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Managerial Practices for Team Cohesion Among Quality Engineers in the U.S. Automotive Industry

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Linda Marie White

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Walden University
2021

Abstract

Managerial Practices for Team Cohesion Among Quality Engineers

in the U.S. Automotive Industry

by

Linda Marie White

MP, Walden University, 2019

MBA, Baker College, 2004

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Management

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November 2021

Abstract

Compromising on the quality in the automotive manufacturing industry due to a quality manager's poor team-building skills may sometimes cause financial loss and consumer deaths. A gap exists in the engineering and management literature on guidelines that quality managers in the automotive industry can apply to build team cohesiveness among quality engineers and production teams. The overarching research question in this study addressed the perceptions of quality managers who had successfully created team cohesion within quality engineering teams. The conceptual framework was founded on the concepts of leaders, followers, team cohesion, trust, and commitment and was grounded in leader-member exchange and followership theories that emphasize the importance of commitment and communication among managers and their teams. Utilizing a single case study with embedded units design, data were collected from semistructured interviews with seven quality managers from the automotive industry, archival data, and reflective journaling notes. Thematic analysis of the data revealed 15 themes within five coding categories: (a) becoming a competent quality manager, (b) challenges of leading quality engineer teams in the automotive industry, (c) building team trust with quality engineers, (d) building team commitment with quality engineers, and (e) leadership to create team cohesion. Investigating how to build team cohesion among quality engineers within the automotive industry may contribute to positive social change by lending a voice to managers who influence positive organizational dynamics and may raise the level of quality and safety in automotive products.

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Dedication

       This study is dedicated to God my beloved Father in Heaven, for blessing me with the strength, inspiration, and confidence during this journey. I also dedicate this study to my late mother, Lola Taylor, and my father, John Taylor, who inspired me to continue pursuing academic excellence. I am thankful for them instilling in me the value of perseverance and dedication to achieve any goal I pursue. I would also like to dedicate this dissertation to my family, siblings, colleagues, and friends who supported me throughout this educational journey to achieve my professional goals.

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Chapter 1: Introduction to the Study

The automotive manufacturing industry tends to have production problems due to a lack of a proper interface between effective management and quality control systems (Bell & Gluesing, 2020; Braun et al., 2020). Quality control and sound work by quality engineers in the automotive industry are essential because cars are inherently dangerous if they are not correctly constructed with good quality control (Aerotek, 2017). A poorly designed product in the automotive industry can trigger expensive recalls, cause car accidents, and be hazardous to drivers (Braun et al., 2020).

Quality engineering teams working together in cohesion can also spot problems before the product is marketed to consumers to ensure that automotive product meets industry standards (Volker & Prostean, 2018); for some components, like the exhaust and emissions systems, meeting proper standards is essential for accident prevention (Automotive Industry Action Group, 2020). Cohesion within organizations occurs when managers and their team are combined in social interactions to achieve common goals (Festinger, 1950). However, quality engineering teams tend to become dysfunctional because many engineers work in relative isolation, with directives coming from management, instead of collaborating within a cohesive team (Ihrfelt & Johansson, 2020). Scholars suggested that empirical data collected from quality managers in automotive manufacturing organizations may contribute to positive social change by informing managers and their quality engineering teams about nurturing a team mindset founded on cohesiveness, trust, and commitment (see Edwards, 2020; Nichols, 2020).

Chapter 1 provides the problem and purpose statements, background information on the major theoretical and conceptual foundations, and the population involved in the study. This chapter also includes the overarching research question, nature of the study, operational definitions, assumptions, and scope and limitations of the study. Chapter 1 concludes with the significance of the research and ways in which positive social change may occur by meeting the purpose of the study.

Background of the Study

Engineering quality issues are a primary concern to the automotive industry because the poor quality of automotive products and services may lead to catastrophic failures that may endanger lives and increase litigation (Edwards, 2020). Quality, in this study, was defined as the ability of the vehicle to perform the advertised functions of engine performance, luxury features, and environmental expectations (Goicoechea & Fenollera, 2012). In 1990, a recall of defective airbags relied on a volatile compound in its inflator. In 2002 and between 2003 and 2010, there was a recall due to defective ignition switches that caused the vehicle to stall and affected the safe operation of airbag systems (Safecar, n.d.). In 2011, a transmission malfunction caused the vehicle to stall and have an intense vibration, which caused consumers to have sudden or delayed acceleration, resulting in multiple injuries and fatalities. Quality is critical to reputations in the automotive manufacturing industry, and the well-being of consumers is a priority (Pacana & Czerwińska, 2020).

Quality engineering is also essential to the automotive product-manufacturing industry because standards are the primary way product quality planning is executed

(Nichols, 2020). Teams within automotive product-manufacturing organizations support and review the assembly process through daily checks and balances, nonconformance assemblies, and daily observation of quality guidelines to ensure compliance to standards (Ihrfelt & Johansson, 2020). Organizational team creativity and organizational performance within work groups are influenced by cohesiveness (Niu et al., 2020).

Cohesion has been of interest to scholars for many years, such as seminal psychological studies conducted by Lott and Lott (1965), Mullen and Copper (1994), and Mathieu et al. (2015). Although there have been many studies about team cohesion, there are conflicting results and opinions about how cohesion influences team performance. Nevertheless, team cohesion leads to successful interactions within an organization, and social cohesion has impacted overall organizational performance. The team cohesion-building process involves ensuring that managers function as leaders who devote time to building team cohesiveness, trust, and commitment among their teams (Appelbaum et al., 2020; Niu et al., 2020).

A high degree of consensus in the perception of leadership by team members serves as an essential stimulus for team cohesion (Manata, 2020). Team cohesion supports quality among organizational teams, and the literature suggested that team cohesion has contributed to organizational survival through formation of collaborative, cross-functional team thinking (van der Voet & Steijn, 2020). The automotive industry managers of quality engineering teams can promote commitment by demonstrating dedication to the quality process and building cohesive teams to raise manufacturing and production standards (Appelbaum et al., 2020; Zheng et al., 2020). Scholars

recommended that further research is needed to investigate how managers leading automotive quality engineering teams can raise manufacturing standards by building team cohesion (Agozzino, 2020; Suebsook & Chaveesuk, 2020).

Problem Statement

The automotive manufacturing industry is more likely to suffer the consequences of poor quality by focusing on producing tangible products and neglecting quality leading to expensive recalls, car accidents, and hazards to drivers (Bell & Gluesing, 2020; Braun et al., 2020). For example, 323.4 million vehicle recalls were issued between 2010 and 2019, which was an 81.8% increase from the prior decade (Wayland, 2019). Many executives from General Motors, Takata, Toyota, and Volkswagen were called to Washington DC to answer for scandals in the auto industry related to quality and how they handled the recalls (Wayland, 2019). The automotive manufacturing industry tends to have production problems due to a lack of a proper interface between effective management and production systems (Braun et al., 2020). The social problem addressed in the current study was that compromising on the quality in the automotive manufacturing industry due to a manager's poor team-building skills may sometimes cause financial loss and consumer deaths (see Markulik et al., 2019; Unver et al., 2020).

Modern automotive product-manufacturing organizations need managers who actively encourage, influence, assist, and train team members (HARMAN, 2019; Suebsook & Chaveesuk, 2020). Scholarly and practitioner-based knowledge on team cohesion among quality engineers and production teams in the automotive industry is rare, resulting in products that may be deficient and dangerous to the public (Agozzino,

2020; Schmidt et al., 2021). Additionally, many quality managers in the automotive industry have not been trained in strategies to build cohesion among team members within their organizations and do not understand how to leverage the best qualities of their teams (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020). There was a gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). The specific management problem is that few quality managers in the automotive manufacturing industry understand how to successfully build team cohesion among quality engineering teams (see Schmidt et al., 2021; Tasmin et al., 2020).

Purpose of the Study

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. This study addressed the gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). In alignment with the qualitative paradigm, I conducted a single case study with an embedded-units design (see Yin, 2017). I conducted seven interviews until data saturation was met, and I collected data through multiple sources to answer the research question (see Stake, 2010; Yin, 2017). Triangulation of data sources was used to establish the trustworthiness of my analysis and findings (Farquhar et al., 2020; Merriam & Tisdell, 2015).

Research Question

How do quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams?

Conceptual Framework

The conceptual framework is chosen to systematically examine and explore concepts within a topic (Jabareen, 2009). I considered the following concepts related to team performance: leaders, followers, team cohesion, trust, and commitment. The conceptual framework of this study was grounded in the leader-member exchange theory (LMX) that emphasizes the importance of commitment and communication among managers and their teams (Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016). In addition, the followership theory (FT) was used to explore the managers and their teams as coproducers of leadership and its outcomes (see Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014).

The LMX and FT related to this qualitative single descriptive case study by supporting behaviors and actions that assist managerial interactions within quality engineering teams in automotive manufacturing organizations. The FT may assist in understanding the leadership process by reflecting the manager and their team's styles and behaviors and enabling reversal of the lens in leadership by addressing the role that followers play in creating and maintaining effective followership and leadership outcomes (see Carsten et al., 2010; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). Team cohesion has been studied extensively in several contexts, including work environments, and has been positively linked to working team performance (Castaño et

al., 2013; Manata, 2020; Mullen & Copper, 1994). Quality managers and quality engineers' team employees interact to help organizations achieve quality objectives; organizations benefit when they trust each other and are committed to their objectives, leading to team cohesion and commitment to quality (Nader-Rezvani, 2019). In the present study, I gathered data on the importance of building team cohesion among quality engineering teams. A more detailed review of the theoretical foundations of my conceptual framework is provided in Chapter 2.

Nature of the Study

The nature of this study was qualitative to address the purpose, which was designed on a constructivist paradigm under the assumption that people and groups construct their social reality (see Denzin & Lincoln, 2005). A quantitative approach was inappropriate for this study because quantitative researchers examine relationships, test theories, standardize reporting, and collect quantifiable data (see Harkiolakis, 2017). A mixed-methods approach was not appropriate because quantitative data were not required to answer my research question (see Bryman, 2017).

The goal of qualitative research is to explore experiences from the viewpoint of people living within a specific context, and constructivists look to challenge people to be more critical of their understanding of the world and themselves while interpreting interactions between the individual and the environment (Cooper & White, 2012). Qualitative research also presents opportunities that describe how to analyze business decisions and how to explore the reasons behind various aspects of behavior within organizations. In the current study, I explored how successful quality managers in the

U.S. automotive manufacturing industry build team cohesion within quality engineering teams (see Klenke, 2016).

The research problem and the purpose of the study required qualitative methodology because there was a need to explore a problem involved in a complex social process (see Merriam & Tisdell, 2015). Given that the study's purpose called for a deeper understanding of how successful quality managers in the U.S. automotive manufacturing industry build team cohesion within quality engineering teams, a descriptive, single case study with embedded units (see Yin, 2017) was used to meet the study goals. The unit of analysis in a case study can be an individual, group, or organization, among others (Yin, 2017). The unit of analysis for the current study was the quality manager in the automotive industry. When the focus is on individuals, the study's central phenomenon is the context and not the target of the study (Yin, 2017); therefore, the investigation becomes an employee study and not an organizational study.

Qualitative case studies comprise an integral part of the business field, are more connected to quantitative data and methods than other qualitative designs, and generate holistic and in-depth knowledge using multiple data sources (Yin, 2017). Although there are various purposeful sampling strategies, criterion and snowball sampling are the most common strategies used in qualitative research (Baxter & Jack, 2008). Snowball sampling works by asking a few key participants who already met the criteria for the study to refer others who may also meet the criteria (Merriam & Tisdell, 2015). Participants for the current case study were recruited using purposeful criterion and snowball sampling strategies and were screened with the following inclusion criteria:

adults over the age of 18, 3 years minimum experience managing quality engineering teams in the U.S. automotive industry, and possession of knowledge and skills developing cohesive teams.

Definitions

Every word is subject to interpretations; knowing the different meanings is vital to understanding this research context. When operational definitions explain terms within a study, readers seem to understand their meaning because of clear definitions (Frankfort-Nachmias & Nachmias, 2008). Having clear definitions eliminates ambiguity that could impede the comprehension of the phenomenon under study. The following definitions were intended to reinforce understanding of the phenomenon of quality managers in building trust, displaying cohesiveness, and promoting commitment among their team.

Cohesion: This term refers to a force that makes individual team members a group (Festinger, 1950). Team cohesiveness is expressed as the extent to which team members like each other and the extent of willingness they want to maintain the team's original composition (Niu et al., 2020).

Commitment: This term refers to the degree to which managers and followers feel connected to their organization (Einolander, 2015).

Followers: This term refers to individuals who follow the opinions or teaching of others, regardless of their own beliefs (Chaleff, 2009).

Quality manager: This term refers to an individual who possesses expert knowledge of the national and international quality standards that are relevant to their industry sector (Nader-Rezvani, 2019).

Trust: This term refers to the influence managers or followers develop by engaging in behaviors that target trustworthiness pertinent to their organizational content (Legood et al., 2016).

Assumptions

Within a study, assumptions derive from the assumed perspectives believed accurate by the researcher (Leedy & Ormrod, 2005). The current study addressed quality manager behavior in building trust, cohesiveness, and commitment among their team within automotive quality engineering product-manufacturing organizations. Because I was the primary instrument in this qualitative case study, my assumptions were unverified. Researchers have multiple assumptions reviewed at the establishment of their study.

The first assumption was that the selected participants would honestly and truthfully answer the interview questions. The information letter and consent form for the interview invitation were well designed to ensure participants felt comfortable answering truthfully and accurately. I ensured that all participants were engaged in an open and straightforward forum by conducting semistructured interviews with open-ended interview questions to capture data to answer the research question.

All participants were employed within an automotive quality engineering product-manufacturing organization. I assumed they understood the phenomenon of quality managers' behavioral interactions with followers. Behavior tends to change in the face of authority (Chaleff, 2009). Research participants responded to questions regarding interactions among quality managers and teams to support sensible information caption. I

further assumed there might have been a problem with participant dropout. Unforeseen events might have led to participants opting to terminate participation in the study. To avoid dropout, I engaged participants early and discussed specific interests to arouse their curiosity.

Scope and Delimitations

The scope of this study was limited to automotive quality engineering managers and their teams. This study focused on exploring how successful quality managers' behaviors are used to build teams. The quality engineering organizations in which participants were employed were within the United States. Delimitations indicate the boundaries of research over which the researcher has influence and makes choices (Leedy & Ormrod, 2005). Within a case study, a case may not ensure the findings are generalizable to other situations (J. A. Maxwell, 2013). I decided to use two theories to establish my conceptual framework. The conceptual framework of a study enables the researcher to learn more about a little-known situation.

I combined LMX (Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016) and FT (Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). This qualitative single descriptive case study included managers (quality managers) and teams (quality engineers.) from U.S. automotive quality engineering product-manufacturing organizations. This selection was appropriate for this study because the organizational interactions within automotive quality engineering product-manufacturing organizations would produce findings to answer the research question. The primary goal of these interactions is to ensure optimum goal retention. The results of this study may be

transferable to education, health care, manufacturing, and government agencies in which managers and followers function as a team.

Limitations

Limitations of qualitative studies include potential shortcomings or weaknesses beyond the researcher's control, which may be related to the chosen research design, statistical model constraints, funding constraints, or other factors that may affect the results and conclusions of the study (Tracy, 2019). The limitations of a case study are captured within several arenas. First, I interpreted the situation in great depth through descriptive analysis of the phenomenon (see Yin, 2017). A creditable case study contains a detailed description, analysis, and summary provided by the researcher (Patton, 2015). Second, a single case study is limited by the sensitivity and integrity of the investigator (Merriam & Tisdell, 2015; Yin, 2017). Within the current study, I had the primary role of collecting data and performing analysis. Other limitations to this qualitative, single case study included possible biased responses of quality managers and difficulty recruiting participants for interviews.

The researcher's reflexivity is another factor that could affect the results of a study. Reflexivity is an strategy to systematically attend to the context of knowledge construction at every step of the research process (Lane & Roberts, 2018). Awareness of the systematic process involved in the study may prevent researcher bias that may arise from the researcher's background experience about the topic. To enhance the study's validity, researchers triangulate data from various sources to produce transferable rather than generalizable conclusions in qualitative studies (Ahrens et al., 2018). This study is

focused on the direct function of the similarities between contexts described within the conceptual framework. Bias can dilute the methodological rigor of the study results and make it difficult for researchers to disconnect from their normal behaviors. In a qualitative case study, researchers must identify their bias and how prior knowledge may affect data collection and analysis (Leedy & Ormrod, 2005: Miles et al., 2014).

Significance of the Study

Significance to Practice

This study may contribute to management practices and theory by expanding on how successful quality managers in the U.S. automotive manufacturing industry build team cohesion within quality engineering teams. Common organizational goals can be developed through relationships that support organizational objectives (Zheng et al., 2020). Managers and their teams engage in a daily relationship, which involves influence (Malakyan, 2014). The results of my study may enable managers and their teams to understand their influence within an organization to preserve healthy organizational systems (see Chaleff, 2009).

Significance to Theory

This study may contribute to advancing knowledge in the discipline by exploring how quality managers and their team within automotive quality engineering product-manufacturing organizations focus on building team cohesion within automotive quality engineering product-manufacturing organizations. This study may provide new knowledge that benefits LMX and FT through investigation of interactive relationships between managers and their teams. The LMX explores the importance of commitment,

communication, and communication among managers and their teams (Grean & Uhl-Bien, 1995). The FT explores the managers and their team as coproducers of leadership and its outcomes (Uhl-Bien et al., 2014). I explored how managers build trust, display cohesiveness, and promote commitment and trust among their team through the LMX and FT lens to achieve organizational objectives.

Significance to Social Change

This study may contribute to positive social change within automotive quality engineering product-manufacturing organizations by lending a voice to individuals who have a reflective influence on the organization, which may assist in achieving common goals (see Malakyan, 2014). The findings were obtained from quality managers leading quality engineering teams to deliver supportive applications such as enriched team building and workgroup techniques. The data collected from managers in automotive manufacturing organizations may inform managers and their quality engineering teams about nurturing a team mindset founded on cohesiveness, trust, and commitment (see Edwards, 2020; Nichols, 2020).

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Summary and Transition

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There was a gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). The specific problem was that few quality managers in the automotive manufacturing industry understand how to build team cohesion among quality engineering teams (see Schmidt et al., 2021; Tasmin et al., 2020). The purpose of this qualitative, single descriptive case

study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. Meeting the purpose of this study may address the literature gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). In alignment with the qualitative paradigm, I conducted a single case study with an embedded-units design (see Yin, 2017). Triangulation of data sources was used to establish the trustworthiness of my analysis and findings (see Merriam & Tisdell, 2015). Chapter 2 provides a literature review to support how managers can build trust, display cohesiveness, and promote commitment among their team within automotive quality engineering product-manufacturing organizations. The literature search strategy and the conceptual framework are described as well.

Chapter 2: Literature Review

The specific management problem was that few managers in the automotive manufacturing industry understand how to build team cohesion among quality engineering teams (see Schmidt et al., 2021; Tasmin et al., 2020). As a result, the automotive manufacturing industry is more likely to suffer the consequences of poor quality by focusing on producing tangible products and neglecting quality leading to expensive recalls, car accidents, be hazards to drivers (Bell & Gluesing, 2020; Markulik et al., 2019). Scholarly and practitioner-based knowledge on team cohesion among quality engineers and production teams in the automotive industry is rare, resulting in a gap in the engineering and management literature on guidelines for managers to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). Managers in the automotive industry need specific strategy training to build cohesion among team members within their organizations to leverage the best qualities of their team members (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020).

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. In Chapter 2, I describe the literature search strategy and review the conceptual framework I chose to guide this study. Next, I present a synthesis of the scholarly research on building team cohesion among quality engineering teams.

Literature Search Strategy

The important terms involved in my literature search included *automotive manufacturing organizations*, *quality engineering*, *quality engineering in the automotive industry*, *team cohesion*, *team building*, *organizational commitment followers*, *leaders*, *leader-member exchange theory (LMX)*, and *managers*. The selected books, journal articles, and dissertations were published between 1950 and 2021. I obtained references and sources from ABI/Inform Complete, Academic Search Complete, Business Source Complete, Google Scholar, ProQuest, ProQuest Central, Sage Premier, Research Gate, Wayne State University library, and Walden University's library.

The literature search included terms such as *automotive manufacturing industry*, *employees*, *knowledge exchange*, *productivity*, *quality*, *social interactions*, *strategy*, and *structure* within multiple databases to identify relevant information. In the literature reviewed, articles focused on managerial interactions among followers within automotive product-manufacturing interactions. Table 1 illustrates the literature review sources of the current study.

Table 1

Literature Review Sources

Keyword	Number of articles	Database
Automotive manufacturing	52	Sage
Managers	30	Emerald
Followers	27	Business Source
LMX theory	15	ProQuest
Trust	16	ABI/Inform Complete
Cohesiveness	18	ProQuest Central
Commitment	10	Sage Premier

Literature Review

Conceptual Framework

The conceptual framework is chosen to systematically support, examine, and explore concepts within a topic (Jabareen, 2009). I considered the following concepts related to team performance: leaders, followers, team cohesion, trust, and commitment. The conceptual framework of this study was grounded in the LMX that emphasizes the importance of commitment and communication among managers and their teams (see Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016). In addition, the FT was used to explore the managers and their teams as coproducers of leadership and its outcomes (see Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014).

The LMX and FT related to this qualitative single descriptive case study by supporting behaviors and actions that assist managerial interactions within quality engineering teams in automotive manufacturing organizations. The LMX may assist in understanding how managers and their teams engage in informal exchanges to achieve high-quality exchange relationships (Joseph, 2016). Exchange relationships may allow managers to reciprocally receive team building and workgroup techniques to achieve organizational goals. The LMX also focuses on managers and their teams' impact on organizational performance (Joseph, 2016; Scandura & Pellegrini, 2008).

LMX considers managers and their team as having a separate encounter based on organizational goals (Dulebohn et al., 2012). Within an organization, managers must develop a social balance between their teams to achieve organizational success. LMX emphasizes that followers develop exchange relationships with managers, influencing

social behavior (Breevaart et al., 2015). Social behaviors between the manager and their team may affect daily exchanges based on their influence and other team members.

Managers and their team relationships influence individual performance within an organization (Joseph, 2016). Amid organizational changes, managers can benefit from developing relationships with their team through organizational exchanges and better understanding of the role social influence plays within the engagement of their team. LMX research has been critiqued for lacking consideration of the role of social framework development of followers' awareness of LMX. LMX's primary focus is on the significance of communication among managers and their teams (Grean & Uhl-Bien, 1995). Research indicated that developing a robust leader-member exchange relationship depends on the manager's awareness of the application of LMX (Breevaart et al., 2015; Dulebohn et al., 2012;; Joseph, 2016).

The FT may assist in understanding the leadership process by reflecting the manager and their team's styles and behaviors (Carsten et al., 2010; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). The FT enables reversal of the lens in leadership by addressing followers' role in creating and maintaining effective followership and leadership outcomes (Carsten et al., 2010; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). The FT may further explore managers and their team identities within the leadership process.

Research indicated that the follower role is complex and multifaceted (Carsten et al., 2010; Malakyan, 2014; Oc & Bashshur, 2013; Uhl-Bien et al., 2014). Followers' individual and team influence could make an organization successful or contribute to an

organization's downfall. Control within an organization is obtained by controlling essential resources or outcomes (Malakyan, 2014). Followers have a social influence on managers, directly related to power (Oc & Bashshur, 2013). For example, managers depend on their teams for information regarding daily organizational activities. The power within an organization may be defined as control over essential resources, information, or outcomes within an organization (Malakyan, 2014). Managers and followers tend to change their roles from leader to follower and follower to leader if deemed necessary to foster interpersonal relationships and skills (Malakyan, 2014).

Cohesion is one of the team elements that has received much attention in organizational behavioral psychology but not in quality engineering (Niu et al., 2020). Festinger (1950) defined *cohesion* as a force that makes individual team members a group. Team cohesiveness was also expressed as the extent to which team members liked each other and the extent of their willingness to maintain the team's original composition. Cohesion is a multidimensional rather than a unitary construct (Niu et al., 2020).

As organizations strive to become prosperous, managers play an essential role in devoting their time, efforts, and commitment to their job, team development, and organizational objectives by building team cohesion (Niu et al., 2020). Driving cohesion in teams means the manager knows how to bring together a group of team members to leverage the best qualities of their teams, including task commitment, team collaboration, strong interpersonal relationships, and open communication (Sepuru et al., 2020). This team-building process involves ensuring that managers function as leaders who devote time to building team cohesiveness, trust, and commitment among their teams (Gyory et

al., 2019; Niu et al., 2020). Team cohesion has been studied in several contexts, including work environments, and has been positively linked to working team performance (Castaño et al., 2013; Manata, 2020; Mullen & Copper, 1994). Quality managers and quality engineers' team employees interact to help organizations achieve quality objectives; organizations benefit when they trust each other and are committed to their objectives, leading to team cohesion and commitment to quality (Nader-Rezvani, 2019).

Automotive Industry in the United States: A Brief Overview

The automotive product-manufacturing industry consists of the world's most significant passenger automobile and light truck manufacturers. The industry originated about 131 years ago (Ashamalla et al., 2011), which has historical and modern-day importance that offers employees opportunities to achieve long-term prosperity (Baron & Menk, 2012). Increased global competition has forced the automotive product-manufacturing industry to improve quality and efficiency over the past decade. The industry realized that quality was essential to the customer due to numerous vehicle recalls related to catastrophic failures that endangered lives.

Quality is significant to the reputation of the automotive manufacturing industry, and the well-being of consumers is a priority. Identified as consumer satisfaction, quality is continuously transforming (Hoyer & Hoyer, 2001). A fundamental philosophy of the automotive product-manufacturing industry is producing quality products (Goicoechea & Fenollera, 2012). Before quality was a primary focus for the U.S. automotive industry, Deming made attempts to communicate how quality was vital to upper-level managers but was ignored (Davids, 1999; Evans & Lindsay, 2005; Noguchi, 1995).

During World War II, Deming trained engineers and factory workers on statistics and realized his teachings would not solve the quality issues manufacturing organizations needed to address (Evans & Lindsay, 2005). Soon after World War II, Deming received an invitation to assist Japan with its census. The Japanese government heard about how Deming's theories were used to assist U.S. companies during the war (Evans & Lindsay, 2005; Leitner, 1999). Upon his arrival, Deming started teaching the Japanese statistical quality control (Evans & Lindsay, 2005; Noguchi, 1995), including the importance of reviewing the management processes statistically (Evans & Lindsay, 2005).

Japanese managers embraced Deming's theories and accomplished quality improvements, which led to their pathway of rebirth by implementing constant improvements that permitted the ability to break down barriers (Davids, 1999; Spigener & Angelo, 2001). The Japanese founded the Deming Application Prize to repay him for his friendship and compassion (Noguchi, 1995) and awarded him with Japan's highest honor, the Royal Order of the Sacred Treasure (Evans & Lindsay, 2005). Many years later, the U.S. NBC program entitled "If Japan Can … Why Can't We?" that highlighted Deming's successful contributions in Japan and Nashua Corporation (Evans & Lindsay, 2005). This example supported the need for the U.S. automotive industry to reinvigorate a focus on quality. Soon after the resurgence, corporate executives cited Deming as the central figure who improved quality.

Quality engineering is essential to the future of the automotive product-manufacturing industry because guidelines based on standards are the primary way quality planning is executed (Evans & Lindsay, 2005; Goicoechea & Fenollera, 2012).

Quality assurance standards such as ISO/TS 16949 initiated ISO 9001:2000 in the automobile product-manufacturing industry (Goicoechea & Fenollera, 2012). ISO 9000 is a framework of standards that allows the automotive industry to meet customer/stockholders' desires within regulatory conditions related to a quality product (Evans & Lindsay, 2005; Goicoechea & Fenollera, 2012). Quality can be maintained within the automotive product-manufacturing industry with the help of the organizational hierarchies, effectively aligning organizational systems with the company's quality strategy. The current study was necessary to managers in the quality engineering industry because it is the manager's responsibility to implement continual improvement processes in general and quality initiatives (see Hoyer & Hoyer, 2001; Leitner, 1999; Spigener & Angelo, 2001).

Managers and Their Teams

Managers and their teams work together to achieve organizational goals. To assist teams in achieving organizational goals, leaders are expected to be both a manager and leader to encourage and influence team members (Simonet & Tett, 2013; Turaga, 2017). A follower is defined as an individual who follows the direction of others without questioning in a passive manner (Hoption et al., 2012). A leader is an individual who guides people toward a mutual goal or result (Joseph, 2016).

A manager is an individual who has a certain amount of people who report to them to achieve an identified collection of tasks to support an organization (Chamorro-Premuzic & Murphy, 2017). A manager is an individual who manages an organization and influences their team to achieve organizational goals (Arnold, 2018; Turaga, 2017).

Managers can be trained to understand the difference between managers and leaders and may use the knowledge to function as valuable leaders (Chamorro-Premuzic & Murphy, 2017).

Followers devote their efforts, time, and commitment to achieving organizational objectives guided by their manager (Joseph, 2016). Social exchanges within teams involve tangible or intangible interactions between a minimum of two individuals. For example, managers and their team must have social engagements in which positive or negative outcomes occur during organizational goals. Casimir et al. (2014) argued that social exchanges transpire when a manager or team member performs in a certain way that helps one another but does not generate responsibility. Conversely, Filstad (2011) argued that social exchange is the engagement in which a manager captures the knowledge and skills to lead their team in an organization to capture objectives.

The literature added to the established knowledge in the field. The commitment may be directly connected with the goals and values of an organization. Schulz et al. (2017) argued that subjective well-being identifies team members' feelings about their work life in organizations. Parish et al. (2008) argued that employees with quality relationships with their manager feel more desire to support change. Casimir et al. (2014) argued that organizations should improve the quality of their teams.

The literature lacks qualitative case studies to understand the need for managers within quality engineering automotive product-manufacturing organizations to enrich interpersonal relationships with their teams. Over the past several years, organizations have focused on various goals depending on their mission statement (Turaga, 2017). As a

result, researchers have asked for more studies that provide information on how managers can use co-creative teams to build trust, cohesiveness, and commitment among their teams (Chong, 2014; Wise, 2014). Lack of knowledge in this area could inhibit managers' influence, affecting if and how goals are achieved (Kellerman, 2008).

The concept of cohesion is the bond that connects managers and team followers in an organization, facilitating practical task completion between the team members (Wise, 2014). When managers and their team feel connected to their organization, they may feel committed to ensuring continual improvement to achieve organizational success daily (Casimir et al., 2014). Team building consists of various activities intended to improve team performance within organizations. Organizations need to create teams to produce collective knowledge, resulting in collective competence (Merrill, 2019).

Team dynamics influence the team's roles and responsibilities, which directly impact A team's dynamics give structure to the team to aid proper ways to bring out the teams' strengths (Merrill, 2019). For example, a team having dynamic principles like a communal drive, diversity and inclusion, participative management, sense of belonging, trust between members, and consensus decision making may allow the team to fully develop to achieve team cohesion (Delice et al., 2019). However, team formation may be a cumbersome task due to individual differences, contributing to resistance when individuals work together (Delice et al., 2019).

When there are issues with team dynamics, the team that does not have trust or cohesiveness compromises their performance, and quality suffers (Paul et al., 2016). Paul et al. looked at several hypotheses focused directly on team performance due to a lack of

trust and cohesion. Paul et al. found strong coordination between performance and trust, and cohesion. Paul et al.'s study provided evidence of a solid tie to how well teams perform when they have trust and team cohesion. Teams' performance is improved when managers consider team dynamics and understand the importance of emotional intelligence to support a cohesive team.

Managers as Leaders

According to Manning (2013) and Maxwell (2011), a leader could utilize the 360-degree evaluation platform accessible through an internet search to rate their performance among their peers. Manning's (2013) study revealed 360-degree assessments of leaders' team role behaviors were found to vary in different contexts, and Maxwell's (2011) study revealed 360-degree leaders' behaviors might develop from anywhere in the organization. Once a 360-degree evaluation is completed, the results can be reviewed and evaluated to capture constructive feedback to support the manager's overall improvement and ultimately improve the organization. Also, the results may assist leaders with working knowledge of how they can exercise certain factors that best fit their organizational mission.

Best fits for managing leaders with similar skillsets related to organizational socially desirable characteristics and their effects (Arnold et al., 2018). Leaders who accept criticism, take responsibility, strive to correct shortcomings, or improve their performance are generally effective within their organization (Arnold et al., 2018). The results suggest leader's behavior influence followership and organizational goal attainment. For example, in automotive product-manufacturing organizations of today,

leaders are required to perform both a manager and leader position to advance and inspire followers to achieve organizational success (Arnold, 2018; Turaga, 2017).

The demand for managers to coach their team increases as the benefits become more and more evident (Ahrens et al., 2018). Ahrens et al. (2018) revealed a significant insight into managers' training to coach their team through their study of 580 managers from Australian organizations with more than 200 followers who participated in qualitative research on training for the coaching manager. However, the primary limitations of this study were that the questionnaire for the study captured a low response rate creating a sampling bias within the results. In addition, the manager was self-reporting their insights. Therefore, future studies should adapt the manager executive managers and team insights (Ahrens et al., 2018).

The challenges managers struggle with within their automotive product-manufacturing organizations have gained the interest of scholars (Turaga, 2017). However, managers cannot rely on traditionally learned experiences to led follower generations within today's organizations. The culture changes have required organizations to pursue people managers to motivate, inspire, and support their teams to achieve everyday endeavors (Axelrod, 2015). Managers require training to coach their team to complete essential tasks in organizations (Ahrens et al., 2018).

An Effective Leader

Leaders and managers have identified a change within an organizational culture that seeks emotional intelligence and balanced approaches during daily engagement of followers and tasks from managers (Goleman et al., 2013). Goleman et al., (2013) study

divulge that effective leadership transpires where the head and heart connect. However, intelligence is only a part of leadership. Managers and leaders must rely on connections with followers to determine their moods. Team members transmit signals that alter hormone levels within the body, affecting emotions (Goleman et al., 2013). Emotional intelligence is the ability of individuals to recognize each other emotions and utilize emotional information to guide thinking and behavior to manage emotions to achieve goals (Goleman et al., 2013). Emotional intelligence directly relates to how managers interact with team members, and the more emotional intelligence that is utilized, the better the team dynamics are and high the performance of these teams (Druskat & Wolff, 2001).

Turaga (2017) argued that organizational hierarchies need to realize how managers and leaders are different and utilize the results to drive effective managers. Today, organizations pursue managers who can inspire, motivate, and support team members in everyday endeavors (Turaga, 2017). Many experts have examined ideas surrounding the differences between a manager and a leader to identify practical leadership abilities. Presently, there is a lack of a clear definition of leadership, which may create problems for scholars (Evans & Lindsay, 2005; Glinkowska & Kaczmarek, 2017). Many scholars agree that leadership involves influencing followers to achieve organizational goals, but this is not an in-depth portrayal of the leadership application. Leadership can influence followers and systems under one's authority to secure beneficial relationships and achieve vital outcomes that significantly impact

organizational goals (Arnold, 2018; Evans & Lindsay, 2005; Glinkowska & Kaczmarek, 2017; Turaga, 2017).

Leaders are proactive individuals who look toward future possibilities to clear the path forward to guide followers to achieve organizational goals (Arnold et al., 2018; Axelrod, 2015). Managers who utilize everyday psychology with their team will achieve expressive growth. The methodological approach of this paper was based on years of consulting with managers, distinguishing how to grow followers in meaningful pathways (Axelrod, 2015). The conclusions revealed that managers are underestimated in organizations regarding the talent development of leaders. The undervalue of managers regarding talent development of leaders is essential to my study because managers require development to lend their team to achieve organizational goals. Leadership researchers have identified that authentic leadership can come from anywhere within an organization (Arnold et al., 2018; Buller, 2018).

Middle Managers

A vital challenge exists between middle managers and follower generations within organizations (Buller, 2018). While difficulties are being a manager at any level of an organization, leading from the middle entangles the manager between upper-level managers and their team functioning together to achieve organizational tasks. Managers must establish credibility among their team through their management styles and strategies to obtain polarity between competing interests of their team to support the balance of accountability of team members (Carsten et al., 2018; Epitropaki et al., 2016). Despite the level of leadership, a manager will always lead from the middle.

Leading from the middle may be very difficult because a manager must understand that leadership is vigorous, and discovering the opportunities which will allow their team to achieve peak performance is rigorous (Buller, 2018). Buller (2018) revealed challenges, traits, and themes discovered within the concept through the lens of current trends discovered from prior research focused on leaders leading from the middle of an organizational hierarchy. Buller (2018) argued that effective leadership could cultivate and materialize from any stage within an organization. The primary limitation of this study was the sample size captured from leaders leading from the middle of an organizational hierarchy, and the author recommended further reflective and qualitative research studies of middle managers that could add further insight and diversity to assist organizations (Buller, 2018).

The middle is a powerful location because a manager can see vertically and horizontally across an organization's structure, enabling a strategic view of the action plan to sanction buy-in from their team (Carsten et al., 2018). An efficient way to manage the balance is to have communication that is honest and direct. Middle managers' behaviors influence their team through their strategic views, which may aid the achievement of multiple assignments within an organization (Farrell, 2014). Managers must remember that leadership is dynamic and seek opportunities to sustain growth and development (Buller, 2018).

Research on Quality Engineering Teams in the Automotive Industry

The US automotive industry consists of the world's most significant passenger automobile and light truck manufacturers. Increased global competition over the past

decade has forced the automotive industry to improve quality and efficiency because the industry realized the quality was essential to the customer due to numerous vehicle recalls (Howard, 2019), leading to catastrophic failures that may endanger lives. Quality engineering teams are important to the future of the automotive industry because guidelines based on standards are the primary way quality planning is executed (Nichols, 2020).

A quality engineering team collaborates with quality engineers to ensure that design and engineering specifications are comprehended and met (Gyory et al., 2019). Identified as consumer satisfaction, quality is continuously transforming through supportive engagement and assurance of management in the improvement process (Bell & Gluesing, 2020). Quality engineers are vital for sustaining the design and engineering specification requirements to provide first-class products, knowledge, and techniques (Aerotek, 2017). These quality controls are essential because automobiles are inherently dangerous if the quality is not correctly controlled (Nichols, 2020).

The state of quality engineering within the automotive industry is founded on the effective quality management of manufactured products (Pacana & Czerwińska, 2020). Quality management is specifically crucial because it is associated with safety and human life. In the automotive industry, quality management standards such as ISO 9001: 2016 were created to eliminate defects and errors, leading to customer satisfaction. The organizational hierarchies can obtain and maintain quality in the automotive industry, effectively aligning organizational systems with the company's strategy (Braun et al., 2020). The automotive industry is enduring a transformation, which may be challenging

for future quality engineers. Continuous improvement has always been an endless journey within the industry. A review of Google searches has identified that interest in quality engineering has declined by 70% since 2004, and interest in data analytics has shown an impressive 140% increase relative to quality engineering since 2004 (Zonnenshain & Kenett, 2020).

The automotive business model has recently transitioned to acquisitions and partnerships to transform automobiles into mobility (Bell & Gluesing, 2020). A challenge for quality engineers is identifying ways to maintain high quality while launching new products and features faster to maintain or enhance market share. Rapid technology changes have influenced consumers' selection of products. Today's automotive industry experiences challenge capturing clear sensory and intellectual feedback from customers purchasing new products (Braun et al., 2020).

Many customers do not seem to react to the physical quality of automobiles, but they relate more to what the objects mean to them and identify a significant gap regarding intangibles concerning automobile design (Braun et al., 2020; Kasava et al., 2020). Quality management systems endure subjective problems because poor-quality management systems and production systems are not being aligned correctly. Quality engineering is essential to the automotive industry to prevent recalls, hazards, death, and assurance of correctly constructed automobiles. A critical step the automotive industry must practice is providing diverse knowledge and perspectives through team problem-solving activities (Gyory et al., 2019). Critical to quality is capturing quality managers who have extensive experience continually improving quality processes (Appelbaum et

al., 2020). With the consumer electronics industry rapidly producing new devices daily, the automotive industry must discover ways to deliver new devices quickly with superior quality to maintain and increase their market share to stay competitive (Bell & Gluesing, 2020).

Followers

A lack of research performed on followers as essential elements of the leadership process, creating barriers for scholars (Chaleff, 2009; Joseph, 2016; Kellerman, 2008; Uhl-Bien et al., 2014). Although there is a common agreement between scholars that followers consist of various followership styles (Chaleff, 2009; Kellerman, 2008; Kelley, 1992), the mast majority have similar views with few outliers. Leadership can only occur if followership. Kelley's (1992) seminal research identified five types of followership: exemplary, alienated, conformist, pragmatist, and passive. Chaleff (2009) defined four types of followers: implementer, partner, individualist, and resource. Kellerman (2008) presented five different types of followers; isolate, bystander, participant, activist, and diehard. Gobble (2017) acknowledged that followership, like leadership, is critical to maintaining organizational engagement to achieve common goals. Followers are essential to leaders and leadership and have varying effects on how leaders view their roles and responsibilities, which may assist leaders with comprehension of follower's behaviors during engagement within organizations regarding common goal retention (Carsten et al. (2018)).

Several scholars have chosen to use Kellermans' research to expand on how followers influence the relationship among leaders to achieve organizational goals.

DeRue and Ashford (2010) suggested that leadership identity is developed when leaders and followers are given identities during social interactions. These identities give an individual power within the organization. Crossman & Crossman (2011) argues that if leaders and followers absorb the ability to understand followership, the knowledge will improve training and organizational performance. Notgrass (2014) emphasizes that more in-depth research is required regarding followers/followership, enhancing a quality relationship between leaders and followers through followers' perspectives.

Hayes et al. (2015) argued that understanding and fostering follower behaviors could improve overall organizational effectiveness. For example, a follower's absence of effort reflects a deficiency of confidence in the integrity and sincerity of a leader. Leadership is dependent upon oral commitment and the responsibility to achieve organizational goals. Hurwitz and Koonce (2017) argued that leadership and followership engage only in mixed crowds. For example, shy individuals follow, and bold individuals lead. Leaders act as producers, and followers follow. Within this symposium, six papers were reviewed which advanced the practice of followership in diverse ways. Successful leadership should entail leaders who obtain an active followership role. Followership indirectly and includes behaviors, skills, and traits of the follower that influence leader-follower effectiveness. Followers and followership need to be understood because the value-added support of followers has been proven to have optimum success for leaders within organizations (Hurwitz & Koonce, 2017).

Joseph (2016) argued leader-follower relationships influence an individual's performance within an organization. Joseph (2016) explored the lived experiences of

exchange relationships between leaders and followers to understand their daily engagement to capture organizational goals within this qualitative research. The sample size comprised of twenty-three participants consisting of seven leaders and sixteen followers. The LMX theory studies leaders' and followers' influences on an organization (Breevaart et al., 2015; Joseph, 2016). Amid global organizational changes, organizations can benefit from developing leader and follower relationships through organizational exchanges. These exchange relationships are founded on the manager and follower's engagement, tolerability, and dedication Employees' roles require the engagement of informal exchanges between managers and their teams to achieve organizational goals (Joseph, 2016).

Team Cohesion

Cohesion is one of the team climates which have taken much attention in organizational behavioral psychology, but not in many studies in quality engineering (Niu et al., 2020). Festinger (1950) defined within his seminal works cohesion as a force that makes individual team members a group in his seminal works. Team cohesiveness was also expressed as the extent to which team members liked each other and the extent of willingness they wanted to maintain the team's original composition. Thus, cohesion is a multidimensional construct rather than a unitary (Niu et al., 2020).

Driving cohesion in teams means the manager knows how to bring together a group of team members to leverage the best qualities of their teams, including task commitment, team collaboration, strong interpersonal relationships, and open communication (Sepuru et al., 2020). Previous studies suggest organizational

performance within workgroups is influenced by cohesiveness (Wise, 2014). Team

cohesiveness, which generates a positive, creative effect, may identify aspects to achieve

organizational success (Park et al., 2012). Managers should consider team cohesiveness

as an administrator of creativity in organizational exploration (Park et al., 2012; Wise,

2014).

Cohesiveness is exhibited in quality engineering organizations within automotive

manufacturing facilities through departmental objectives. For example, each quality

department has different objectives following the quality operating systems policies and

procedures to produce a first-in-class assembly. The quality operating systems policies

and procedures are audited and reviewed regularly to ensure that all the necessary

guidelines are followed (Evans & Lindsay, 2005). Managers and their teams are

cohesively connected to achieve common goals. However, organizational teams need to

engage in group cohesion to establish a structural measure in which team cohesion and

social cohesion can evolve (Wise, 2014).

Cohesion bonds organizational interactions between managers and their teams.

This literature adds to the established knowledge in the field. Team social cohesiveness

interacts positively with an organization's successful interactions (Park et al., 2012).

Nevertheless, social cohesion has negatively impacted overall performance. Nevertheless,

team cohesiveness exhibits a positive relationship between team exploitation and team

creativity (Park et al., 2012) which may play a strategic position in why teams should

take advantage of their existing experiences and resources (Park et al., 2012).

These studies contribute to further clarification of cohesiveness within teams in organizational environments. Levine (2018) argued that this study provided greater comprehension of team cohesiveness and team performance. Also, group behavior focuses on cause-effect relations to analyze conditions in which individual groups plan their destiny. Park et al. (2012) suggest the discoveries from this acknowledge valuable insights on the team learning theory, which may be utilized with team creativity research to offer important implications into team cohesiveness. Levine (2018) argued that their controlled study of student groups captured the most significant sample reported in team studies, which is required for examining composition models.

Team cohesiveness has a significant impact on team performance, impacting a team's financial performance in an organization. Creativity has been a significant contributor to cohesiveness among individuals (Park et al., 2012). A high degree of consensus in the perception of leadership by team members serves as an essential stimulus for team cohesion (Manata, 2020). Team cohesion supports quality among organizational teams, as the literature suggests that team cohesion has contributed to organizational survival by forming collaborative, cross-functional team thinking (van der Voet & Steijn, 2020). The automotive industry managers of quality engineering teams can promote commitment by demonstrating dedication to the quality process and building cohesive teams to raise manufacturing and production standards (Appelbaum et al., 2020; Zheng et al., 2020). Scholars recommend that further research is needed to investigate how managers leading automotive quality engineering teams can raise manufacturing standards by building team cohesion (Agozzino, 2020; Suebsook & Chaveesuk, 2020).

Trust in Teams

Trust is influential in today's fast-moving innovative companies, where dispersed teams take on numerous endeavors. Trust influences managers or followers by engaging in behaviors that target trustworthiness pertinent to their organizational content (Legood et al., 2016). Trust is the ability of an individual to be vulnerable to another individual due to the expectations that the other individual will act critically to the trustor. Organizational trust between managers and their teams is associated with beneficial outcomes (Korsgaard et al., 2015). Trust at the organizational level involves the shared relationship with the abundant agreement between the members of an organization. Understanding how trust between managers and their team can be leveraged may influence organizational trust, strengthening the relationship (Legood et al., 2016).

When people trust, they feel those individuals will make the appropriate decision. Trust may develop over some time through interactions between exchange partners seeking to achieve a common objective. Fulmer and Gelfand (2012) argued that organizational trust is a psychological state involving an eagerness to accept vulnerability based on the accomplishments of an organization. Organizational trust is an essential paradigm across the different levels within an organization. For example, organizations are multilevel systems, and trust operates at the individual, organizational, and team levels of evaluation. Managers establishing trustworthy relations with followers supports a cooperative relationship that influences behavior and intentions (Brower et al., 2009; Korsgaard et al., 2015). For example, trustworthy behaviors may predict organizational

trust by utilizing trustworthiness perceptions and followers' trust in their managers (Legood et al., 2016)).

Managers' networks may influence their team trust within their organization. Some critical insights in the organizational trust are a large body of research performed that has utilized a wide range of antecedents (Fulmer & Gelfand, 2012; Legood et al., 2016). Legood et al. (2016) support data contributing to a trust-building theory, and the trust-building process varied based on seniority in terms of organizational position as a contributor to both leadership/trust literature. Fulmer and Gelfand (2012) argue that trust at the team level requires further research to link it with objective organizational outcomes. Furthermore, Legood et al. (2016) argued that senior managers are crucial to building trust in organizations.

An essential characteristic of subordinate organizational performance is the existence of trusting relationships between managers and followers. Reflections of trustworthy behaviors from managers influence their team performance (Cremer et al., 2018; Korsgaard et al., 2015). Nienaber et al. (2015) argued that managers might build trustworthy relationships with their team by being willing to be transparent and display vulnerability. Managers can display vulnerability by exhibiting passive emotions concerning reliance-based trustful behavior and energetic emotions concerning disclosure-based trustful behavior (Nienaber et al., 2015). Organizations may encounter limitless benefits when managers and their teams engage in trustworthy relationships. The perceived trustworthiness of a manager is determined by the perception of their team (Cremer et al., 2018; Nienaber et al., 2015).

Legood et al. (2016) debated that senior managers are crucial to building trust in organizations, but there is little research on the influence of trust within senior and middle management. Also, the methodologically across-sectional aspect of this study has issues because it prohibits inferences of connection. For example, a simple case may be that followers trust their organization and select their managers. The trust is given to the organization is then given to the selected manager (Korsgaard et al., 2015). Ultimately, Cremer et al., (2018) research approach was compiled of a multimethod approach regarding trustworthy perceptions. However, discoveries revealed high validity for the mediation process of trustworthiness and limited external validity. Organizational structure significantly impacts building trust between managers and their teams (Legood et al., 2016).

Team Commitment

Commitment symbolizes a team member's yearning to remain a member of the organization because they are supportive of the goals, mission, and values of their organization. Einolander (2015) argued that commitment is a psychological state which attaches a member to their organization. Einolander's (2015) research describes the theoretical background of organizational commitment, although managers may not realize how complex the concept truly is. Schulz et al. (2017) argued that commitment is a member's emotional desire to remain within an organization. Schulz et al., (2017) research utilized surveys from 108 frontline employees. The surveys identified the importance of subjective well-being as an effective tool to increase organizational commitment between managers and frontline employees. According to Einolander (2015)

and Schulz et al. (2017), commitment is focused on the mental degree of an individual's desire to be emotionally involved in an organization.

Managers ought to identify the internal emotions of their team to capture important information regarding their intentions within the organization to assure focused goals are achievable (Einolander (2015). Managers and their teams may create loyalty when they identify with the goals and values of their organization. Commitment occurs in quality engineering organizations in automotive product-manufacturing facilities through managers displaying dedicated behaviors between their teams. Managers may display dedicated behaviors toward an organization by being loyal, faithful, devoted, and trustworthy toward everyone in the organization at all times. Having managers committed to their team tends to aid positive organizational outcomes (Casimir et al., 2014).

Managers should consider their team's psychological state because their state attaches them to the organization (Einolander, 2015). Organizational commitment is critical to achieving effective decision-making regarding employees' commitment and engagement in their work and is highly valuable for the managers' team. Conversely, the intrinsic nature of commitment makes the task difficult to achieve (Schulz et al., 2017). Einolander (2015) argued that followers commit to their organization based on work settings and organizational engagement. Conversely, Schulz et al. (2017) argued that organizational commitment is a work-related attitude that followers and leaders have toward their organization. Albeit organizational change impacts job performance and organizational citizenship behavior (Fedor et al., 2006). Having committed employees tend to be positive for organizational well-being.

Fedor et al. (2006) investigated how commitment to organizational change and overall commitment to the organization influenced individuals' commitment. Fedor et al. (2006) capture data from 804 employees within 34 organizations in the southeastern U.S. The results revealed that both types of commitment could be rationalized through 3-way interaction between acceptance/rejection of the change captured through individual reflection, degree of change in the workplace, and influence of the change (Fedor et al., 2006).

Team Cohesion and Quality Engineering in the Automotive Manufacturing Industry

In the automotive manufacturing industry, team managers have placed a resilient emphasis on teams utilizing teamwork skills (Zheng et al., 2020). Teamwork skills captured by quality engineers can create a competitive advantage in automobile manufacturing. Currently, quality engineering team managers focus on building a productive team climate to heighten team members' effectiveness (Niu et al., 2020). By utilizing cohesion, knowledge sharing, and trust as delegates, cohesion has a collaborative effect with trust and knowledge sharing, which could intensify project achievements (Imam & Zaheer, 2021).

Cohesion is a team component that many organizations have been interested in studying to achieve successful outcomes (Niu et al., 2020; van der Voet & Steijn, 2020). Cohesion in teams consists of interpersonal relationships, task commitment, and task attraction (Niu et al., 2020). Innovation in teams depends on team cohesion to assure shared visions widen the perspective of team members to seek productive interaction (van

der Voet & Steijn, 2020). There is an apparent demand for quality engineering managers in the automotive manufacturing industry to establish teams driven by team cohesive interactions utilizing tacit knowledge (Schmidt et al., 2021).

The forms of tacit knowledge frequently utilized in the automotive manufacturing industry are skills and experience (Schmidt et al., 2021). Tacit knowledge is based on knowledge workers interacting and motivating coworkers to engage cohesively as teams to capture productive results and develop networks (Tasmin et al., 2020). Tacit knowledge in the form of experience is related to utilizing experience to aid practical improvements, avoid problematic issues that may affect quality, and have managerial implications that can influence innovation and performance in the automotive industry (Schmidt et al., 2021).

There is a direct connection between shared leadership and project success (Suebsook & Chaveesuk, 2020). Quality managers assume the roles and responsibilities of creating visions for quality engineers to share knowledge, develop cohesion, and display trustworthiness among their teams (Imam & Zaheer, 2021). Shared leadership studies have revealed that leadership amplifies project success when knowledge sharing and cohesion are engaged between team members (Imam & Zaheer, 2021; Schmidt et al., 2021). Quality engineering organizations should encourage shared leadership because the process can spread power between all the team members, which will support a cohesive environment. Shared leadership roles have significant benefits at all levels within an organization to achieve diverse skill sets, so overall project deliverables (Suebsook & Chaveesuk, 2020).

With the drive to maintain a competitive edge in the automotive industry, quality engineering organizations realize the need to utilize technology and innovation to achieve a sustainable competitive advantage (Suebsook & Chaveesuk, 2020; van der Voet & Steijn, 2020). Collaborative innovation engaged with knowledge, skills, and experience has increased innovative ideas to be created and implemented (van der Voet & Steijn, 2020). Working teams such as cross-functional teams focused on working together to achieve common goals entailed with diverse subject-manner experts has been proven to increase creativity and innovation (Suebsook & Chaveesuk, 2020). The formation and development of team cohesion are founded on dynamic processes, which directly impact team cohesion and team member effectiveness (Niu et al., 2020).

It is reasonable to state that the relationship between team cohesion and team members' effectiveness is a mutual effort and should be reviewed to discover exactly how these two subjects influence each other (Niu et al., 2020; Suebsook & Chaveesuk, 2020). Building a productive team climate to assist cohesion to enhance team member effectiveness is an essential question reviewed by team managers within organizations regularly (Niu et al., 2020). A primary focus needs to be directed to what extent team member effectiveness has on team cohesion so replicative ideals can be shared to assist with creativity and innovation in the automotive manufacturing industry. Team cohesion defines how close the team members are and how much they value their relationship (Imam & Zaheer, 2021).

Quality engineering managers sharing leadership at individual and team member levels could significantly benefit team cohesion in quality engineering organizations

(Braun et al., 2020; Imam & Zaheer, 2021; Zheng et al., 2020). Organizations should encourage shared leadership because the process spreads the power among the team members. Allowing team members to express their views on project guidelines and deadline dates supports a cohesive environment. When team members are selected for a project leadership role, the quality manager should select the proper individual based on personality that reflects the leadership and engage the entire team regarding the selection to maintain open dialogue and a cohesive environment (Zheng et al., 2020).

Likewise, quality managers should establish a matrix based on team members' strengths and weaknesses to support a cohesive, innovative, and creative team (Zheng et al., 2020). Quality engineering managers function in leadership roles within automotive manufacturing organizations. Research has revealed that managerial insights influence cohesion within organizations. Trust positively influences inner-personnel behaviors between all members Managers should always support adopting efficient coordination methods to maintain positive interactions (Suebsook & Chaveesuk, 2020; Zheng et al., 2020). Also, knowledge sharing aids intra-organizational cooperation because the process encourages team members to be engaged in the project. Cooperative behaviors among all team members support cohesive interactions, allowing quality teams to achieve unlimited goals (Braun et al., 2020).

Summary and Conclusions

Cohesion has been of interest to scholars from many years ago, such as seminal psychological studies conducted by Lott and Lott (1965), Mullen and Copper (1994), and Mathieu et al. (2015). Although there are many studies about team cohesion, there are

conflicting results and opinions about how cohesion influences team performance. Nevertheless, team cohesion leads to successful interactions within an organization, and social cohesion has impacted overall organizational performance (Appelbaum et al., 2020; Niu et al., 2020).

Quality engineering teams consist of diverse members who work on quality issues among different platforms within the industry (Niu et al., 2020). Each team member's contribution is critical to project completion, and the cohesion between members helps maintain focus on quality achieved task completion, not just task completion (Imam & Zaheer, 2021). Quality engineering is also essential to the automotive product-manufacturing industry because standards are the primary way product quality planning is executed (Nichols, 2020). Teams within automotive product-manufacturing organizations directly support and review the assembly process through daily checks and balances, nonconformance assemblies, and daily observation of quality guidelines to assure compliance to standards (Ihrfelt & Johansson, 2020).

A high degree of consensus in the perception of leadership by team members serves as an essential stimulus for team cohesion (Manata, 2020). Team cohesion supports quality among organizational teams, as the literature suggests that team cohesion has contributed to organizational survival by forming collaborative, cross-functional team thinking (van der Voet & Steijn, 2020). The automotive industry managers of quality engineering teams can promote commitment by demonstrating dedication to the quality process and building cohesive teams to raise manufacturing and production standards (Appelbaum et al., 2020; Zheng et al., 2020). Scholars recommend that future researchers

understand how managers leading automotive quality engineering teams can raise manufacturing standards by building team cohesion (Agozzino, 2020; Suebsook & Chaveesuk, 2020).

In Chapter 3, I present the methodology for the qualitative case study designed to achieve the purpose of the study and generate data to answer the central research question. This next chapter presents the sampling rationale and approach and the data collection approach. Lastly, the logic for the study, the data analysis plan, ethical procedures, and trustworthiness strategies are also discussed.

Chapter 3: Research Method

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. I used a single case study with an embedded units design (see Yin, 2017). Scholars have documented the need for empirical research to develop guidelines and recommendations for how managers may successfully build team cohesion within quality engineering teams (Schmidt et al., 2021; Tasmin et al., 2020). The current study may contribute to management practices and theory by expanding on how successful quality managers in the U.S. automotive manufacturing industry build team cohesion within quality engineering teams. Investigating how to build team cohesion among quality engineers within the automotive manufacturing industry may contribute to positive social change by lending a voice to managers who have insight and successful experiences in promoting positive organizational dynamics. This chapter provides detailed information on the research method and rationale for conducting a qualitative case study. The central research question guiding this empirical investigation is presented with the participant selection strategy, data collection strategies and data analysis, the role of the researcher, ethical considerations, and a summary of the main points of Chapter 3.

Research Design and Rationale

A qualitative descriptive case methodology was suitable for this study to investigate a case within a real-world context (see Yin, 2017). This case study was anchored in real-life situations, which allowed a holistic account of the phenomenon.

This descriptive case study permitted me to conduct semistructured interviews to capture the attitudes and processes of managers and describe how successful U.S. automotive manufacturing industry managers build team cohesion within quality engineering teams.

The research question drives the research strategy and is crucial to understanding the problem to be studied (Browne & Keeley, 2014). In the current study, the problem statement and purpose statement supported the development of the overarching research question, which addressed things that managers within U.S. automotive product-manufacturing organizations do to build cohesive teams that exemplify trust and commitment. Consistent with the purpose of this study, the CRQ was as follows: How do quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams?

Quality engineering teams tend to become dysfunctional because many engineers work in relative isolation, with directives coming from management, instead of collaborating within a cohesive team (Ihrfelt & Johansson, 2020). Cohesion is one of the team elements that has received attention in organizational behavioral psychology research, but not in studies in quality engineering (Niu et al., 2020). Driving cohesion in teams means the manager knows how to bring together a group of team members to leverage the best qualities of their teams and devote time to building team cohesiveness, trust, and commitment among their teams (Gyory et al., 2019; Niu et al., 2020). Empirical data collected from managers in automotive manufacturing organizations may inform managers and their quality engineering teams about nurturing a team mindset founded on cohesiveness, trust, and commitment (see Edwards, 2020; Nichols, 2020).

A qualitative approach allows the researcher to view the phenomenon from the participants' perspective (J. A. Maxwell, 2013). Qualitative researchers start with universal research questions, while quantitative researchers start with clear propositions. Quantitative methodology was not appropriate for the current study because I was not testing a hypothesis or gathering numerical data (see Howe & Eisenhardt, 1990). Qualitative researchers strive to comprehend multifaceted situations and utilize observation to construct theory (J. A. Maxwell, 2013). A qualitative approach was appropriate because the focus of the current study was to explore how managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams.

I chose the case study design over other qualitative designs such as ethnography, grounded theory, phenomenology, and narrative because a case study protocol could help me provide an in-depth understanding of the case, including what it is, how it works, and how it interacts with its real-world contextual environment (see Yin, 2017). The qualitative method enables researchers to explore people's lived experiences from a constructivist viewpoint while interpreting interactions between the individuals and the environment (Cooper & White, 2012). Qualitative case studies play a central role in the management field and align with postpositivist methods more than other qualitative designs, with multiple data sources to produce a contextual body of knowledge (Stake, 1995). A descriptive single case study was conducted to provide a deep understanding of how successful quality managers in the U.S. automotive manufacturing industry build team cohesion within quality engineering teams.

Role of the Researcher

Within qualitative research, the researcher is the human instrument responsible for performing data collection and analysis, producing an inductive investigation strategy, and ensuring the final study is richly descriptive (Stake, 2010). The researcher functions as the human instrument to thoroughly understand the data (Merriam & Tisdell, 2015). Qualitative data collection is continuous and requires an itemized organization to ensure that methods are identified as usable within the study (Miles et al., 2014).

As the researcher, I collected the data, conducted data analysis, and interpreted the analyzed data. Data were captured through semistructured interviews, reflective field notes, and archival data focused on my subject matter. Personal or professional relationships were avoided by recruiting participants through selected media sources. I recruited the participants from LinkedIn Groups of managers and followers. Soliciting participants through selected media sources helped me avoid having informal or formal power over participants before or after the study. Participants from selected Internet groups involved within product-manufacturing organizations focusing on quality were purposefully sampled. Professional contact was eliminated with participants after the data collection process had concluded. Credibility was maintained by using triangulation with semistructured interviews and reflective field notes.

Researcher bias is an influence or condition that can result in misrepresentation of the data. Qualitative researchers should identify and monitor bias to show how the bias may have resulted in the data's interpretation (Merriam & Tisdell, 2015). Researchers strive to mitigate bias by avoiding emotions and feelings that lead to caring, which is a

primary cause of bias (Patton, 2015). All potential manifestations of a researcher's bias should be addressed before and during the study. Bias is mitigated by being conscious of approaches to manage research ethically. Qualitative research entails many approaches, and a researcher must make proper choices to lessen bias. Case study researchers strive for optimal ethical standards to achieve integrity by practicing trustworthiness, evading dishonesty, displaying responsibility to scholarship, accepting responsibility for one's work, and not fabricating information (Merriam & Tisdell, 2015; Yin, 2017).

Methodology

The case study approach allows the researcher to capture a holistic view of the identified research problem; to simplify, interpret, and clarify the research dilemma or situation; and to expose details captured from the heterogeneous viewpoints of all participants (Yin, 2017). Because of the heterogeneous data collection, data triangulation is possible (Merriam & Tisdell, 2015). In the current study, using multiple data sources and semistructured interviews with quality managers engaged in the phenomenon under study allowed me to describe automotive quality engineering product-manufacturing team dynamics. Case studies can reveal important data and other pertinent information about an inadequately understood situation (J. A. Maxwell, 2013; Merriam & Tisdell, 2015).

A qualitative descriptive case study design has advantages and disadvantages that must be reviewed before selection to ensure successful outcomes. Some case study research advantages consist of the following: The cost is inexpensive because accessing data can be done for free, the case study methods place the data into a usable format, and

the study is secured in real-life settings (Merriam & Tisdell, 2015). Some case study research disadvantages consist of the following: The data may have influence factors, the data could take longer to analyze, and there could be a labor-intensive method of data collection (Patton, 2015). Qualitative research is subjectively inductive rather than following a strict sequence, which allows the researcher to capture data in a natural setting. Within a qualitative study, the researcher is a crucial instrument who uses inductive logic to assist the data collection process. The researcher works back and forth among themes and the data set until a comprehensive understanding is established (Merriam & Tisdell, 2015).

The qualitative approach is the most convenient method to investigate a topic on which little is known in the literature (Stake, 2010). The qualitative method entails multiple dimensions, which can be revealed in a multifaceted form, and is a flexible methodology in which the researcher engages the multiple components of the design, assessing their associations among each other. The purpose of the methodology section is to offer enough detailed information so future investigators can replicate the study (Tracy, 2019). The qualitative research method is appropriate in a situation in which the data are collected to analyze individuals within a specific context, such as quality managers in the automotive industry located in the United States. In this single case study with an embedded units design, data were collected through multiple sources, including (a) a semistructured interview protocol that was field tested, (b) reflective field notes, and (c) archival data in the form of government reports on quality assurance within the automotive industry (see Merriam & Tisdell, 2015).

Purposeful selection of participants is recommended in qualitative data collection and analysis, and I used criterion and network sampling strategies (see Yin, 2017). Recruited participants satisfied the inclusion criteria for study participation: adults over the age of 18, at least 3 years of experience managing quality engineering teams in the U.S. automotive industry, and possession of knowledge and skills developing cohesive teams (see Merriam & Grenier, 2019; Stake, 2010).

A participant pool selected through purposeful sampling is used to launch the single case study (Yin, 2017). Schram (2006) recommended a range of five to 10 participants for a qualitative study, stating that a larger sample size could interfere with an in-depth investigation of the phenomenon under study. The minimum number of interviews conducted for a case study is five participants, and I continued past this number until I reached data saturation, which was seven participants, with similar data noted from Participants 5, 6, and 7 (see Halkias & Neubert, 2020; Schram, 2006). A large sampling size in case study research may create error biases in the findings or unexpected conflicts during the fact-finding processes (Baxter & Jack, 2008).

Population

I recruited my sample from quality engineering automotive product-manufacturing organizations in the East region of the United States until data saturation was reached. I recruited the participants from LinkedIn groups of quality managers by requesting permission from the moderator to submit an invitation to each group. Four groups were targeted for this study: ASQ Automotive Division (4,096 members), ASQ The Global Voice of Quality (111,374 members), ASQ Certified Quality Engineers

(11,172 members), and American Society for Quality (8,428 members). The total number

of potential participants during the recruitment period in January 2021 from these listed

LinkedIn groups was 135,070 members. There may have been overlapping membership

among the listed groups, but a total population of 135,070 members was enough to

capture a sample size to obtain saturation in a small-sample qualitative study.

Sampling Strategy and Criteria

Although there are various purposeful sampling strategies, criterion and snowball

sampling are the most common strategies in research (Baxter & Jack, 2008). Participants

for the current case study were recruited using purposeful criterion and snowball

sampling strategies and were screened with the following inclusion criteria: adults over

the age of 18, at least 3 years of experience managing quality engineering teams in the

U.S. automotive industry, and possession of knowledge and skills developing cohesive

teams. The exclusion criteria for the sample applied to participants who did not meet all

of the inclusion criteria. The study's sampling strategy followed that of similar studies in

the business and management subject area that were grounded in Yin's (2017)

interpretation of participant recruitment for case studies, such as Brown (2017) on airport

managers, Hamlett (2014) on manufacturing managers, and Neubert (2016) on tech firm

owners.

Sampling Selection

The process for identifying and selecting participants to gather information

through interviews about their views, attitudes, and opinions regarding how quality

managers in the U.S. automotive manufacturing industry successfully build team

cohesion within quality engineering teams enabled the in-depth study of the phenomenon (see Merriam & Tisdell, 2015). I worked to select participants through criterion and snowball sampling to ensure the richest data. I then established rapport once I was assured of participants' expert understanding and experiences with building team cohesion, which contributed to the process of in-depth data analysis and interpretation. An appropriate sampling strategy ensures a participant sample that can contribute to a sound understanding of the central study topic and not just generalizations (Baxter & Jack, 2008).

Sample Size and Saturation

A small sample of seven participants was chosen for this single case study with embedded units. This strategy was enacted to increase the chances of reaching saturation faster and to ensure a trustworthy study of superb quality and validity (see Fusch & Ness, 2015). The number of participants chosen for this study on how successful U.S. automotive manufacturing industry managers build team cohesion within quality engineering teams provided an information-rich data pool.

Initially, I identified quality managers working in the U.S. automotive industry who met my sample's inclusion criteria through the LinkedIn online professional network, which served as my recruitment tool (see Stokes et al., 2016). I asked prospective participants to contact me via personal message on LinkedIn. When the participants were recruited for the study and had signed their informed consent form, I arranged for interviews to be conducted via Skype and Zoom (see Gray et al., 2020; Janghorban et al., 2014). Skype and Zoom enable the interview interaction to avoid

contextual information influencing the researcher and maintaining an unbiased atmosphere (Sipes et al., 2019).

A larger sample size could weaken deep investigation of the phenomenon under study, whereas the upper limit of 10 participants could ensure reaching saturation quicker (Fusch & Ness, 2015). Part of ensuring credibility means achieving saturation without compromise. I did not want to seek candidates to simply reach saturation, which could have introduced bias and caused the research to undermine trustworthiness criteria (see Anney, 2014). The minimum number of interviews conducted for a qualitative study should be five participants, and I continued past this number until I reached data saturation, which was seven participants, with similar data noted from Participants 5, 6, and 7 (see Halkias & Neubert, 2020; Schram, 2006).

Instrumentation

Within this single case study, the primary data collection instrument was a researcher-developed instrument composed of semi-structured interview questions focused on answering the overarching research question, field-tested. Semi-structured interview questions were flexibly worded and grounded in the extant literature to allow participants to respond regarding the situation with an answer that emerged from their worldview and opened the platform for new ideas to transpire (Merriam & Tisdell, 2015). A semi-structured interview approach enables the researcher to interpret throughout the interview process (Miles et al., 2014). There were no accurate instruments available to apply to this study. Agee's (2009) work and the reviewed literature in Chapter 2 guided me in developing some questions in developing my semi-structured guide. I used Agee

(2009) in a general sense to support the creation, framing, and establish a series of events or conditions based on Agee's (2009) similar study. However, there were very few examples where I could lift questions to address my study. I also reviewed several quantitative studies, but the questions were generally improper and did not translate well.

Concerning framing the questions, Yin (2017) and Maxwell (2013) support framing the questions according to specific participants to prevent inappropriate generalizations and identify diversity. These approaches assisted with maintaining focus on the specific actions, beliefs, and events asked about within the semistructured guide. From this study, I considered what was important and included these concepts in my interview guide. The interview items dealt with team cohesion, trust, and commitment in quality engineering teams (see Legood et al., 2016). The interview items dealing with cohesiveness focused on establishing a bond between members, exploitation, team creativity (see Wise, 2014). Finally, the interview items dealing with commitment focused on team relationships, loyalty, and behaviors (see Schulz et al., 2017).

I performed a field test to help to ensure the interview guide would provide data to answer my research questions. The purpose of a field study is to allow the researcher to make adjustments and revisions to the interview guide and collection method for the main study (Dooley & Dooley, 2015). Additionally, completing a field study does not necessarily assure the success of a full-scale study but adds some trustworthiness to the study (Morin, 2013). Qualitative researchers must prove their research is credible. Trustworthiness was identified through member checking, and triangulation and the field test also improved trustworthiness. Member checking was accomplished by soliciting

feedback from interviewees on emerging findings. Triangulation was accomplished by utilizing different data sources and comparing/contrasting the data sources with interview data or follow-up interviews with the same interviewees (Merriam & Tisdell, 2015).

Procedures for Recruitment, Participation, and Data Collection

I recruited through a recruitment post, information letter, and consent form for the invitation to be interviewed letter submitted within the appropriate social media sources. The information letter and consent form explained the purpose, voluntary participation, foreseeable risk, request participant questions, and detailed consent form to assure proper participant selection to answer the overarching research question (Leedy & Ormrod, 2005; Merriam & Tisdell, 2015). I requested written permission for recruitment after completing my proposal and received approval of my study from Walden University's Institutional Review Board (IRB). If recruitment had resulted in too few participants, I planned to utilize the snowball sampling approach by asking voluntary participants to recommend potential candidates familiar with my research objectives (Maxwell, 2013; Merriam & Tisdell, 2015). The snowball sampling approach is utilized by multiple researchers (Maxwell, 2013).

I made arrangements for a quiet place devoid of distractions and loud background noise interfering with audio recordings. To avoid weakening the phenomenon's investigation through a large sample size, I would select five to 10 participants for this study (Schram, 2006). Data organization and analysis started as the participants were being interviewed and continued until data saturation was achieved.

A semistructured interview guide was used to guide participants to obtain rich data collection (Miles et al., 2014). I set aside my preconceived notions or knowledge of the phenomena by capturing lived experiences from the participants. All interview data were audio-recorded to ensure proper transcription was collected. In this study, I conducted a semi-structured interview, audio recorded the interview, and transcribed the interview (Miles et al., 2014). Semistructured interviews based on an interview protocol support an open-ended questionnaire to obtain rich data (Patton, 2015). As a researcher, the transcription process allowed me to gather accurate data for verification by member checking to assure authenticated translation is captured (Maxwell, 2013). Observations within qualitative research examine the experience that the inquiry brings through Skype and Zoom meetings (see Tracy, 2019)

During the interviews, I asked open-ended and probing questions specific to the participants' identified group explored in the study. This questioning style allowed the participants to provide depth and detail and clarify ambiguities (Rubin & Rubin, 2012). This strategy of questioning and response recordings ensured the validity and reliability of data collection. To ensure the study's trustworthiness, biases were monitored as the interviews progressed to minimize their influence (Tracy, 2019). I used Microsoft Excel spreadsheets to organize questions, collect data, store data, and code/categorize data thematically (Bree & Gallagher, 2016). To ensure privacy, collected data were stored in a secured location with a private password only known to the researcher.

At the end of the interviews with all the selected participants, the interviews were transcribed to ensure precise and explicit recording of the interviewee's responses to

allow for thematic analysis (Yin, 2017). I sent a transcribed copy of each participant's

responses and requested they review, scrutinize, and authenticate their responses as their

original contribution to the research during the interview. Following the best practice for

qualitative research, the transcribed data will be kept confidential and destroyed after five

years (see Tracy, 2019).

To strengthen the trustworthiness, I compared multiple sources of evidence

obtained from field notes and archival documents (Merriam & Tisdell, 2015; Yin, 2017)

and triangulated the results of the qualitative interviews with reflective field notes

archival documents. The archival documents included reports on quality engineering and

auto accident information from the automotive industry, business reports, and

government websites. During the interview, the observational notes were made by

focusing on the participant's pretexts, subtexts, personal emotions, and contingencies and

observational notes provided insights into nonverbal cues during the interview (Tracy,

2019; Yin, 2017).

Data Analysis Plan

Data analysis consists of organization and management, immersive engagement,

writing, and representation (Merriam & Tisdell, 2015). Qualitative data analysis

transforms written data such as interviews, field notes, and archival documents into

findings and conclusions. Case study data analysis is a combination of procedures for

examining, categorizing, tabulating, testing, and converging case study evidence to

produce empirically based findings (Yin, 2017). In qualitative studies, piles of

unanalyzed data collection are common challenges confronting researchers (Maxwell,

2013). The research rigor of case studies is increased by the interweaving of data collection and data analysis. In this study, I conducted both data collection and data analysis simultaneously to prevent this scenario. Before data analysis commenced, I prepared a detailed description of the research setting (Yin, 2017).

I began the process of data analysis by reviewing and examining the data to determine what was worth investigating by reading through the interview transcribed data and other documents that are to be analyzed (Maxwell, 2013), determined and followed a specific analytical technique appropriate for the data, coded the interview data, and interpreted the findings (Saldaña, 2016). The data analysis process allowed me to identify emerging themes and patterns that helped answer the central research question. When the emerging themes were categorized, findings emerged that helped me understand how successful US automotive manufacturing industry managers build team cohesion within quality engineering teams (see Yin, 2017).

Data analysis requires a rigorous approach when applying any one of Yin's (2017) five analytical techniques—pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis for case study research. I adopted a rigorous approach and pattern matching logic that answered my case study's "how" research question. The objective of pattern matching is to examine whether the empirically-based pattern matches or differs from the predicted pattern. Yin (2017) argued that if the empirical and the predicted pattern show some resemblances, it indicates the original explanation's acceptability, strengthening the trustworthiness of the case study results.

Being a novice researcher, I needed a simple and effective means to analyze my data. Saldaña's (2016) descriptive manual coding method was more effective and suitable for my data analysis than computer-assisted qualitative data analysis software (CAQDAS). In line with Yin (2017), my data analysis comprises analysis-assemble, collect, interpret, disassemble, and conclude the data. Interviews and reflective field notes were my data sources, and the methodological triangulation improved the dependability of the results. To ensure the study's replicability if another researcher conducts a similar study, I documented all the conditions under which the study occurred. I developed the codes grounded in the conceptual framework. I connected the result of the data analysis with the central research question so that future researchers could clearly understand the entire research process that leads to the conclusion (Stake, 2010).

In qualitative inquiry, a code is a symbolic construct generated by the researcher to capture the summative or the essence of every statement in the transcript of data (Saldaña, 2016). Using manual coding, I developed the splitting up or categorizing common codes, phrases, and words within the participants' responses. I used content analysis techniques for primary data. I first identified codes in the main content from the in-depth interviews and created categories from the identified codes. Using a pattern-matching technique, I continued with the content analysis from primary and secondary data and triangulation by exploring patterns of similarity or difference among themes generated by the analysis (Yin, 2017).

Thematic analysis is the core process of pattern matching in identifying, examining, and pinpointing similarities, relationships, and differences in the data

(Ravitch & Carl, 2019) and offers an effective and reliable data approach in a qualitative

study (Tracy, 2019). Using the coding analysis that recognizes similar relationships

within several cases, I classified several themes with codes connecting data collections

and combining themes across multiple sources and methodologies (Saldaña, 2016).

Codes that share common meanings were classified into conceptual categories and

themes (Saldaña, 2016). The final step was interpreting the data analysis results, which

involved comparing various themes from the data analysis generated through multiple

sources (interviews, field notes, and archival data) and comparing the findings with the

theoretical proposition generated from the literature review. Yin (2017) argued that the

study findings to be generalized to the theoretical propositions established from the

literature is the strength of case studies.

Issues of Trustworthiness

Credibility

As an instrument within this study, I established credibility through member

checking, peer-review, prolonged contact with participants, saturation, data triangulation,

and methodological triangulation to reinforce the trustworthiness of my case study

research results (Miles et al., 2014; Yin, 2017). The strategy of data triangulation is to

pattern match utilizing multiple data sources (Miles et al., 2014). Data triangulation is a

tool to capture data from multiple instances from different sources by forming the

discoveries with other discoveries connected to identify research outcomes (Miles et al.,

2014; Yin, 2017). "Within "methodological triangulation, the strategy is to capture data

from multiple sources to broaden researchers' insights into the different issues underlying

the phenomena under study (Miles et al., 2014; Yin, 2017). Methodological triangulation also utilizes three data collection procedures: reflective field notes, archival data, and semi-structured interviews. The member checking technique utilized to validate captured data written, recorded, and transcribed assured participant reflections were captured real-life regarding the phenomena (Patton, 2015). I utilized this technique to achieve credibility within my research to assure accurate interpretations occur. Peer-review engagement allows the researcher to seek review from peers interacting within the same research arena to advise on the positives or negatives of the presented research obligations (Maxwell, 2013).

Member checking is achieved after the researcher invites the participants to review the findings for accuracy and intended meaning (Shenton, 2004). The data analysis process, which included using pattern-matching logic, provided an understanding of the lived experiences. Pattern matching was used as the technique for data analysis and focused on a similarity between the empirical and predicted pattern results that helped strengthen the credibility of the results (Yin, 2017). I ensured triangulation of the 3 data sources, the semi-structured interviews, archival data, and reflective field notes

Transferability

Anney (2014) defines transferability as to what degree the qualitative data results can be generalized to other situations and applications in other settings or groups. I provided evidence to enhance the transferability of my study results by doing a detailed description of the research context and through thick, rich descriptions of the results and

purposeful sampling, focusing on critical assumptions central to the research (Stake, 2010). My research design may easily be transferred to other studies and populations. Rich, thick data description enables the research to make fruitful decisions regarding transferability by describing participants and the setting of their selected research in detail. As a researcher, having a clear and robust audit trail aids comprehension and replication (Stake, 1995).

Dependability

Dependability in qualitative research refers to the stability of data over time and conditions. It is an evaluation of the quality of the data collection, data, and theory generation that has been undertaken in a study (Ellis, 2019, p. 111). An examination of the process used to collect, record, and analyze data helps determine dependability. In order to ensure dependability, participant inclusion criteria and the interview protocol were followed, and interview protocol questions were presented at each semi-structured interview. The semi-structured and focus group interviews were recorded and transcribed verbatim, changing the data collection or analysis process.

The dependability of my study was established by the utilization of multiple methods of data collection and by following an audit trail of the research process (Merriam & Tisdell, 2015). Multiple data sources were collected to support my research objectives by searching between the sources and looking for common themes (Leedy & Ormrod, 2005). Within the audit trail, I described how I captured data, arrived at categories, and made decisions throughout the research process through detailed journal captions (Merriam & Tisdell, 2015).

Confirmability

Confirmability is the degree to which the results of an inquiry could be confirmed or collaborated about one's data (Anney, 2014). Confirmability is confirmed when the results of an inquiry are neutral, accurate, and free of researcher reflexivity. Confirmability is necessary for a qualitative study as the inquiry results will reflect the participant's truthfulness. I mitigated my own biases and beliefs on the study topic through awareness and constantly checking my biases, beliefs, and dispositions towards my research (Maxwell, 2013; Merriam & Tisdell, 2015). These clarifications allow the researcher to describe how they have captured the analysis of the data. Qualitative research focuses on examining and understanding the researcher's values because they can be influenced by the behavior and conclusion of the study (Merriam & Tisdell, 2015).

Ethical Procedures

Ethical procedures were established to assure the voice of the participants through guidelines regulated through the Institutional Review Board (IRB) at Walden University. During my research, I complied with all IRB standards at Walden University. Once I received IRB Approval No. 12-21-20-0104681, I attached my number to my study to reveal the expiration date to assure compliance with the process.

Agreements to gain access to participants included an invitation letter, recruitment flyer, and semi-structured interview protocol. There were no ethical concerns within my planned research. I treated my participants' common courtesy during my planned, audio-recorded interviews to establish a business rapport. The voluntary interview was scheduled to last between 30 to 60 minutes, in which I recorded and captured notes

utilizing SoundNote software during data collection with the participants. Upon completion of the interview, transcription of the collected data immediately occurred to gain member checking from the participants in the interview. Participants had the right to withdraw from the study at any time.

No ethical issues were foreseen in planning to contact participants because the Walden University protocol was mimicked. Participants of the study were informed of the security measures taken to assure confidentiality. I passcode locked all electronic data and will do so for five years, and written data obtained from the interviews, recording from the interviews, transcriptions from the interviews, and documented notes were stored in a locked file cabinet. I did not foresee any ethical issues in the process for the participants.

All interviews were scheduled based on participant's availability. The information letter and consent form for the interview invitation stated that engagement within the research has no monetary value and is strictly voluntary. Voluntary participation aids positive social change by identifying how successful US automotive manufacturing industry managers build cohesion within quality engineering teams.

Within the research process, I utilized a snowball sampling within my electronic resources, product-manufacturing organizations, and individuals to assure any personal interaction is avoided (Merriam & Tisdell, 2015). I conducted telephone interviews when deemed necessary and inerate3d with each participant according to the IRB standards for human subject research. Having the utmost consideration for each participant's privacy, I believe each individual felt more comfortable and open during the interview process.

If the participant had wanted to end the interview anytime during the interview process, I would have immediately stopped the recording, captured the submitted data, and thanked the participant for their interactions within the study thus far. No monetary value was engaged for study participation, and if any of the participants had experienced any hardship during the study, it would have been addressed accordingly.

Summary

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the US automotive manufacturing industry successfully build team cohesion within quality engineering teams. This topic was chosen because research concerning building team cohesion within quality engineering teams in the US automotive industry is limited. To address the research problem and purpose of the study, qualitative data were collected from multiple sources of evidence, including interviews, archival data, and reflective field notes. Semistructured interviews were conducted using video conferencing software while sampling participants from LinkedIn profiles based on the keywords "quality manager" and "quality engineer" in the automotive industry. The research question, purpose of the study, recruitment of the participants, and the data collection process and analysis aligned with the research design were discussed. Finally, I analyzed how the trustworthiness of the data results could be evaluated, and ethical procedures were followed throughout the study. Chapter 4 contains the application of the findings from the qualitative, single case study with embedded units through a detailed presentation of the data analysis approach and study results

Chapter 4: Results

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. Meeting the purpose of this exploratory study would address the literature gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). The specific management problem addressed in this study was that few managers in the automotive manufacturing industry understand how to build team cohesion among quality engineering teams (see Schmidt et al., 2021; Tasmin et al., 2020).

I conducted seven in-depth face-to-face individual interviews with quality managers leading quality engineering teams in the U.S. automotive industry. The minimum number of interviews conducted in a case study is five (Schram, 2006). I continued past this number until I reached data saturation, which was seven participants, with similar data noted from Participants 5, 6, and 7 (see Halkias & Neubert, 2020). Data from the interview transcripts were analyzed through thematic analysis to identify themes. I triangulated the interview data themes with data from reflective field notes and archival data to support the trustworthiness of findings and make suggestions for further research (see Farquhar et al., 2020).

Scholars have written that many quality managers in the automotive industry have not been trained in strategies to build cohesion among team members within their organizations and do not understand how to leverage the best qualities of their teams

(Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020). To answer the research question,
I followed recommendations in the literature that updated empirical data were
needed to inform management practices and theory by expanding on how successful
quality managers in the U.S. automotive manufacturing industry build team cohesion and
how common organizational goals can be developed through relationships that support
organizational objectives (see Zheng et al., 2020). Chapter 4 includes descriptions of the
research setting, participant demographics, data collection procedures, data analysis
procedures, and evidence of trustworthiness. I also present the study results and conclude
the chapter with a summary and transition
to Chapter 5.

Research Setting

Potential participants for this study were identified via my LinkedIn professional
network platform, my professional network, and snowball sampling (see Merriam &
Tisdell, 2015). I searched for and reviewed potential participants' profiles using
purposeful criterion and snowball sampling strategies to determine whether they met the
following inclusion criteria: adults over the age of 18, at least 3 years of experience
managing quality engineering teams in the U.S. automotive industry, and possession of
knowledge and skills developing cohesive teams. The exclusion criteria for the sample
applied to participants who did not meet all of the inclusion criteria. In the recruitment
email, I explained the procedure for the interview, the interview method, and the
interview duration. I made sure that all potential participants read the letter of recruitment
and understood the inclusion criteria. Each participant was aware that their identities and

the confidentiality standards practiced during the data collection process would be protected. A copy of the interview protocol was messaged to each participant who requested to review the interview questions before starting formal data collection. Once the participants read the informed consent form and replied via email, "I consent," I set up the interview date and time that best worked with the participant's schedule.

I began with 10 potential participants initially sourced from the LinkedIn professional networking platform. Seven agreed to participate, and three declined due to a busy schedule, work overload, or illness. Four participants who agreed to be interviewed became the source for the other three recruited through snowball sampling. I began data collection by conducting interviews with the selected participants and collected audio-recorded interview data using the Zoom audio-only platform with the participants' consent.

All interviews were conducted in privately chosen settings of the participants, and there was no evidence of prolonged interruptions or disruptions. Each interview was planned to last for 30–60 minutes, which would be sufficient time to gather information-rich conversational data through semistructured interviews (see Tracy, 2019). There was no evidence of participant fatigue from any of the interviewees. I took reflective field notes during the interviews and jotted down the participants' responses that most aligned with my observations.

Demographics

The demographic data of the seven participants is presented in Table 2. I assigned the participants pseudonyms from P1 to P7 to conceal their identities and maintain

confidentiality. Of the participants who were interviewed, 90% were men, and 10% were women. Their ages were 30s (50%), 50s (40%), and 40s (10%). In terms of educational achievement, 100% had high school diplomas and a bachelor's degree, and 20% had a master's degree. Participants had a range of quality experience, with 10% having 0–10 years of experience, 45% having 10–20 years of experience, and 45% having 15–25 years of experience. In terms of work location, 100% of participants were employed as quality engineers or/and managers in a manufacturing organization. None of the participants were within the infant or older population age categories. There were no vulnerable participants, as required by Walden's IRB.

The interviews for my study were conducted via Skype and Zoom (see Gray et al., 2020; Janghorban et al., 2014). All of the interviews were recorded using Sound Note software, a free program that was used to capture audio recordings via my personal computer, and a phone-based audio call recorder. The interview duration ranged from 32 to 45 minutes. The participants who took part in the study were seven quality managers employed in the U.S. automotive manufacturing industry.

Table 2

Participants' Demographics and Characteristics

Participant	Over 18	Gender	Knowledge of topic	Years of experience	Role in organization
Participant 1	Yes	Male	Yes	10	Quality manager
Participant 2	Yes	Female	Yes	15	Quality professional
Participant 3	Yes	Male	Yes	10	Senior quality engineer
Participant 4	Yes	Male	Yes	17	Quality manager
Participant 5	Yes	Male	Yes	6	Quality manager
Participant 6	Yes	Male	Yes	10	Quality manager
Participant 7	Yes	Male	Yes	24	Quality manager

Data Collection

Walden University IRB granted me the approval to start collecting data on December 21, 2020 (IRB Approval No. 12-21-20-0104681). I began data collection with the first interview on January 19, 2021, and continued until May 4, 2021, when the seventh participant was interviewed. The data collection technique used for the study included semistructured interviews, reflective field notes, and archival data.

Initial Contact

I searched for and reviewed potential participants' profiles on the LinkedIn professional networking platform to determine whether they met the inclusion criteria. I began with eight potential participants initially sourced from LinkedIn. Seven agreed to participate; one declined. Four participants became the source for three additional participants through snowball sampling. Once a participant showed interest, I sent them the recruitment letter (see Appendix A) and the informed consent form. The recruitment letter contained a section to validate the potential participant's eligibility to participate

based on the inclusion criteria for the study. After the participant replied saying, "I consent," I set up the interview date and time that best worked with the participant's schedule.

Interviews

The interviews were conducted via WhatsApp and Zoom (see Gray et al., 2020; Janghorban et al., 2014). Each interview was individually recorded using Sound Note software, a free program that captures audio recordings via my personal computer, and a phone-based audio call recorder. The interviews ranged from 32 to 60 minutes. WhatsApp and Zoom provided a cost-effective and convenient alternative to in-person interviews. Both platforms facilitate long-distance communication, reduce researcher travel costs, and enhance collaborations (Gray et al., 2020). Also, an additional recording device was used to ensure an alternative means of accessing the interview recordings in case of a software malfunction.

Each interview began with an appreciation for the participant's participation, followed by a brief study overview. All interviews were conducted in privately chosen settings at the participants' chosen time when there would be no prolonged interruptions. Two participants conducted interviews at their workplace office, and the rest conducted interviews in their homes. I used the interview protocol (see Appendix B) to guide the interview, ensuring consistency in the interview process for the seven participants. I used probes and follow-up questions listed after each interview question in Appendix B to elicit an information-rich explanation when needed or prompted.

The primary data collection tool used in the study was a semistructured interview protocol with focused open-ended questions. The interview questions addressed the study topic to elicit answers based on the participants' experiences. The interviews included five questions grounded in the conceptual framework and the literature presented in Chapter 2. For this qualitative single case study with embedded units, the minimum number of interviews was five. I conducted more than five interviews and reached data saturation at seven, with repetitive information in Interviews 5, 6, and 7 (see Halkias & Neubert, 2020; Schram, 2006).

The interview process took 106 days to complete all seven interviews, with a variation in response time from participants consenting and scheduling interviews due to their workload and time zone differences. The process consisted of identifying the participants, obtaining consent, conducting the interviews, and following up with the transcripts. The interviews were planned for 20–60 minutes each, but the average time was 50 minutes.

All interview data were audio recorded to ensure proper transcription was obtained. I conducted semistructured interviews, audio recorded the interviews, and transcribed the interviews (see Miles et al., 2014). Semistructured interviews based on an interview protocol support an open-ended questionnaire to obtain rich data (Patton, 2015). The transcription process allowed me to gather accurate data for verification by member checking to ensure authenticated translation was obtained (see J. A. Maxwell, 2013).

To ensure the study's trustworthiness, I monitored biases as the interviews progressed to minimize their influence (see Tracy, 2019). I used Microsoft Excel spreadsheets to organize questions, collect data, store data, and code/categorize data thematically (see Bree & Gallagher, 2016). To ensure privacy, I stored collected data in a secure location with a private password known only to me. At the end of the interviews, I transcribed the recordings to ensure accurate data for thematic analysis (see Yin, 2017). Following the best practice for qualitative research, I will keep the transcribed data confidential and will destroy them after 5 years (see Tracy, 2019).

Reflective Field Notes and Journaling

I maintained reflective field notes from the date I received my IRB approval on December 21, 2020. I created a plan for recruiting participants, processing feedback, and recording any contextual information relevant to the phenomenon under study. I used reflective field notes to capture notable responses and provided points for probing questions during the interview process. Because the interview was on WhatsApp and Zoom and only audio, I noted verbally expressed tones of voice or attitudes expressed vocally during the interviews that stood out or drew my attention. I further reflected on the interviews for inference by repeatedly listening to the interview audio recordings (see Merriam & Grenier, 2019).

Transcript Review

To strengthen the trustworthiness of qualitative data, I conducted a transcript review in the member-checking process (see Merriam & Grenier, 2019). I sent each participant a transcribed copy of their responses and asked them to review, scrutinize, and

authenticate their responses as their original contribution to the study (see Tracy, 2019).

Of seven total participants, four replied to validate their data, and the others' were

considered validated due to their lack of response as instructed by the procedures listed in

the informed consent section for member checking.

The data accuracy and credibility improved during the transcript review process

because member checking ensured that participants' thoughts were clearly expressed and

corrected appropriately (see Yin, 2017). I removed participants' names and replaced them

with pseudonyms (P1–P7) after receiving the validated transcribed data to maintain

confidentiality. The transcribed data were further organized into a single Microsoft Word

document and saved in a secure file under the data security plan established for the study.

The verified transcribed data were used for manual hand coding and data analysis.

Data Analysis

I began data analysis after completing the transcript review process with all seven

participants. The raw data presented a detailed account of how successful quality

managers in the U.S. automotive manufacturing industry build team cohesion within

quality engineering teams. I adopted a descriptive coding strategy (see Saldaña, 2016) by

assigning meaning to segments of raw data collected for this study and used the emerging

words from the descriptive coding for categorization and thematic analysis.

Because coding drives data collection in a case study design (Saldaña, 2016), the

data analysis for the current study led to the emergence of themes regarding the real-

world experiences of quality managers in the U.S. automotive manufacturing industry.

Considering that a case study involves in-depth and holistic investigation into all aspects

of the case and provides industry-related data that are not anticipated by literature (Yin, 2017), the current study provided detailed information on the unexplored area of knowledge in building team cohesion among quality engineering teams in the U.S. automotive manufacturing industry. Given that thematic analysis is driven by the systemized raw data coding process (Yin, 2017), I applied thematic analysis for this study to examine meanings and describe the workplace realities of managers leading quality engineering teams in the U.S. automotive industry. The process of recording, transcribing, member checking, and categorizing participants' responses using keywords further supported the trustworthiness of this study's results (see Halkias & Neubert, 2020).

In the descriptive coding method, the thematic analysis for this study used manual hand-coding through a systematic process described by Saldaña (2016). The descriptive coding method (Saldaña, 2016) aids the researchers in assigning meanings to segments of raw data, which leads to lists of words, phrases, or both for indexing and data categorization. Microsoft Excel software aided me in organizing this manual hand-coding process. The coding of words and phrases combined with data triangulation brought about a substantial recognition of patterns, while carefully scanning the data for similarities and differences in the pattern improved the dependability for the study results (Yin, 2017).

I adopted the *ground-up data analysis strategy (Yin, 2017)* and generated codes from the transcribed data using the inductive analysis approach Boyatzis (1998) recommended. The inductive analysis involves coding the data without attempting to fit

into a preexisting coding frame or the researcher's preconceptions. While utilizing thematic analysis, I searched for themes important to the depiction of the study's problem by carefully reading the critical scholarly works cited within my problem statement and conceptual framework (see Yin, 2017).

Using a pattern-matching technique, I continued with the content analysis from primary and secondary data and triangulation by exploring patterns of similarity or difference among themes generated by the analysis (Yin, 2017). The first step I took was to identify codes in the main content of the in-depth interviews and then create categories from the identified codes. (Yin, 2017). As soon as data entry began, I highlighted the keywords and phrases relevant to answer the interview questions. This thematic analysis was carried out by carefully identifying and recording emerging patterns from the interview discussion. I highlighted and extricated all words and phrases which I considered pertinent to answer the study's central research questions from the participant's transcribed interview. I assigned codes to the extricated and evaluated data segments and recorded the codes against each interview question. Codes were further accrued into themes by identifying and distinguishing similarities (Yin, 2017). The final coding categories and themes for this single case study are further presented and described below to exemplify the coding process for each coding category and theme.

Saldaña (2016) recommended that the descriptive manual coding method is more suitable for novice researchers conducting data analysis. The analysis considered all the archival data from government and private business reports on quality engineering in the US automotive industry and my reflective field notes. Codes shared common meanings

across multiple sources were classified into conceptual categories and themes (Saldaña,

2016). This methodological triangulation enhanced the dependability of the results

(Farquhar et al., 2020).

The five coding categories were grounded in the conceptual framework, and the

15 themes gleaned from the thematic analysis are listed in Table 3.

Table 3

Coding Categories and Themes

Coding category	Theme
Becoming a competent quality manager	Continuous leadership and team-building training
	Authentic commitment to product quality and customer safety
	Superior communication and employee engagement skills
Challenges of leading quality engineer teams in the automotive industry	Lack of interface between effective management and production systems
	Strengthen effective followership outcomes
	Learn how to leverage the best qualities of quality engineers
Building team trust with quality engineers	Role model professionalism
	Open-door policy without fear of retaliation
	Respect quality engineers' perspective on problem-solving
Building team commitment with quality engineers	Continuous collaboration for reaching common goals
	Recognize the value of quality engineers to teamwork
	Invest in training for team members
Leadership to create team cohesion	Role model daily commitment to customers health and safety
	Share the rewards and recognition with team members
	Daily commitment to build cohesion between quality managers and quality engineers

The five conceptual coding categories are grounded in the study's conceptual

framework that considers the following concepts related to team performance within the

extant literature: leaders, followers, team cohesion, trust, and commitment. The

conceptual framework of this study is grounded in 1) the leader-member exchange theory

(LMX) that emphasizes the importance of commitment and communication among managers and their teams (Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016) and 2) the followership theory (FT) will be utilized to explore the managers and their teams as coproducers of leadership and its outcomes (Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). As organizations strive to become prosperous, managers play an essential part in devoting their time, efforts, and commitment to their job, team development, and organizational objectives by building team cohesion (Niu et al., 2020). This team-building process involves ensuring that managers function as leaders who devote time to building team cohesiveness, trust, and commitment among their teams (Gyory et al., 2019; Niu et al., 2020).

The results of this study are aimed at addressing a gap in the engineering and management literature on how to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). Building upon LMX and FT theory, the present study collected and analyzed data from managers on the importance of building team cohesion among quality engineering teams. Results of the study were framed by scholarly assumptions on how team performance influences LMX, which may, in turn, strengthen team cohesion (see Chiniara & Bentein, 2018; Manata, 2020).

Presenting case study research findings can be done in different styles according to the purpose of the work, the kind of analysis undertaken, and the intended readership. In this case, the personation of category and themes is by participant quotes to give voice to a previously unheard population in the literature through this purposefully recruited

sample (Corden & Sainsbury, 2006). The following table describes the finalized coding categories and themes of this single case study with embedded units, along with respective examples of participant quotations (see Table 4) to represent each of those categories and themes.

Table 4

Coding and Theme Examples

Participant	Interview Excerpt	Coding Category	Theme
Participant 6	"As a manager commitment is important to my relationship with employees being dedicated to work hard to achieve common goals. I lead by example work hard to build fruitful relationships to allow team members to focus on resolutions to assure company objectives are captured".	*Becoming a competent quality manager*	1) Continuous leadership and team-building training; 2) Authentic commitment to product quality and customer safety; 3) Superior communication and employee engagement skills
Participant 4	"I always feel commitment to my teams. I train, support, and lead my teams, and in response my teams work together, communicate, and achieve common goals daily".		
Participant 7	"As a manager the team develops a shared purpose through training in all aspects of the work and importance not just in their area but also on how it positively benefits		

Participant	Interview Excerpt	Coding Category	Theme
	individuals, other team members, and ultimately to the organization and the customers.		
Participant 1	"As a manager building trust can be challenging, but you have learned from your teams to be supportive, value their opinion, and show everyone you have their back".	*Challenges of leading quality engineer teams in the automotive industry.*	1) Lack of interface between effective management and production systems; 2) Strengthen effective followership outcomes; 3) Learn how to leverage the best qualities of quality engineers.
Participant 7	"As a manager I have experienced employee commitment by employees completing their task ahead of time despite difficulty, and employees assisting other team members during heavy workloads by going above and beyond their job duties on many occasions. Commitment does not happen overnight; it takes trust on each-others part and reciprocation".		
Participant 3	"As a quality engineer the processes you use to create knowledge about quality within your team is by empowering people".		

Participant	Interview Excerpt	Coding Category	Theme
Participant 5	"As a manager in order to share knowledge with other quality engineering teams I allowed them to attend our meetings, share the archived data, and work together as one team to resolve issues".		
Participant 6	"As a manager trust means having an open dialogue with all your employees. Within the company, the open-door policy serves as an efficient role to allow interactions to occur without penalties. Having a good relationship with my employees, and leading by example supports good work ethics among everyone".	*Building team trust with quality engineers.*	1) Role model professionalism; 2) open-door policy without fear of retaliation; 3) respect quality engineers' perspective on problem-solving.
Participant 4	"As a manager supportive interaction among all team members is very important. Open door forums and direct communication with every member personal or business allows the teams to function together productively".		

Participant	Interview Excerpt	Coding Category	Theme
Participant 2	"As a manager commitment is important to your relationship with employees because as a team, the focus is primary on the result, a quality product committed to our customers health and safety. In addition, as a manager or employee at some point the roles switched and are subject to be committed to managing the risk factors are handled properly".	*Building team commitment with quality engineers.*	1) Continuous collaboration for reaching common goals; 2) recognize the value of quality engineers to teamwork; 3) invest in training for team members.
Participant 6	"As a manager I lead by example, which supports my team's which support's my team's commitment to completing task as a team to assure productive interactions reflect on our company.		
Participant 7	"As a manager I reward team commitment by investing in employee training on new areas, skills, job promotions, increased wages and bonuses, and company rewards to show the employee management cares which makes them feel special and include their family".		

Participant	Interview Excerpt	Coding Category	Theme
Participant 1	"As a manager collaboration has different levels which work different at each level. Collaboration is about having commitment with your team members to produce or create common goals".	*Leadership to create cohesion.*	1) Role model daily commitment to customers health and safety; 2) Share the rewards and recognition with team members; 3) Daily commitment to build cohesion between quality managers and quality engineers.
Participant 2	"As a manager you assure everyone is aware of the multiple modes to communicate so there is a solid platform on deck for everyone to collaborate to support cohesiveness among team(s). People seem to be more involved when everyone gets an opportunity to weigh in during the daily meetings, which assures everyone is on the same page".		
Participant 5	"As manager rewards are performed as a team interaction, so I engage the team with the proper interactions, such as after work affairs, simple "thank you", and daily encouragement to show the team they are doing an excellent job.		

Evidence of Trustworthiness

Credibility

As an instrument within this study, I established credibility through member checking, peer-review, prolonged contact with participants, saturation, data triangulation, and methodological triangulation to reinforce the trustworthiness of my case study research results (Miles et al., 2014; Yin, 2017). The strategy of data triangulation was to pattern match utilizing multiple data sources (Miles et al., 2014). Within methodological triangulation, the strategy was to capture data from multiple sources to broaden researchers' insights into the different issues underlying the phenomena under study (Miles et al., 2014; Yin, 2017). Methodological triangulation also utilizes three data collection procedures: reflective field notes, archival data, and semi-structured interviews. The member checking technique was utilized to validate captured written, recorded, and transcribed data, which assured participant reflections were captured real-life regarding the phenomena (Patton, 2015). Peer-review engagement allowed the review from peers interacting within the same research arena to advise on the positives or negatives of the presented research obligations (Maxwell, 2013).

Member checking was achieved after the researcher invited the participants to review the findings for accuracy and intended meaning (Shenton, 2004). The data analysis process, which included pattern-matching logic, provided an understanding of the participants' experiences. Pattern matching was used as the technique for data analysis and focused on a similarity between the empirical and predicted pattern results

that helped strengthen the credibility of the results (Yin, 2017). I then ensured

triangulation of the three data sources, the semi-structured interviews, reflective field

notes.

Transferability

Anney (2014) defines transferability as to what degree the qualitative data results

can be generalized to other situations and applications in other settings or groups. I

provided evidence to enhance the transferability of my study results by doing a detailed

description of the research context and through thick, rich descriptions of the results and

purposeful sampling, focusing on critical assumptions central to the research (Stake,

2010). My research design may easily be transferred to other studies and populations.

Rich, thick data description enables the research to make fruitful decisions regarding

transferability by describing participants and the setting of their selected research in

detail. As a researcher, having a clear and robust audit trail aids my comprehension and

replication (Stake, 1995).

Dependability

Dependability in qualitative research refers to the stability of data over time and

conditions. It is an evaluation of the quality of the data collection, data, and theory

generation that has been undertaken in a study (Ellis, 2019). An examination of the

process used to collect, record, and analyze data helps determine dependability. In order

to ensure dependability, participant inclusion criteria and the interview protocol were

followed, and interview protocol questions were presented at each semi-structured

interview. The semi-structured interviews were recorded and transcribed verbatim, not changing the data collection or analysis process.

The dependability of my study was established by the utilization of multiple methods of data collection and by following an audit trail of the research process (Merriam & Tisdell, 2015). Multiple data sources were collected to support my research objectives by searching between the sources and looking for common themes (Leedy & Ormrod, 2005). Within the audit trail, I described how I captured data, arrived at categories, and made decisions throughout the research process through detailed journal captions (Merriam & Tisdell, 2015).

Confirmability

Confirmability is the degree to which the results of an inquiry could be confirmed or collaborated about one's data (Anney, 2014). Confirmability was confirmed when the inquiry results were neutral, accurate, and free of researcher reflexivity. Confirmability was necessary for a qualitative study as the inquiry results will reflect the participant's truthfulness. I mitigated my own biases and beliefs on the study topic through awareness and constantly checking my biases, beliefs, and dispositions towards my research (Maxwell, 2013; Merriam & Tisdell, 2015). These clarifications allowed a description of how I captured the analysis of the data. Qualitative research focuses on examining and understanding the researcher's values because they can be influenced by the behavior and conclusion of the study (Merriam & Tisdell, 2015).

Study Results

A specific purpose and research question guided the research strategy for this single case study with embedded units (Yin, 2017). Meeting this exploratory study's purpose may address the literature gap on how successful quality managers in the US automotive manufacturing industry build team cohesion within quality engineering teams. Scholarly and practitioner-based knowledge on team cohesion among quality engineers and production teams in the automotive industry is rare, resulting in products that may be deficient and dangerous to the public (Agozzino, 2020; Schmidt et al., 2021). My study collected data to answer the central research question "how do successful quality managers in the US automotive manufacturing industry build team cohesion within quality engineering teams?" by conducted semistructured interviews with seven managers leading quality engineering teams regarding their strategies, activities, actions, and behaviors for building team cohesion

Successful quality managers' perceptions on this topic were revealed in this case study, with patterns and themes developed from the raw data collected and subsequent data analysis. Thematic analysis of the textual data identified these patterns and themes. The process consisted of comparing themes from the data generated from multiple sources (interview, field notes, archival data) and comparing them with the theoretical proposition generated from the literature review. The strength of case study findings rests because it allows the researcher to generalize the theoretical propositions established from the literature (Yin, 2017). This study was framed by the study's conceptual framework that considered the following concepts related to team performance within the

extant literature: leaders, followers, team cohesion, trust, and commitment and was

grounded in 1) the leader-member exchange theory (LMX) that emphasizes the

importance of commitment and communication among managers and their teams

(Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016) and 2) the followership

theory (FT) will be utilized to explore the managers and their teams as coproducers of

leadership and its outcomes (Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al.,

2014). The alignment of the conceptual framework to the overall findings was essential in

interpreting the results to capture a deep understanding of how successful quality

managers in the US automotive manufacturing industry build team cohesion within

quality engineering teams.

Comparing the findings with findings from similar studies helped me to validate

the findings of the other studies. Data out of congruence with the pattern or explanation

emerging from the data analysis are called *discrepant cases* (Walsh et al., 2015).

Analyzing, interpreting, and reporting discrepant cases is essential to broaden, revise, or

confirm the patterns emerging from the data analysis and strengthen its credibility. There

were no discrepant cases found or that reached data saturation to influence the study's

findings.

The final step of case study research is to report the case study results (Yin,

2017). I used thick descriptive narratives to report the case study's outcome and

presented my research audience with a comprehensive picture of how participants

provided data to answer the research question. I used thematic analysis recommended by

Yin (2017) to categorize data from my research to understand the study participants'

views, behaviors, or qualities in a natural setting to answer the central research question

(Yin, 2017). Without following one specific reporting procedure, the presentation of

qualitative results of a thematic analysis should provide a logical, coherent, concise, non-

repetitive, and unassuming account of the data within the identified themes (Boyatzis,

1998; Yin, 2017).

I applied rigor to my data analysis procedures by adopting Yin's (2017) pattern

matching logic that addressed the "how" of my case study research question. Pattern

matching occurs when the predicted pattern is compared with the empirical pattern. By

deduction of critical propositions that emerged from the literature review and my

knowledge of quality engineering in the US automotive industry, I revealed empirically-

based patterns resulting from the data analysis findings.

This section contains 15 themes that emerged from the thematic analysis and are

defined through a summative statement captured from the participants' responses to the

interview questions. Supportive summative statements on each theme are represented by

direct quotes from the participants that define each theme's complex perspectives. Each

theme was relevant to the purpose of the study and directly related to the research

question. Table 2 reflects the relationship between the participants' responses and the

emergent coded themes.

Each theme's response listed below is direct quotes from the participant's voice to

provide contextual, detail-rich data and enhance confirmability of the study results.

Interview responses were carefully analyzed, with self-reflection represented through my

reflective field notes during data collection. I used triangulation of findings from

reflective field notes and archival data to ensure that the results emerged from participant-driven experiences and not my predisposition on the central phenomena investigated through this study.

Continuous Leadership and Team-Building Training

This theme refers to continuous leadership and team-building training interactions between quality managers and quality engineers within quality engineering teams. Leaders are expected to be both managers and leaders to encourage and influence team members (Simonet & Tett, 2013; Turaga, 2017). Participants discussed various challenges regarding managers requiring training to coach their team to complete essential tasks in organizations (Ahrens et al., 2018).

Participant 7: "As a manager, I think I should be honest and open to receive criticism or problems and develop trust and understanding with team members to assure we openly share and create knowledge about quality. Also, lead by example to encourage the growth of team members, both personal and professional, and provide feedback rather than criticizing in open meetings to aid sharing of new ideas. Also, share purpose between team members, so everyone is aware of our short and long term goals and objectives to assure the benefits for each member and the organization".

Participant 6: "As a manager, I generally like to recognize people's strengths and develop their weaknesses. This process allows me to share purpose between all the team members by allowing everyone to work together to share their individual wealth of knowledge. By reviewing different perspectives this process permits all measurables to

be addressed and discussed to assure data driven next steps are taken to solve the issue(s)".

Authentic Commitment to Product Quality and Customer Safety

This theme refers to competent quality managers' authentic commitment to ensuring product quality and customer safety. Increased global competition over the past decade has forced the automotive industry to improve quality and efficiency because the industry realized the quality was essential to the customer due to numerous vehicle recalls (Howard, 2019), which could lead to catastrophic failures that may endanger lives. Participants discussed that they faced various challenges relating to product quality and customer safety due to team interactions.

Participant 2: "From my perspective a team is functioning well when moral is good, and everyone has a positive attitude, and that the work is getting done is of the highest quality. The manager being the organizer of most meetings you would know this automatically by seeing their performance. As a manager your team(s) work together and depending on the subject-manner-experts, they strive by discussing their expertise through team meetings on the subject manner, this allows the work to be distributed by the overall interactions of the team".

Participant 4: "Being a manager you don't always get a chance to pick your team, sometimes you have a team through inheritance of practice. Which could be cumbersome, as you say, to get everyone on the same page, we do not have to walk the same and talk the same, but everyone needs to be on the same page as far as goals and how we plan to achieve them. As a manager when observing my team(s), leaders are

disguised based on subject-manner-experts through team(s) experience. During team

meetings, the members discuss the next steps. Then next steps are to distribute the work

to achieve access".

Superior Communication and Employee Engagement Skills

This theme refers to productive communication and the skills employees utilize to

engage each other. Driving cohesion in teams means the manager knows how to bring

together a group of team members to leverage the best qualities of their teams, including

task commitment, team collaboration, strong interpersonal relationships, and open

communication (Sepuru et al., 2020). Participants discussed that they faced various

challenges relating to communication and employees' skillsets engaging each other.

Participant 5: "As the manager I do not need to make all the decisions for my

team(s), I let my team(s) make the decision(s) regardless of right or wrong and I stand

behind their decision so we can learn from the experience by building confidence among

the team(s). As a manager I learned and trained my team to deal with different ideas and

perspectives by learning to communicate and listen so you can receive and embrace the

information prior to speaking on it. It is amusing to have support from your manager that

you are capable of performing your duties".

Participant 6: "Being the manager, I ask for open communication between all

team members'. Through open communication the team can identify ideas, and make

discoveries to resolve our concerns. Then, as the manager I deal with team members

different perspectives by listening, thinking before I response, engaging all the subject-

manner-experts, connecting the processes, and allowing input from everyone to assure all

necessary measurables are discussed and addressed to assure data driven next steps are taken to solve the problem".

Lack of Interface Between Effective Management and Production Systems

This theme refers to the lack of interface between effective management and production systems. Quality management systems endure subjective problems because poor-quality management systems and production systems are not aligned correctly. Critical to quality is capturing quality managers who have extensive experience continually improving quality processes (Appelbaum et al., 2020). Participants discussed that they faced various challenges regarding the lack of interface between effective management and production systems.

Participant 1: "What I normally do is look at the business purpose first, before I review the team. Quality managers must first access the entire issue in order to make proper business decisions. As a manager my team(s) then shares and captures data to evaluate what they have learned by working together investigating issues, documenting discoveries, and replicating these actions daily to assure all team members support the same processes to resolve the problem(s). By utilizing these methods, the manager facilitates openly sharing and creates knowledge by allowing everyone to present their opinion".

Participant 4: "I think a good team has to learn from experience, they have to experience some conflict with other team members not necessarily bad conflict, but conflict in a way that builds trust and understanding. If team development is skipped, the team may have poor performance as they try to prosper. As a manager my team develops

a shared purpose by summarizing the purpose to scope, involving everyone in the purpose to scope, and establishing an action plan like forming, norming, and storming or 6 Sigma to have a step-by-step data driven process to capture successful outcomes".

Strengthen Effective Followership Outcomes

This theme refers to the power of effective followership outcomes. Gobble (2017) acknowledged that followership, like leadership, is critical to maintaining organizational engagement to achieve common goals. The followership theory enables reversal of the lens in leadership by addressing followers' roles in creating and maintaining effective followership and leadership outcomes (Carsten et al., 2010; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). Participants discussed that they faced various challenges regarding the power of effective followership outcomes.

Participant 3: "If you want to build a team as a manager you must lay down a foundation with an established strategy. As a quality engineer you can tell your teams are functioning well by the interactive communication between everyone. Teams seem to always deal with members with different perspectives and by keeping an open-mind, negative interactions can be avoided and positive sharing of ideals can be accomplished".

Participant 4: "I think when people see individuals that have unique contribution and appreciation for another persons' perception it supports people wanting to work together. As a manager what helps a team work together is respect, open communication, forming, storming, norming, and sharing of discoveries/thoughts. If a team practices effective communication, respect, and trust a cohesive platform has been established".

Learn How to Leverage the Best Qualities of Quality Engineers

This theme refers to the best approach to leverage the qualities of quality engineers. Hayes et al. (2015) argued that understanding and fostering follower behaviors could improve overall organizational effectiveness. Participants discussed that they faced various challenges regarding the leverage of a quality engineer's strengths.

Participant 1: "Ownership drives team members to feel as though they are committed to their team(s). All members must play an active role which displays their commitment to assure collaboration supports the team goals. As a manager your team develops and captures a shared purpose by reviewing the team to relate the issue with members background(s) to assist with productive engagements from prior practices".

Participant 3: "Giving people voice allows for discoveries to be made. Establishing a comfortable forum which welcomes all comment(s), sets the stage for consistent improvement. As a quality engineer one of the main strategies utilized to help with decision making is the toolbox application, were daily meetings occur based on problem-solving skills, allowing discoveries to be presented to assist solving the problem. All team members are active participants who work together to share the wealth of knowledge to capture fruitful outcomes".

Role Model Professionalism

This theme refers to the process of professionalism displayed by quality engineers. Trust at the organizational level involves the shared relationship with the abundant agreement between the members of an organization. Organizational trust between managers and their teams is associated with beneficial outcomes (Korsgaard et

al., 2015). Understanding how trust between managers and their teams can be leveraged may influence organizational trust, strengthening the relationship (Legood et al., 2016). Participants discussed that they faced various challenges regarding trust-building.

Participant 3: "An individual needs to be transparent so that people see trustworthy behaviors. Within team building platforms motivation is driven by team interactions displaying transparency among team members. As a quality engineer the kind of performance within a team that supports a trusting environment is listening to your team members and giving them confidence to speak their own opinion".

Participant 5: "Trust is influenced in a team by the manager leading by example and allowing team members to perform their task based on their own learned disciplines. Team performance that supports a trusting environment is everyone working together to deep-dive an issue, respecting one another to share knowledge to resolve the issues, and taking risk based on lessons-learned supported by data driven decisions. As a manager trust means to believe in your team members ability to perform their task successfully".

Open Door Policy Without Fear of Retaliation

This theme refers to the open door policy procedures. Trust influences managers or followers by engaging in behaviors that target trustworthiness pertinent to their organization (Legood et al., 2016). Participants discussed that they faced concerns with the open door policy procedures.

Participant 2: "Within organizations team members should be open with one another and share, collaborate, and flow together because if your department has a re-organization with new management who supports direct interaction with everyone

through collaborative meetings to discuss daily interactions, operations and innovative ideals policies may change. As a manager I support diversity and inclusion among everyone by utilizing an open-door policy, leading by example, and having passion for everyone so I am very approachable. Trust building among your team(s) are very important to assure productive interactions are job-one.

Participant 6: "Trust as a leader I think is establishing forums to support the team in all aspects, like an open door policy. Management styles differ, which could engage multiple applications. I believe in training, which I do not operate outside of my chain of command. Trust is a shared relationship supported by all people involved. As a manager the main thing I do to support trust is allow the team members to do their job, support their efforts, and assist with any resources required to be successful".

Respect Quality Engineers' Perspectives on Problem-Solving

This theme refers to quality engineers' outlook on problem-solving. Organizations may encounter limitless benefits when managers and their teams engage in trustworthy relationships. Reflections of trustworthy behaviors from managers influence their team performance (Cremer et al., 2018; Korsgaard et al., 2015). Nienaber et al.(2015) argued that managers might build trustworthy relationships with their team by being willing to be transparent and display vulnerability. Participants discussed that they faced concerns with quality engineers' outlook on problem-solving.

Participant 1: "I review the business purpose, then the team, so I can place team members accordingly to resolve problem(s). Managers leading by example assists the team members working well together to resolve problem(s). As a manager important

aspects of building trust are having respect, empathy, and passion for your team reflecting a positive cohesion engagement".

Participant 7: "As a manager trust is influenced in a team by individuals sharing openness, honesty, right combination of team members and experience of team members. Team leaders showing concern of team members and having active roles in supporting, resolving and providing feedback to the team is very important. Team members should feel confident of their leaders that they are not being punished for wrongdoing or errors during the process of exercising their best efforts".

Continuous Collaboration for Reaching Common Goals

This theme refers to the commitment among quality engineers to reach common goals. According to Einolander (2015) and Schulz et al. (2017), commitment is focused on the mental degree of an individual's desire to be emotionally involved in an organization. Participants discussed that they faced concerns with commitment with quality engineers.

Participant 2: "Commitment is important to the manager-employee relationship because managers pave their way to excellence by setting and achieving goals. Managers should always lead by example and expect the same from employees to assure empathy and respect. You characterize their actions and your actions by leading by example and sharing motivational techniques to achieve cohesiveness among all team members. As a manager the behaviors you see when you have a committed team are processed from managers leading by example. Employees view managers as their leaders and seem to replicate common practices to achieve common goals between everyone".

Participant 3: "The behaviors you see when you have a committed team is people going the extra mile. Commitment is important to your relationship with employees to assure everyone is focused, motivated, and driven to accomplish the same goals. As a quality engineer you may experience a sense of commitment to the team through characterization of their actions as productive/acceptable and your actions as leading by example, making interactions fruitful, comfortable, and connected to one another".

Recognize the Value of Quality Engineers to Teamwork

This theme refers to the commitment of quality engineers to teamwork. Einolander (2015) argued that followers commit to their organization based on work settings and organizational engagement. Participants discussed that they faced concerns with the commitment of quality engineers to teamwork.

Participant 1: "I view commitment as very important to my relationship with employees, because all team members play a significant role, and in order to achieve commitment we must have buy-in to our organization. As a manager the behavior I see in a committed team is ownership. Also, managers may experience a sense of commitment to their team by viewing actions such as supportive, focused, and passionate. The entire team organization should be committed to excellence so they can take on a certain sense of ownership as a team".

Participant 5: "I think commitment is important to my employee relationship because team members need to be dedicated to their occupations for the team to perform successfully. I always led by example train, coach, mentor, and support my team to achieve commitment among everyone. My team shows their commitment by working

hard to achieve their tasks and going above and beyond when deemed necessary to achieve their task".

Invest in Training for Team Members

This theme refers to the commitment of quality engineers' training. The demand for managers to coach their team increases as the benefits become more and more evident (Ahrens et al., 2018). Participants discussed that they faced concerns with the commitment of quality engineers training.

Participant 2: "As a manager your team knows who should do what because you identify strengths and weaknesses among your members. Then you place those members accordingly with individuals who may need assistance and allow them to grow together to strength each other's knowledge base. But I think at the organization level the incentives for your commitment and your quality of work needs to be handled at the HR level because it is not changeable at the managerial level".

Participant 5: "As a manager the process I utilize to create knowledge about quality in my team is to allow my members to be subject manner experts and give presentations to upper-management and other team members based on their lessons learned and captured. Commitment of quality engineering training is an important organizational aspect because training is directly connected to productive performance. Managers establish knowledge sharing among new employees, seasoned employees, next generation employees and supporting teams by assuring proper knowledge sharing occurs and is tracked my training matrixes.

Role Model Daily Commitment to Customers' Health and Safety

This theme refers to leadership commitment to customers' health and safety. Team cohesiveness has a significant impact on team performance, impacting a team's financial performance in an organization. Organizations need to create teams to produce collective knowledge, resulting in collective competence (Merrill, 2019). When there are issues with team dynamics, if the team allows trust or cohesiveness to compromise their performance, then quality suffers (Paul et al., 2016). Participants discussed that they faced concerns with a commitment to customer health and safety among cohesive teams.

Participant 5: "Within a team there is a wealth of knowledge that just needs to be processed properly among everyone. I think a techniques to aid team cohesiveness is to capture feedback, listen, and analysis together during team meetings. As a manager to aid team cohesion I led by example, train, mentor, coach all members to assure confidence, wisdom, and lessons learned are shared and utilized to resolve issues".

Participant 6: "As a manager what establishes a team that works together is identification of strengths and weaknesses among members, tag-teaming those members throughout the ranks to build on their weaknesses and capitalize on their strengths with other members, and simply showing respect to everyone to assure team objectives are shared and everyone feels valuable. Team cohesion is focused on solving problems by working together, listening to one another, respectfully sharing opinions, and having empathy for one another".

Share the Rewards and Recognition With Team Members

This theme refers to leadership submitting rewards and recognition to team members. Team cohesiveness which generates a positive, creative effect, may identify aspects to achieve organizational success (Park et al., 2012). Participants discussed they faced concerns regarding rewards and recognition to team members.

Participant P1: "I think to give rewards or recognitions to my team members, I must recognize the team through a continuous improvement process to assure all members are entailed within the process. As a manager I think there should be some type of reward for team commitment based on rewarding everyone for a job well done when all the criteria's are meet for the reward. There is no "I" in team so all members must be abreast of the contributions required by everyone to achieve and maintain productive relationships".

Participant P3: "As a quality engineer rewarding team commitment can be very tricky. You must pay close attention to the processes to assure everyone is a part of the reward, so you reward the team to assure everyone receives a part for performing a good job as a team. Every member of a team plays an important position, and as a manager you must value everyone's contribution".

Build Cohesion Between Quality Managers and Quality Engineers

This theme refers to quality managers and quality engineers building cohesion within a quality organization. Team cohesion supports quality among organizational teams, and team cohesion has contributed to organizational survival by forming collaborative, cross-functional team thinking (van der Voet & Steijn, 2020). Participants

discussed that they faced concerns regarding the building of cohesion between quality

managers and quality engineers.

Participant 1: "As a manager what establishes a team that works together is

communication. You support communication by establishing team building platforms so

everyone can be aware of what is going on within the team, which assist with engaging

subject-manner-experts to aid successful outcomes. Then address decision making

activities through data driven decisions captured through a team investigation".

Participant 2: "I think a techniques to assist team cohesion is through my daily

team expectations. As a manager I view/review daily engagement through regular team

meetings and problem-solving interactions. Every team member has strengths and

weaknesses so by building teams based on disciplines allows successful growth between

everyone".

Summary

In this chapter, I presented the result of the pattern-matching and thematic

analysis methods of seven participants' interview data, followed by the synthesis of the

results to answer this study's central research question: *How do quality managers in the*

US automotive manufacturing industry successfully build team cohesion within quality

engineering teams?

Five conceptual categories with 15 themes emerged from the findings of this

single case study with embedded units after the study was framed by the study's

conceptual framework that considered the following concepts related to team

performance within and supported by the extant literature: leaders, followers, team

cohesion, trust, and commitment. The thematic analysis provided rich data on the experiences of participants. The five codes that emerged are as follows: (a) becoming a competent quality manager, (b) challenges of leading quality engineer teams in the automotive industry, (c) building team trust with quality engineers, (d) building team commitment with quality engineers, and (e) leadership to create team cohesion.

The 15 themes that emerged from the data analysis process include the following: (a) continuous leadership and team-building training, (b) authentic commitment to product quality and customer safety, (c) superior communication and employee engagement skills (d) lack of interface between effective management and production systems,(e) strengthen effective followership outcomes, (f) learn how to leverage the best qualities of quality engineers, (g) role model professionalism, (h) open-door policy without fear of retaliation, (i) respect quality engineers' perspective on problem-solving, (k) continuous collaboration for reaching common goals, (l) recognize the value of quality engineers to teamwork, (o) invest in training for team members, (m) role model daily commitment to customers health and safety, (n) share the rewards and recognition with team members, (o) daily commitment to build cohesion between quality managers and quality engineers.

The study's trustworthiness was evidenced using seminal methodology scholars' recommendations (Stake, 2013; Yin, 2017). The single case study results were comprehensively analyzed and interpreted within the context of the leader-member exchange theory (LMX) that emphasizes the importance of commitment and communication among managers and their teams (Breevaart et al., 2015; Grean & Uhl-

Bien, 1995; Joseph, 2016). In addition, the followership theory (FT) was utilized to explore the managers and their teams as coproducers of leadership and its outcomes (Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014). The LMX and followership theory (FT) relate to this qualitative single descriptive case study by supporting behaviors and actions that assist managerial interactions within quality engineering teams in automotive manufacturing organizations. Chapter 5 will present the findings' interpretations, describe the study's limitations, and recommendations for further research. Finally, I will discuss the implications of the findings to social change, theory, and practice and conclude.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative, single descriptive case study was to explore how quality managers in the U.S. automotive manufacturing industry successfully build team cohesion within quality engineering teams. Meeting the purpose of this exploratory study may address the gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). To address the study's research problem and purpose, I used qualitative data collected from multiple sources of evidence, including interviews, field notes, and archival data (see Merriam & Tisdell, 2015). Data sources were triangulated to establish the data analysis's trustworthiness (see Guion et al., 2011; Merriam & Tisdell, 2015).

Using a qualitative single case study with an embedded units design allowed me to give voice to quality managers on how to build team cohesion among quality engineering teams in the U.S. automotive industry (see Schmidt et al., 2021; Tasmin et al., 2020). This study was framed by the conceptual framework grounded in the LMX that emphasizes the importance of commitment and communication among managers and their teams (see Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016), and FT was utilized to explore managers and their teams as coproducers of leadership and its outcomes (see Gobble, 2017; Hurwitz & Koonce, 2017; Uhl-Bien et al., 2014).

Scholarly and practitioner-based knowledge on team cohesion among quality engineers and production teams in the automotive industry is rare, an omission that may contribute to defective and dangerous automotive products sold to the end-user customer

(Agozzino, 2020; Schmidt et al., 2021). Future research was required to establish which research approaches could be utilized to extend theory on specific strategies to build team cohesion and how quality managers may leverage the best qualities of their quality engineering teams (Imam & Zaheer, 2021; Schmidt et al., 2021). The use of a single case study with an embedded units design was beneficial in this study, offering the flexibility required to iterate and extend theories (see Halkias & Neubert, 2020; Stake, 2010) supporting the LMX (Grean & Uhl-Bien, 1995) and FT (Uhl-Bien et al., 2014).

New knowledge emerges from recognizing patterns in the collected data and the logical arguments that underpin them (Eisenhardt & Graebner, 2007). After conducting pattern-logic and thematic analysis methods on data from face-to-face interviews with seven participants, I identified the following 15 themes: (a) continuous leadership and team-building training, (b) authentic commitment to product quality and customer safety, (c) superior communication and employee engagement skills, (d) lack of interface between effective management and production systems, (e) strengthen effective followership outcomes, (f) learn how to leverage the best qualities of quality engineers, (g) role model professionalism, (h) open-door policy without fear of retaliation, (i) respect quality engineers' perspective on problem-solving, (j) continuous collaboration for reaching common goals, (k) recognize the value of quality engineers to teamwork, (l) invest in training for team members, (m) role model daily commitment to customers health and safety, (n) share the rewards and recognition with team members, and (o) daily commitment to build cohesion between quality managers and quality engineers.

Interpretation of Findings

The findings of this single case study with embedded units confirmed or extended current knowledge in the discipline, with each case presenting examples of issues presented in the conceptual framework and discussed in the literature review in Chapter 2. In this section, I present and review the study's findings in the context of the five coding categories that emerged from the data analysis: (a) becoming a competent quality manager, (b) challenges of leading quality engineer teams in the automotive industry, (c) building team trust with quality engineers, (d) building team commitment with quality engineers, and (e) leadership to create team cohesion. I compare these five conceptual coding categories with relevant concepts from the conceptual framework and the extant literature presented in Chapter 2.

I also provide evidence from the seven semistructured interviews to support how the study's findings confirm, disconfirm, or extend existing knowledge. The process of analyzing and presenting data evidence for theory extension in a single case study demonstrates the complexity of the inductive and deductive evaluation process of qualitative data (Halkias & Neubert, 2020). Extension studies, such as the single case study with embedded units, provide replication evidence to support the extension of prior research results while developing valuable insights and new theoretical directions (Bonett, 2012).

Findings and Coding Categories

Becoming a Competent Quality Manager

Scholars have written that many quality managers in the automotive industry have not been trained in specific strategies to build cohesion among team members within their organizations and do not understand how to leverage the best qualities of their teams (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020). My study results confirmed that many quality managers in the automotive industry should identify and build team cohesion among quality engineers. Study participants confirmed that leading by example, developing shared purposes, and communicating regularly with employee engagement skills supports trustworthy relationships. This study results extended knowledge based on works of Schmidt et al. (2021) and Tasmin et al. (2020) on how a qualitative single case study with embedded units can allow quality managers to have a voice on how to build team cohesion among quality engineering teams in the U.S. automotive industry.

Challenges of Leading Quality Engineer Teams in the Automotive Industry

The challenges managers struggle with within their automotive product-manufacturing organizations have gained the interest of scholars (Turaga, 2017). However, managers cannot rely on traditionally learned experiences to lead follower generations within today's organizations. The culture changes have required organizations to pursue people managers to motivate, inspire, and support their teams to achieve everyday endeavors (Axelrod, 2015). Managers require training to coach their team to complete essential tasks in organizations (Ahrens et al., 2018). My study results confirmed challenges, traits, and themes discovered within the concept through the lens of current trends discovered from prior research focused on leaders leading from the middle of an organizational hierarchy (Buller, 2018).

Study participants confirmed they faced various challenges relating to communication and employees' skill sets engaging each other, the lack of interface between effective management and production systems, and various challenges regarding trust building. These results align with Carsten et al.'s (2018) and Epitropaki et al.'s (2016) conclusions that managers should establish credibility among their team through their management styles and strategies to obtain polarity between competing interests of their team to support the balance of accountability of team members. The results extend knowledge based on the works of Simonet and Tett (2013), Turaga (2017), and Ahrens et al. (2018) that leaders are expected to be both managers and leaders to encourage and influence team members. Current participants discussed various challenges regarding managers requiring training to coach their team to complete essential tasks in organizations.

Building Team Trust With Quality Engineers

Some critical insights in the organizational trust are a large body of research performed that has utilized a wide range of antecedents (Fulmer & Gelfand, 2012; Legood et al., 2016). My study results confirmed that quality managers and engineers' team employees interact to help organizations achieve quality objectives; organizations benefit when they trust each other and are committed to their objectives, leading to team cohesion and quality (Nader-Rezvani, 2019). Some participants confirmed that a cohesive platform has been established if a team practices effective communication, respect, and trust. Current findings aligns with the LMX, which explores the importance of commitment, communication, and communication among managers and their teams

(Grean & Uhl-Bien, 1995) and FT, which describes how managers and their team are coproducers of leadership and its outcomes (Uhl-Bien et al., 2014). I explored how managers build trust, display cohesiveness, and promote commitment and trust among their team through the LMX and FT lenses to achieve organizational goals. The study results extend knowledge based on Grean and Uhl-Bien (1995) and Uhl-Bien et al. (2014), revealing how trusting relations among quality managers and employees support effective interactions to establish a cohesive platform.

Building Team Commitment With Quality Engineers

Scholars indicated commitment is focused on the mental degree of an individual's desire to be emotionally involved in an organization (Einolander, 2015; Schulz et al., 2017). My study results confirmed that commitment was grounded in the LMX, which emphasizes commitment and communication among managers and their teams (Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016). Study participants confirmed that commitment is essential to a manager's relationship with employees because the primary focus is on the results as a team. Current findings align with Casimir et al.'s (2014) conclusions that managers committed to their team tend to aid positive organizational outcomes. This study results extend knowledge based on the work of Breevaart et al. (2015), Grean and Uhl-Bien (1995), and Joseph (2016) who conducted single case studies of a comprehensively analyzed interpretation of the LMX that emphasizes the importance of commitment and communication among managers and their teams.

Leadership to Create Team Cohesion

Scholars indicated that team cohesion relates to creating a bond between managers and team followers, facilitating practical task completion between all team members (Delice et al., 2019; Wise, 2014). My study confirmed that cohesion bonds organizational interactions between managers and their teams. Study participants confirmed that managers ensure everyone is aware of the multiple modes to communicate, so there is a solid platform on deck for everyone to collaborate to support cohesiveness among teams. Scholarly and practitioner-based knowledge on team cohesion among quality engineers and production teams in the automotive industry is rare, an omission that may contribute to defective and dangerous automotive products sold to the end-user customer (Agozzino, 2020; Schmidt et al., 2021). This study's results extend knowledge based on the works by Merrill (2019) and Paul et al. (2016) on how team dynamics give structure to the team to aid proper ways to bring out team strengths; when there are issues with team dynamics, the team that does not have trust or cohesiveness compromises the performance and quality suffers.

Summative Reflections on the Findings

Although a manager's leadership style plays a crucial role in nurturing and promoting team cohesion, cohesion can also become an organizational development objective. The automotive manufacturing industry may adopt strategies to strengthen ties within a quality engineering team by increasing team cohesiveness. Given the significant impact of management skills adopted by quality managers leading an engineering design team in fostering team cohesion and enhancing team performance, it would be advantageous for organizations to select and train quality managers who place team

members' needs over their leadership agenda by being committed to building trusting relationships with team members.

Senior leadership looks for managers to encourage, motivate, and support team members and to have the emotional intelligence to drive balanced management approaches to leverage the best of followers (Goleman et al., 2013; Turaga, 2017). Leaders and managers are essential personnel in an organization, but the relationship with team members is more effective if the manager has the competencies to practice behaving as an efficient leader (Arnold, 2018; Turaga, 2017). These assumptions apply as well in the automotive manufacturing industry, where quality control and sound work by quality engineers are required to keep automobiles from becoming dangerous pieces of equipment resulting in expensive product recalls, car accidents, and injury and death to end-user customers (Aerotek, 2017; Braun et al., 2020).

A quality manager should be trained to embody and promote a climate of collaboration and trust by showing respect, helpfulness, and courteous behaviors toward others within and outside the team; these characteristics of a manager become a good fit into a servant-leadership work culture. A quality engineer can create a sense of purpose and pride in maintaining a quality program throughout an organization. Promoting a servant-leadership culture in organizations in which human resources development is valued and encouraged is particularly relevant in today's complex and competitive society, where employees strive to find human-centered and robust ethical leadership.

Limitations of the Study

There were seven limitations in this case study. First, I interpreted the situation in great depth through a descriptive analysis of the phenomenon (Yin, 2017). A creditable case study contains a detailed description, analysis, and a summary selected by the researcher (Patton, 2015). Within a qualitative single case study, the researcher is the primary instrument (Maxwell, 2013). A case study may be time-consuming and labor intensive (Maxwell, 2013; Yin, 2017). To address the limitation of time consumption, I created a detailed plan of action to submit optimal drafts to avoid multiple revisions and follow prepared dissertation matrixes within the dissertation process.

Second, a single case study is limited by the sensitivity and integrity of the investigator (Merriam & Tisdell, 2015; Yin, 2017). Within this study, I performed the primary role of collecting data and performing analysis. Training needed in observation and interviewing is not always available to case study researchers (Patton, 2015). Due to the flexibility of a case study, there may be guidelines in assembling the final report (Yin, 2017). To address the limitations of sensitivity and integrity, I had to rely on my instincts and abilities throughout my efforts as a researcher.

Qualitative research studies tend to produce transferable rather than generalizable conclusions (Ahrens et al., 2018). A qualitative study is focused on the direct function of the similarities between contexts described within the conceptual framework. The fittingness describes the similarity between sending and receiving contexts (Miles et al., 2014; Patton, 2015). Case studies examine different questions and do not produce empirical generalizations (Patton, 2015; Yin, 2017). However, quality managers and their

teams in automotive quality engineering product-manufacturing organizations focused on quality may find the discoveries from the findings beneficial.

Bias can invade a research project in numerous undetected ways. Bias may be difficult to perceive because it is difficult for researchers to disconnect from their normal behaviors. In a qualitative case study, researchers must identify their bias and how prior knowledge can affect data collection and analysis (Leedy & Ormrod, 2005; Miles et al., 2014; Patton, 2015). I dealt with bias by utilizing detailed research logs reflecting participants' interactions, data analysis choices, observations, and pertinent information about the study. This study may also contribute to positive social change within automotive quality engineering product-manufacturing organizations, extending to the community job satisfaction and better quality, and ultimately saving lives.

Recommendations

This study is the first of its kind conducted on how quality managers in the US automotive manufacturing industry build team cohesion within quality engineering teams. During each stage of the study, I took notes and maintained communication with study participants to answer any additional questions or clarify any issues they may have had. I documented data at every step of the process to provide productive and meaningful recommendations for practice and future research. The automotive manufacturing industry is more likely to suffer the consequences of poor quality by focusing more on producing tangible products and neglecting quality leading to expensive recalls, cause car accidents and be hazardous to drivers (Bell & Gluesing, 2020; Braun et al., 2020). This study may contribute to management practices by contributing participable protocols for

quality managers in the US automotive manufacturing industry to build team cohesion within quality engineering teams.

The conceptual framework of this study considered in its development concepts scholars has utilized to support team performance research: leaders, followers, team cohesion, trust, and commitment. The conceptual framework of this study is grounded in the leader-member exchange theory (LMX), defining the importance of commitment and communication among managers and their teams (Breevaart et al., 2015; Grean & Uhl-Bien, 1995; Joseph, 2016) and followership theory (FT) to explore the managers and their teams as coproducers of leadership and its outcomes (Gobble, 2017; Uhl-Bien et al., 2014).

A literature gap exists in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). Few quality managers in the automotive manufacturing industry understand how to build team cohesion among quality engineering teams due to a lack of practitioner-based knowledge and professional training on team cohesion (Schmidt et al., 2021; Tasmin et al., 2020). Following the completion of this study, automotive manufacturing quality managers now have results that have not been previously explored to assist them in sound management and leadership for quality engineering teams. With the study results' development of future practice and research recommendations, organizations can more effectively train and inform quality managers and their quality engineering teams about nurturing a team

mindset founded on cohesiveness, trust, and commitment (see Edwards, 2020; Nichols, 2020).

Recommendations for Building Team Cohesion by Quality Managers in the U.S. Automotive Manufacturing Industry

During the interviews for this study, almost all the participants indicated that to improve team dynamics, a manager and the team must share common goals and review the strengths and weaknesses of everyone to allow individual growth to occur. They also reported that inconsistency of quality managers engaging productively with teams contributes to the low performance of teams. The automotive manufacturing industry tends to have production problems due to the lack of a proper interface between effective management and production systems (Braun et al., 2020). Additionally, the automotive manufacturing industry is more likely to suffer the consequences of poor quality by focusing on producing tangible products and neglecting quality leading to expensive recalls, which may cause car accidents and can be hazardous to drivers (Bell & Gluesing, 2020; Braun et al., 2020). The industry is impacted by the manager's poor team-building skills, which may cause at a minimum financial loss and consumer deaths in most serve cases (Markulik et al., 2019; Unver et al., 2020).

Increased global competition has forced the automotive product manufacturing industry to improve quality and efficiency over the past decade. Quality is significant and vital to the reputation of the automotive manufacturing industry, and the wellbeing of consumers is a priority. Identified as consumer satisfaction, quality is continuously transforming (Hoyer & Hoyer, 2001). Quality can be maintained within the automotive

product-manufacturing industry with the help of the organizational hierarchies, effectively aligning organizational systems with the company's quality strategy. The quality manager's responsibility is to implement continual improvement processes in general and quality initiatives (Hoyer & Hoyer, 2001; Leitner, 1999; Spigener & Angelo, 2001). Casimir et al. (2014) argued that social exchanges transpire when a manager or team member performs in a certain way that helps one another but does not generate responsibility. Conversely, Filstad (2011) argued that social exchange is the engagement in which a manager captures the knowledge and skills to lead their team in an organization to capture objectives.

There is a need to fund research and development to assist quality managers within quality engineering automotive product-manufacturing organizations to enrich relationships with their teams. Few managers in the automotive manufacturing industry understand how to build team cohesion among quality engineering teams (Schmidt et al., 2021; Tasmin et al., 2020). As a result, the automotive manufacturing industry is more likely to suffer the consequences of poor quality (Bell & Gluesing, 2020; Markulik et al., 2019). I need to reiterate a point raised by one of my study participants regarding how quality managers building team cohesion "by practicing effective communication, respect, and trust the teams have developed a cohesive platform," this process is very doable and may assist with the development of a practical learning program.

Recommendations for Practice

In organizations with highly complex systems, such as automotive manufacturing organizations, quality engineers have become essential to meeting the design and

engineering specifications required to deliver high-quality products, experiences, and systems to the customer/end-user. Beyond a robust set of technical skills, leadership skills are needed to elevate a distinguish a good quality manager to an exceptional one. Being a team player and working with everyone involved ensures designing engineering products where the quality and safety of customers are understood, respected, and met. Interpreting regulations into executive, manageable processes and training teams on those processes ensure the process is maintained and executed effectively. The leadership strengths of a quality manager leading engineering teams coordinating a broad range of stakeholders ensure high-quality products on time and within budget. Leading teams to understand and resolve conflict issues, whether with management or peers, is a well-honed and essential skill to meet quality engineering team goals.

There is a gap in the engineering and management literature on guidelines for managers to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). Empirical studies on team cohesion among quality engineers and production teams in the automotive industry are scarce, allowing few guidelines for managers to follow on building team cohesion (Zheng et al., 2020). As a result, managers in the automotive industry have not been trained in specific strategies to build cohesion among team members within quality engineering teams (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020).

Building upon LMX and FT theory, the present study gathered data from managers on the importance of building team cohesion among quality engineering teams. Results of the study were framed by scholarly assumptions on how team performance

influences LMX, which may, in turn, strengthens team cohesion (see Chiniara & Bentein, 2018; Manata, 2020). Managers and their teams engage in a daily relationship, which involves influence, team relationships, trust, and commitment to organizational goals (Malakyan, 2014). Quality engineering teams working together in cohesion can also spot problems before the product is marketed to consumers to ensure that automotive products meet industry standards (Volker & Prostean, 2018). The implications for professional practice of this study may inform quality managers and their teams to understand how team cohesion within an organization can promote healthy organizational systems (Chaleff, 2009)

Building an appropriate and productive team climate to enhance team members' effectiveness is always an essential question considered by team managers and supervisors. This study showed how team cohesion could affect the team's effectiveness to meet organizational goals. Following are recommendations emerging from theoretical arguments and empirical support provided by this study on how quality managers' leadership can build team cohesion within quality engineering teams.

- Quality managers need the training to understand how to empower team members through shared leadership. The quality manager should understand that sharing the leadership role within the team complements knowledge sharing and clarifies members about the design of quality of its deliverables. A culture of knowledge sharing helps team members (especially those who have less experience) deal with stressful situations in the workplace that may influence the manufacturing of quality products.

- Quality managers need the training to understand how servant leadership-type behavior can strengthen team cohesion and indirectly enhance team trust and commitment to the project, producing quality products and meeting deadlines.

- Quality managers should pay particular attention to the negative impact of differentiation in the quality of relationships among followers, which may be a barrier to team cohesion and cooperation.

- In placing a quality manager at the head of a design engineering team in automotive manufacturing, leadership should assign a person with a personality to share the leadership role, where appropriate. A combination of shared and traditional leadership is also possible –for example, where teams are relatively large. The ability to inspire cohesion among members, communicate the organization's vision, and transform the team are also required.

- Quality managers should be aware of the intricacy of establishing trust in the team and be adept at using skills/strategies to handle difficult situations that might erode trust while also remaining aware that too much trust can negatively affect project deliverables. Likewise, they should understand that cohesion in a team requires more than simply working together with common goals, and quality managers have a responsibility to create an environment in which members value each other

- Quality managers need to be present on the floor where teamwork takes place in real-time. One cannot lead by sitting behind a desk while the people you

depend on are on the floor or in another office. Quality managers should be on the front line to show their team's support and support the team's actions towards producing quality products, meeting project deliverables, and assuring organizational goal achievement.

Recommendations for Future Research

Reoccurring themes that emerged from the participants' interviews suggested that the main thing that establishes a team that works together is the practice of effective communication, respect, and trust within the members. Resistance to embrace change could hamper the teams' knowledge-sharing (Imam & Zaheer, 2021). Organizational change is also hampered by not correctly training quality managers in specific strategies to build cohesion among team members, and they do not understand how to leverage the best qualities of their teams (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020). Organizational change is significant due to increased global competition, forcing the automotive product manufacturing industry to improve quality and efficiency to stay competitive within the industry.

Future research could use quantitative approaches to replicate the discoveries of this study to validate these findings in similar or different contexts. Harkiolakis (2017) argued that the quantitative approach to gathering information is focused on describing a phenomenon across a large number of participants provides the possibility of summarizing characteristics across groups or relationships. Utilizing a quantitative approach with more participants to validate the findings will allow more quality

managers to participate in the study. The small sample of quality manager participants limits my findings, and a quantitative approach may extend findings enormously.

Future qualitative single case study researchers could replicate this research using different quality managers from manufacturing sectors or geographical locations. Using different manufacturing sectors or geographical locations may present diverse perceptions of barriers to sharing knowledge or training programs. Sometimes different manufacturing sectors may support, reinforce, and contribute knowledge sharing within the industry (Imam & Zaheer, 2021). Finally, the contextual themes that emerged from this study may be recommendations for future research to investigate different approaches to capitalize on enhanced training programs for quality managers.

Implications of the Study

Implications for Positive Social Change

Much research has been conducted on leaders, but minimal research exists on how a manager could strive to become a leader (Turaga, 2017). While multiple managers view themselves as influential leaders, the unfortunate truth is that many leaders are below average (Arnold, 2018). Most leaders think they perform better than they do. There is a spread between reality, and the leader manages perception, which helps understand the follower's behavior to achieve positive changes within an organization. If a leader could evaluate their performance, the results could aid positive change within their organization (Arnold, 2018).

Positive social change can be experienced when quality managers gain the appropriate training and understanding of building team cohesiveness among quality

engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). The widely accepted organizational team-building process involves ensuring that managers function as leaders who devote time to building team cohesiveness, trust, and commitment among their teams (Gyory et al., 2019; Niu et al., 2020). Investigating how to build team cohesion among quality engineers within the automotive manufacturing industry may contribute to positive social change by lending a voice to managers who have an insightful influence on positive organizational dynamics.

Implications for Policy

The United States automotive industry consists of the world's most significant passenger and light truck manufacturers. Like other major industries in the United States, the automotive industry is subject to a series of rules and regulations imposed by the government. Quality engineering is essential to the future of the automotive product-manufacturing industry because guidelines based on standards are the primary way planning is executed (Evans & Lindsay, 2005; Goicoechea & Fenollera, 2012).

Regulations influence the way automobiles are designed, how their parts are manufactured, and what safety features are included. Quality engineering teams are important to the future of the automotive industry because they ensure employees execute quality planning in the automotive manufacturing processes (Nichols, 2020). Regulations guided the creation of quality assurance standards such as ISO/ TS 16949 initiated ISO 9001:2000 in the automobile product-manufacturing industry (Goicoechea & Fenollera, 2012). ISO 9001 is a framework of standards that allows the automotive industry to meet customer/stockholders; desires within regulatory conditions related to a quality product

(Evans & Lindsay, 2005; Goicoechea & Fenollera, 2012). These standards are the
baseline for all product-manufacturing organizations to maintain quality across all
sectors.

Additionally, quality managers can improve quality control within their
manufacturing arena by implementing different standards through their quality
engineering teams. Quality managers can start by creating a quality culture. From the
lowest-experience employee to the highest level managers, everyone should create a
quality product. This dedication includes having an open-door policy where employees
are not afraid to bring production challenges or quality concerns to the attention of those
above them.

Industry Implications

Automotive manufacturers worldwide seek to achieve continuous quality
improvement to maintain adequate delivery to customers and stay competitive. This study
suggests the quality managers' responsibility to implement continual improvement
processes in general and quality initiatives within manufacturing organizations (Hoyer &
Hoyer, 2001; Leitner, 1999; Spigener & Angelo, 2001). This continual improvement
process is critical to the automotive industry because defective assemblies could lead to
expensive recalls or even worse accidents which could cause fatalities (Edwards, 2020).

Continuous quality improvement has revolved within the automotive industry
since the beginning of building automobiles. All of the tools and techniques utilized by
organizations in the industry were developed to guarantee quality and efficiency within
automotive manufacturing (Edwards, 2020). This study sheds light on the need for

quality managers in the automotive industry to be trained in specific strategies to build cohesion among team members within their organization so they will be able to leverage the best quality teams to implement best practices (Imam & Zaheer, 2021; Suebsook & Chaveesuk, 2020).

There is a gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (Braun et al., 2020; Zheng et al., 2020). Edwards (2020) founded six steps to aid continuous improvement within the automotive industry; adopt a team mindset, define value from the customer's point of view, develop a shared understanding of the cost of quality, solve problems completely, practice strong discipline, and leverage improvement management technology. By following these six guidelines, quality managers and quality engineers may develop and implement effective quality improvement programs with their teams to reap substantial benefits within their organizations.

Theoretical Implications

The theoretical implications of building team cohesion within engineering teams require further investigation into the causes and effects of poor management practices within the US automotive manufacturing industry. This single case study with embedded units may address the literature gap in the engineering and management literature on guidelines for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020).

Yin (2017) noted that the strength of case study design is that findings based on a

rigorous study design may be generalized to the theoretical propositions established from

the literature. My study findings advance knowledge in the management discipline by

contributing original qualitative data to the scholarly literature on how successful quality

managers build team cohesion within automotive quality engineering product-

manufacturing organizations.

As part of my analysis strategy for this study, I used the inductive approach to

extend theory and allow themes to emerge from data (Saunders et al., 2018). This study

developed new theoretical knowledge within the leader-member exchange theory (LMX)

framework and the followership theory (FT) by investigating interactive relationships

between managers and their teams. The LMX explores the importance of commitment,

communication, and communication among managers and their teams (Grean & Uhl-

Bien, 1995), and followership theory (FT) explores how managers and teams can become

co-producers of positive leadership outcomes and meeting organizational objectives. The

findings of this study, the research processes, and the trustworthiness in the research

results jointly allow for the credibility and dependability of this single-case study to

extend the theories grounding the study's conceptual framework (see Stake, 2013).

Conclusions

The purpose of this qualitative, single descriptive case study was to explore how

quality managers in the US automotive manufacturing industry successfully build team

cohesion within quality engineering teams. Meeting the purpose of this exploratory study

may address the literature gap in the engineering and management literature on guidelines

for quality managers to build team cohesiveness among quality engineers and production teams in the automotive industry (see Braun et al., 2020; Zheng et al., 2020). The in-depth insight provided in the interviews provided themes that answered the central research question and aligned key concepts which framed this study and related to team performance: leaders, followers, team cohesion, trust, and commitment. The conceptual framework of this study is grounded in the leader-member exchange theory (LMX) and the followership theory (FT), and both theories were utilized to explore and describe quality managers and their teams within the US automotive manufacturing industry as coproducers of leadership for building team cohesion (see Gobble, 2017; Uhl-Bien et al., 2014).

The interview participants in this study provided personal experiences and perceptions of how successful quality managers in the US automotive manufacturing industry may build team cohesion within quality engineering teams. The primary data collection strategy allowed participants to respond with an answer that emerged from their worldview and opened the platform for new ideas to transpire (Merriam & Tisdell, 2015). Consequently, the study participants shared real-life experiences regarding the necessary proficiencies required for quality managers to build team cohesion within quality engineering teams to drive change in the automotive industry by leveraging the best qualities of their teams.

The data from the study was used to determine the references for proficiencies required for quality managers to implement change initiatives and future research effectively. Study results aligned with conclusions drawn by Zheng et al. (2020) that

quality managers' evaluations of change initiatives must be supported by organizational goals developed through work team relationships that support organizational objectives. Study participants acknowledged that an effective way to manage the balance is to have honest and direct communication. Managers must remember that leadership is dynamic and seeks opportunities to sustain growth and development by receiving continuous training on building team cohesion (Suebsook & Chaveesuk, 2020).

Quality engineering teams deserve to have quality manager initiatives focused on building cohesiveness among everyone to capture continually improving quality processes (Appelbaum et al., 2020). Due to the competition from the global environment, quality engineering organizations worldwide must practice diverse knowledge and perspectives through team problem-solving activities (Gyory et al., 2019). Compromising on the quality in the automotive manufacturing industry due to a manager's poor team-building skills may sometimes cause at a minimum financial loss and consumer deaths in the most severe cases (Markulik et al., 2019; Unver et al., 2020). The results of this study support the need for quality managers to successfully build effective quality engineering teams to improve the standards of quality and safety in automotive products for the end-user consumer and the general public.

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Appendix A: Invitation Letter

Date: December 2020

Dear Prospective Research Participant,

My name is Linda White, a Ph.D. student in the Management program at Walden University, conducting a research study on how quality managers within automotive manufacturing organizations in the U.S. build teams that successfully exemplify trust, cohesiveness, and commitment.

I am seeking professional quality engineers and quality engineer manager participants to interview. Participation in the study is voluntary. The scheduled interview will take a minimum of 60 minutes or less. The interview process may take place on Zoom, Skype, or telephone and will be audio recorded. A participant can decline the interview at any time if they feel uncomfortable with any portion of the interview process. During no time will a participant be giving up any of their legal rights. There will be no penalties or risk associated if a participant decides to decline. If deemed necessary to assure clarity, there may be a 10 to 20-minute follow-up at the participants availability.

The IRB approval number from Walden University for this study is 12-21-20-0104681 and will expire on Grad December 20, 2021. If you agree to participant, please send me an email stating you understand and consent to participant. If you have any questions or concerns, at any time before, during, or after the interview process, contact me immediately at (248)910-6335. Also, if deemed necessary, feel free to contact the university's Research Participant Advocate (email address irb@mail.waldenu.edu). If you are interested in participating in this research study, feel free to contact linda.white@waldenu.edu or (248) 910-6335. All participants who agree, should keep/print a copy of the consent form.

Sincerely,

Linda White, MBA
Ph.D. Management-Leadership and Organizational Change
Walden University
College of Management and Technology
Linda.white@waldenu.edu
(248) 910-6335

Appendix B: Semistructured Interview Protocol

Identifier Number: _____

Date: _____

Introduction: State name of researcher, title, purpose of research, and IRB approval number. Obtain demographic profile, experience, level of education, length of time in industry, and age of participant. Notify participant the interview may last a minimum of 30 to 60 minutes. Establish an introduction/open conversation.

Is there anything else you would like to add to your story regarding how quality managers within automotive manufacturing organizations in the U.S. build teams that successfully exemplify trust, cohesiveness, and commitment.

Demographic Profile:

1. Select the choices list below which best describe you (Please Answer All Questions)

   A. Age Bracket: Below 30___; 31-40___; 41-50___; 51 and Above___

   B. Education Level: _____

   C. Employment: _____

   D. Position Title: _____

   E. Gender: Female___; Male___

   F. Number of Years at Your Current Position___

   G. List Item(s) not Included: _____

Appendix C: Overarching Research Question Sub/Interview Questions

CRQ: How do successful quality managers in the US automotive manufacturing

industry build team cohesion within quality engineering teams?

Sub Questions:

- How do managers improve Team dynamics?
- What can managers do to influence behaviors and intentions to build trust among employees?
- How can managers build team cohesiveness to achieve organizational success between employees?
- What can managers do to aid employees feeling attached to their organization to achieve commitment?

Interview Questions:

- SQ1: How do manager improve team dynamics?

    - What do you do to create, capture, a shared purpose between team members?
    - How does your team share what they learn?
    - How does your team capture what they learn?
    - What seems to help your team develop a shared purpose?
    - What kind of processes do you use to help with decision making within your teams?
    - What do you feel makes your team members work better together?
        - Can you give me an example of a time when that happen?
    - How do your teams correct mistakes?
    - How does your team deal with people with different ideas and perspectives?
    - When you think of your team, can you give me any examples of when you observed team members being open with one another?
        - What were the circumstances?
    - What do you do to support diversity and inclusion among your team members?

- SQ2: What can managers do to influence behaviors and intentions to build team trust?

- o How do you know teams are functioning well?
- o Can you tell me what trust mean to you?
- o What do you think influences trust in a team?
- o What kind of performance within a team supports a trusting environment?
- o What do you think you can do to support trust building in your teams?
- o Can you share examples with me of your important aspects of build trust?
- o Is there anything else you can think of that you would like to share?

- ➤ SQ3: How can managers build team cohesiveness to achieve organizational success between employees?

  - o What do you think establishes a team that works together?
  - o What do you do to help your teams work together?
  - o What is your view on collaboration?
  - o Is there anything else you can think of that you would like to share?
  - o What would you do to identify techniques to aid team cohesion?

- ➤ SQ4: What can managers do to aid employees feeling attached to their organization to achieve commitment?

  - o What behaviors do you general see when you have a committed team?
  - o How is commitment important to your relationship with employees?
  - o What do you do to reward team commitment?
  - o Is there anything else you can think of that you would like to share about commitment?
  - o Have you ever experienced a sense of commitment to a team and if so, how would you characterize their actions and your actions?

- ➤ SQ5: How do managers leaders share knowledge within their teams?
  - o What processes do you use to create knowledge about quality in your team?
  - o What processes do you use to capture knowledge about quality?
  - o What kind of process do you use to share knowledge with other quality engineering team members?
  - o What way do you think should managers behave to facilitate a team that openly shares and creates knowledge about quality?
  - o How do you handle decision making activities?
  - o When observing your team how do they know who should do what?
  - o How do your teams distribute their work?

Conclusion: Thank the participant for their participation and time as a research participant. Also, thank the participant for their support and contribution to positive social change within product manufacturing organizations by aiding managers' ability to build trust, cohesiveness, and commitment amongst followers.

Debrief: Enlighten the participant with a detailed description of next steps and how they will be contacted for a follow-up and verification of the interview. Finally, acknowledge how the all the collected data will be protected.