that due to the lack of public outcry regarding construction safety in the Gulf, governments were unlikely to push regulation. Man, Chan, and Wong (2017) implied

enhancing the risk perception of the workers would reduce the merits and drawbacks of risk-taking behavior in Hong Kong construction sites. Man et al. (2017) proposed the risks call for the inspection of the risks in the workplace based on worker perception. Man et al. (2017) concluded training employees to recognize the risks in the workplace would enable employers to develop measures to control the risks and reduce safety incidents.

Boileau (2016) proposed that managers need to consider unsafe working conditions, unsafe equipment, and employee behavior when making organizational decisions. Canadian research related to moving machine parts determined the absence of lockout procedures and clear job instructions were two causes of worker-related accidents (Chinniah, 2015). Easy access to moving parts is one of the main causes of accidents in Quebec (Chinniah, 2015). Chinniah (2015) concluded that when managers reduce the safety risk in running machinery, the machine could perform the function the machine required.

Frequency. Heinrich (1959) proposed the best way to measure the effectiveness of a safety management system is the disabling-accident frequency rates. There are an estimated three million serious workplace injuries each year. However, many injuries do not get reported (Michaels, 2015). The number does not include the estimated 50,000 employees who die from occupational diseases (Michaels, 2015). Chronic noncommunicable diseases and workplace health promotion are the new focus for the future of occupational safety and health (Harrison & Dawson, 2016).

Costs. When incidents continuously occur in the workplace, businesses experience direct cost, and indirect cost that can become expensive (Lebeau et al., 2014). Occupational Safety and Health Administration (OSHA) proposed the direct cost created by workplace incidents include damage to machinery, tools, and materials. Another example of direct costs are wage losses. Insurance premiums, medical payments, and workers' compensation are examples of direct costs. The indirect costs created by workplace incidents include (a) fines from regulatory agencies, (b) decreased profits due to re-training expenses, (c) investigations of incidents and near misses, (d) efficiency costs due to the loss of experienced employees, and (e) and expenses incurred by the employee and his or her family (OSHA, nd).

Lebeau et al. (2014) indicated the injuries and diseases in the workplace result in social consequences for the employee and monetary consequences for the employer. Investing in preventable causes of injuries can result in fewer work disruptions (Rohani et al., 2015). The costs related to workplace injuries and illnesses in Croatia have a significant impact on employers who should reevaluate the benefits of having a safety incident prevention program (Badun, 2017). Researchers have shown that a systematic and continuous safety management program that focuses on the identification of hazards and the analysis of risks are tools that reduce safety violations and safety incidents (Wachter & Yorio, 2014). Nidhu and Abinaya (2017) proposed that the relationship between safety management systems and the reduction of safety incident costs in the workplace deserves investigation. However, Wachter and Yorio (2014) indicated that

safety management systems without employee engagement would not reduce safety violations or safety incidents

Provan, Dekker, and Rae (2017) found that organizational stakeholders influence safety professionals through challenge, alliance, and authority. According to Provan et al., organizational influence may result in the ineffectiveness of the safety program. Awwad, El Souki, and Jabbour (2016) reported that while a safety initiative exists in Lebanon, the lack of stakeholder commitment and inadequate safety education impacts the safety program implementation.

Misiurek and Misiurek (2016) discovered that the three significant root causes of human error in the United Kingdom on construction sites were a lack of employee training, inadequate work standards, and the lack of employee supervision. Misiurek and Misiurek argued that human error and not technical conditions impacted the number of safety incidents on a construction site. Misiurek and Misiurek proposed that using a Training Within Industry (TWI) program would help eliminate the safety incidents related to the three significant root causes of human errors.

The Benefit of Implementing a Safety Management System

Parker et al. (2016) proposed machine safety management programs might benefit small metal fabrication businesses by reducing safety citations and preventing a serious injury. Managers should view safety management systems as an investment and not as an expense (Boileau, 2016). When managers recognize the benefits of OHS investments enterprises can achieve increased profitability (Boileau, 2016).

During a study on construction workers conducted in Turkey, Yilmaz (2015) determined that hundreds of workers were killed or injured due to the lack of safety measures on construction sites. Golovina, Teizar, and Pradhananga (2016) concluded that their research on equipment blind spots for construction workers on foot was used to find root causes that result in blind spot related fatalities. The level of prevention of safety incidents has a financial impact on construction site sustainability (Yilmaz, 2015).

Demirkesen and Arditi (2015) proposed safety management systems in construction businesses are simply a set of safety standards that would be useless if the safety training is ineffective. Demirkesen and Arditi (2015) argued that language barriers put immigrant workers at a higher risk because of the limited command of the English language might prevent immigrants from understanding the job hazards. Small businesses are challenged to provide safety training for their employed due to limited resources and economic constraints. However, some organizations that provide safety training for free (Sunindijo, 2015). Wu, Wang, Zou, & Fang (2016) insisted leadership role-modeling influences the project safety culture more than any other leadership characteristic. Wu et al. (2016) contended that direct supervisors should have skills that reflect caring in the work environment.

Facey et al. (2017) argued that having an effective joint health and safety Committee (JHSC) required having effective communication, training, the appropriate committee members, and committed leadership. Having a joint health and safety committee is not enough, the JHSC must make an impact to provide a safe and healthy work environment (Facey et al., 2017). Successful safety teams provide guidance and

engage all the stakeholders, thus, allowing the safety program support and inclusion in the organization. Pilbeam, Doherty, Davidson, and Denyer (2016) contended a committed leadership recognizes the importance of engaging the employees.

A study between a Scandinavian company and a Danish company showed that rule-oriented, and participative leadership produces a positive result in safety performance (Grill, Pousette, Nielsen, Grytnes, & Torner, 2017). Grill et al. (2017) suggested Danish construction managers should set safety rules and encourage their employees to participate in the safety process of the organization. Grill et al. (2017) proposed leader visibility is another element of active transactional leadership. Effective leaders are on the manufacturing floor, actively clarifying leadership expectations (Grill et al., 2017). Grill et al. (2017) contended having a clear definition of a safety management system with engaged employees enhances safe behavior.

Safety Management Systems and Safety Incident Preventions

The historical elements of Heinrich's safety management systems approach may promote safety incident prevention in small businesses and reduce safety violations and incidents. Unnikrishnan et al. (2015) proposed that a written safety policy does not exist in most small businesses. Unnikrishnan et al. (2015) proposed competition previously proved problematic for safety in small industries because of economic survival and safety issues are unimportant when companies compete for other contracts. Today, competition is a driver for safety practices because clients want to associate with safe businesses (Unnikrishnan et al., 2015). Small business managers would benefit from understanding

how workplace health and safety management systems can significantly affect their competitive advantage (Sunindijo, 2015).

Using a confidential and free onsite consultation funded by OSHA can help small businesses identify potential hazards and discrepancies in their safety programs (OSHA, 2016). Small business owners can reach out to industry experts in their field for guidance in reducing safety incidents (OSHA, 2016). The same benefits large companies experience with the incident prevention approach may promote incident prevention in small businesses (Heinrich, 1959).

Targeting the training of the underserved workforce in workplace safety ensures the elements of safety and health are understood. (O'Conner, Flynn, Weinstock, & Zanoni, 2014). At-risk workers have language problems that prevent them from understanding safety practices (O'Conner et al., 2014). Finding ways to educate underserved employees enhances workplace safety, and as a result, workers increase their safety performance (O'Conner et al., 2014).

Mathias (2016) proposed utilizing marketing strategies to improve workplace safety, and through changing, the organizational attitude is worth investigating. Shamsi, Pariani, Shams, and Saleymani-nejad (2016) contended marketing strategies should include information that engages the employees and influences the behavior of the employees. Shamsi et al. (2016) used social marketing to study the effects of social marketing as an intervention strategy to promote the use of personal protective equipment in Iran. Mathias (2016) suggested promotional marketing strategies could be effective tools for promoting safety. The challenge is to find effective strategies that target

management and the employees to keep down the conflict between the two groups. (Mathias, 2016).

When employees feel their workplace cares about their health and safety, the employees are more likely to remain with the organization (Amponsah-Tawiah & Mensah, 2016). The safety system assesses the hazards in the workplace and monitors, evaluates, investigates, educates, and oversees the implementation of the safety policies used to control or eliminate the hazards in the mining industry (Bahn, 2014). Albert, Hallowell, and Kleiner (2014) suggest that construction businesses are unable to design safety practices at the work site. Albert et al. (2014) contended that when safety committee members recognize the risks associated with workplace hazards, organizational safety performance increase. Bahn (2014) agreed that a trained safety consultant guides organization towards a safe and healthy work environment; thus, improving the organization's competitive advantage.

Alternative to the Safety Management Systems Conceptual Model

A suggested alternative is behavior-based safety theory. Choudhry (2014) conducted a case study on behavior-based safety on a construction site in Hong Kong. Results from the study showed that any company in any place could benefit from using a behavior-based safety (Choudhry, 2014). Behavior-based safety proponents relied on supervisors to use incentive programs to encourage the employees to work safely. Observers gave training materials to the employees and provided feedback based on the training material (Choudhry, 2014). Users of this theory proposed the employees want feedback from supervision and need safety motivation to work safely. Khosravi, Asillian-

Mahabadi, Hauzadeh-Rangi, Bastani, and Behzadan (2014) determined that good supervision, worker engagement, and two-way communication negate unsafe behaviors. While behavior-based safety includes employee recognition, it should also include positive feedback and encourage open communication (Choudhry, 2014). Kim, Park, and Park (2016) determined that a safety management system and a safety culture change, both locally and nationally, would promote a prevention culture.

Leveson (2013) found that the system-theoretic accident model and processes (STAMPS) are a safety systems model that focuses on the failure to constrain safety system behavior that results in accidents. Leveson went past physical failure to include causation factors such as the dysfunctional interaction related to non-failing elements. Software and logic design errors, errors in complex human decision-making and workforce behavior are examples of non-failing elements. Leveson concluded inadequate safety procedures and undefined outside contractor standards are other examples of failure causation factors.

Occupational Safety and Health Administration

The OSHA's mission is to ensure a safe and healthy workplace for every man and woman in the nation (OSHA, 2016). Rosner and Markowitz (2016) observed that the OSH Act of 1970 and the Workers Right to Know laws were important events in OSHA's history. The Workers Right to Know established the chemical and hazardous substances laws that required employers to tell the employees what hazards were in the workplace. OSHA set safety standards and policies that saved lives and prevented injuries and illnesses (OSHA, 2014).

Occupational Safety and Health Administration (OSHA) policies include compliance assistance and cooperative programs (OSHA, 2014). According to OSHA (2016), safety incidents had decreased from 11 per 100 workers in 1972 to 3.5 per 100 workers in 2010. Occupational Safety and Health Administration is the organization responsible for ensuring employers provide workers with a safe workplace (OSHA, 2016).

Ajator et al. (2017) conducted a study using Nigerian Construction Companies that concluded that the implementation of health and safety management systems means site managers and the affected employees must be responsible for managing and controlling the risks and hazards they come in direct contact within the work environment. Golovina, Teizer, and Pradhananga (2016) contended that construction managers use near-miss heating maps as a tool to detect and dissect risks and hazards related to the interaction between workers on foot and heavy construction equipment. Amponsah-Tawiah and Mensah (2016) reported that when Ghana mining managers accept the fact that when workers feel safe at work, the employees gain a sense of belonging. Thus, a safe work environment increases worker loyalty.

The U.S. Congress passed the Occupational Safety and Health Act in 1970 to ensure worker safety (OSHA, 2016). Occupational Safety and Health regulations, which include lockout-tag-out, asbestos, machine guarding, fall protection and other standards have saved lives in the workplace (OSHA, 2016). Occupational Safety and Health Administration personnel regulate employee safety in all U.S. workplaces (OSHA, 2014).

The average number of Americans killed on the job was 38 per day in 1970 (OSHA, 2016). Since 1970, workplace fatalities fell by more than 65%; this includes occupational injuries and illnesses (OSHA, 2016). U.S. employment has almost doubled since the inception of OSHA to close to 130 million employees, which reinforces the difference OSHA has made in workplace fatalities and injuries since its inception (OSHA, 2016).

The Federal Government created OSHA based on the premise that the employees had a right to work without losing their lives (OSHA, 2016). MacLaury (1981) suggested the push for federal regulation came from officials in the Labor Department. In 1968, the Labor Department convinced President Johnson to include a bill that covered workplace safety. OSHA (2016) administrators were committed to providing a workplace safe from unknown chemicals and deadly hazards. MacLaury (1981) argued that businesses opposed the legislation because they were concerned with the amount of power the laws would give to the Secretary of Labor. On December 29, 1970, President Nixon signed the bill to administer a new division called the Occupational Safety and Health Administration (OSHA, 2016).

Occupational Safety and Health Administration administrator's statutory authority extends to most nongovernmental workplaces where there are employees (OSHA, 2016). Federal coverage excludes state and local government workers. State administrators operating their workplace safety and health plans cover most private sector workers and are required to extend their coverage to the public sector (state and local government) workers in the state (OSHA, 2016). Occupational Safety and Health Administrators

created the National Institute for Occupational Safety and Health (NIOSH) as a research agency whose purpose was to enhance the employers and the employee's ability to create safe working environments (NIOSH, 2016).

When the Occupational Safety and Health Act passed into law, agency inspectors were empowered (MacLaury, 1981). Agency inspectors could now force employers to provide the employees an environment that is free from recognized hazards (MacLaury, 1981). Industries disagreed with the empowerment, noting OSHA still had business owners and legislators thinking the federal government should stay out of state business and lobbied the Congress to place restrictions on the administration (MacLaury, 1981).

The Occupational Safety and Health Administration (2016) allows the states to set-up and manage their own OSH programs. However, the states must enforce all federal standards and investigate standards covering hazards not addressed by federal standards. MacLaury (1981) contended industry lobbyists protested that federal regulation would interfere with the State's ability to govern at the local level. However, with congressional support, the law passed, and the creation of OSHA promoted workplace safety as a human right (OSHA, 2016).

With the creation of OSHA, workers now had a right to a safe working environment and the right to participate in their safety (OSHA, 2016). Clayton (2004) reported that under certain laws, the employer was not accountable for the injured employee. The three rules of common law were the fellow servant rule, contributory negligence, and the assumption of risk. The fellow servant rule that meant employers were not responsible if an employee experienced an injury because of another employee

(Clayton, 2004). Contributory negligence means the employer is unaccountable for damages if the injury is a result of his or her negligence. The assumption of risk means the employer is unaccountable because the employee knows the job is dangerous when he or she is hired (Clayton, 2004). The Occupational Safety and Health Administration provided workers with the right to a safe and healthy workplace. However, the workers continued to be injured (Michaels, 2015).

Clayton (2004) concurred that workers' compensation became law to provide employees injured on the job with insurance coverage that compensated the employees for lost wages, medical care and, in some cases, vocational rehabilitation. On the contrary, Michaels (2015) argued that the injured employee, family members, and society bore the burden of the costs of workplace injuries and illnesses. Clayton (2004) concluded that the basis of the worker's compensation programs was injured workers would receive no-fault benefits and employers would receive limited liability in case of a safety incident.

Before 1916, employees had to prove it was negligence on the employer when it came to injuries or death in the workplace (Clayton, 2004). Clayton (2004) argued that not all claims fell under worker compensation; each jurisdiction has rules that eliminates some injuries and illnesses that are expressly work related. Clayton (2004) reported that workers' compensation became law to provide employees injured on the job with insurance coverage that compensated the employees for lost wages, medical care and, in some cases, vocational rehabilitation. Clayton (2004) concluded that the benefit of the

worker's compensation programs was that injured workers would receive no-fault benefits and employers would receive limited liability in case of a safety incident.

According to OSHA (2016), the top four construction violations in 2016 were the duty to provide fall protection, scaffolding, ladders, and fall protection training. Presently, fall hazards continue to be one of the fatal four leading causes of fatalities in construction (2017). A National Stand-Down for fall prevention was a tool used to raise fall hazard awareness on construction sites across the nation (OSHA, 2017). The Occupational Safety and Health Administration collaborated with essential organizations in the effort to prevent fatal falls and injuries in construction (OSHA, 2017). These organizations included the National Institute for Occupational Safety and Health (NIOSH), The National Occupational Research Agenda (NORA), OSHA approved State Plans, State Consultants Programs, The Center for Construction Research and Training (CPWR), The American Society of Safety Engineers (ASSE), The National Construction Safety Executives (NCSE), The National Safety Council, The U. S. Air Force, and The OSHA Training (OTI) Education Centers (OSHA, 2017). There was also the Small Business Regulatory Enforcement Fairness Act.

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (2015) requires federal agencies to answer a request from small businesses for advice and interpretation regarding small business compliance. The Small Business Regulatory Enforcement Act was a tool used to allow small business managers participation in the development of new regulatory standards (SBREFA, 2015).

OSHA standards. Agency standards are rules used to describe the methods employers must use to protect employees from hazards (OSHA, 2016). There are four groups of OSHA Standards: General Industry, Construction, Maritime, and Agriculture (OSHA, 2016). General Industry has the largest number of worksites and employees because general industry covers every type of industry not covered by maritime, construction, or agriculture (OSHA, 2016). The Occupational Safety and Health Act has a General Duty Clause that mandates employers to provide employees with a workplace environment that is free from recognized harm that may cause death or serious physical harm (OSHA, 2016).

Congress established the Mine Health and Safety Act (MHSA) in 1977 (MSHA, 1977). Congressional members created the mining act to protect the health and safety of mineworkers (MSHA, 1977). Congressional members used the mining act to establish standards to regulate and improve the quality of the work environment for miners. (MSHA, 1977). The mining act was used to force mine owners to comply with the standards created for the mining industry (MSHA, 1977). The mining act was used to create training programs and develop research focused on preventing accidents and diseases in the mining industry (MSHA, 1977).

The Wage and Hour Division administers the Contract Work Hours and Safety Standards Act (2009). The Contract Work Hours and Safety Standards Act was established to give contract workers safe working conditions and the right to receive fair compensation for time worked over 40 hours whether they are working on a federally funded contract or not (CWHSSA, 2009). Organizations that receive federal contracts

that are $100,000 and above must comply with CWHSSA standards (CWHSSA, 2009). Organizations that knowingly or repeatedly violate the overtime laws are fined and penalized (CWHSSA, 2009)

The Fair Labor Standards Act created the 40-hour workweek, a national minimum wage, overtime pay, and child labor standards (FLSA, 2016). The FLSA (2016) designed the child labor provisions to prevent minors from working instead of attending school and preventing the exposure of minors to hazardous employment (FLSA, 2016). The Fair Labor Standards Act requires employers that offer summer or afterschool employment to children must ensure the child is 16 or older to work in a warehouse, construction site, or in a manufacturing plant (FLSA, 2016). The Fair Labor Standards Act states employees 18 or older may work in any industry, regardless of hazards, without a specified number of work hours (FLSA, 2016).

Small Businesses and Safety Strategies

Heinrich (1959) used his safety management systems conceptual model to project the premise that good safety management does not need to be expensive and that the inclusion of safety in the business plan is necessary. Wachter and Yorio (2014) contended engaging the employees in safety awareness reduced the errors employees made because of not being aware of the hazards in their surroundings.

Small businesses are a large part of the American economy. According to the U.S. Small Business Administration (2016), there are 28.8 million small businesses in the nation. Van der Molen and Frings-Dresen (2014) contended small construction business managers do not know how to recognize workplace hazards and 14% of construction

workers reported they encounter unsafe conditions often at work. Sunindijo (2016) argued many small construction businesses in Australia do not have the client's commitment to safety needed to educate and train their employees.

Promoting health and safety through appropriate prevention programs is often difficult for small chemical businesses in China because of the lack of resources and the knowledge required when implementing a safety management system (Zhao, Joas, Abel, Marques, Suikkanen, 2013). Ozmec et al. (2015) contended that focusing on safety in small businesses makes good business sense since small businesses make up a large part of the economy.

Sunindijo (2016) examined reasons businesses viewed safety hazards as part of doing business. The lack of resources and misunderstanding OSHA regulations are just two of the reasons small businesses view hazards as part of doing business (Zhao et al., 2013). Sinclair and Cunningham (2014) suggested small businesses would benefit from training and support from OSHA and other agencies with compliance resources. Most building contractors in Nigeria understand that safety risks have a negative influence on their profits; however, the building contractors still view the cost of safety compliance as too costly (Okoye & Okolie, 2014). Michaels (2012) considered OSHA inspections save lives while adding cost to organizations a myth.

Sunindijo (2016) found small businesses too overwhelmed with the day-to-day operations to be concerned with safety compliance. Ozmec et al. (2015) found that small construction companies often overlook safety compliance to be more competitive in the

industry. Sauter (2013) found occupational safety and health programs need more research to promote the integration of safety and health in the workplace.

Sinclair and Cunningham (2014) argued that small businesses allow other activities to interfere with their commitment to safety. Sinclair and Cunningham (2014) suggested the lack of knowledge and resources are factors that hinder the implementation of safety incident prevention. Sinclair and Cunningham (2014) concluded that commitment to health and safety resources would enhance small and medium enterprise safety programs and reduce incidents and fatalities.

NIOSH (2015) proposed temporary workers, immigrants, and minorities are characteristics that put workers at a higher risk of injury and illness in the workplace. Rohlman et al. (2016) suggested young workers are at-risk workers. NIOSH (2015) insisted that many at-risk workers work for small businesses. Guo et al. (2015) reported that due to the nature of safety risks in construction, safety systems might not effectively cover the dynamics in the workplace. Dragano et al. (2015) after conducting a study on at-risk workers, argued that in all countries, temporary employees or young employees often lack the knowledge needed to work safely and are at a greater risk for injury.

Bahn (2013) used a case study to examine how safety conditions changed for contract workers in mines compared to permanent employees and what problems occurred. Bahn (2013) concluded that mixing non-permanent workers with permanent workers was problematic; however, the problems were not systematic. When workers are working under two different sets of safety practices, there is conflict (Bahn, 2013).

Migrant workers are at a higher level of risk than permanent workers are. The lack of training, language barriers, and lack of experience placed the workers at risk (Giraudo, Bena, & Costa, 2017). Picchio and Van Ours (2017) reported Italian research concluded temporary worker underreport injuries and are at a higher risk for severe injuries than regular workers are. The National Institute for Occupational Safety and Health (2015) proposed temporary workers are vulnerable because of overlapping characteristics such as being non-union or working in a small business. Multiple characteristics increase the barriers to a workers' health and safety in the workplace.

Transition and Summary

Section 1 included the foundation of the study, and the examination of strategies business managers use to reduce safety incidents in small businesses. I explored strategies successful business managers have developed that might contribute to the safety of other employees in other industries. The review included literature on small businesses and questions on the research question. The literature review included literature on OSHA's safety, safety systems management, safety incidents and incidents, and incident prevention.

Section 2 contains the purpose of the proposed study, my role as the researcher, and the selection of the participants. Section 2 contains (a) the research methodology, (b) the research design, (c) the data collection, (d) the data analysis procedures, and (e) the reliability and validity of the research. Section 2 also includes a transition summary to Section 3.

Section 3 contained the purpose of the study and the research question, a summary of the study findings, and a complete presentation of the study findings. Section 3 included a discussion of the way the conclusion and recommendations apply to the professional practice of business, a summary of my reflections from the study findings, and my recommendations for further research.

Section 2: The Project

The focus of the study was to explore the strategies small construction business managers use to reduce safety incidents in their organizations. The specific problem was that some small construction business managers lack strategies to reduce safety incidents in their organizations. Section 2 contains the purpose of the study, my role as a researcher, and the selection of the participants. Section 2 also includes the research methodology, research design, data collection, population and sampling, analysis process, reliability and validity of the research, a summary, and a transition into Section 3.

Purpose Statement

The purpose of the qualitative single case study was to explore the strategies small construction business managers use to reduce safety incidents in their organizations. The study's target population consisted of six managers in a small construction business who have used strategies successfully to reduce safety incidents in Northwest Ohio. The study may contribute to positive social change by reducing the negative communal effects of safety incidents in the workplace. When an employee is injured, the incident affects the employee's quality of life due to lost wages and benefits (Michaels, 2015). The burden of workplace incidents, such as injuries and deaths, caused by safety incidents affect employees and their families (Michaels, 2015). The burden of care and subsequent rehabilitation associated with the injury of a low wage earner often impact their family relationships (Michaels, 2015).

Role of the Researcher

The role of the researcher is to collect valid and reliable data to answer the overarching research question for a given study (Bahrami, Soleimani, Yaghoabzodeh, & Ranjbar, 2016). Assuming this role of the researcher and after I received IRB approval, I collected and analyzed qualitative data related to strategies some small construction business managers use to reduce safety incidents in their organization. As the researcher, I used semistructured interviews, company records, and interview observations to collect valid and reliable data.

As the researcher, I have a relationship with my research topic. I have a background in health and safety resulting from 8 years working in a manufacturing environment as a certified safety professional. I have firsthand experience with the enforcement of safety policies. I witnessed the effect a fatality had on an organization. My personal experience did not influence the interview results nor the formation of the interview questions.

The role of the researcher is to practice the ethical duty and obligations of the three principles of the Belmont Report: Beneficence means to cause no harm to the participants and to maximize the benefits of the study, justice means the researcher distributes the burdens and benefits of the study equally, and the respect of persons means to recognize that the participants are autonomous and that participants with diminished autonomy need protection (Belmont Report, 1979). I followed the three principles of the Belmont Report by providing an assessment of the risks and benefits of the study in the informed consent form.

Smith and Noble (2014) contended that researcher bias exists and can have an impact on the interpretation of the study findings. Viewing data from the researcher's personal lens is a form of research bias (Fusch & Ness, 2015). Bracketing is a tool used to mitigate bias in research (Sorsa, Kukkala, & Astedt-Kurki, 2015). Bracketing is the process of identifying the unresolvable bias that exists in the study (Sorsa et al., 2015). I used bracketing to reduce researcher bias by writing interview notes during the data collection and analysis.

The interview protocol provided guideline that researchers use to ensure the research questions align with the interview questions (Castillo-Montoya, 2016). There were four elements in the interview protocol. The research participants have the right to privacy and confidentiality (Castillo-Montoya, 2016). The participants have the right to expect the researcher to be honest (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi. 2014). The participants have the right to sign a written informed consent form (Sanjari et al., 2014). Using an interview protocol helps the qualitative researcher to create validity and reliability in the research findings (Castillo-Montoya, 2016). I used the interview protocol to inform the participants that they were under no obligation to participate, that they could withdraw at any stage in the interview process, and that there would be no consequences if they decided not to participate. I followed the interview protocol example found in Appendix A.

Paradis, O'Brien, Nimmon, Bandiera, and Martimianakis (2016) suggested that the use of semistructured interviews, interview observations, and company records are appropriate tools to collect qualitative data. I used open-ended questions during

semistructured interviews to collect the unique experiences from the participants. I used interview observations to collect nonverbal cues from the participants. I used company records to increase the validity of the data collected and for additional opportunities for further research studies.

Participants

Selecting the correct participants in a qualitative study is critical to collecting well-informed, in-depth data of interest (Etikan, Musa, & Alkassim, 2016). The eligibility criteria for participants in a qualitative study come from the overarching research question (Etikan et al., 2016). Exploring strategies small construction business managers use to reduce safety incidents in their organizations was the focus of this study. The eligibility criteria for participants in this qualitative study included managers of a small construction business with at least 10 employees, but not exceeding 300, with a proven record of accomplishing safety violation reductions in Northwest Ohio. The chosen participants met specified eligibility criteria to participate in this study, as recommended by Palinkas et al. (2015).

Gaining access to study participants is an important part of the interviewing process (Cunliffe & Alcadipani, 2016). After receiving IRB approval to conduct the study, I gained access to the participants by attending emailing participants on their website. Kondowe and Booyens (2014) conducted a research study in Khayelitsha, South Africa and recommended that researchers attend meetings in which the researcher and potential participants may attend. I introduced myself and explained the purpose of the study with the consent form. I asked the members of the Better Business Bureau of

Northwest Ohio to participate in the research study. In a qualitative study, the researcher provides the criteria to participate to the potential participants and explains confidentiality and the informed consent process (Castillo-Montoya, 2016). Once a Better Business Bureau member agreed to participate, I explained the informed consent process to each participant and gave the participant an informed consent form to sign. I used the informed consent form as an example of the informed consent form.

Building and maintaining trust is a crucial step in building a working relationship conducting the interview process with peers (Quinney, Dwyer, & Chapman, 2016). In a qualitative study, researchers create a working relationship by encouraging the consensual participants to ask questions regarding the study (Ponelis, 2015). I set up the interview times, dates, and location with the participant's approval. I built a good networking relationship with the participants by sharing the interview process openly. I showed the participants genuine interest and respect.

Qualitative researchers use the eligibility criteria to establish the alignment of the participants with the overarching research question (Castillo-Montoya, 2016). I used semistructured interviews, interview observations, and company records to help answer the research question. The participants had the background and experience to answer the interview questions, as Palinkas et al. (2015) recommended.

Research Method and Design

Researchers use the research design to reveal the appropriate data collection method (Trefry, 2017). Rudnick (2014) suggested that researchers use the qualitative method to uncover comparisons in health research data. In qualitative research, the

participants have an active role in the progress of the study (Austin & Sutton, 2014). For this study, I chose the qualitative research method and a single case study design.

Research Method

When using the qualitative research method, exploring the perceptions and experiences of the participants is important (Gelling, 2015). Rahman (2017) contended that researchers use the qualitative research method to provide a richness and depth to data related to the participant's behaviors and perceptions. Yauch and Strudel (2003) concurred that qualitative researchers use methods, such as interview observations and case studies, to produce underlying values, beliefs, and assumptions about organizations. In this research study, I explored the strategies some successful small construction business managers use to reduce safety incidents in their organizations.

Austin and Sutton (2014) suggested that qualitative research is important because it allows researchers to seek and accept the complex and evolving quality of the world in context and adds a new aspect to interventional research that quantitative measures might overlook. Gelling (2015) concurred by proposing that the qualitative research method is appropriate when studying participants in their natural setting as a method for understanding social interactions in context. In this study, I explored strategies that help managers reduce safety incidents. Quantitative methods did not apply to this study because researchers using the quantitative method apply statistical techniques to generalize patterns about the study process (see Almalki, 2016). While mixed-methods research methodology allows researchers to obtain in-depth and contextualized insights, very few safety researchers use a mixed-method research methodology to study safety

issues (Zou et al., 2014). The mixed-method research methodology was not appropriate for this study because the mixed-methods research methodology contains quantitative methods, which I did not need in this study.

Research Design

Cronin (2014) proposed case study as a research strategy when the researcher explores in-depth descriptions of the participant's experiences with strategies. I used semistructured interviews, interview observations, and company records to collect detailed information from business managers possessing successful experience in reducing safety incidents in the workplace. Rossetto (2014) stated that qualitative research interviews allow the researcher to contextualize the participants' experiences by providing a richer understanding of how the participants perceive those experiences. Using company records to examine facts regarding company policies and statistics is appropriate in qualitative case studies (Rahman, 2016). In addition, Rahman (2016) indicated the use of interview observations is appropriate in qualitative case studies.

I chose a case study research design. A case study is appropriate when the researcher focuses on a contemporary phenomenon in real-life context explored with *how, what,* or *why* research question (Harrison, Birks, Franklin, & Mills, 2017). A case study is an appropriate approach when the researcher explores a case identified for study (Hyett, Kenny, & Dickson-Swift, 2014). Phenomenological researchers attempt to understand people's realities gained from life experiences (Padilla-Diaz, 2015). A phenomenological approach was not appropriate for the study because the study was not about understanding people's life experiences. Qualitative researchers use an

ethnography to investigate large groups in their real-life environment, focusing on the cultural characteristics of a group (Tickle, 2017). An ethnographic design was not appropriate for this study because this approach focuses on the cultural characteristics of a group and not their workplace experiences.

Data saturation occurs when there is no new data revealed that relate to the research question (Fusch & Ness, 2015). Data saturation means there are no new codes, themes, or information for the researcher to collect that contributes to previous data (Wu, Thompson, Aroin, McQuaid, & Deatrick, 2016). Tran, Tran, Porcher, and Ravaud (2017) presented a mathematical model to describe how researchers could use math to reach data saturation. I obtained data saturation when there were no new data that I could use to enhance previous research.

Population and Sampling

The population of a research case study consists of participants that have the same characteristics defined in the sampling criteria developed by the researcher (Palinkas et al., 2015). The population for this study consisted of safety managers in a small construction business that has demonstrated the ability to reduce safety incidents. The small construction business managers had a minimum of 5 years in business. I selected purposive sampling for this study. Researchers use purposive sampling to choose study participants based on the study criteria (Mauceri, 2014). Researchers use purposive sampling to examine the participant's perspective regarding the research topic (Shneerson & Gale, 2015). Purposive sampling is the process of identifying and selecting participants that are knowledgeable about or experienced with the phenomenon of interest (Palinkas

et al., 2015). I used purposive sampling to explore strategies successful managers use to reduce safety incidents.

Researchers use a sample or subset of the chosen population to establish the number of participants (Hyett & Dickson-Swift, 2014). The number of participants should allow the researcher to reach data saturation. Data saturation means there are no new codes, themes, or information for the researcher to collect that contributes to previous data (Fusch & Ness, 2015). I achieved saturation when there were enough data to duplicate the study, when the ability to obtain additional data did not exist, and when further coding was no longer feasible. Yeasmin and Rahman (2012) suggested researchers use methodological triangulation to enhance the validity of the data results. Fusch and Ness (2015) stated researchers use methodological triangulation to reach data saturation. I used the interview findings, company records, and interview observations notes until no new substantive information surfaced.

The sample size must be large enough to answer the overarching research question and small enough to reach data saturation (Burmeister & Atiken, 2012). While Yin (2014) does not specify a concrete number, Yin does imply the number of participants depends on the research question and the research approach (Yin, 2014). The number of participants for this study consisted of six successful managers in a small construction business having membership in the Better Business Bureau of Northwest Ohio and having been in business for at least 5 years.

Researchers use the eligibility criteria in a research study to describe the characteristics that specify inclusion and exclusion from being a participant (Lamb,

Backhouse, & Adderly, 2016). Researchers use the eligibility criteria to obtain accurate and meaningful findings (Georgia Center for Oncology Research and Education, 2017). Eligibility characteristics could include occupation, age, gender, ethnicity, and location (Georgia Center for Oncology Research). The eligibility criteria for participants in this study included (a) managers in a small construction business with a successful safety record of reducing safety incidents in the workplace, (b) managers having been in business for at least 5 years, and (c) are members of the Better Business Bureau of Northwest Ohio. The eligibility criteria were appropriate for this study.

Qualitative interviewing has been the primary method used to collect data in qualitative research (Oltmann, 2016). The interview setting should include an area with minimal distractions and occur at times and locations convenient and comfortable for the participants (Edwards & Holland, 2014). Manzano (2016) proposed researchers use qualitative interviews as a tool with open-ended questions in a semi or unstructured process. Costillo-Montoya (2016) contended researchers should inform participants of the nature of the study and the ethical considerations of the study.

I conducted semistructured interviews with six participants chosen from the population sample. The interviews contain 5 open-ended questions. I gave the participants an informed consent form to sign and return to me. I used interview observations notes to capture nonverbal cues when the participant responds to the research questions. I used company records to increase the validity of the data. I conducted the interviews when and where it was convenient for the participants.

Ethical Research

As recommended by Zhou and Nunes during a study in China (2013), I did not start the interview process before obtaining approval from Walden's Institutional Review Board (IRB). I conducted the research under the Walden University IRB approval number 02-27-280434376. Noain-Sanchez (2016) recommended that researchers obtain participant's consent before commencing the data collection. As recommended by Noain-Sanchez, I used the informed consent form to inform the participants of the purpose of the research and requested their consent to the interview process.

Komic, Marusic, and Marisic (2015) proposed that informed consent means informing the participants of their right to confidentiality, their right to withdraw from a research study, and whether there are any incentives for participation in the study. When the participants agreed to participate in the study, they received an informed consent form found in Appendix C. Qualitative researchers use the informed consent form to protect the rights of the research study participants (Grady, Cummings, Rowbotham, McConnell, Phil, & Kang, 2017). Palinkas et al. (2015) contended researchers use the informed consent form to explain to the participants their right to withdraw at any time from the study. Sanjari et al. (2014) contended researchers use the informed consent form to protect the participants through full disclosure and confidentiality. Grady et al. (2017) suggested that researchers are rethinking the informed consent process. Grady et al. (2017) reported the use of the internet and smartphones as a tool for collecting data without compromising the research participants. I sent the consent form via e-mail to the participants, presented the printed copy of the consent form in person, and asked the

participants to confirm their willingness to participate in the study. I informed the participants that they were under no obligation to participate, could withdraw at any stage in the interview process, and there were no consequences if they decided not to participate. I informed the participants that there were no incentives for participating in this study.

Redlich-Amirav and Higginbottom (2014) proposed using data analysis software to code and manage the collected data from the research interviews. Paradis et al. (2016) proposed researchers use coding to identify participant documents. I used a numerical code to protect the identity of the participants throughout the study. The participants' documents listed in the table of contents and the appendices were (a) Appendix A, The Interview Questions; (b) Appendix B, The Interview Protocol; (c) Appendix C, Certificate of Completion.

Securely storing data in a locked location helps ensure participant confidentiality (University of Delaware Research, 2015). I created a Microsoft Word file with a password to ensure confidentiality and privacy. I plan to destroy the files after the 5-year period. Destroying word files and audiotapes after 5 years is appropriate (University of Delaware Research., 2015). I plan to store the audiotapes of the interviews in a safety deposit box and destroy them after the 5-year period. Human Research Protection Program administrators (2017) contended destroying documents that identify the participants after a 5-year period is appropriate. I plan to destroy all documents that could identify the participants after the 5-year period.

Data Collection Instruments

I was the primary data collection instrument. Kendall and Halliday (2014) contended that as the primary data collector, qualitative researchers in India need the support of supervisors and ethics committees when they encounter unpredictable issues during the data collection process. Data collection techniques include using company documents, interview notes, interviewing, questionnaires, and focus groups (Paradis et al., 2016). The data collection techniques that I used in this study are semistructured interviews, company records, and interview notes. Hofisi, Hofisi, and Mago (2014) proposed the use of semistructured interviews in a qualitative study to produce an in-depth understanding of the participant's experience related to the research question. O'Keeffe, Buytaert, Mijic, Brozovic, and Sinha (2016) proposed researchers use semistructured interviews to explore the *how, what, and why* of the participant's experiences, using the research question as a guide. Gelling (2014) stated that semistructured interviewing is appropriate for a qualitative study because of rich, in-depth data researchers collect from study participants' knowledge of the study topic. Therefore, semistructured interviews were appropriate for this study.

Researchers use data sources to access large amounts of statistical data (Hemkens et al., 2016). Researchers use existing company records to obtain a better understanding of the way the company functions, the company culture, company policies and company changes (O'Leary, 2014). Yin (2014) proposed company records are appropriate to use in case study research. I used company records to increase the validity of the collected data by conducting methodological triangulation.

Researchers use interview observations to document nonverbal cues exhibited by participants during the semistructured interview (Oltmann, 2016). Documenting nonverbal cues using interview observations enhances the validity of the data and increases the credibility of the study results (Bonaccio, O'Reilly, O'Sullivan, & Chicchio, 2016). Onwuegbuzie and Byers (2014) indicated the use of interview observations is appropriate in qualitative studies. I used interview observation notes to increase the reliability of the data collection. I documented the nonverbal cues of the participants during the semistructured interview by taking interview observation notes.

The interview protocol is a tool used by the researcher as a guide through the interview process (Castillo-Montoya, 2016). The interview protocol is a tool used to ensure the accuracy and consistency of the experiences of each participant (Heydon & Powell, 2016). Jacob & Furgerson (2012) reported that researchers use the interview protocol as a checklist to ensure all the relevant questions are in the interview. I conducted semistructured interviews, recorded interview observations, and reviewed company records to collect interview data. I took notes during the interviews to capture nonverbal cues when the participants respond to the research questions. I reviewed company records to increase the validity of the collected data. I used the interview questions included in Appendix A. I followed the interview protocol included in Appendix B.

Member checking is a tool used to allow the participants to review the accuracy of the data in the interview transcript (Birt, Scott, Cavers, Campbell, & Walter, 2016). Researchers used member checking as a tool for participants to confirm or disconfirm

what they said in the interview (Simpson & Quigley, 2016). Researchers use member checking to validate the accuracy of the researcher's interpretation of the participants' responses to interview questions (Birt et al., 2016). Once the participants ensured the interpretation of their information was correct, the researcher asked if there was any additional information. However, because of the field notes and non-verbal cues that the researcher gathers, some participants might not recognize the collected data (Hadi & Closs, 2016). Member checking enhances the trustworthiness of the collected data (Birt et al., 2016). Qualitative researchers use member checking to ensure the reliability and validity of the collected data (Hadi & Closs, 2016). I scheduled time for member checking with participants to ensure the reliability and validity of the collected data. I gave each participant a copy of my interpretation of their responses to interview questions, written in my own words, for their validation and clarification. I used member checking to allow the participants to add to or subtract from the interview data after conducting interviews.

Data Collection Technique

Researchers use multiple data collection techniques to collect data about the participants in their natural environment (Makrakis & Kostoulas-Makrakis, 2016). Hofisi, Hofisi, and Mago (2014) proposed researchers use an array of data collection techniques. The techniques include reviewing company records, interview observations, interviewing, questionnaires, and focus groups (Paradis et al., 2016). I chose semistructured interviews, interview observations, and company records. Researchers use methodological triangulation to ensure trustworthiness (Dang, 2015). I used

semistructured interviews, interview observations, and company records to validate the collected data. The data collection process included (a) attending the lunch seminar to access members of the Safety Council of Northwest Ohio, (b) obtaining and distributing the potential participant's signed informed consent forms located in Appendix C, and (c) setting the time and date for the interviews. I used interview observations to capture nonverbal cues when the participants respond to the research questions. I reviewed company records to increase the validity of the collected data.

Gelling (2016) stated one advantage to semistructured interviewing is the rich, in-depth data it provides. Another advantage of semistructured interviews is that an informal atmosphere can encourage the participant to be open and honest (Jong & Jung, 2015). Flexibility is another advantage to using semistructured interviews (Hofisi, Hofisi, & Mago, 2014). Having flexibility allows the researcher to adjust the interview questions or change the direction and pace of the interview as the interview takes place (Jong & Jung, 2015).

A disadvantage to using semistructured interviews is the prejudices, stereotypes, and assumptions of the interviewer may affect the interview outcomes (Hofisi, Hofisi, & Mago, 2014). Another disadvantage is that the interviews are time-consuming, regarding both the data collection and the data analysis (Jong & Jung, 2015). Finally, a disadvantage to using semistructured interviews is that an untrained interviewer may lead the participant to reveal information the participant could regret afterward (Alshenqeeti, 2014).

Using company records to verify facts regarding company policies and company statistics is appropriate in qualitative studies (O'Leary, 2014). One advantage of using company records is the data are easy to access (Hemkens et al., 2016). A disadvantage of using company records is the data may not be specific to the researchers' needs (Doolan, Winters, & Noureddine, 2017). Onwuegbuzie and Byers (2014) indicated the use of interview observations is appropriate in qualitative studies. One advantage to interview observations is the researcher may notice something in the participant's body language that could lead to new insights not covered in the interview questions (Bonaccio et al., 2016). While researchers could gather rich data from using non-verbal cues, a disadvantage to using interview observations is qualitative researchers seldom use nonverbal cues in data collection (Onwuegbuzie & Byers, 2014)

The data collection process includes member checking to ensure the validity and reliability of the study (Hadi & Closs, 2016). Researchers use member checking to ensure the accuracy of the researcher's interpretation of participants responses to interview questions (Birt et al., 2016). Researchers use member checking to enhance the credibility of the findings (Simpson & Quigley, 2016). I conducted member checking with study participants to ensure my interpretation of the interview data were accurate and complete.

Data Organization Techniques

Researchers use data organization to analyze and interpret the collected data in one phase before advancing to the next phase of the qualitative process (Wu et al., 2016). The data organization process includes (a) data checking, (b) code identification, (c) sorting and coding the themes and patterns, (d) transcribing the data, and (e) documenting

conflicting data (Neale, 2016). I used the data organization process to analyze and interpret the collected data. I used an organizational technique to give direction to the organizational process. I engaged in (a) checking the data, (b) identifying codes, (c) sorting and coding the themes and patterns, (d) transcribing the data, and (e) documenting conflicting data as my data organization process.

One qualitative researcher using an inductive approach identified the data as a critical step in the data organization process (Liu, 2016). Melville and Hincks (2016) suggested numerical coding is appropriate for participant identification. I used numerical coding to identify the participants. I identified the study participants as SP1 through SP6. Researchers use coding as a data organization tool to group similar concepts into categories and subcategories to answer the research question (Ose, 2016). When the coding was complete, I sorted the data, created Microsoft Word files based on the emerging themes, and created a different set of numerical codes for the emerging themes and patterns. I used member checking to document conflicts or misinterpretations.

Buys and Shaw proposed (2015) 5 years as the amount of time the confidential data from a study remains in the researcher's possession. Destroying the data after the proposed 5-year waiting period is appropriate (Human Research Protection Program, 2017). I transcribed the data into a Microsoft Word file secured with a password. I stored the audio tapes in a safety deposit box. I plan to destroy all documents 5 years from the completion of the study.

Data Analysis

Yeasmin and Rahman (2012) stated that the use of triangulation strengthens the consistency of the findings and increases the validity of the results. Almalki (2016) proposed that methodological triangulation is used in qualitative research to collect different types of data related to the research topic and is then, compiled for analysis and interpretation. Carter et al. (2016) suggested that methodological triangulation is appropriate for a qualitative study because researchers use multiple data sources to enhance the validity of the process. I used the interview findings, company records, and interview observations to enhance the validity that was a result of using multiple data sources.

Yin (2014) proposed there are five steps in the data analysis process. The steps include compiling the data, disassembling the data, reassembling the data, interpreting, and concluding the data to address the proposed purpose of the study. When researchers use multiple data sources, the data must be compiled in preparation for the data analysis (Johnson et al., 2017). In the compiling phase, I organized the data sequentially to build a database. In the disassembling phase, I sorted, compared, and coded the data. In the reassembling phase, I used the cluster style and categorized the coded data into themes. The interpreting phase involved creating meaning from the themes and patterns that emerged from the data. I analyzed the themes and patterns that emerged from the data. The final phase of the data analysis process was concluding the data (Yin, 2014). Qualitative research impacts the results of the research study (Austin & Sutton, 2014). I drew conclusions from the analyzed data.

During the data analysis, researchers use the findings to describe the research topic (Wu et al., 2016). During the data analysis process, researchers used the data analysis method to organize the data, compare the data, and create codes from the comparisons or categories (Yin, 2014). I identified themes that emerge from the compared data and made conclusions (Austin & Sutton, 2014). I used the data analysis method using categorical aggregation to conduct the data analysis process.

During the data analysis process, researchers used the interview data to help draw conclusions about the research problem and the research question (Wilson & Onwuegbuzie, 2016). Utilizing the key themes, researchers often compare the literature review and the proposed conceptual framework to address the research question (Gelling, 2017). During the data analysis, researchers use the findings to describe the research topic (Wu et al., 2016). I focused the themes on the purpose of the study and explored the strategies small construction business managers used to reduce safety incidents.

A mind map is a visual thinking tool used to help the researcher structure the data with a visual display of the patterns, concepts, and categories (Kotob, Styger, & Richardson, 2016). Researchers use mind maps to organize the emerging data (Aykac, 2014). Researchers use mind maps to uncover creative connotations emerging from the data (Sumen & Calisici, 2015). I used a mind map to generate new ideas for themes and patterns and their interconnections. I used a mind map to correlate my themes with the current literature.

Reliability and Validity

Leung (2015) stated that validity, reliability, and generalizability are important issues when designing, analyzing, and interpreting the quality of a qualitative study. In a qualitative study, dependability, creditability, transferability, confirmability, and data saturation ensure reliability (Gelling, 2015). Gunawan (2015) suggested the term dependability in qualitative research performs the same function as reliability in quantitative research. Noble and Smith (2015) proposed the concept of rigor in a quantitative study replaced the exploration of consistency in the qualitative study. I used reliability and validity when I designed, analyzed, and interpreted the quality of the study.

Reliability

Member checking is a tool used to ensure the reliability of the study (Hadi & Close, 2016). Birt et al. (2016) proposed comparing the participants' comments and the transcript data ensures the accuracy of the researcher's interpretation of member checking. Researchers use member checking to obtain more in-depth information and enhance creditability (Simpson & Quigley, 2016). I scheduled the participants for member checking sessions to ensure my interpretation of the interview data were correct.

Dependability ensures the results of the research is consistent and reputable (Gelling, 2015). Triangulation is a tool used to validate data using multiple sources. The methods conducted, analyzed, and interpreted in the study measure the results (Carter, Bryant-Lukosius, Dicenso, Blythe, & Neville, 2014). Gunawan (2015) proposed that researchers establish dependability to understand how reliable the research methods are. I used methodological triangulation as a tool to measure the study results and to ensure the

interview questions would produce answers to the overarching research question. I used the interview findings, company records, and interview notes to establish dependability in the data.

Validity

Validity is the result of the level of trustworthiness in the data that proves the data are accurate (Carter et al., 2014). The rich, thick, and in-depth description is a useful tool for establishing validity (Hadi & Close, 2016). Ndanu and Sysmba (2015) proposed researchers use methodological triangulation to facilitate data validity. I used the interview findings, company records, and interview notes to establish validity in the data.

Creditability establishes believability in the research results (Moon, Brewer, Januchowski-Hartley, Adams, & Blackman, 2016). Researchers use creditability to demonstrate confidence in the research data (Gelling, 2015). Simpson and Quigley (2016) proposed member checking is a technique used to ensure creditability. I gave a copy of my interpretation of the study participants' answers to the interview questions to the participants for validation purposes. The participant's comments served as a check of the transcripts creditability.

Transferability refers to transferring the data contextually (Moon et al., 2016). The reader should be able to take the research and its collection method and compare it to a similar situation with the same results in another setting (Gelling, 2015). Hadi and Closs (2016) stated the details of the research lends the study transferability. I used the limitations, assumptions, and the delimitations as a tool to measure the degree to how much the results of the study would transfer outside of the study.

Confirmability occurs when other researchers concerning the potential for bias or data distortion confirm the study findings (Moon et al., 2016). Confirmability is the level of the study findings other researchers can corroborate (Gelling, 2015). Confirmability is appropriate for establishing trustworthiness in qualitative studies (Anney, 2014). I identified and documented any negative circumstances that could distort my interpretation of the findings.

Saturation in this study consist of six interviews with participants that fit the population criteria. Qualitative researchers use purposeful sampling from the population criteria to achieve saturation (Suen, Huang, & Lee, 2014). Fugard and Potts (2015) contended it is possible to reach saturation after six interviews. Fusch and Ness (2015) proposed stopping the data collection upon data saturation is appropriate. I reached data saturation after interviewing the six participants. I asked the participants additional questions to collect data until no new themes were emerging from the data.

Transition and Summary

Section 2 included the purpose of the proposed study, the role of the researcher, participant description, research method and design, population and sampling, details of ethical research, data collection instruments, data collection techniques, data organization techniques, data analysis techniques, and reliability and validity.

Section 3 contains the purpose of the study and the research question, a complete presentation of the study findings, a discussion of the way the conclusion and recommendations applied to the professional practice of business, a summary of my reflections from the study findings, and my recommendations for further research.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore the strategies successful small business managers use to reduce safety incidents in their organization. I used four semistructured interview questions to collect data from six successful small construction business managers. In addition, I used the process of methodological triangulation to compare and validate the data collected from interview notes and company records. The results consisted of four themes developed using a categorical aggregation of the data. Four emergent themes supported what strategies successful small construction business managers use to reduce safety incidents in their organization. All participants (100%) in the study acknowledged that (a) senior management commitment to safety culture, (b) safety training, (c) accountability, and (d) employee engagement were critical strategies for small construction business managers to use to reduce safety incidents in an organization.

Presentation of the Findings

The overarching research question is as follows: What strategies do successful small construction business managers use to reduce safety violations in the workplace? I identified four themes from interview notes, interview data, and company records. I used the themes to link the literature review and the conceptual framework provided in Section 1. The conceptual framework for this study, Heinrich's SMSCM, aligned with the themes.

Emergent Theme 1: Senior Management Commitment to Safety Culture

The first theme that emerged from a thorough analysis of the participants' responses to the interview questions and a review of company records is that senior management must be committed to improving safety, promoting a successful safety system, and empowering everyone on site to be a part of that success. Each participant indicated that senior management commitment created a positive organizational safety culture. Study Participantreported that employees look to senior managers for health and safety guidance. SP1 emphasized the importance of leaders visiting the work site and mingling with the team members. SP1 stated,

> In our organization, the leaders visit the site where they acknowledge good safety practices and address unsafe work practices. The visits give the team members the opportunity to ask question and report issues they think are important to having a safe working environment.

SP2 noted that the way the employees respond to safety reflects the way the employees perceive the managers commitment. SP2 stated,

> In our organization the managers make it very clear on what kind of work practices that are tolerated and those that are not . . . making people accountable for their actions is supported by a clearly written safety policy. When the safety practices and standards are clear and concise, everyone is accountable for the decisions they make and should be rewarded or disciplined for those decisions.

SP3's report concerning senior management's commitment to a safety culture emphasized transparency. SP3 stated that

> Establishing a safety culture demands an honest and transparent discussion of the organizational expectations regarding the safety culture. Our organization uses evaluation tools and employee surveys to get input from the team members and the first line supervisors on where the gaps are in our safety program.

SP4 noted that senior management must create and sign a written safety policy that describes the organization's goals and commitment to health and safety. SP4 indicated that the written safety policy needed to include everyone in the organization. SP4 stated that

> Our managers are or should be transparent and visible in their daily interactions with the employees. Our managers are expected to lead by example, following the same safety procedures they expect the team members to follow and by being consistent in their enforcement of those procedures.

SP5 believed that senior management commitment to the safety culture helped define the safety methods and processes in the organization. SP5 reported that senior management commitment contributed to the organizational structure needed to meet the safety goals. SP5 noted that senior managers created the safety policy to establish clear safety objectives and to convey an organizational commitment to communicate the safety objectives. SP5 responded that "we believe in organizational communication." SP5 stated that

> By communicating and defining the safety expectations, the managers, employees, subcontractors, and anyone else on the worksite can understand what the expectations are when it comes to working safely. Senior management

commitment is beneficial when the commitment supports a culture of safety built on a foundation of organizational policies and procedures who are communicated and enforced.

SP6 described a safety culture as the organizational beliefs, values, and attitudes of the people in the organization. SP6 noted that establishing a successful safety culture starts with the leadership. SP6 stated that "you know you have a successful senior management safety culture commitment when all the team members and the entire organization looks out for each other and are not afraid to report injuries or safety hazards."

Correlation to the literature. Studies from the literature review confirmed the findings of my study. Feng (2013) reported that senior managers, committed to health and safety and model that commitment, develop motivated employees who are committed to performing their work safely. According to Kim et al. (2016), senior management must play the leading role when it comes to creating successful safety systems. Similarly, members of the FAA (2016) noted that organizations that include management commitment, communication of health and safety policies to the entire organization, and organizational safety accountability have a successful safety program.

Wu et al. (2016) emphasized that the success of health and safety programs depends on the behaviors of the managers. Nielsen (2014) supported Wu et al.'s conclusions by stating that the foundation of a safety culture is determined by management clearly defining the roles of each employee and communicating the organization's expectations for what is required to comply with the safety policies. Kim

et al. (2016) noted that organizations with a healthy safety culture are identified by communications based on mutual trust, shared perceptions of the importance of workplace safety, and confidence in the organizations implementation of preventative measures. Amponsah-Tawiah and Mensah (2016) concluded that employees are not naturally committed to their organizations and that employees expect their managers to consider their health and safety by implementing good and sound safety measures.

Correlation to the conceptual framework. The conceptual framework supported the study findings. Heinrich (1959) contended that upper management was responsible for creating a safety culture and developing a health and safety management system. By studying actual records and engineering reports, Heinrich determined that 98% of occupational incidents were preventable. He proposed that while past circumstances were undesirable, an important fact remains, which is that management can prevent unsafe acts. He also concluded that managers can control the employees' behavior related to unsafe acts and the mechanical hazards and proper guarding. Controlling mechanical hazards included installing guarding on machines and tools, providing personal protection equipment, and replacing or repairing tools and machinery. Heinrich proposed that controlling the safety of the work environment is a management function. He used the theory to support teaching employees how to work safely and how to recognize hazards. He used the theory to encourage discipline if the employees could not improve their work performance.

Ozmec (2015) indicated that the organizational size, safety culture, and financial situation sometimes have an impact on employee workplace safety practices. Nordlof,

Wijik, and Westergren (2015) reported that smaller organizations struggle more than larger organizations. Sinclair and Cunningham (2015) noted that smaller organizations are the majority in every industry in the United States. Sinclair and Cunningham also proposed that smaller organizations endure the greater burden of occupational injuries, illnesses, and fatalities than larger organizations. Van der Molen and Frings-Dresen (2014) contended that small construction business managers do not know how to recognize workplace hazards and that 14% of construction workers reported they encounter unsafe conditions often at work. Cunningham et al. (2018) contended that smaller organizations often lack the necessary resources for effective occupational safety and health activities pertaining to non-native workers. However, OSHA (2016) regulations require all organizations to manage the risk and hazards in the workplace and on construction sites to protect human health and ensure safety. Small businesses are not exempt from such regulations.

Emergent Theme 2: Safety Training

The second theme that emerged from the data referred to safety training. The participants' findings revealed that providing health and safety training to the employees could improve employee morale and increase organizational efficiency. In the analysis of the participants' responses and reviewing company records, I found that investing in employee safety training, such as recognizing potential hazards, conducting safety audits, and using personal protection equipment transforms employees into team players, making safety the organizational bottom line.

The analysis of the participants' responses and the review of company records revealed that construction companies that use dangerous equipment and operate in volatile work environments need safety training to create a safety culture. A successful safety program does not stop at a worker's orientation to the job. Instead, a successful safety program includes explaining situations the team member might encounter and instructing the way that team member should respond. When the team members cannot recognize the hazards or understand safe work practices, the team members face a higher risk for injury or fatality.

All participants agreed that safety training was key in reducing safety incidents in the workplace. SP1 boasted that SP1's organization was different from other construction sites because when the organization hires new employees, the new person is assigned to a team peer trainer. SP1 noted that

> The team peer trainer is responsible for helping the newbie get acquainted with the worksite and to help resolve or explain what the rules are and where to go for assistance if needed. Peer-to-peer safety training is a large part of our organizational culture.

SP2 reported that SP2's organization has a safety program based on supplying the team members with the knowledge and skills needed to do their work safely, thus avoiding hazards that put themselves and or their team members at risk. SP2 stated that

> Management commitment means considering the health and safety of everyone in the organization; this means being committed to training the employees to be aware of their surroundings and to look out for each other. Everyone on the

> worksite should be able to recognize hazards, contractors, sub-contractors, clients, suppliers, everyone.

SP3 reported that the team peer trainer is responsible for helping the new person get acquainted with the worksite and resolve or explain the rules and where to go for assistance. SP3 added, "peer-to-peer safety training is another large part of our organizational culture." All participants reported safety training reduced the organizational costs related to safety incidents on the construction site by ensuring everyone in the organization understands the hazards in their environment and the necessity of controlling the hazards and promoting safe work practice. SP4 reported that safety training was costly but necessary. SP4 stated that, "the cost of retraining an injured team member or hiring a new team member to replace an injury or fatality is reduced by safety training." SP4 noted,

> In the construction business, because of the complex and constantly changing environment safety, injuries and incidents cost the industry millions of dollars in medical costs. If you included lost wages and worker compensation, safety training just makes good business sense.

SP5 believed that safety training was an essential element required to keep the organization safe. SP5 reported that training the team members the proper way to execute their work tasks includes teaching the team members the proper techniques and procedures for using the machinery and tools safely. SP5 reported that giving the team members refresher safety training is equally as important as training new team members. SP5 stated that

> When the team members work repetitively, doing the same tasks over and over daily, the team members may not think that the safety training is important as it was when the team member was initially trained and become laxed in practicing workplace safety.

SP6 agreed that dull and mundane work tasks can lead to a laid-back work attitude. The same caution a concerned team member experience as a new worker can change over time. SP6 highlighted the importance of team members understanding the aspects of training and the reasons safety training remains relevant and essential to the success of the organization. SP6 stated that

> The benefit of refreshing team member safety training is to remind the worker that danger on the worksite still exists. When the team members go without safety training regarding old and new hazards, complacency develops and the chances of a safety incident or fatality increase.

Correlation to the literature. According to Burke et al. (2006), leaders using worker safety and health training improve the workers' safety knowledge and reduce workplace safety incidents. Hola and Szostak (2014) suggested that leaders of the construction industry should embrace the importance of analyzing what causes safety incidents on construction sites, develop safety training and educational opportunities that enhance worker skills, and create a safety system focused on reducing safety incidents. Dragano et al. (2015) conducted a study on at-risk workers and found that, in all countries, temporary or young employees often lack the knowledge needed to work safely and are at a greater risk of injury. Cunningham et al. (2018) stated that there are

omissions in the length, occasions, and the way leaders provide safety and health training to at-risk workers.

According to Raheem and Hinze (2014), the construction industry globally employs almost 10% of the workforce but is responsible for 20-40% of the fatal occupational health and safety incidents. OSHA (2016) reported that 937 of the 4379 worker fatalities occurred in the construction industry in 2015. The Bureau of Labor Statistics (2015) noted that there are tens of thousands of injuries that occur each year on construction sites. The principal causes of worker fatalities and injuries on the construction site are falls, being struck by an object, electrocution, machinery, and being trapped between objects or walls (BLS, 2015). Health and safety training enhances the workers' awareness of workplace hazards and enables the workers to work safely and productively (Burke et al., 2006). The participants revealed that providing health and safety training to the employees could improve employee morale and increase organizational efficiency.

Managers use worker safety and training to reduce workplace safety incidents and the cost associated with workplace injuries and fatalities (Okoye & Okolie, 2014). Oswald, Smith, and Sherratt (2015) suggested that the practice of analyzing what causes safety incidents on construction sites, developing safety training and educational opportunities that enhance worker skills, and creating a safety system focused on reducing safety incidents would improve the construction industry's sustainability.

Correlation to the conceptual framework. Heinrich (1959) contended that leaders can contain or avoid many of the common workplace hazards if employees

receive safety training and the proper personal equipment. Heinrich noted that in addition to the obvious benefit of keeping the workers safe, providing a safe work environment will reduce the costs related to safety incidents. Heinrich also indicated that safety training and hazard education were crucial to arming the employees and managers with hazard-recognition and safety skills to ensure that the team members can work safely and perform more efficiently. Nidhu and Abinaya (2017) proposed that the relationship between safety management systems, safety training, and the reduction of safety incident costs in the workplace deserves investigation. Hola and Szostak (2014) supported Nidhu and Abinaya's (2017) claim when stating that proper safety training can reduce insurance losses, administrative penalties, and litigation fees.

OSHA (n.d.) leaders proposed that the direct cost of workplace incidents created include damage to machinery, tools, and materials. According to OSHA, another example of direct costs is wage losses. Insurance premiums, medical payments, and workers' compensation are examples of direct costs (OSHA, n.d.). The indirect costs workplace incidents created include (a) fines from regulatory agencies, (b) decreased profits due to re-training expenses, (c) investigations of incidents and near misses, (d) efficiency costs due to the loss of experienced employees, and (e) and expenses incurred by the employee and the employee's family (OSHA, n.d.).

Emergent Theme 3: Accountability

Fostering a culture of safety accountability was the third theme that emerged from a thorough analysis of the participants' responses to the interview question and a review of the company records. All six participants shared that promoting accountability

empowers employees with the motivation to engage in personal development and practice organizational safety policies. SP1 reported that safety accountability is a learned behavior. Before team members start a task, the team member should consider the task and what is the correct way to complete the job safely. Team members and managers must ensure the employees understand the elements regarding the tasks for completion and the necessary personal protective equipment available. Safety accountability means the team members and the managers are aware of the work environment and are constantly monitoring the work site for changes or hazards in the area. SP1 noted that a significant difference in SP1's organization from other organizations was that the team members are given the resources needed to perform their tasks safely. SP1 reported that the team members are given time to set up safety programs and the technology they need to support the joint safety activities, such as safety meetings, safety audits, and a reward system. SP1 stated that

> When the construction industry builds a culture of accountability into their safety practices, the team members watch out for each other. The team members are empowered to speak up when they see hazards and the team members and management are not afraid to hold each other accountable.

SP2 reported requiring managers and employees to conduct daily workplace inspections and review the information that identifies the hazards that are already present and have the potential to result in a safety incident. SP2 noted placing blame is not a productive way of teaching the team members or line supervisors to trust open communication and does not promote personal motivation. SP2 stated that

> Senior management traditionally looks for consequences focused on punishing the team members or lower managers for performing unsafely. In our organization, we look for consequences that produce positive results. When a manager sees a team member in an unsafe situation, an accountable manager would take the time to explain the hazard and help the team member find a safer method to finish the task.

SP3 believed that safety accountability starts with talking to other members and managers about safety. SP3 reported that if managers do not make safety a part of the employees' jobs, managers should not hold the employees accountable for their individual safety. SP3 stated that

> Before management can create an environment of team member accountability, the managers must set the rules of accountability with transparency and open communication. Clearly stated expectations enable the members of the organization to know what is expected and empowers the members to make safe decisions.

SP4 noted that safety accountability is not just showing up for work on time and performing the assigned tasks. SP4 stated that "being accountable included being responsible for their individual safety and the safety of their team members. The team members must be encouraged and rewarded for reporting near misses, safety incidents, and potential hazards."

SP5 stressed the importance of setting safety expectations and supplying the team members the resources needed to achieve the safety expectations. SP5 reported that senior managers should lead by example when it comes to accountability. SP5 stated that

> Managers think of accountability as a positive and empowering value that creates a basis for individual and organizational success. Blaming others corrupts corrective action and denies the team members the opportunity to learn, giving the team members and lower managers credit when they succeed sets the tone for positive organizational accountability.

SP6 reported that a successful manager with an inclusive attitude motivates the team members and creates a motivating environment. SP6 stated that "an essential piece of empowering motivated team members includes asking their opinions and providing positive and frequent feedback." SP6 added that "empowering the team members means managers must model empowering behavior."

Correlation to the literature. Martin and Lewis (2015) noted that construction managers focusing on safety standards assign each level of the organization safety accountability. Skeepers and Mbohwa (2015) suggested that accountability means improving safety performance by providing safety management systems based on safety leadership, communication, commitment, and employee training.

The OSHA (2016) leaders defined accountability as the condition of being responsible for one's own behavior when it comes to safety. The General Duty Clause of OSHACT 1970 listed five elements employers are accountable for, which are (a) compliance with OSHA standards; (b) resources that provide employees with safe

operating procedures and a work environment that is free from hazards; (c) training for all employees; (d) supervision of employees in safety practices; and (e) accountability, which is taking the steps to ensure employee safety compliance (OSHA, 2016). Daniel (2015) contended without a clear definition and a lack of understanding the responsibilities, Australian leaders experience challenges associated with construction workers' safety performance. According to Hashim and Chileshe (2012), depending on the size of the organization, there may be front-line, middle, and senior management levels. Organizational leaders must define accountability for each level of management (Hashim & Chileshe, 2012). Daniel (2015) noted that without a clear definition of safety leadership, a misalignment between safety expectations and employee performance may develop, which creates confusion in employees.

Martin and Lewis (2014) stated that improving the Trinidad and Tobago construction industry's safety track record requires a deep understanding of the factors that drive employees to engage in unsafe behaviors and attitudes, risking their individual safety. Shen, Chuanjing, Koh, Rowlinson, and Bridge (2017) found that safety climate interventions would be more effective in the future if managers display transformational leadership, encourage construction workers to speak up for safety, and model safe behavior on the job. Management must define what the employees do, explain organizational expectations, and measure and reward employees' actions and performance towards promoting a total safety culture (Martin & Lewis, 2015).

Correlation to the conceptual framework. Heinrich (1959) contended that unsafe acts or behaviors are the primary cause of injuries and safety incidents in the

workplace. However, Heinrich proposed that accountability from management and the workers is very important in avoiding injuries at the workplace. Heinrich stressed that management's failure to make workers accountable plays a role as well in the occurrence of injuries.

Heinrich (1959) proposed that controlling the safety of the work environment is a management function. He used the concept to support teaching employees to work safely and recognize hazards. He also used the concept to encourage discipline if the employees could not improve their work performance. Heinrich concluded that a part of the SMSCM approach is based on the premise that a worker's sense of accountability is an internal condition or belief caused by the knowledge that failure to meet performance expectations would result in a consequence. Thus, He insisted that successful accountability exists when leaders objectively evaluate safe behavior.

Emergent Theme 4: Employee Engagement

The fourth emergent theme from a thorough analysis of the participants' responses to the interview questions and a review of the company records was employee engagement. All participants unanimously agreed that employee engagement is important to an organization's safety performance. SP1 reported that employee engagement is necessary for identifying and evaluating hazards because employees need to understand and identify any potential safety hazard in the work environment. SP1 believed that leaders engage their employees through team member involvement. SP1 stated that

> Having weekly safety audits and a monthly safety meeting allows the team members to openly discuss the safety concerns or hazards in their assigned work areas and enables the team members to participate in resolving those identified issues without fear.

SP2 reported that employees could gain safety hazard recognition expertise through training and knowledge accumulated over time. In addition, SP2 stated that employees gain safety hazard recognition expertise when actively listening to team members, providing the tools the team members need to perform their tasks safely, and removing the tools that hinder safe working conditions. SP2 stated that "after these safety hazards and concerns have been identified and evaluated, the next thing is to find a way to incorporate the suggestions and eliminate the concerns. Providing immediate feedback tells the team members their participation is appreciated."

SP3 agreed with SP2 in that following up with employees is very important because, without feedback from the employees, team members' involvement disappears. SP3 noted that actively involving the team members in the investigation of accidents, near misses, safety incidents, and the general health environment is crucial to a good safety program. SP3 stated that

> An engaged team member is a team player that is fully committed to performing their tasks safely and participating in the success of the organization. Being engaged means the team members come to work focused, committed to doing the tasks the safe way, and actively offering their suggestions on how to improve their work environment for themselves and their fellow team members.

SP4 reported that employee participation makes SP4's safety program unique. When leaders give the employees the opportunity to contribute to the development of their safety practices, employees are more prone to identify with these practices and make the practices their own. SP4 stated that

> Instilling a sense of ownership in the team members gives the organization the potential to fully engage their workforce, turning individuals into team members that know they are appreciated and the organization respects their input. SP4 continued the team members are more engaged when their input is appreciated.

SP5 believed that it is crucial to the success of an organization's efforts to reduce injuries to involve the team members in safety investigations and in the development of the safety program. SP5 reported that engagement is the piece of the puzzle that results in the selection of the level the team member is going to commit to successfully achieve the organizational mission. SP5 stated that

> Engagement is the driver of a team members work performance, managers can begin improving team members' commitment by identifying and implementing opportunities to raise the level of transparency in the safety arena. Team member engagement in the construction business is closely tied to the industry's bottom line. Team member engagement results in a better quality of life for team member and the communities that they live in by reducing the number of team member lives that are lost.

SP6 reported that creating a culture in which employees take safety issues seriously is a way of engaging the team members. SP6 stated that "getting the team

members to share personal incidents where they contributed to a safety improvement or where a safety incident was avoided enables the team members to make safety personal. Taking safety personal results in an engaged workforce."

Correlation to the literature. The findings from this study align with the literature. Wacher and Yorio (2014) argued that managers can use safety management systems to predict worker engagement levels; thus, leaders see worker engagement levels as mediators between the safety management system and the safety performance outcomes. Employee engagement is a major factor that affects safety performance in either a positive or negative way (Wu et al., 2016). Heinrich (1959) found communication strategies are useful tools when building support systems that created employee engagement. Without an effective way of communicating safety expectations, managers risk losing employee focus and may compromise an employee's ability to engage other employees (Wacher & Yorio, 2014). Federal Transit Administrators (2017) claimed that senior managers must set expectations that provide direction to help employees receive the skills required to achieve the expectations. Wu et al. (2016) suggested that managers and employees must share a comprehensive understanding of processes, purposes, and goals used to identify hazards in the workplace.

Correlation to the conceptual framework. The conceptual framework for this study is the SMSCM, which aligns with the employee engagement theme that emerged in this study. Wachter and Yorio (2014) contended that managers use safety management systems and employee engagement to reduce the barriers managers face during the enforcement of safety systems and the safety performance indicators.

Heinrich (1959) found that workplace injuries and fatalities are preventable if managers encourage and enforce behavioral changes. The findings of the study align with the SMSCM in that empowering the employees through employee engagement enables construction managers to improve organizational safety performance. According to Wu et al. (2016), employee engagement has a two-way effect on an organization's safety performance. If the employee engagement is conducted incorrectly, the performance results may not achieve the expected performance level (Wu et al, 2016).

Federal Transit Administrators (2017) reported that the use of safety management systems allows managers to use their authority to encourage safety compliance with the organization's safety policies and rules by motivating the employees to make safety decisions. Federal Transit Administrators contended that leaders need to include a discussion of health and safety issues in every meeting. When leaders praise good safety behavior and use unsafe behavior as an opportunity to improve the organizational safety performance, safety incidents decrease (Federal Transit Administration, 2017).

Small business managers would benefit from understanding the manner in which workplace health and safety management systems can significantly affect their competitive advantage (Sunindijo, 2015). When employees feel their workplace leaders care about their health and safety, employees are more likely to remain with the organization (Amponsah-Tawiah & Mensah, 2016). The safety system assesses the hazards in the workplace and monitors, evaluates, investigates, educates, and oversees the implementation of the safety policies used to control or eliminate the hazards in the mining industry (Bahn, 2014).

Applications to Professional Practice

The findings of the study are potentially meaningful to professional practice in many ways. The focus of the study was to explore strategies small construction business managers use to reduce safety incidents in their organizations in Northwest Ohio. As a result of analyzing data collected, four themes emerged that may contribute to the success in reducing safety incidents in this organization.

Heinrich (1959) found that workplace injuries and fatalities were preventable if managers encourage and enforce behavioral changes. The findings of the study aligned with the SMSCM in that by empowering the employees through employee engagement, construction managers could improve organizational safety performance. Wachter and Yorio (2014) suggested that effective safety management systems that promote organizational performance should include employee engagement.

A study finding relates to organizational accountability. Organizations that strive for increased safety accountability display the highest level of safety performance. In this type of organization, everyone understands that everyone is accountable for safety. The senior managers expect suppliers and contract workers to practice the same level of safety expectations that the senior managers demand from the regular employees. By using a safety management system approach, organizations eliminate the challenges that prevent them from achieving the level of safety accountability that empowers the employees to own the safety of their work environment (Heinrich, 1959).

Another emerging theme from the study findings relates to safety training. According to Burke et al. (2006), worker safety and health training improves worker

safety knowledge and reduces workplace safety incidents. The study findings have implications that management systems enabled employees to gain access to safety training. Furthermore, safety training enhanced the employees' ability to recognize and identify safety hazards in the workplace. Heinrich (1959) contended that safety training and the proper personal equipment could prevent many of the common workplace hazards.

Finally, the study findings confirmed that the importance of senior management safety culture commitment. Skeepers and Mbohwa (2015) conducted a study in South Africa and found that senior leadership visibility and behavior affect the safety culture on construction sites. Skeepers and Mbohwa noted that safety performance on construction worksites improved with management leadership and a positive safety culture.

Implications for Social Change

The implications for positive social change include a safe and healthy workplace that protects workers from injuries and fatalities. Reducing the burden that impact families and communities related to occupational safety incidents is critical. The study may also contribute to positive social change, as small construction business managers reading the study could understand the need to provide training for all employees on the awareness of safety hazards and the reduction of safety incidents at work and in the communities.

The study findings that emerged reinforced the premise that safe worksites not only reduce safety incidents and fatalities but promote successful, vibrant lives and healthy communities as well. Employees suffering a disabling injury could lose 40% of

their income over 5 years. Families can lose even more because of the increased stress, conflicts, and divorce associated with occupational injury and illness. As presented in the study findings, all the participants agreed that management commitment, safety training, accountability, and employee engagement help reduce safety incidents. Managers that actively support their safety systems have fewer injuries and safer work environments. Safe work environments improve employee morale, which often leads to increased productivity and better service.

Recommendation for Action

I am personally committed to sharing the results of the study with small construction business managers as it relates to the construction industry's safety practices. The managers in the construction industry play a significant role in the reduction of safety incidents in their industry. Senior construction managers are encouraged to stress their commitment to build a consistent safety program. Construction organizations must invest in the proper resources to support the development of a safety culture. Proper resources include quality personal protection equipment, expert safety training, and safety policies and procedures. Study participants revealed that employees should be responsible for their safety. Using safety management systems enable the employees to be responsible and accountable for their safety and the safety of their co-workers. The more employees understand and take ownership of their construction site's safety initiatives, the more the employees will embrace the safety policies.

Recommendations for Further Research

I recognized several research limitations and new areas for further study regarding strategies to reduce safety incidents on construction sites. I used the *limitations* subsection to record the potential weaknesses of the study, which were not in my control as the researcher. There may be unknown conditions or workplace cultures that could insert bias into the responses of the participants.

I would recommend that researchers conduct further studies to explore issues not covered in the study. One recommendation for further study is the inclusion of the manner in which union involvement affects safety practices on construction worksites. Another recommendation is that researchers expand the research domain to determine whether the themes that emerged from this study mirror other business sectors in other locations. A final recommendation for further research is the assessment of the workers' perceptions of the safety culture on construction worksites.

Reflections

The techniques for health and safety management Heinrich created in 1959 are relevant today in health and safety programs and systems. Heinrich's (1959) techniques include senior management commitment, close supervision, safety rules, employee education through training, incident investigation, and hazard identification. Findings from this study became informative at a time when construction business managers are seeking strategies to reduce safety incidents on construction worksites. Prior to conducting this research, I had no predetermined concepts concerning construction safety. As the researcher for the study, I conducted this study in a professional, ethical,

and unbiased manner I depended solely on the data collected and analyses conducted to answer the overarching research question for this study.

During the data collection period, I was careful to collect data in an unbiased manner and to emphasize the mission of the researcher, while doing my professional and personal best to make the participants feel comfortable. The construction business managers were gracious and helpful in sharing their wide personal and professional experiences. During my data analysis process, I cautiously scrutinized the multiple types of data to identify themes, being careful to bracket any potential personal biases.

The study findings resulting from data analyses revealed a clear understanding of the phenomenon under investigation to answer the research question. I felt humbled by the outcome of the research and gained an enlightened relevant knowledge from the findings of the study. Each one of the participants indicated that the subject of reducing safety incidents in construction was warranted.

Conclusion

Leaders of construction organizations have not traditionally accepted a safety systems approach as critical to providing a safe and healthy environment. A safety system requires managers to construct and support the safety systems within the framework and operating practices of other systems within the organization. I introduced numerous strategies that successful small construction business managers used to reduce safety incidents in their organization, which are (a) senior management safety culture commitment, (b) safety training, (c) accountability, and (d) employee engagement. By

improving a safety environment, construction managers reduce the cost associated with injuries and illnesses and ensure long-term sustainability of their organizations.

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Appendix A: Interview Questions

Institution: _____

Interviewee: _____

Introductions: _____

Beginning Comments: _____

_____

Interview Questions

1. What strategies did you use to reduce safety incidents?
2. How did you identify and evaluate safety hazards?
3. How do you and your managers correct deviations from safety rules?
4. What makes your safety program different from other small construction businesses?
5. What additional information related to safety incidents can you share that might be helpful?

Appendix B: Interview Protocol

Institution: _____

Interviewee: _____

Introductions: _____

Beginning Comments: _____

_____

Interview Questions

1. What strategies did you use to reduce safety incidents?

    Follow on question: Tell me more.

    Follow on question: Did I understand you correctly, when you said

2. How did you identify and evaluate safety hazards?

    Follow on question: Describe those aspects in as much detail as you can

    Follow on question: What other aspects can you think of?

3. How do you and your managers correct deviations from safety rules?

    Follow on question: It sounds like you are saying

    Follow on question: What other differences can you describe?

4. What makes your safety program different from other small construction businesses?

    Follow on question: You listed some of the strategies, what else was needed?

    Follow on question: Were there contributing factors?

5. What additional information related to safety incidents can you share that might be helpful?