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Leadership and Continuous Improvement in the Nigerian Beverage Industry

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This is to certify that the doctoral study by

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2021

Abstract

Leadership, Continuous Improvement, and Performance in the Nigerian Beverage Industry

by

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

There is a high failure rate of continuous improvement (CI) initiatives in the beverage industry. Continuous improvement initiatives could help beverage manufacturing managers improve product quality, efficiency, and overall performance. Grounded in the transformational leadership theory, the purpose of this quantitative correlational study was to examine the relationship between idealized influence, intellectual stimulation, and CI. Nigerian beverage industry managers (N = 160) who participated in the study completed the Multifactor Leadership Questionnaire Form 5X-Short, and the Plan, Do, Check, and Act (PDCA) cycle. The results of the multiple linear regression were statistically significant, $F(2, 157) = 16.428$, $p < 0.001$, $R^2 = 0.173$. Idealized influence ($ß = 0.242$, $p = 0.000$) and intellectual stimulation ($ß = 0.278$, $p = 0.000$) were both significant predictors. A key recommendation is for beverage manufacturing managers to promote their employees' creativity, rational thinking, and critical problem-solving skills. The implications for positive social change include the potential to increase the opportunity for the growth and sustainability of the beverage industry.

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Dedication

This doctoral study is dedicated to God Almighty who has always been my guide and source of grace especially through the duration of this program. All glory, praise, and adoration belong to Him. I also dedicate this work to my parents Mr. and Mrs. C. N. Njoku. God continues to answer your prayers.

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Section 1: Foundation of the Study

Continuous improvement (CI) is a group of processes, initiatives, and strategies for enhancing business operations and achieving desired goals (Iberahim et al., 2016; Khan et al., 2019). CI is a critical process for organizations to remain competitive and improve performance (Jurburg et al., 2015; McLean et al., 2017). CI is an essential strategy for the beverage industry. As cited in McLean et al. (2017), Oakland and Tanner (2008) reported a 10% to 30% success rates for CI initiatives in Europe, while Angel and Pritchard (2008) stated that 60% of Six Sigma, a CI strategy, fail to achieve the desired result. This overwhelming rate of CI failures is a reason for concern for business managers, especially those in the beverage sector. CI failures result in financial, quality, and operational efficiency losses for the beverage industry (Antony et al., 2019). Abasilim et al. (2018) and Hoch et al. (2016) argued that the transformational leadership style has implications for successful CI implementation.

Beverages are liquid foods and form a critical element of the food industry (Desai et al., 2015). Beverages include alcoholic products (e.g., beers, wines, and spirits) and nonalcoholic drinks (e.g., water, soft or cola drinks, and fruit juices; Aadil et al., 2019). Manufacturing and beverage industry leaders use CI strategies to improve process efficiency, product quality and enhance efficiency (Quddus & Ahmed, 2017; Shumpei & Mihail, 2018; Sunadi et al., 2020; Veres et al., 2017).

Background of the Problem

Beverage manufacturing leaders need to maintain high productivity and quality, with fast response, sufficient flexibility, and short lead times to meet their customers and consumers demands (Kang et al., 2016). There is a high failure of CI initiatives, resulting in decreases in efficiency and quality and financial losses (Antony et al., 2019). McLean et al. (2017) reported that approximately 60% of CI strategies fail to achieve the desired results. Sustainable CI is a daunting task despite its importance in achieving organizational performance. The rate of CI failure is of considerable concern to beverage manufacturing managers, and it is imperative to understand how to improve the level of successful implementation of CI strategies (Antony et al., 2019; Jurburg et al., 2015).

McLean et al. (2017) and Sundai et al. (2020) argued that organizational CI efforts improve business performance. However, there is evidence of CI failures in beverage manufacturing firms (Sunadi et al., 2020). Successful implementation of CI initiatives is one of the challenges facing most business leaders (McLean et al., 2017). Providing effective leadership for sustained development and improvement is one strategy for achieving CI (Gandhi et al., 2019). Understanding the relationship between transformational leadership and CI could help business leaders gain knowledge to improve the implementation success rate, increase productivity and quality, and minimize losses (Jurburg et al., 2015). Therefore, the purpose of this quantitative correlational study was to examine the relationship, if any, between transformational leadership

components of idealized influence and intellectual stimulation and CI, specifically in the Nigerian beverage sector.

Problem Statement

There is a high failure of CI initiatives in manufacturing organizations (Antony et al., 2019; Jurburg et al., 2015). Less than 10% of the U.K. manufacturing organizations are successful in their lean CI implementation efforts (McLean et al., 2017). The general business problem was that some manufacturing managers struggle to successfully implement CI initiatives, resulting in decreased quality assurance and just-in-time production. The specific business problem was that some beverage manufacturing managers do not understand the relationship between idealized influence, intellectual stimulation, and CI.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI. The independent variables were idealized influence and intellectual stimulation, while CI was the dependent variable. The target population included manufacturing managers of beverage companies located in southern Nigeria. The implications for positive social change include the potential to understand the correlations of organizational performance better, thus increasing the opportunity for the growth and sustainability of the beverage industry. The outcomes of this study may help

organizational leaders understand transformational leadership styles and their impact on CI initiatives that drive organizational performance.

Nature of the Study

There are different research methods including (a) quantitative, (b) qualitative, and (c) mixed methods (Saunders et al., 2019; Tood & Hill, 2018). I used a quantitative method for this study. The quantitative methodology aligns with the deductive and positivist research approaches and entails data analysis to test and confirm research theories (Barnham, 2015; Todd & Hill, 2018). Positivism aligns with the realist ontology, using and analyzing observable data to arrive at reasonable conclusions (Riyami, 2015; Tominc et al., 2018; Zyphur & Pierides, 2017). The quantitative approach is appropriate when the researcher intends to examine the relationships between research variables, predict outcomes, test hypotheses, and increase the generalizability of the study findings to a broader population (Saunders et al., 2019; Tomic et al., 2018; Yin, 2017). Therefore, the quantitative method was most appropriate to test the relationship between beverage manufacturing managers' leadership styles and CI.

Researchers use the qualitative methodology to explore research variables and outcomes rather than explain the research phenomenon (Park & Park, 2016). The qualitative method is appropriate when the researcher intends to answer why and how questions (Yin, 2017). The qualitative research approach was not suitable for this study because my intent was not to explore research variables and answer why and how questions. Conversely, adopting the mixed methods approach entails using quantitative

and qualitative methodologies to address the research phenomenon (Saunders et al., 2019). This hybrid research method was not appropriate for this study because there was no qualitative research component.

The research design is the framework and procedure for collecting and analyzing study data (Park & Park, 2016). There are different research designs, including correlational and causal-comparative designs (Yin, 2017). Saunders et al. (2019) argued that the correlational design is for establishing the relationship between two or more variables. My research objective was to assess the relationship, if any, between the dependent and independent variables. Thus, the correlational design was suitable for this study. The intent was to adopt the correlational research design for this research. The causal-comparative research design applies when the researcher aims to compare group mean differences (Yin, 2017). Thus, the causal-comparative design was not appropriate for this study as there were no plans to measure group means.

Research Question

Research Question: What is the relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI?

Hypotheses

Null Hypothesis (H_0): There is no relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI.

Alternative Hypothesis (H_1): There is a relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI.

Theoretical Framework

The transformational leadership theory was the lens through which I planned to examine the independent variables. Burns (1978) introduced the concept of transformational leadership and Bass (1985) expanded on Burns's work by highlighting the metrics and elements of different leadership styles, including transformational leadership. Transformational leaders can motivate and stimulate their followers to support organizational improvement initiatives and drive positive business performance (Adanri & Singh, 2016; Nohe & Hertel, 2017). The fundamental constructs of transformational leadership are idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1999). Manufacturing managers who adopt idealized influence and intellectual stimulation can drive CI in their organizations (Kumar & Sharma, 2017). As constructs of transformational leadership theory, my expectation was that the independent variables, measured by the Multifactor leadership Questionnaire (MLQ), would influence CI.

I used the Deming plan, do, check, and act (PDCA) cycle as the lens for examining CI. Shewhart introduced CI in the early 1920s (Best & Neuhauser, 2006; Singh & Singh, 2015). Deming modified Shewart's CI theory to include the PDCA cycle (Shumpei & Mihail, 2018; Singh & Singh, 2015). CI is a process-oriented cycle of PDCA that organizations might use to improve their processes, products, and services (Imai, 1986; Khan et al., 2019; Sunadi et al., 2020). Thus, the PDCA includes critical steps for business managers and leaders who intend to drive CI.

Operational Definitions

The definition of terms enables a research student to provide a concise and unambiguous meaning of vital and essential words used in the study. A clear and concise explanation of terms might allow readers to have a precise understanding of the research. The following section includes the definition and clarification of keywords.

Brewing: is the process of producing sugar rich liquid (wort) from grains and other carbohydrate sources (Briggs et al., 2011). This process broadly includes the addition of yeast, a microorganism, for the conversion of the wort into alcohol and carbon (IV) oxide (fermentation). The next steps involve maturation, filtration, and packaging of the product (Briggs et al., 2011; Desai et al., 2015). Alcoholic beverages are also produced from this process. Non-alcoholic beverages involve the same process excluding the fermentation step.

Continuous improvement (CI): refers to a Japanese business operational model (Imai, 1986; Veres et al., 2017). CI is the interrelated group of planned processes, systems, and strategies that organizations can use to achieve higher business productivity, quality, and competitiveness (Jurburg et al., 2017; Shumpei & Mihail, 2018). Firms can use CI initiatives to drive performance and superior results.

Idealized influence: is a transformational leadership component (Chin et al., 2019). Idealized influence is the leader's ability to have a vision and mission. Leaders and managers who display an idealized influence style possess the appropriate behavior to drive organizational performance (Louw et al., 2017). Business managers apply

idealized influence when the followers perceive them as role models and have confidence in taking direction from them as leaders (Omiete et al., 2018)

Intellectual stimulation: a transformational leadership model in which leaders stimulate problem-solving capabilities in their followers and help them resolve challenges and difficulties (Louw et al., 2017). Transformational leaders who display intellectual stimulation enhance followers' innovative and creative CI capabilities (Van Assen, 2018). Intellectual stimulation is a leadership characteristic that business leaders may use to drive growth and improvement in teams and organizations.

Lean manufacturing systems (LMS): refers to a manufacturing philosophy for achieving production efficiency and delivering high-quality products (Bai et al., 2017). This production strategy originated from Japan's auto manufacturer, the Toyota Manufacturing Corporation, as an integral part of the Toyota Production System (TPS); Bai et al., 2017; Krafcik, 1988). LMS is a tool for identifying and eliminating all non-value-added manufacturing processes (Bai et al., 2019). Thus, LMS could serve as a CI strategy that leaders may use to eliminate losses, improve efficiency, and enhance quality in the manufacturing process.

Total quality management (TQM): is a lean production system for quality management. TQM is a holistic approach to delivering superior quality products (Nguyen & Nagase, 2019). The customer is the center-focus for TQM implementation, and the main objective of this quality management system is to meet and exceed customer expectations (Garcia et al., 2017). Manufacturing managers deploy TQM as a quality

improvement tool in the manufacturing process. TQM is a process-centered strategy requiring active involvement and support of employees and top management (Marchiori & Mendes, 2020).

Transformational leadership: One of the most researched leadership models, transformational leadership is a leadership theory in which leaders focus on encouraging, motivating, and inspiring their followers to support organizational goals (Chin et al., 2019). The four components of transformational leadership include (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration (Bass & Avilio, 1995).

Transactional leadership: is a leadership style that involves using rewards to stimulate performance (Passakonjaras & Hartijasti, 2020). Transactional leaders encourage a leadership relationship where leaders reward followers based on their performance and ability to accomplish the given tasks (Samanta & Lamprakis, 2018). Contingent reward and management by exception are two components of transactional leadership (Bass & Avilio, 1995; Passakonjaras & Hartijasti, 2020). Transactional leaders reward followers who meet and exceed expectations and punish those who fail to deliver assigned tasks and goals.

Assumptions, Limitations, and Delimitations

Assumptions, limitations, and delimitations are critical factors in research. These factors include (a) the researcher's perspectives and applied in the research development,

(b) data collection, (c) data analysis, and (d) results. These factors are also important for readers to understand the researcher's scope, boundaries, and perspectives.

Assumptions

Assumptions are unverified facts and information that the researcher presumes accurate (Gardner & Johnson, 2015; Yin, 2017). These unsubstantiated facts are the researcher's presumptions that have implications for evaluating the research and the research outcome (Kirkwood & Price, 2013; Saunders et al., 2019). It is critical that the researcher identifies and reports the study's assumptions so others do not apply their beliefs (Gardner & Johnson, 2015). My first assumption was that the beverage manufacturing managers have the skills and knowledge to answer the research questions. Saunders et al. (2015) opined that participants who provide honest and objective responses reduce the likelihood of bias and errors. I also assumed that the participants would be forthcoming, unbiased, and truthful while completing the questionnaire. I assumed that a sufficient number of participants will take part in the study. Data collection processes and techniques need to align with the study objectives and research question (Mohajan, 2017; Saunders et al., 2019). My final assumption was that the questionnaire administration and data collection process will produce accurate data and information.

Limitations

Limitations are those characteristics, requirements, design, and methodology that may influence the investigation and the interpretation of the research outcome (Connolly,

2015; Price & Judy, 2004). Research limitations may reduce confidence in a researcher's results and conclusions (Dowling et al., 2017). Acknowledging and reporting the research restrictions is critical to guaranteeing the study's validity, placing the current work in context, and appreciating potential errors (Connolly, 2015). Furthermore, clarifying study limitations provide a basis for understanding the research outcome and foundation for future research (Dowling et al., 2017; Price & Judy, 2004). This study's first limitation was that the respondents might not recall all the correct answers to the survey questions. The second limitation of the study was that data quality and accuracy depend on the assumption that the respondents will provide truthful and accurate responses.

There are also potential limitations associated with the chosen research methodology. The researcher is closer to the study problem in a qualitative study than quantitative research (Queiros et al., 2017). The quantitative study's scope is immediate and might not allow the researcher to have a more extended range of reach as a qualitative study (Queiros et al., 2017). The other potential constraint was the nonflexibility characteristic of a quant-based study (Queiros et al., 2017). Furthermore, there was a limitation to the potential to generalize the outcome of quant-based research with correlational design (Cerniglia et al., 2016). The use of the correlational design restrains establishing a causal relationship between the research variables. The other limitation was that respondents would come from a part of the country, and data from a single geographic location may not represent diverse areas.

Delimitations

Delimitations are the restrictions and the boundaries set by the researcher (Yin, 2017) to clarify research scope, coverage, and the extent of answering the research question (Saunders et al., 2019). Yin (2017) argued that the chosen research question, research design and method, data collection and organization techniques, and data analysis affect the study's delimitations. Selecting the transformational leadership model and CI as research variables was the first delimitating factor as there were other related leadership models and organizational outcomes. The other delimiting factor included the preferred research question and theoretical perspectives. Another delimiting factor was that all the participants were from the same geographical location and part of the country. The study's target population was the next delimiting factor as only beverage manufacturing managers and leaders participated in the study. The sample size and the preference for the beverage industry were the other delimitations of the study.

Significance of the Study

Organizational leadership is critical to business performance (Oluwafemi & Okon, 2018). CI of processes, products, and services are avenues through which business managers can improve performance (Shumpei & Mihail, 2018). Maximizing organizational performance through CI strategies is one of the challenges facing manufacturing managers (McLean et al., 2017). Thus, CI might be a good business performance improvement strategy for managers and leaders in the beverage industry.

Contribution to Business Practice

This study might benefit business leaders and managers who seek to improve their processes, products, and services as yardsticks for improved organizational performance. The beverage industries operating in Nigeria face a constant challenge to improve productivity and drive growth (Nzewi et al., 2018). Thus, business managers' ability to understand the strategies to improve performance is one of the critical requirements for continuous growth and competitiveness (Datche & Mukulu, 2015; Omiete et al., 2018). This study is also significant to business managers, leaders, and other stakeholders in that it may indicate a practical model for understanding the relationship between leadership styles, CI, and performance. A predictive model might support beverage manufacturing managers' and leaders' ability to access, measure, and improve their leadership styles and organizational performance.

Implications for Social Change

This study's results could contribute to social change by enabling business managers and leaders to understand the impact of leadership styles on CI and how this relationship might help the organization grow and positively impact society. Improving performance, especially in the beverage sector, can influence positive social change by growing revenue and leading to increased corporate social responsibility initiatives in the communities. Other implications for positive social change include the potential for stable and increased employment in the sector, increased tax base leading to enhanced services and support to communities. Thus, the beverage sector's improved performance

may support the socio-economic well-being and development of the host communities, state, and country.

A Review of the Professional and Academic Literature

This section is a comprehensive review of the literature on transformational leadership and CI themes. This section also includes a review of the literature on the context of the study. This review is for business managers and practitioners who are keen to understand and appreciate the relationship between transformational leadership and CI in the beverage sector. The purpose of this quantitative correlational study was to examine the relationship, if any, between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI. One of the aims of this study was to test the hypothesis and answer the research question. The null hypothesis was that there is no relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI. The alternative view was a relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI.

This review includes the following categories: (a) overview of the beverage manufacturing process, (b) leadership, (c) leadership styles, (d) transformational leadership, and (e) CI. The first section includes an overview of beverage manufacturing methods and stages. The second section consists of the definition of leadership in general and specifically in the beverage industry. The second section also includes a general outlay of the performance and challenges of the manufacturing and beverage sectors and clarifying the role of beverage manufacturing leaders in CI. The third section is the

review and synthesis of the literature on leadership styles, transformational leadership style and other similar leadership styles. In the fourth section, my intent was to focus on transformational leadership and MLQ and present an alternate lens for examining leadership constructs and justification for selecting the transformational leadership theory. This section also includes the review of literature on intellectual stimulation and idealized influence, the two independent variables, and the implications for CI in the beverage industry. The fifth section includes the description of CI and its various theories as DMAIC, SPC, Lean Management, JIT, and TQM. The fifth section also consists of the definition and clarification of the PDCA as the framework for measuring CI and the link between CI and quality management in the beverage industry.

I accessed the following databases through the Walden University Library: (a) ABI/INFORM Complete, (b) Emerald Management Journals, (c) Science Direct, (d) Business Source Complete, and (e) Google Scholar to locate scholarly and peer-reviewed literature. Specific keyword search terms included (a) *leadership,* (b) *transformational leadership,* (c) *CI,* (d) *business performance, (*e)*organizational performance,* (f) *idealized influence,* and (g) *intellectual stimulation*. Table 1 consists of a summary of the primary sources and journals for this literature review.

Table 1

A List of Literature Review Sources

Type of sources	Current sources (2015-2021)	Older sources (Before 2015)	Total of sources
Peer-reviewed sources	164	30	194
Other sources	28	12	40
Total	192	42	234
%	86	14	

I reviewed literature from 192 (82%) sources with publication dates from 2015 – 2021. The literature review includes 86% peer-reviewed sources with publication dates from 2015 – 2021.

Beverage Manufacturing Process – An Overview

Beverages are liquid foods (Aadil et al., 2019). Beverages include alcoholic (e.g., beers, wines, and spirits) and nonalcoholic products (e.g., water, soft or cola drinks, fruit juices and smoothies, tea, coffee, dairy beverages, and carbonated and noncarbonated beverages) (Briggs et al., 2011; Desai et al., 2015). Alcoholic beverages, especially beers, have at least 0.5% (vol./vol.) alcohol content, while nonalcoholic beverages have less than 0.5% (vol/vol) alcohol content (Boulton & Quain, 2006). Manufacturing of alcoholic beverages involves mashing, wort production, fermentation, maturation, filtration, and packaging (Briggs et al., 2011; Gammacurta et al., 2017). The mashing process consists of mixing milled grains (e.g., malted barley, rice, sorghum) and water in temperature-controlled regimes (Boulton & Quain, 2006). The wort production process

entails separating the spent grain, boiling, and cooling the wort for fermentation (Kunze, 2004). Fermentation involves the addition of yeast (i.e., a microorganism) to the wort and the yeast converts the sugar in the wort to alcohol and CO2 (Boulton & Quain, 2006; Debebe et al., 2018; Gammacurta et al., 2017). During maturation, the beer is stored cold before filtration; the filtration process involves passing the beer through filters to remove impurities and produce clear, bright beer (Kayode et al., 207; Varga et al., 2019). The last step is packaging the product into different containers (i.e., bottles, cans, etc.) and stabilizing the finished product to remove harmful microorganisms and ensure that the beverage remains wholesome throughout its shelf life (Briggs et al., 2011; Kunze, 2004). Pasteurization and sterile filtration are techniques for achieving beverage stabilization (Briggs et al., 2011; Varga et al., 2019).

Nonalcoholic products do not undergo fermentation (Briggs et al., 2011). Production of nonalcoholic beverages is a shorter process that involves storing the cooled wort for about 48 hours before filtration and packaging. Nonalcoholic beverages require more intense stabilization since these products typically have a longer shelf life and are more prone to microbial spoilage (Boulton & Quain, 2006). For nonalcoholic beers, the beer might undergo fermentation and subsequent elimination of the alcohol content by fractional distillation (Kunze, 2004). The beverage manufacturing manager implements quality control systems by identifying quality control points at each process stage (Briggs et al., 2011; Chojnacka-Komorowska & Kochaniec, 2019). Managers also ensure quality control by implementing improvement strategies to prevent the reoccurrence of identified

quality deviations. One of the tools for improving the production process is the PDCA cycle. The various steps and tools associated with the PDCA cycle serve particular purposes in the manufacturing quality management system and quality control process (Chojnacka-Komorowska & Kochaniec, 2019; Mihajlovic, 2018; Sunadi et al., 2020).

Leadership

Leadership is one of the most highly researched topics and yet one of the least understood subjects (Aritz et al., 2017). There is no single, clear, concise, and generally accepted definition for leadership. Charisma, communication, power, influence, control, and intelligence are some of the terms associated with leadership (Aritz et al., 2017; Jain & Duggal, 2016; Shamir & Eilam-Shamir, 2017; Williams et al., 2018). In summary, leadership is a position of influence, authority, and control and a state in which the leader takes charge of coordinating, managing, and supervising a group of people (Shamir & Eilam-Shamir, 2017). Leaders use their positions of influence to deliver goals and objectives (Aritz et al., 2017). Dalmau and Tideman (2018) opined that leaders are change agents who use their behaviors and skills to communicate and engender change among their followers and team members. Effective leadership is a critical success factor for CI and sustainable growth (Gandhi et al., 2019).

Leadership is an essential ingredient and one of the most potent factors for driving organizational growth (Torlak & Kuzey, 2019; Williams et al., 2018). In organizations, leadership encompasses individuals' ability, called leaders, to influence and guide other individuals, teams, and the entire organization (Kim & Beehr, 2020). Leaders are a

critical subject for business because of their roles and their influence on individuals, groups, and organizational performance (Ali & Islam, 2020; Ceri-Booms et al., 2020; Kim & Beehr, 2020). Williams et al. (2018) summarized leaders as individuals who guide their organizations by performing leadership activities. These leaders perform various leadership activities to achieve business goals. In today's competitive business environment, organizations are searching for leaders who can drive superior performance and deliver sustainable results (Ali & Islam, 2020). Organizational leaders are involved in crafting, deploying, and institutionalizing improvement strategies for business performance (Fahad & Khairul, 2020; Khan et al., 2019; Shumpei & Mihail, 2018). Leadership has implications for business improvement and growth and is a critical subject for beverage managers who intend to drive CI. Thus, the leader's role in the business environment is crucial for CI and organizational success in a beverage firm. The next section includes an overview of leadership in the beverage industry and beverage industry leaders' impact on CI and performance.

Leadership and Challenges of the Nigerian Manufacturing Sector

The Nigerian manufacturing sector is a critical player in the nation's developmental strides. The manufacturing industry is a substantial economic base and one of the drivers of internally generated revenue (Ayodeji, 2020; Muhammad, 2019; NBS, 2019). This sector, for instance, accounts for about 12% of the nation's labor force (NBS, 2014; 2019). The food and beverage subsector is estimated to contribute 22.5% of the manufacturing industry value and 4.6% of Nigeria's GDP (Ayodeji, 2020). The

relevance of the beverage manufacturing sector to a nation's economy makes this sector an appropriate determinant of national economic performance.

There are indications of positive growth and development in the Nigerian manufacturing sector (NBS, 2014; 2019). In the first quarter of 2019, the nominal growth rate in the manufacturing sector was 36.45% (year-on-year) and 27.52% points higher than in the corresponding period of 2018 (8.93%), and 2.88% points higher than in the preceding quarter (NBS, 2019). The food, beverage, and tobacco industries in the manufacturing sector grew by 1.76% in Q1 2019 (NBS, 2019). However, the sector had also witnessed slow-performance indices. In 2016, the Nigeria Bureau of Statistics (NBS) reported nominal GDP growth of 19.12% for the second quarter, 13.28% lower than the previous year at 32.4% (NBS, 2014). The nominal GDP was 2.26% lower in 2014 compared to 2013 (NBS, 2014).

The manufacturing sector recorded negative performance indices in 2019. The sector's real GDP growth was a meager 0.81% in the first quarter of 2019 (NBS, 2019). This rate was lower than in the same quarter of 2018 by -2.59% points, and the preceding quarter by -1.54% points. The sector contributed 9.80% of real GDP in Q1 2019, lower than the 9.91% recorded in Q1 2018 (NBS, 2019). The food, beverage, and tobacco subsector had a lower growth rate in Q1 2019 (1.76%) than the 2.22% in Q4 2018 and 2.90% in Q3 2018 (NBS, 2019). These declining performance indices threaten the growth and sustainability of the sector. Thus, there was justification for focusing on strategies to

improve CI for improved performance in the beverage manufacturing sector and this goal was one of the objectives of this study.

The Nigerian manufacturing sector, of which the beverage industry is a critical part, faces many challenges. The numerous challenges facing the Nigerian manufacturing sector include epileptic power supply, the poor state of public infrastructure, including roads and transportation systems, lack of foreign exchange to purchase raw materials, and high inflation (Monye, 2016). Other challenges include increased production cost, poor innovation practices, the shift in consumer behavior and preference, and limited operational scope. Like every other African country, leadership is one of Nigeria's challenges (Adisa et al., 2016; George et al., 2016; Metz, 2018). Effective leadership drives organizational development (Swensen et al., 2016), and the lack of this leadership quality is the bane of the firms operating on the African continent (Adisa et al., 2016). These leadership problems lead to poor organizational management, and these shortcomings are more prevalent in manufacturing organizations in developing countries than those in developed nations (Bloom et al., 2012). Leadership challenges abound in the Nigerian manufacturing sector.

The rapidly evolving business environment and the challenges of doing business in the current world market require innovative and sustainable leadership competencies (Adisa et al., 2016). As critical stakeholders in organizational growth and CI efforts, beverage manufacturing leaders need to appreciate these leadership bottlenecks. These

challenges make leadership an essential subject for CI discourse and justified the focus on evaluating the relationship between leadership and CI in the beverage industry.

Leadership in the Beverage Industry

There are leaders in various functions of the beverage industry. Beverage manufacturing leaders are those who are involved in the core beverage manufacturing and production process. These are leaders who lead the production process from raw material handling through brewing, fermentation, packaging, quality assurance, engineering, and related functions (Boulton & Quain, 2006; Briggs et al., 2011). The role of beverage industry leaders includes supervising and coordinating beverage manufacturing activities to ensure the delivery of the right quality products most efficiently and cost-effectively (Boulton & Quian, 2006; Chojnacka-Komorowska & Kochaniec, 2019). The role of beverage manufacturing leaders also entails managing and supervising plant maintenance activities and quality management systems.

Williams et al. (2018) opined that leaders influence and direct their followers. This leadership quality is critical and is one of the most potent leadership characteristics in beverage manufacturing. Beverage manufacturing leaders manage teams in their various functions and departments (Briggs et al., 2011). These leaders need to have the competencies and capabilities to engage, influence and direct their teams towards delivering quality, efficiency, and cost-related goals for CI and growth (Chojnacka-Komorowska & Kochaniec, 2019). A leader might manage a group of people in diverse workgroups and sections in a typical beverage manufacturing firm. For instance, a

beverage manufacturing leader in the brewing department might have team members in the various subunits like mashing, wort production, fermentation, and filtration. Coordinating and managing the members' jobs in these different work sections is a critical determinant of leadership success. Managing and coordinating members' tasks and assignments in the various units is a vital leadership function for beverage managers and a determinant of CI (Chojnacka-Komorowska & Kochaniec, 2019; Govindan, 2018). Beverage manufacturing leaders need to appreciate their roles and span of influence across the various functions and sections to influence and drive CI. Thus, these leadership roles and qualities have implications for constant improvement and performance of the beverage sector.

Beverage industry leaders are at the forefront of developing and ensuring CI strategies for sustainable development (Manocha & Chuah, 2017). Govindan (2018) opined that these industry leaders manage and drive improvement initiatives for operational efficiency and enhanced growth. Like in any other sector, beverage manufacturing leaders require relevant and strategic leadership skills and competencies to engage critical stakeholders, including employees, to support CI initiatives (Compton et al., 2018). Some of these skills include managing change processes, knowledge and mastery of the process and product quality management, and coordination of improvement processes and strategies (Compton et al., 2018). These leadership competencies and skills are critical for sustainable and CI. Beverage industry managers

who lack these leadership competencies are less prepared and not strategically positioned to drive CI.

Govindan (2018) and Manocha and Chuah (2017) argued that industry leaders who enhance CI in their organizations embrace change and are keen to implement change processes for growth and performance. Leading and managing change, as a leadership function, is valuable for beverage leaders who hope to achieve CI goals, and this function is one of the competencies that transformational leaders may want to consider for CI.

Leadership and CI in the Beverage Industry

Beverage industry leaders play active roles in CI. Influential beverage manufacturing leaders understand their roles in driving organizational goals and use their influence and control to ensure that employees participate in improvement initiatives. Khan et al. (2019) and Owidaa et al. (2016) found a link between leadership, CI strategies, and organizational performance. Kahn et al. opined that organizational leaders drive CI strategies for sustainable growth and development. Shumpei and Mihail (2018) suggested that leaders who adopt CI initiatives in their manufacturing processes can achieve cost and efficiency benefits. Leaders who aspire for organizational success appreciate the role of CI as a factor for growth and development. One of the indicators of organizational success is business performance.

Beverage manufacturing leaders need to develop strategies for operating effectively and efficiently at all levels and units as a yardstick for competitiveness. One way of achieving effective and efficient operations is through the implementation of CI, a

process through which everyone in the organization strives to continuously improve their work and related activities (Van Assen, 2020). Leaders and managers are critical stakeholders in implementing business goals and objectives, including CI (Hirzel et al., 2017); therefore, beverage industry leaders and managers may influence the implementation of CI initiatives.

Leaders are role models and motivate, stimulate, and influence their followers' activities and interests in specific organizational goals (Van Assen, 2020). Jurburg et al. (2017) opined that business leaders and managers who show commitment to the growth and development of their organizations engender employees' dedication and willingness to participate in CI processes. Van Aseen (2020) conducted a multiple regression analysis of the impact of committed leadership and empowering leadership on CI. The analysis of the multiple linear regression presents multiple correlations (R), squared multiple correlations (R2), and F-statistic (F) values at a given p – value (p) (Green & Salkind, 2017). Van Aseen (2020) reported a positive and significant relationship ($F(5, 89) = 9.58$, $R2 = 0.39$, and $p < .001$) between committed leadership and CI. Van Assen showed a positive and significant coefficient for empowering leadership (Beta (b) = 0.58, t – test (t) = 6.41, and $p < .001$) and confirmed that there was a positive and significant correlation between empowering leadership and committed leadership. CI-friendly business leaders and managers are those who play an active role in empowering their followers. Thus, leaders can show commitment to improving CI by empowering their followers.

Improving problem-solving capabilities is one of the fundamental principles of CI (Camarillo et al., 2017). Closely associated with problem-solving are the knowledge management capabilities in the organization. Organizational leaders and managers play active roles in advancing and improving problem-solving and knowledge management competencies and skills. Camarillo et al. (2017) propose that manufacturing managers keen to drive CI and deliver superior business performance need to improve their problem-solving and knowledge management capabilities. CI-driven problem-solving include defining process problems and deviations, identifying the leading causes of variations, and improving actions to drive sustainable improvement (Singh et al., 2017).

Manufacturing managers who intend to drive CI need to understand problem-solving basics and apply them in their routine work. Ali et al. (2014) argued that problem-solving capabilities are critical for achieving sustainable results. Transformational leaders achieve set goals by motivating and stimulating team members to adopt innovative and unique problem-solving approaches. Similarly, Higgins (2006) opined that food and beverage manufacturing leaders achieve CI by encouraging and supporting problem-solving activities across all organization sections. Thus, problem-solving is critical for CI and has implications for beverage managers who aspire to improve performance.

Leadership Style

Leadership style is a particular kind of leadership displayed by business managers and leaders (Da Silva et al., 2019; Park et al., 2019; Yin et al., 2020). Leaders embody

different leadership characteristics when leading, managing, influencing, and motivating their team members and employees. These leadership characteristics are commonplace in an organization where managers and leaders deploy diverse leadership styles to lead and manage their team members (Park et al., 2019; Yin et al., 2020). Abasilim et al. (2018) suggested that leaders who strive to improve performance need to enhance employee commitment to organizational goals and objectives. Business leaders need to choose and implement leadership styles and behaviors that may help achieve the organizational goals and objectives as a yardstick for optimal performance (Abasalim, 2014; Nagendra & Farooqui, 2016; Omiette et al., 2018). Despite the arguments and support for leaders' role in enhancing business performance, there are indications that business managers do not possess the requisite skills and knowledge to drive organizational performance (Jing & Avery, 2016). CI is one of the critical beverage industry performance indices, and the sector leaders need to possess the appropriate skills and knowledge to drive CI for organizational growth. To achieve this goal, beverage industry leaders need to incorporate and practice leadership styles that support CI.

Business managers' leadership style remains one of the most significant drivers of business performance (Abasilim, 2014; Abasilim et al., 2018; Omiette et al., 2018). Business performance is the totality of an organization’s positive outlook (Nagendra & Farooqui, 2016). Business performance entails measuring and assessing whether a business attains its goals and objectives (Nkogbu & Offia, 2015). Nagendra and Farooqui (2016) reported that leaders’ styles positively and negatively affect organizational

performance outcomes. Nagendra and Farooqui showed that transactional leadership style ($\beta = -0.61$; $t = -0.296$; $p < .05$) had a negative but insignificant impact on employee performance. Nagendra and Farooqui however, reported that transformational leadership ($\beta = 0.44$; $t = 0.298$; $p < .05$) and democratic leadership ($\beta = 0.001$; $t = 0.010$; $p < .05$) styles had a positive and significant effect on performance. Thus, business leaders and managers need to focus on the appropriate leadership styles to improve organizational performance metrics. CI is one of the organizational performance metrics of interest to business leaders.

There is a link between leadership and CI (Kumar & Sharma, 2017). Kumar and Sharma found a coefficient of determination (R^2) of 0.957 in the multiple regression analysis of the relationship between leadership style and CI. Thus, leaders' style significantly accounts for 95.7% CI (Kumar & Sharma, 2017). Leadership styles might have positive, negative, or no impact on CI strategies (Kumar & Sharma, 2017; Van Assen & Marcel, 2018). Kumar and Sharma reported that transformational leadership significantly predicts CI, while Van Assen and Marcel (2018) argued that transformational leadership had no impact on CI strategies. Van Assen and Marcel found a positive and significant relationship ($b = 0.61$, $p < 0.1$) between empowered leadership and CI strategies. Van Assen and Marcel also reported a negative relationship ($b = -0.55$, $p < 0.1$) between servant leadership and CI. Thus, leadership style impacts CI, and this relationship could be of interest to beverage manufacturing leaders. Beverage industry

managers may determine the most appropriate leadership styles as strategies to implement CI strategies successfully.

Bass (1997) highlighted three distinct leadership styles: transformational, transactional, and laissez-faire in his comprehensive leadership model, the Full Range Leadership (FRL) theory. Transformational leaders display an element of charismatic leadership where managers and leaders influence followers to think beyond their self-interest and embrace working for the group and collective interest (Campbell, 2017; Luu et al., 2019). Dawnton (1973), Burns (1978), and later Bass (1985) developed the concept of transformational leadership. The transformational leadership style involves the motivation and empowering of followers to meet collective goals (Luu et al., 2019). Transformational leadership is one of the most highly researched and studied leadership styles.

Transformational leaders influence their followers to embrace CI initiatives (Sattayaraksa and Boon-itt, 2016). Kumar and Sharma (2017) found a significant correlation ($r1 = 0.631$, $n=111$, $p<0.01$) between transformational leadership and CI. Similarly, Omiete et al. (2018) reported a positive and significant relationship between transformational leadership and organizational resilience in the food and beverage firms. Omiete et al. (2018) showed that resilience is a critical factor influencing the organizational performance and profitability of food and beverage firms. While there is evidence to support the positive relationship between transformational leadership and CI, this leadership style could also have other levels of effect on CI. Van Assen and Marcle

(2018), for instance, found that transformational leadership had no positive and significant ($b = -0.08$, $p < 0.01$) impact on CI strategies. The purpose of this study is to examine the relationship between transformational leadership and CI in the Nigerian beverage industry.

Transactional leaders focus on directing employee work roles, driving performance, and provide rewards for task accomplishments (Teoman & Ulengin, 2018). Providing tips for meeting the desired goals and punishment for not meeting the desired expectations are characteristics of the transactional leadership style (Kark et al., 2018). Followers in transactional leadership relationships stick to laid down procedures and standards to deliver set targets and goals. Gottfredson and Aguinis (2017) argued that followers in a transactional relationship expect rewards for meeting their goals. Gottfredson and Aguinis opined that this form of contingent reward could boost followers' morale, lead to enhanced job performance, and increased satisfaction. Thus, transactional leaders, who fail to provide these rewards, might cause disaffection in the team, leading to decreased job satisfaction and performance.

Laissez-faire is a leadership style where team members lead themselves (Wong & Giessner, 2018). This leadership characteristic is a hands-off approach to leadership, where managers allow employees and followers to make critical decisions. Amanchukwu et al. (2015) and Wong and Giessner (2018) reported that laissez-faire is the most ineffective in Bass' FRL theory. Amanchukwu et al. (2015) opined that leaders and managers who practice the laissez-faire leadership style do not take leadership

responsibilities and are not actively involved in supporting and motivating their followers. Thus, this leadership style may affect employee and organization performance negatively. In a quantitative study of the relationship between employees' perception of leadership style and job satisfaction, Johnson (2014) reported a negative correlation between laissez-faire leadership style and employee job satisfaction. Beverage industry employees who have less job satisfaction and motivation are less likely to support organizational CI initiatives (Breevaart & Zacher, 2019). This negative correlation has potential implications for beverage industry leaders who may want to adopt the laissez-faire leadership style.

Unlike transformational leadership, laissez-faire leadership negatively affects followers (Breevaart & Zacher, 2019). Trust is a factor for leadership effectiveness. Breevaart and Zacher (2019) reported followers to have less trust in laissez-faire leaders. Laissez-faire leaders have less social exchange with their followers, and that these leaders are not present to motivate, challenge, and influence their followers (Breevaart & Zacher, 2019). In the study of the effectiveness of transformational and laissez-faire leadership styles and the impact on employee trust in a Dutch beverage company, Breevaart and Zacher (2019) found that weekly transformational leadership had a positive ($\beta = .882$, $p<0.001$) impact on follower-related leader effectiveness. Breevaart and Zacher also found a negative effect ($\beta = -0.096$, $p<0.05$) of weekly laissez-faire leadership on follower-related leader effectiveness. This ineffective leader-follower relationship leads to less trust in the leader. Generally, the beverage industry employees who participated in

Breevaart and Zacher's (2020) study showed more trust when the leaders displayed more transformational leadership ($\beta = .523$, $p < .001$) and less trust when their leader showed more laissez-faire leadership ($\beta = -.231$, $p < .01$). Khattak et al. (2020) reported a positive and significant relationship between trust and CI. The lack of social exchange and less trust in the laissez-faire leaders-follower relationship might threaten CI in the beverage industry. Thus, social exchange and trust are critical factors that might influence CI and have implications for beverage industry leaders.

Business leaders' style impacts their relationships with their team members and the quality of leadership provided in the organization (Campbell, 2018; Luu et al., 2019). Business leaders also influence employee behavior, subordinates' commitment, and organizational outcomes (Da Silva et al., 2019; Yin et al., 2020). Nagendra and Farooqui (2016) and Chi et al. (2018) advanced that leaders' styles affect business performance. Business managers need to develop strategies for sustained performance to keep up with the market changes and the increased complexity of doing business (Petrucci & Rivera, 2018). Influential leaders can practice and implement different leadership styles (Ahmad, 2017; Nagendra & Farooqui, 2016). In other cases, Abasilim et al. (2018) and Omiette et al. (2018) posit that specific leadership styles are required to drive business performance metrics. While a divide may exist in approach, there is consensus conceptually that business managers are critical players in developing and implementing business performance strategies. Business leaders and managers might display different leadership styles to enhance business performance. The next section includes the analysis and

synthesis of the literature on the transformational leadership theory identified as the theoretical framework for this study

Transformational Leadership Theory

There are different leadership theories to explain, assess, and examine leadership constructs and variables. Transformational leadership is one of the most popular leadership theories (Lee et al., 2020; Yin et al., 2020). Burns originated the subject of transformational leadership (Burns, 1978). Bass expanded the initial concepts of Burns' work and listed transformational leadership components to include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985; 1999). Thus, the transformational leadership theory consists of components that leaders might adopt as leadership styles in their engagement and relationship with their followers. Transformational leadership theory consists of a leader's ability to use any of the identified components to influence and motivate the employees towards achieving the organizational goals and objectives (Datche & Mukulu, 2015; Dong et al., 2017; Widayati & Gunarto, 2017). This argument makes transformational leaders essential for achieving business goals and CI.

Transformational leadership theory is a leadership model that entails the broadening of employees' and followers' individual responsibilities towards delivering organizational and collective goals (Dong et al., 2017; Widayati & Gunarto, 2017). This characteristic makes transformational leadership a critical strategy that business leaders and managers can use to achieve organizational goals and objectives (Widayati &

Gunarto, 2017). Transformational leadership is a popular leadership model that is at the heart of scholarly literature and research. Transformational leaders influence employees' and followers' behavior and stimulate them to perform at their optimal levels. Transformational leaders can drive organizational performance by motivating, encouraging, and supporting their employees and followers (Ghasabeh et al., 2015). Transformational leaders are relevant in mobilizing followers for organizational improvement. Leaders drive CI in organizations. One of the roles of business leaders, especially those in the manufacturing firms, is to guide CI and performance enhancement (Poksinska et al., 2013). In beverage manufacturing, these leadership roles could include managing daily operational activities and production processes and supervising operators (Briggs et al., 2011; Verga et al., 2019). Deming (1986), the originator of CI, opined leaders initiate and reinforce CI. Transformational leaders can stimulate employees to improve processes and products by integrating CI strategies into organizational values and goals (Dong et al., 2017; Widayati & Gunarto, 2017). This leadership function is one of the benefits transformational leaders impact in the organization.

There are alternate lenses for examining leadership constructs (Lee et al., 2020). Transactional leadership is one of the most common theories for studying leadership constructs and phenomena (Morganson et al., 2017; Passakonjaras & Hartijasti, 2020; Samanta & Lamprakis, 2018; Yin et al., 2020). Transactional leaders encourage an exchange relationship and a reward system. Transactional leaders reward employees

based on accomplishing assigned tasks and applying punitive measures when subordinates fail to deliver assigned roles to the desired results (Bass & Avilio, 1995).

Teoman and Ulengin (2018) opined that transactional leadership is a form of leadership model that leads to incremental organizational changes. Toeman and Ulengin reckon that change implementation and visionary leadership are two characteristics of the transformational leadership model that managers require to drive improvements in processes, products, and systems. Thus, leaders might struggle to use the transactional leadership model to create and generate radical change. The outcome of Toeman and Ulengin's study has implications for beverage industry managers who plan to enhance CI. Furthermore, Laohavichien et al. (2009) and Toeman and Ulengin (2018) opined that Deming's visionary leadership, as the epicenter for driving CI, is a characteristic of the transformational leadership model. Laohavichien et al. and Toeman and Ulengin arguments justify the preference for transformational leadership.

Multifactor Leadership Questionnaire (MLQ)

The MLQ is the instrument for measuring the transformational leadership constructs of this study. MLQ is one of the most widely used tools for measuring leadership styles and outcomes (Bass & Avilio, 1995; Samanta & Lamprakis, 2018). Bass and Avilio (1995) constructed the MLQ. The MLQ consists of 36 items on leadership styles and nine items on leadership outcomes (Bass & Avilio, 1995). The MLQ includes critical questions and criteria for assessing the different transformational leadership styles, including idealized influence and intellectual stimulation. Though MLQ

developers suggest not modifying the MLQ, there are various reasons for making changes and using modified versions of the MLQ. Some of the reasons for using modified versions of the MLQ include (a) reducing the instrument's length, (b) altering the questions to align with the study need, and (c) ensuring that the MLQ items suit the selected industry (Kailasapathy & Jayakody, 2018). The MLQ Form 5X Short is one of the standard versions for measuring transformational leadership (Bass & Avilio, 1995).

Critics of the MLQ argued that too many items on the survey did not relate to leadership behavior (Muenjohn & Armstrong, 2008). There was also a concern with the factor structure and subscales of the MLQ as only 37 of the 67 items in the first version of the MLQ assessed transformational leadership outcomes (Jelaca et al., 2016). In this first version, only nine items addressed leadership outcomes such as leadership effectiveness, followers' satisfaction with the leader, and the extent to which followers put forth extra effort because of the leader's performance (Bass, 1999). Bass & Avilio (1997) developed the current version of the MLQ to address the identified concerns and shortfalls. The current MLQ version includes 36 items; 4 items measuring each of the nine 17 leadership dimensions of the Full Range Leadership Model and additional nine items measuring three leadership outcomes scales (Jelaca et al., 2016). MLQ is a valid and consistent tool for measuring leadership outcomes.

The MLQ is a tool for measuring transformational leadership constructs (Jelaca et al., 2016; Samanta & Lamprakis, 2018). Kim and Vandenberghe (2018) examined the influence of team leaders' transformational leadership on team identification using the

MLQ Form 5X Short. Kim and Vandenberghe rated different transformational leadership components using various scales of the MLQ. Kim and Vandenberghe used eight items of the MLQ: four items of idealized influence and four inspirational motivation items as the scale for assessing leadership charisma. Kim and Vandenberghe also examined intellectual stimulation and individualized consideration using four separate MLQ Form 5X Short elements. Hansbrough and Schyns (2018) evaluated the appeal of transformational leadership using the MLQ 5X. Hansbrough and Schyns asked participants to determine how frequently each modified transformational leadership item of the MLQ fit their ideal leader based on selected implicit leadership theories. The outcome was that transformational leadership was more likely to be appealing and attractive to people whose implicit leadership theories included sensitivity (β=.21, $p<$ .01), charisma (β=.30, $p < .01$), and intelligence ($\beta = .23$, $p < .05$).

There are other measures for assessing transformational leadership dimensions. The Leadership Practices Inventory (LPI) is one of the alternate lenses for assessing transformational leadership dimensions (Zagorsek et al., 2006). The LPI is not a popular tool for empirical research as it has week discriminant validity (Carless, 2001). Developed by Sashkin (1996), the Leadership Behavior Questionnaire (LBQ) is another tool for measuring leadership constructs. The LBQ is popular for measuring visionary leadership, which is different from, but related to, transformational leadership (Sashkin, 1996). There is also the Global Transformational Leadership scale (GTL) created by Carless et al. (2000). The GTL is a small-scale tool and measures for a single global

transformational leadership construct (Carless et al., 2000). These alternative transformational leadership measurement tools do not align with this study's objectives and are not suitable for measuring transformational leadership.

In summary, the MLQ is one of the most common, valid, consistent, and well-researched tools for measuring transformational leadership (Sarid, 2016; Jeleca et al., 2016). These qualities make the MLQ relevant and the most appropriate theoretical framework for the current research. The complete list of the MLQ items for the intellectual stimulation and idealized influence leadership constructs is in the Appendix.

Transformational Leadership and Business Performance

Transformational leaders inspire and motivate followers to perform beyond expectations. Hoch et al. (2016) found that leaders' transformational leadership style may improve employee attitudes and behaviors towards CI. Transformational leaders intellectually stimulate their followers to embrace new ideas and find novel solutions to problems (Sattayaraksa & Boon-itt, 2016). Kumar and Sharma (2017) associated transformational leadership with CI and reported that transformational leaders influence and stimulate their followers to think innovatively and embrace improvement ideas. In examining the relationship between leadership styles and CI initiatives, Kumar and Sharma found that transformational leaders significantly and positively ($R=0.978$, $R2= 0.957$, $\beta=0.400$, $p=0.000$) influence organizational CI strategies. These qualities of transformational leaders have implications for beverage manufacturing firms and leaders. Employee motivation, intellectual stimulation, and idealized influence are components of

transformational leadership that have implications for CI and beverage industry leaders who aspire to lead CI initiatives and deliver sustainable improvement.

Beverage industry leaders may explore transformational leadership styles as strategies to improve performance and enhance CI because transformational leaders who motivate their followers have a positive effect on CI. Hoch et al. (2016) and Kumar and Sharma (2017) concluded that a transformational leadership style has implications for CI. This conclusion aligns with the views of Abasilim et al. (2018) and Omiete et al. (2018) on the implications of transformational leadership for business growth and sustainable improvement.

Transformational leadership has implications for business performance (Chin et al., 2019; Widayati & Gunarto, 2017). Transformational leaders influence employee behavior and commitment to organizational goals (Abasilim et al., 2018; Chin et al., 2019; Omiete et al., 2018). Widayati and Gunarto (2017) examined the impact of transformational leadership and organizational climate on employee performance. Widayati and Gunarto reported that transformational leadership positively and significantly affected employee performance ($\beta = 0.485$; $t= 6.225$; $p=.000$). Thus, business leaders and managers need to focus on building strategies that enhance transformational leadership competencies to improve employee performance (Ghasabeh et al., 2015; Widayati & Gunarto, 2017). Nigerian manufacturing leaders drive employee commitment and interest in CI initiatives by applying transformational leadership styles

(Abasilim et al., 2018). This leadership characteristic has implications for beverage industry leaders who seek novel strategies for enhancing CI and business performance.

Louw et al. (2017) opined that transformational leadership elements are integral components of an organization's leadership effectiveness. There is a consensus that this leadership model is central to the display of effective leadership by managers and that this behavior easily translates to enhanced performance and organizational growth (Louw et al., 2017; Widayati & Gunarto, 2017). Thus, managers and leaders need to promote the appropriate strategies for transformational leadership competencies. A transformational leader creates a work environment conducive to better performance by concentrating on particular techniques, including employees in the decision-making process and problem-solving, empowering and encouraging employees to develop greater independence, and encouraging them to solve old problems using new techniques (Dong et al., 2017).

Transformational leaders enhance innovativeness and creativity in their followers and encourage their team members to embrace change and critical thinking in their routines and activities (Phaneuf et al.,2016). These qualities are relevant for CI in the beverage manufacturing process. McLean et al. (2019) found that leaders' support for problem-solving, employee engagement, and improvement related activities are avenues for strengthening CI. Employees are critical stakeholders in CI, and leaders who empower their followers to imbibe the appropriate attitudes for CI are in a better position to drive business growth and improvement.

Trust is a factor for leadership engagement, employee commitment, and CI. CI implementation might involve several change processes and the improvement of existing business and operational systems (Khattak et al., 2020). Transformational leaders positively impact organizational change and improvement efforts (Bass & Riggio, 2006; Khattak et al., 2020). These leaders influence and motivate their employees. Employees are critical change and improvement agents and play valuable roles in promoting organizational improvement initiatives. Transformational leaders significantly impact employee-level outcomes and behaviors, including organizational commitment (Islam et al., 2018). Transformational leaders have charisma and transform their followers' behaviors and interests, making them willing and capable of supporting organizational change and improvement efforts (Bass, 1985; Mahmood et al., 2019).

To effect change, organizational leaders need to build trust in the team. Of all the qualities of transformational leaders, trust is one quality that might influence followers' beliefs and commitment to organizational improvement strategies (Khattak et al., 2020). Transformational leaders are influencers and role models who elicit trust in their followers (Bass, 1985; Islam et al., 2018). Trust is a critical factor for employee engagement and commitment to organizational goals and objectives. Trust in the leaders stimulates employee acceptance of organizational improvement initiatives and enhances followers' willingness to embrace CI. Khattak et al. (2020) found a positive and significant relationship between transformational leadership and trust ($\beta = 0.45$, $p < 0.01$). Trust in the leader impacts CI. Khattak et al. (2020) reported a positive and

significant relationship between trust in the leader and CI ($\beta = 0.78$, $p < 0.01$). Trust has implications for business managers in the beverage industry and a critical factor for transformational leadership in the industry. It is important for beverage managers to understand the impact of trust on transformational leadership and how this relationship might affect successful CI.

Similarly, Breevart and Zacher(2019), in their study of the impact of leadership styles on trust and leadership effectiveness in selected Dutch beverage companies, found that trust in the leader was positively related to perceived leader effectiveness (b* = .113, SE = .050, p < .05, CI [0.016, 0.211]). Breevart and Zacher reported a positive and significant relationship between transformational leadership and employee related leader effectiveness. Thus, beverage industry leaders who adopt transformational leadership styles and build trust in their followers might enhance CI. Beverage manufacturing leaders might adopt transformational leadership behaviors to motivate the employee to show higher commitment to improving every aspect of the organization. This relationship between trust, transformational leadership, and CI has implications for CI and the performance of the beverage manufacturing firms. One significance of Khattak et al.'s study for the beverage industry is that the harmonious relationship between industry leaders and followers might enhance the level of trust between both parties and stimulate commitment to CI efforts.

Transformational leaders enhance the motivation, morale, and performance of followers through a variety of mechanisms. Some of these mechanisms include

challenging followers to appreciate and work towards the collective organizational goals, motivating followers to take ownership and accountability for their work and roles, and inspiring and motivating followers to gain their interest and commitment towards the common goal. These mechanisms and leadership strategies are the critical components of the transformational leadership model (Bass, 1985; Islam et al., 2018). Through these strategies, a transformational leader aligns followers with tasks that enhance their potentials and skills, translating to improved organizational growth and performance (Odumeru & Ifeanyi, 2013). Intellectual stimulation and idealized influence are two transformational leadership variables of interest in this study. The next sections include a critical synthesis and analysis of the literature on these transformational leadership variables.

Intellectual Stimulation

Intellectual stimulation is a leadership component that refers to a leader's ability to promote creativity in the followers and encourage them to solve problems through brainstorming, intellectual reasoning, and rational thinking (Ogola et al., 2017). Intellectual stimulation is the extent to which a leader motivates and stimulates followers to exhibit intelligence, logical and analytical thinking, and complex problem-solving skills (Robinson & Boies, 2016). A business leader displays intellectual stimulation by enabling a culture of innovative thinking to solve problems and achieve set goals (Dong et al., 2017).

Leaders' intellectual stimulation affects organizational outcomes (Ngaithe & Ndwiga, 2016). Ngaithe and Ndwiga (2016) reported a positive but statistically insignificant relationship between intellectual stimulation and organizational performance of commercial state-owned enterprises in Kenya. Ogola et al. (2017) investigated leaders' intellectual stimulation on employee performance in Small and Medium Enterprises (SMEs) in Kenya. The study's outcome indicated a positive and significant correlation $t(194) = .722$, $p < .000$ between leaders' intellectual stimulation and employee performance. The results also showed a positive and significant relationship,($\beta = .722$, $t(194) = 14.444$, $p < .000$.) between the two variables (Ogola et al., 2017). Thus, leaders who display intellectual stimulation have a greater chance of enhancing the performance of their followers. The outcome of this study is important for beverage industry leaders who strive to deliver CI goals. Employee involvement and performance are critical for CI (Antony & Gupta, 2019). Employees are critical stakeholders in CI implementation, and the ability of the leader to stimulate the followers intellectually could help influence their participation and involvement in CI programs (Anthony et al., 2019). Thus, intellectual stimulation is one transformational leadership strategy that beverage industry leaders might find useful in their CI quest and implementation.

Anjali and Anand (2015) assessed the impact of intellectual stimulation, a transformational leadership element, on employee job commitment. The cross-sectional survey study involved 150 information technology (IT) professionals working across six companies in the Bangalore and Mysore regions of Karnataka. Anjali and Anand reported

that employees' intellectual stimulation positively impacted perceived job commitment levels and organizational growth support. The mean value of the number of IT professionals who agreed that their job commitment was due to the presence of intellectual stimulation (80.5) was higher than those who disagreed (14.5). The result of Anjali and Anand's study ($t = 14.68$, $df = 35$, $p < 0.005$) is a good indication of the significant and positive effect of intellectual stimulation on perceived levels of job commitment. Managers and leaders who aspire to provide reliable results and improved performance can adopt transformational leadership styles that stimulate employees to become innovative in task execution (Anjali & Anand, 2015). Beverage industry leaders might find the outcome of this study critical to the successful implementation of CI strategies. Lack of commitment of critical stakeholders is one of the barriers to the successful implementation of CI initiatives. Anthony et al. (2019) found that leaders who stimulate stakeholders' commitment and the workforce are more likely to succeed in their CI implementation drive. Employee and management commitment towards using CI strategies such as SPC, DMAIC, and TQM would engender a CI-friendly work environment and maximize the benefits of CI implementation in manufacturing firms (Sarina et al. 2017; Singh et al., 2018).

Smothers et al. (2016) highlighted intellectual stimulation as a strategy to improve the communication and relationship between employees and their leaders. Smothers et al. found a positive and significant relationship between intellectual stimulation and communication between employees and leaders ($R2 = 0.43$, $p< 0.01$). Open and honest

communications are critical requirements for quality management and improvement in manufacturing firms (Marchiori & Mendes, 2020). Beverage manufacturing leaders are not always on the production floor to monitor the manufacturing process. Effective, open, and honest communication of production outcomes, input, and output parameters and outcomes to managers and leaders is critical for quality and efficiency improvement (Gracia et al., 217; Nguyen & Nagase, 2019). Problem-solving is a typical improvement practice in beverage manufacturing (Kunze, 2004). Accurate information, from production log sheets and communication from operators to managers, would enhance problem-solving and fact-based decision-making. The intellectual stimulation of employees would drive open and honest communication (Smothers et al., 2016). This leadership trait is one strategy that beverage industry leaders might find helpful in their CI efforts.

The intellectual stimulation provided by a transformational leader influences the employee to think innovatively and explore different dimensions and perspectives of issues and concepts (Ghasabeh et al., 2015). Innovative thinking is a crucial ingredient for growth and improvement. CI and quality management are customer-focused (Gracia et al., 2017). Firms such as beverage manufacturing companies need to meet and exceed their customers' needs in today’s competitive and globalized market. To meet consumers' and customers' needs, firms need leaders who can intellectually stimulate the workforce and drive their interest in growth and improvement initiatives (Ghasabeh et al., 2015**;** Robinson & Boies, 2016). Transformational leaders who intellectually stimulate their

employees motivate them to work harder to exceed expectations. These employees embrace this challenge because of trust, admiration, and respect for their leaders (Chin et al., 2019). Beverage industry leaders who aspire to improve efficiency and quality-related performance indices continually need to provide an inspirational mission and vision to employees.

Business managers and leaders use different transformational leadership styles and behaviors to stimulate positive employee and subordinate actions for business performance (Elgelal & Noermijati, 2015; Orabi, 2016). Kirui et al. (2015) studied the impact of different leadership styles on employee and organizational performance. Kirui et al. collected data from 137 employees of the Post Banks and National Banks in Kenya's Rift Valley area. Kirui et al. used the questionnaire technique to collect data and, through descriptive and inferential statistical analyses, reported that both intellectual stimulation and individualized consideration positively and significantly influenced performance. The results showed that variations in the transformational leadership models of intellectual stimulation and individualized consideration accounted for about 68% of the difference in effective organizational performance. This study's outcome has implications for leaders' role and their ability to use their leadership styles to influence business performance indicators. Beverage manufacturing leaders might leverage the benefits of employees' intellectual stimulation to improve CI and performance.

Idealized Influence

Idealized influence is one of the transformational leadership factors and characteristics (Al-Yami et al., 2018; Downe et al., 2016). Bass and Avolio (1997) defined idealized influence as the characteristics of leaders who exhibit selflessness and respect for others. Leaders who display idealized influence can increase follower loyalty and dedication (Bai et al., 2016). This leadership attribute also refers to leaders' ability to serve as role models for their followers, and leaders could display this leadership style as a form of traits and behaviors (Downe et al., 2016). Idealized influence attributes are those followers' perceptions of their leaders, while idealized influence behaviors refer to the followers' observation of their leaders' actions and behaviors (Al-Yami et al., 2018; Bai et al., 2016). Idealize influence entails the qualities and behaviors of leaders that their subordinates can emulate and learn. Leaders who show idealized influence stimulate followers to embrace their leaders' positive habits and practices (Downe et al., 2016). Thus, followers' commitment to organizational goals and objectives directly affects the idealized leadership attribute and behavior.

Idealized influence is a well-researched leadership style in business and organizations. Al-Yami et al. (2018) reported a positive relationship between idealized influence, organizational outcomes, and results. Graham et al. (2015) suggested that leaders who adopt an idealized influence leadership style inspire followers to drive and improve organizational goals through their behaviors. This characteristic of leaders who promote idealized influence is beneficial for implementing sustainable improvement

strategies. Malik et al. (2017) suggested that a one-level increase in idealized influence would lead to a 27 unit increase in employees' organizational commitment and a 36 unit improvement in job satisfaction. Effective leadership is at the heart of driving CI, and business managers who display idealized influence attributes and behaviors are in a better position to deploy CI initiatives (Singh & Singh, 2015). Effective leadership styles for driving CI initiatives entail gaining followers' trust and commitment, helping employees embrace CI programs, and selflessly helping employees remove barriers to successful CI implementation (Mosadeghrad, 2014). These are the traits and characteristics exhibited by leaders with idealized influence attributes and behaviors.

Knowledge sharing is a critical factor for organizational competitiveness and improvement. Business leaders are responsible for promoting knowledge sharing among the employees and the entire organization (Berraies & El Abidine, 2020). Business leaders who encourage knowledge-sharing to stimulate ideas generation and mutual learning relevant to organizational improvement, competitiveness, and growth (Shariq et al., 2019). Knowledge sharing enhances the absorptive capacity for organizational CI (Rafique et al., 2018). Transformational leaders encourage their employees to share knowledge for the growth and development of the organization. Berraies and El Abidine (2020) and Le and Hui (2019) found a positive relationship between transformational leadership and employee knowledge sharing. Yin et al. (2020) reported a positive and significant ($\beta = 0.35$, $p < 0.01$) relationship between idealized influence and organizational knowledge sharing in China. Thus, beverage manufacturing leaders who

practice idealized influence would likely achieve successful implementation of CI initiatives.

Continuous Improvement

CI is a collection of organized activities and processes to enhance organizational effectiveness and achieve sustainable results (Butler et al., 2018). Veres et al. (2017) defined CI as a tool and strategy for enhanced organizational performance. There are different frameworks for implementing CI, and the awareness of these frameworks can help business managers to deliver maximum results and performance (Butler et al., 2018). In their study of the impact of CI on organizational performance indices, Butler et al. (2018) reported that a manufacturing company recorded a savings of $3.3m, which equates to 3.4% of its annual manufacturing cost in the first four years of implementing and sustaining CI initiatives. This finding supports the positive correlation between CI initiatives and organizational performance.

CI activities performed by business managers and leaders can positively affect manufacturing KPI and firm performance (Gandhi et al., 2019; McLean et al., 2017; Sunadi et al., 2020). In the study of the impact of CI in Northern India's manufacturing company, Gandhi et al. (2019) reported that managers might increase their organizations' performance by a factor of 0.15 through CI initiatives' implementation. Furthermore, Sunadi et al. (2020) found that an Indonesian beverage package manufacturing company deployed CI initiatives to improve its process capability index KPI by 73%.

Sunadi et al. (2020) investigated the effect of CI on the KPI of an aluminum beverage and beer cans production industry in Jakarta, Indonesia. The Southern East Asia region contributes about 7.2% of the total 335 billion of the global beverages cans demand, and there is the need to ensure that beverage cans manufactured from this region could compete favorably with those from other markets and meet the industry standards of quality and price (Mohamed, 2016). The drop impact resistance (DIR) is a quality parameter and a measure of the beverage package to protect its content and withstand transportation and handling (Sunadi et al., 2020). Sunadi et al. reported the effectiveness of the PDCA and other CI processes, such as Statistical Process Control (SPC), in enhancing the beverage industry KPI. Specifically, beverage managers would find such tools as PDCA and SPC useful in improving DIR and the quality of beverage package.

CI strategies and programs vary, and organizations might decide on the improvement methodologies that suit their needs. The selection of the most appropriate CI strategies tools and the methods that best fit an organization's needs is crucial to a good project result (Anthony et al., 2019). Despite the evidence to support CI in the business environment and especially manufacturing organizations, there are hurdles to implementing these initiatives (Jurburg et al., 2015). Some of the reasons for CI failures include lack of commitment and support from management and business managers and leaders' inability to drive the CI initiatives (Anthony et al., 2019; Antony & Gupta, 2019).

The failure of managers and leaders to drive and successfully implement CI initiatives negatively affects business performance (Galeazzo et al., 2017). Business

managers can implement CI strategies to reduce manufacturing costs by 26%, increase profit margin by 8%, and improve sales win ratio by 65% (Khan et al., 2019; Shumpei & Mihail, 2018). Thus, understanding the requirement for a successful implementation of CI initiatives could be one of the drivers of organizational performance in the beverage sector. Business managers and leaders struggle to sustain CI initiatives' momentum in their organizations (Galeazzo et al., 2017). There is a high rate of failure of CI initiatives in organizations, especially in the manufacturing sector, where its use could lead to quality improvement and production efficiency (Anthony et al., 2019; Jurburg et al., 2015; McLean et al., 2017. Leaders' failure to use CI to deliver the expected results in most organizations makes this subject important for beverage industry managers and leaders. There are limited reviews and literature on CI initiatives' failure in manufacturing organizations (Jurburg et al., 2015; McLean et al., 2019). Despite the nonsuccessful implementation of CI initiatives, there are limited empirical researches to explore failure of CI (Anthony et al., 2019; Arumugam et al., 2016). Also, there are few empirical studies on the nonsuccess of CI programs in Nigerian beverage manufacturing organizations. These positions justify the need to explore some of the reasons for the failure of CI initiatives.

The prevalence of non-value-adding activities and wastages that impede growth and development is one of the challenges facing the Nigerian manufacturing industry, of which the beverage sector is a critical part (Onah et al., 2017). These non-value-adding activities include keeping high stock levels in the supply chain, low material efficiencies

resulting in high process losses and rework, quality deviations and out of specifications, and long waiting time for orders. Most beverage manufacturing firms also face the challenge of inadequate and epileptic public utility supply that could affect the quality of the products and slow down production cycles. The existence of these sources of waste and inefficiencies in the manufacturing process indicates the nonexistence or failure of CI initiatives (Abdulmalek et al., 2016). Some of the Nigerian manufacturing sector's challenges include inefficiencies and wastages in the production processes (Okpala, 2012; Onah et al., 2017). Beverage managers may use CI to improve operational efficiency and reduce product quality risks. One of the frameworks for CI is the PDCA cycle. The following section includes an overview of the PDCA cycle.

PDCA Cycle

Shewhart, in the 1920s, introduced the PDCA as a plan-do-check (PDC) cycle (Best & Neuhauser, 2006; Deming, 1976; Singh & Singh, 2015). Deming (1986) popularized and expanded the idea to a plan-do-check-act process. PDCA is an improvement strategy and one of the frameworks for achieving CI (Khan et al., 2019; Singh & Singh, 2015; Sokovic et al., 2010). Table 1 is a summary of the PDCA components

Table 2

The PDCA cycle Showing the Various Details and Explanations

Cycle component	*Explanation*
Plan (P)	Define what needs to happen and the expected outcome
Do (D)	Run the process and observe closely
Check (C)	Compare actual outcome with the expected outcome
Act (A)	Standardize the process that works or begin the cycle again

Manufacturing managers use the PDCA cycle to improve key performance indicators (KPI) and organizational performance (McLeana et al., 2017; Shumpei & Mihail, 2018; Sunadi et al., 2020).

The Plan stage is the first element of the PDCA cycle for identifying and analyzing the problem (Chojnacka-Komorowska & Kochaniec, 2019: Sokovic et al., 2010). At this stage, the manager defines the problem and the characteristics of the desired improvement. The problem identification steps include formulating a specific problem statement, setting measurable and attainable goals, identifying the stakeholders involved in the process, and developing a communication strategy and channel for engagement and approval (Sunadi et al., 2020). At the end of the planning stage, the manager clarifies the problem and sets the background for improvement.

The Do step is when the manager identifies possible solutions to the problem and narrows them down to the real solution to address the root cause. The manager achieves

this goal by designing experiments to test the hypotheses and clarifying experiment success criteria (Morgan & Stewart, 2017). This stage also involves implementing the identified solution on a trial basis and stakeholder involvement and engagement to support the chosen solution.

The Check stage involves the evaluation of results. The manager leads the trial data collection process and checks the results against the set success criteria (Mihajlovic, 2018). The check stage would also require the manager to validate the hypotheses before proceeding to the next phase of the PDCA cycle (i.e., the Act stage) or returning to the Plan stage to revise the problem statement or hypotheses.

The manufacturing manager uses the Act step to entrench learning and successes from the check stage (Morgan & Stewart, 2017). The elements of this stage include identifying systemic changes and training needs for full integration and implementation of the identified solution, ongoing monitoring, and CI of the process and results (Sokovic et al., 2010). During this stage, the manager also needs to identify other improvement opportunities.

There are several CI strategies for systems, processes, and product improvement in the beverage and manufacturing industries. Some of these CI initiatives include the define, measure, analyze, improve, and control (DMAIC) cycle, SPC, LMS, why, what, where, when, and how (5W1H), problem-solving techniques, and quality management systems (Antony & Gupta, 2019; Gandhi et al., 2019; McLean et al., 2017; Sunadi et al.,

2020). The following sections include critical analysis and synthesis of the CI strategies and methodologies in the beverage and manufacturing sector

DMAIC

DMAIC is a data-driven improvement cycle that business managers might use to improve, optimize, and control business processes, systems, and outputs (Antony & Gupta, 2019). DMAIC is one of the tools that beverage manufacturing managers use to ensure CI and consists of five phases of define, measure, analyze, improve, and control (Sharma et al., 2018; Singhel, 2017). The five-step process includes a holistic approach for identifying process and product deviations and defining systems to achieve and sustain the desired results. Manufacturing managers and leaders are owners of the DMAIC tool and steer the entire organization on the right path to this model's practical and sustainable deployment. Table 2 includes the definition and clarification of the manager’s role in each of the DMAIC process steps

Table 3

The DMAIC Steps and the Manager's Role in Each Stage

DMAIC component	Manager's role
Define (D)	Define and analyze the problem, priorities, and customers that would benefit from the process res and results (Singh et al., 2017).
Measure (M)	Quantify and measure the process parameter of concern and identifying the current state of performance.
Analyze (A)	Examine and scrutinize to identify the most critical causes of performance failure (Sharma et al., 2018).
Improve (I)	Determine the optimization processes required to drive improved performance.
Control (C)	Maintain and sustain improvements (Antony & Gupta, 2019)

Six Sigma and DMAIC are continuous and quality improvement strategies that business managers may use to drive quality management systems in the beverage sector (Antony & Gupta, 2019). Desai et al. (2015) investigated Six Sigma and DMAIC methodologies for quality improvement in an Indian milk beverage processing company. There was a deviation in the weight of the milk powder packet of 1 kilogram (kg) category. Desai et al. reported that the firm introduced Six Sigma and DMAIC strategies to solve this problem that had a considerable impact on quality and productivity. The practical implementation of DMAIC methodology resulted in a 50% reduction in the 1kg milk powder pouch's rejection rate. De Souza Pinto et al. (2017) studied the effect of using the DMAIC tool to reduce the production cost of soft drinks concentrate on Tholor Brasil Limited. Before the implementation of DMAIC, the company had a monthly production input loss of 6%. In the first half of 2016, the company lost R $ 71,506.75

($13,876.89). The projected savings from the DMAIC PDCA cycle deployment was R$54,824.63 ($10,693.36), and the company could use these savings to offset its staff training cost of R$40,000 ($7,762.56). Beverage manufacturing managers who use the DMAIC tool could reduce production losses and improve business savings (De Souza Pinto et al., 2017). Thus, DMAIC has implications for CI in the beverage sector and is a critical tool that beverage managers may consider in the quest to enhance continuous and sustainable improvements.

SPC

SPC is one of the most common process control and quality management tools in the beverage and manufacturing industry (Godina et al., 2016). The statistical control charts are the foundations of SPC. Shewhart of the Bell telephone industries developed the statistical control charts in the 1920s (Montgomery, 2000; Muhammad & Faqir, 2012). Beverage manufacturing managers use the SPC chart to display process and quality metrics (Montgomery, 2000). The SPC chart consists of a centerline representing the mean value for the process, quality, or product parameter in control (e.g., meets the desired specification and standard). There are also two horizontal lines, the upper control limit (UCL) and the lower control limit (LCL), in the layout of the SPC chart (Muhammad & Faqir, 2012). These process charts are commonplace in most manufacturing firms

Process managers and leaders use the SPC to monitor the process, identify deviations from process standards, and articulate corrective measures to prevent

reoccurrence (Godina et al., 2018). It is common in most beverage and manufacturing organizations to see SPC charts on machines, production floors, and KPI boards with details of the critical process indicators that guarantee in-specification and just-in-time production. Godina et al. (2018) opined that managers in manufacturing firms use the process charts to indicate the established limits and specifications of a production parameter of interest. The corrective and improvement actions documented on the charts enable easy trouble-shooting and problem-solving.

Manufacturing managers use SPC charts to monitor process and quality parameters, reduce process variations, and improve product quality (Subbulakshmi et al., 2017). Muhammad and Faqir (2012) deployed the SPC chart to monitor four process and product parameters: weight, acidity and basicity (pH), citrate concentration, and amount to fill in the Swat Pharmaceutical Company. Muhammad and Faqir plotted the process and product parameters on the SPC chart. Muhammad and Faqir reported all four parameters to be out of control and required corrective actions to bring them back within specification. The outcomes of Muhammed and Faqir (2012) and Godina et al. (2018) are indications of the potential benefits of SPC in manufacturing operations. Thus, using SPC as a process and product quality control tool has implications for CI in the beverage industry. Thus, it is useful to examine the appropriate leadership styles for effectively and successfully deploying SPC as a CI tool.

SPC is a widely accepted model for monitoring and CI, especially in manufacturing organizations (Ved et al., 2013). Manufacturing leaders may use the SPC

to visualize the process, and product quality attributes to meet consumer and customer expectations (Singh et al., 2018). The pictorial representation of the SPC charts and the indication of the values outside the center (control) line are valuable strategies that managers may use to identify the out-of-control processes and parameters. Using SPC entails taking samples from the production batches, measuring the desired parameters, and then plotting these on control charts. Statistical analysis of the current and historical results might help manufacturing managers and leaders evaluate their process and products' status, confirm in-specification and areas that require intervention to ensure consistent quality (Ved et al., 2013).

The benefits of using the SPC include reducing process defects and wastes, enhancing process and product efficiency and quality, and compliance with local and international standards and regulations (Singh et al., 2018). Food and beverage managers may find CI tools like SPC useful in their quest for international quality certifications (Dora et al., 2014; Sarina et al., 2017). Quality certifications such as ISO serve as a formal attestation of the food and beverage product quality (Sarina et al., 2017). Thus, beverage industry leaders may use SPC to improve the process and product quality.

Notwithstanding its relevance as a CI tool, beverage manufacturing leaders struggle to maximize its benefit. Sarina et al. (2017) identified some of the barriers to successfully implementing SPC in the food industry to include resistance to change, lack of sufficient statistical knowledge, and inadequate management support. Successful implementation of SPC processes and systems requires leadership awareness and

commitment (Singh et al., 2018). Singh et al. (2018) opined that some factors responsible for CI initiatives' failure in manufacturing industries include the non-involvement and inability of process managers to motivate their employees towards an SPC-oriented operation. Inadequate management commitment is one of the barriers to implementing SPC processes in manufacturing organizations (Alsaleh, 2017; Sarina et al., 2017). Thus, successful implementation of SPC processes and systems requires leadership awareness and commitment. Lack of statistical knowledge is a threat to the implementation of SPC.

LMS

LMS is a production system where manufacturing managers and employees adopt practices and approaches to achieve high-quality process inputs and outputs (Johansson & Osterman, 2017). The Japanese auto manufacturer, TMC, introduced the lean concept in the early 50s (Krafcik, 1988). The LMS is an integral component of Toyota's manufacturing process (Bai et al., 2019; Krafcik, 1988). Identifying and eliminating non-value-added steps in the production cycle are the fundamental principles of the lean manufacturing system (Bai et al., 2019). The LMS also entails manufacturing managers' reduction and elimination of wastes (Bai et al., 2017). LMS is a well-researched subject in the manufacturing setting, especially its link with CI strategies. There are studies on LMS evolution (Fujimoto, 1999), implementation programs (Bamford et al., 2015; Stalberg & Fundin, 2016), and LMS tools and processes (Jasti & Kodali, 2015).

LMS is a CI tool that leaders may use to enhance manufacturing efficiency, quality, and reduce production losses (Bai et al., 2017). Some of the LMS characteristics

include high quality, flexible production process, production at the shortest possible time, and high-level teamwork amongst team members (Johansson & Osterman, 2017). Thus, the LMS is a strategy in most production systems, and leaders may use this tool to achieve CI. The benefits that manufacturing managers may derive from LMS include enhanced quality of products, enhanced human resources efficiency, improved employee morale, and faster delivery time (Jasti & Kodali, 2015). Bai et al. (2017) argued that manufacturing managers need to embrace transitioning from the traditional ways of doing things to more effective and efficient lean manufacturing practices that would enhance CI and growth. Nwanya and Oko (2019) further argued that culture operating using traditional systems and the apathy to transition to lean systems are some of the challenges of successful CI implementation in the Nigerian beverage manufacturing firms (Nwanya & Oko, 2019).

Manufacturing managers may adopt lean methods as strategies for CI and sustainable growth. LMS tools for CI include just-in-time, Kaizen, Six Sigma, 5S (housekeeping), Total Productive Maintenance (TPM), and Total Quality Management (TQM) (Bai et al., 2019; Johansson & Osterman, 2017). The next section includes discussions on the typical LMS tools in the beverage industry

Just-in-Time (JIT). JIT is a manufacturing methodology derived from the Japanese production system in the 1960s and 1970s (Phan et al., 2019). JIT is a manufacturing lean manufacturing and CI strategy that originated from the Toyota Corporation (Phan et al., 2019; Burawat, 2016). JIT is a production philosophy that

entails manufacturing products that meet customers' needs and requirements in the shortest possible time (Aderemi et al., 2019). Manufacturing leaders use just-in-time to reduce inventory costs and eliminate wastes by not holding too many stocks in the supply chain and manufacturing process (Phan et al., 2019). Reduced inventory costs and stockholding would improve manufacturing costs and efficiencies (Burawat, 2016; Onetiu & Miricescu, 2019). Ultimately, JIT can help manufacturing managers to improve the quality levels of their products, processes, and customer service (Aderemi et al., 2019; Phan et al., 2019).

The main principles of JIT include (a) the existence of a culture of promptness in the supply chain, (b) optimum quality, (c) zero defects, (d) zero stocks, (e) zero wastes, (f) absence of delays, and (g) elimination of bureaucracies that cause inefficiencies in the production flow (Aderemi et al., 2019; Onetiu & Miricescu, 2019). Beverages have prescribed total process time for optimum quality (Kunze, 2004). Holding excessive stock is a potential source of quality defects as beverages may become susceptible to microbial contamination and flavor deterioration (Briggs et al., 2011). Manufacturing managers may adopt JIT production to reduce the risks associated with excess inventory and stockholding.

Some of the JIT systems available to manufacturing managers are Kanban and Jidoka (Braglia et al., 2020; Nwanya & Oko, 2019). Kanban, originated by Taiichi Ohno at Toyota, is a tool for improving manufacturing efficiency (Saltz & Heckman, 2020). Kanban is a Japanese word that means signboard and is a visual management tool that

manufacturing managers may use to manage workflow through the various production stages and processes (Braglia et al., 2020; Saltz & Heckman, 2020). A manufacturing manager may use kanban to visualize the workflow, identify production bottlenecks, maximize efficiency, reduce re-work and wastes, and become more agile. Kanban is a scheduling tool for lean manufacturing and JIT production and is thus one of the philosophies for achieving CI (Braglia et al., 2020). Jidoka is another tool for achieving JIT manufacturing (Nwanya & Oko, 2019).

In most manufacturing organizations, including the beverage sector, the traditional approach of having operators and supervisors in front of machines to operate and ensure that process inputs and outputs are within the desired specification. This basic form of production requires the operators to spend valuable time standing by and watching the machines run. Jidoka entails equipping these machines with the capability of making judgments (Nwanya & Oko, 2019). This approach would enable leaders to free up time for operators, and so workers do more valuable work and add value than standing and watching the machines. Jidoka aligns with the JIT philosophy of eliminating non-value-adding activities and cutting down on lost times (Braglia et al., 2020).

Beverage manufacturing managers maximize process and product quality by implementing JIT systems and processes (Aderemi et al., 2019). Phan et al. (2019) examined the relationship between JIT systems, TQM processes, and flexibility in a manufacturing firm and reported a positive correlation between JIT and TQM practices. The results indicated a significant and positive correlation of 0.46 (at 1% level) between a

JIT system of set up time reduction and process control as a TQM procedure. Phan et al. (2019) further performed a regression analysis to assess the impact of TQM practices and JIT production practices on flexibility performance. Phan et al. reported a significant effect of setup time reduction on process control (R^2 = 0.094, F-Statistic= 8.05, p-value = 0.000). Furthermore, the regression analysis outcome indicated that the JIT and TQM systems positively and significantly affected manufacturing flexibility. This relationship between JIT, TQM, and manufacturing efficiency might have implications for Nigerian beverage industry managers. Thus, it is critical for beverage industry leaders to appreciate the existence, if any, of leadership styles prevalent in the organization and the successful implementation of CI strategies such as JIT and TQM.

There is a link between JIT and quality management (Aderemi et al., 2019; Phan et al., 2019). Other elements of JIT, such as JIT delivery by suppliers and JIT link with customers, can also have a positive impact on TQM practices like supplier and customer involvement (Zeng et al., 2013). Thus, JIT is a critical CI strategy that manufacturing firms can use to improve product quality. Implementing the appropriate leadership for JIT has implications for CI. The intent of this study is to assess the relationship between the desired transformational leadership styles and CI in the Nigerian beverage industry.

Total Quality Management (TQM). TQM is a management system for improving quality performance (Nguyen & Nagase, 2019). The original intention of introducing and implementing TQM systems in a manufacturing setting was to deliver superior quality products that exceed customers' expectations (Garcia et al., 2017; Powel,

1995). Over the years, TQM evolved into a long-term strategy and business management process geared towards customer satisfaction. TQM is a process-centered, customer-focused, and integrated system (Gracia et al., 2017; Nguyen & Nagase, 2019). TQM enables business managers to build a customer-focused organization (Marchiori & Mendes, 2020). This philosophy would involve every organization member working to improve processes, products, and services in the manufacturing setting. TQM also entails effective communication of quality expectations, continual improvement, strategic and systemic approaches, and fact-based decision-making (Marchiori & Mendes, 2020). Effective TQM implementation requires leadership support.

Implementing TQM practices improves manufacturing operational performance (Tortorella et al., 2020), and this benefit is essential to a beverage manufacturing leader. Communicating TQM policies, seeking employees' involvement in quality improvement strategies, using SPC tools, and having the mentality for zero defects are some characteristics of TQM-focused leaders. There is a direct correlation between employees' participation in TQM and its successful implementation as a CI initiative.

In a 21 manufacturing firm survey in the Nagpur region, Hedaoo and Sangode (2019) reported a positive and significant correlation of 0.5000 (at 0.001 level) between employee involvement in TQM practices and CI. Leaders who promote employee involvement would likely achieve their TQM and CI goals (Hedaoo & Sangode, 2019). Thus, beverage leaders need to consider engaging employees in all aspects of production as a yardstick for delivering CI goals. Employees and other levels of employees are

actively involved in the entire supply chain operations of the organization and are critical stakeholders for successful CI implementation (Marchiori & Mendes, 2020). Beverage industry leaders need to appreciate the implications of employee engagement for CI. Understanding and appreciating the relationship between leadership styles that stimulate employee engagement, such as intellectual stimulation and idealized influence, is a critical requirement for CI and one of the objectives of this study.

TQM also involves collaborating with all organizational functions and sub-units to meet the firm's quality promise and objectives. Karim et al. (2020) opined that TQM is a strategic quality improvement system in food manufacturing and meets specific customer and consumer needs. TQM also has a significant and positive correlation with perceived service quality and customer satisfaction (Nguyen & Nagase, 2019). The beverage manufacturing firms would find TQM valuable as a potential tool for improving customer base and consumer satisfaction, and driving competitiveness. Successful implementation of TQM and other lean-based continuous management processes is a challenge for Nigerian manufacturing firms (Nwanya & Oko, 2019). The objective of this study is to establish, if any, the relationship between specific beverage managers' leadership styles and CI strategies including continuous quality improvement. If TQM has implications for CI, it would be critical for beverage industry managers to understand the link and drive the appropriate transformational leadership styles for CI.

Total Productive Maintenance (TPM*).* TPM is a maintenance philosophy that entails keeping production equipment in optimal and safe working conditions to deliver

quality outputs and results (Abhishek et al., 2015; Abhishek et al., 2018; Sahoo, 2020). TPM is a lean management tool for CI (Sahoo, 2020). Like other lean-based systems, TPM originated from Japan in 1971 by Nippon Denso Company Limited, a TMC supplier (Abhishek et al., 2018). TPM is the holistic approach to equipment maintenance, which entails no breakdowns, no small stops or reduced running efficiency, elimination of defects, and avoidance of accidents (Sahoo, 2020).

TPM involves machine operators' engagement in maintenance activities (Abhishek et al., 2015; Guarientea et al., 2017; Nwanza & Mbohwa, 2015; Valente et al., 2020). TPM is proactive and preventive maintenance to detect the likelihood of machine failure and breakdowns and improve equipment reliability and performance (Valente et al., 2020). Leaders build the foundation for improved production by getting operators involved in maintaining their equipment and emphasizing proactive and preventative care. Business leaders' ability to deliver quality products that meet customer expectations is dependent on the working conditions of the production machines. TPM has a direct impact on TQM and manufacturing firms' performance (Sahoo, 2020; Valente et al., 2020). TPM pillars include autonomous maintenance, planned maintenance, quality maintenance, and focused improvement (Guarientea et al., 2017; Lean Manufacturing Tools, 2020).

CI and Quality Management in the Beverage Industry.

Beverages could be alcoholic and non-alcoholic products (Briggs et al., 2011; Kunze, 2004). These products, especially non-alcoholic beverages, are prone to spoilage

and microbial contamination and could pose a health and safety risk to consumers (Aadil et al., 2019; Briggs et al., 2011). QM is an integral element of TQM and could serve as a tool for ascertaining the root cause of quality defects and contamination in the production process (Al-Najjar, 1996; Sachit et al., 2015). Sachit et al. (2015) reported that food manufacturing leaders deployed QM to achieve zero customer and regulatory complaints and reduced finished product packaging defects from 1.20% to 0.27%. Identifying and eliminating these sources earlier in the production process reduced the re-work cost later in the supply chain.

The quality of any beverage includes such factors as the quality of the finished product and the quality of raw materials, processing plant quality, and production process quality (Aadil et al., 2019). Quality defects and deviations can lead to product defects, food safety crises, and product recall (Aadil et al., 2019; Kakouris & Sfakianaki, 2018). Beverage quality defects include deterioration of the product, imperfections in beverage packaging, microbial contamination, variations in finished product analytical indices, and negative quality characteristics such as off-flavors, unpleasant taste, and foul smell (Aadil et al., 2019). There are other quality deviations such as variations in volume and weight of beverage, products exceeding best before date, inconsistencies and errors in product labeling and coding, and extraneous materials and particles in the finished product. A beverage manufacturing plant's quality management system is the totality of the systems and processes to deliver all product quality indices and satisfy customer expectations. The ultimate reflection of beverage quality is the ability to meet and satisfy customers'

needs and consumers.

Quality is somewhat a tricky subject to define and is a multidimensional and interdisciplinary concept. Gavin (1984) described the five fundamental approaches for quality definition: transcendent, product-based, manufacturing-based, and value-based processes. In the beverage manufacturing setting, quality is the aggregation of the process and product attributes that meet the desired standard and customer expectations. Quality control is a system that beverage industry leaders use for maintaining the quality standards of manufactured products. The International Organization for Standardization (ISO) is one of the regulators of quality and quality management systems. As defined by the ISO standards, quality control is part of an organization's quality management system for fulfilling quality expectations and requirements (ISO 9000:2015, 2020). The ISO standards are yardsticks and practical guidelines for manufacturing leaders to implement and ensure quality control in a manufacturing organization (Chojnacka-Komorowska & Kochaniec, 2019). Some of these ISO standards include:

- ISO 9004:2018-06: Quality management – Organization quality – Guidelines for achieving lasting success)
- ISO 10005:2007: Quality management systems – Guidelines on quality plans.
- ISO 19011:2018-08: Guidelines for auditing management systems.
- ISO/TR 10013:2001: Guidelines on the documentation of the quality management system (Chojnacka-Komorowska & Kochaniec, 2019)

Achieving quality control in a manufacturing process requires monitoring quality results and outcomes in the entire production cycle. Quality management is a critical subject in beverage manufacturing industries (Desai et al., 2015). Most beverage companies produce alcoholic and non-alcoholic drinks that customers and the general public readily consume. There is a high requirement for quality standards and food safety in this industry (Kakouris & Sfakianaki, 2018). The beverage sector occupies a strategic position in the global food products market. As manufacturers of products consumed by the public, there is a critical link between this industry and quality. The beverage industry needs to maintain high-quality standards that meet the requirement of internal regulations and increasingly sophisticated customers (Desai et al., 2015; Po-Hsuan et al., 2014). Also, these companies need to be profitable in the midst of growing competition and harsh economic realities.

Quality management in the beverage sector covers all aspects of production, from production material inputs, production raw materials, packaging materials, and finished products (Kakouris & Sfakianaki, 2018; Supratim & Sanjita, 2020). There is a high risk of producing and distributing sub-standard and quality defective products if the quality control process only occurs during the inspection and evaluation of the finished product. The beverage manufacturing quality management processes are relevant in the entire supply chain, including the production, processing, and packaging phases (Desai et al., 2015; Supratim & Sanjita, 2020). Thus, the manufacturing of high-quality and competitive products, devoid of any food safety risks, is a challenge facing beverage

manufacturing managers. Beverage manufacturing managers may focus on improving operational efficiency and product quality to overcome these challenges. Successful implementation of process and quality improvement strategies helps the beverage industry managers and leaders enhance their products' quality (Kakouris & Sfakianaki, 2018).

Section 2: The Project

Section 2 includes (a) restating the purpose statement from Section 1, (b) description of the data collection process, (c) rationale and strategy for identifying and selecting the research participants, (d) definition of the research method and design. The section also includes discussing and clarifying population and sampling techniques and strategies for complying with the required ethical standards, including the informed consent process and protecting participants' rights and data collection instruments.

This section also includes the definition of the data collection techniques, including the advantages and disadvantages of the preferred data collection technique. The other elements of this section are (a) data analysis procedures, (b) restating the research questions and hypothesis from Section 1, (c) defining the preferred statistical analysis methods and tools, (d) analysis of the threats and strategies to study validity, and (e) transition statement summarizing the section's key points.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI. The independent variables were idealized influence and intellectual stimulation, while CI is the dependent variable. The target population included manufacturing managers of beverage companies located in southern Nigeria. The implications for positive social change included the potential to better understand the correlations of organizational performance, thus increasing the opportunity for the growth

and sustainability of the beverage industry. The outcomes of this study may help organizational leaders understand transformational leadership styles and their impact on CI initiatives that drive organizational performance.

Role of the Researcher

The role of the researcher was one of the essential considerations in a study. A researcher's philosophical worldview may affect the description, categorization, and explanation of a research phenomenon and variable (Murshed & Zhang, 2016; Saunders et al., 2019). The researcher's role includes collecting, organizing, and analyzing data (Yin, 2017). Irrespective of the chosen research design and paradigm, there is a potential risk of bias (Saunders et al., 2019). The researcher needs to be aware of these risks and put strategies to mitigate the adverse effects of research bias on the study's quality and outcome (Klamer et al., 2017; Kuru & Pasek, 2016). A quantitative researcher takes an objective view of the research phenomenon and maintains an independent disposition during the research (McCusker & Gunaydin, 2015; Riyami, 2015). This stance increases the quantitative researcher's chances to reduce bias and undue influence on the research outcome.

The interest in this research area emanated from my years of experience in senior management and leadership positions in the beverage industry. I chose statistical methods to analyze the research data and assess the relationships between the dependent and independent variables. I used this strategy to mitigate the potential adverse effect of researcher bias. In this study, my role included contacting the respondents, sending out

the questionnaires, collecting the responses, analyzing the research data, and reporting the research findings and results. A researcher needs to guarantee respondents' confidentiality (Yin, 2017). I ensured strict compliance with respondents' confidentiality as a critical element of research ethics and quality by (a) not collecting personal information of the respondents, (b) not disclosing the information and data collected from respondents with any other party, and (c) storing respondents' data in a safe place to prevent unauthorized access. The *Belmont Report* protocol includes the guidelines for protecting research participants' rights and the researcher's role related to ethics (Adashi et al., 2018). I complied with the *Belmont Report* guidelines on respect for participants, protection from harm, securing their well-being, and justice for those who participate in the study.

Participants

Research samples are subsets of the target population (Martinez- Mesa et al., 2016; Meerwijk & Sevelius, 2017). Identifying and selecting participants with sufficient knowledge about the research is an integral part of the research quality and a researcher's responsibility (Kohler et al., 2017). The research participants must be willing to participate in the study and withstand the rigor of providing accurate and valuable data (Kohler et al., 2017; Saunders et al., 2019). One of the researcher's responsibilities is identifying and having access to potential participants (Ross et al., 2018).

The participants of this study included beverage industry managers in the South-eastern part of Nigeria. Participants in this category included supervisors, managers, and leaders who operate and function in various departments of the beverage industry. I had a

fair idea of most of the beverage industries' names and locations in the country. My strategy involved sending the research subject and objective to potential participants to solicit their support by taking part in the questionnaire survey. The participants included those managers in my professional and business network. In all circumstances, participants gave their consent to participate in the study by completing a consent form. Participants completed the survey as an indication of consent.

Continuous and effective communication is one of the strategies for stimulating active participation (Yin, 2017). I had open communication channels with the respondents through phone calls and emails. Due to the COVID-19 pandemic and the risks of physical contacts and interactions, I chose remote and virtual communication channels like phone calls, Whatsapp calls, and meeting platforms like zoom. One of the ethical standards and responsibilities of the researcher is to inform the participants of their inalienable rights and freedom throughout the study, including their right to confidentiality and withdrawal from the study at any time (Adashi et al., 2018; Ross et al., 2018). I clarified participants' rights to confidentiality and voluntary withdrawal in the consent form.

Research Method and Design

A researcher may use different methodologies and designs to answer the research question (Blair et al., 2019). The research method is the researcher's strategy to implement the plan (design), while the design is the plan the researcher plans to use to answer the research question (Yin, 2017). The nature of the research question and the

researcher's philosophical worldview influence research methodology and design (Murshed & Zhang, 2016; Yin, 2017). The next section includes the definition and analysis of the research method and design.

Research Method

A researcher may use quantitative, qualitative, or mixed-method methods (Blair et al., 2019; Yin, 2017). I chose the quantitative research method for this study. Several factors may influence the researcher's choice of research methodology (Murshed & Zhang, 2016).

The researcher's philosophical worldview is another factor that may influence a research method (Murshed & Zhang, 2016). The quantitative research methodology aligns with deductive and positivist research approaches (Park & Park, 2016). Quantitative research also entails using scientific and quantifiable data to arrive at sufficient knowledge (Yin, 2017). The positivist worldview conforms to the realist ontology, the collection of measurable research data, and scientific techniques to analyze the data to arrive at conclusions (Park & Park, 2016). In applying positivism and using scientific and statistical approaches to test hypotheses and determine the relationship between variables, the researcher detaches from the study and maintains an objective view of the study data and variables. The quantitative method is appropriate when the researcher intends to examine the relationships between research variables, predict outcomes, test hypotheses, and increase the generalizability of the study findings to a

broader population (Saunders et al., 2019; Tomic et al., 2018; Yin, 2017). These characteristics made the quantitative method suitable for this study

Qualitative research is an approach that a researcher might use to understand the underlying reasons, opinions, and motivations of a problem or subject (Saunders et al., 2019). Unlike quantitative research that a researcher might use to quantify a problem, qualitative research is exploratory (Park & Park, 2016). A qualitative researcher has a limited chance to generalize the results (Yin, 2017). These two qualities made the qualitative method unsuitable for this study. Furthermore, some qualitative research methodologies align with the subjectivist epistemological worldview (Park & Park, 2016). The researcher may become the data collection instrument in a qualitative study using tools like interviews, observations, and field notes to collect data from study participants (Barnham, 2015; McCusker & Gunaydin, 2015). In this study, I collected quantitative data using the questionnaire technique, and thus, the quantitative methodology was the most appropriate approach for the research.

The mixed-method includes qualitative and quantitative methods (Carins et al., 2016; Thaler, 2017). In this method, the researcher collects both quantitative and qualitative data and combines the characteristics of both methodologies (Yin, 2017). The mixed-method was not appropriate for this study because I did not have a qualitative research component.

Research Design

The research design is the plan to execute the research strategy data (Yin, 2017). I used a correlational research design in this study. The correlational design is one of the research designs within the quantitative method (Foster & Hill, 2019; Saunders et al., 2019). The correlational research design is suitable for assessing the relationship between two or more variables (Aderibigbe & Mjoli, 2019). In a correlational analysis, a researcher investigates the extent to which a change in one variable leads to a difference or variation in the other variables (Foster & Hill, 2019). As stipulated in the research question and hypotheses, the purpose of this study was to investigate, if any, the relationship and correlation between the independent and dependent variables.

The research question and corresponding hypotheses aligned with the chosen design. The cross-sectional survey was the preferred technique for this study. The cross-sectional survey technique is common for collecting data from a cross-section of the population at a given time (Aderibigbe & Mjoli, 2019; Saunders et al., 2019). The cross-sectional survey method entails collecting data from a random sample and generalizing the research finding across the entire population (El-Masri, 2017).

Other quantitative research designs that a researcher might use include descriptive and experimental techniques (Saunders et al., 2019). A descriptive design enables the researcher to explain the research variables (Murimi et al., 2019). Descriptive analysis is not suitable for assessing the associations or relationships between study variables (Murimi et al., 2019). The descriptive research design was not suitable for this study.

The experimental research design is suitable for investigating cause-and-effect relationships between study variables (Yin, 2017). By manipulating the independent (predictor) variable, the researcher might assess and determine its effect and impact on the dependent (outcome) variable (Geuens & De Pelsmacker, 2017). Most experimental research involves manipulating the study variables to determine causal relationships (Saunders et al., 2019). Choosing the cause-and-effect relationship enables the researcher to make inferential and conclusive judgments on the relationship between the dependent and independent variables. Though there was the possibility of a cause-and-effect relationship between the study variables, I did not investigate this causal relationship in the research. Bleske-Rechek et al. (2015) argued that correlation between two variables, constructs, and subjects does not necessarily mean a causal relationship between the variables and constructs. Correlational analysis is suitable for testing the statistical relationship between variables and the link between how two or more phenomena (Green & Salkind, 2017). I did not investigate a cause-and-effect relationship. Thus, a correlational design was appropriate for the study.

Population and Sampling

Population

The target population for this study consisted of beverage manufacturing managers in South-Eastern Nigeria. Managers, selected randomly from these beverage companies, participated in the survey. The accessible population of beverage manufacturing managers was 300, including senior managers, middle managers, and

supervisors. The strategy also included using professional sites like LinkedIn, social media pages, and industry network pages to reach out to the participants.

Participants were managers in leadership positions and responsible for supervising, coordinating, and managing human and material resources. These beverage manufacturing managers occupy leadership positions for the implementation of CI initiatives in their organizations (McLean et al., 2017). Manufacturing managers interact with employees and serve as communication channels between senior executives and shopfloor employees to implement business decisions to attain organizational goals (Gandhi et al., 2019). These managers can influence the organization's direction towards CI initiatives and execute improvement actions (Gandhi et al., 2019; McLean et al., 2017). Beverage managers who meet these criteria are a source of valuable knowledge of the research variables.

Sampling

There are different sampling techniques in research. Probability and nonprobability sampling are the two types of sampling techniques (Saunders et al., 2019). An appropriate sampling technique contributes to the study's quality and validity (Matthes & Ball, 2019). The choice of a sampling method depends on the researcher's ability to use the selected technique to address the research question.

I chose the probability sampling method for this study. This sampling technique entails the random selection of participants in a study (Saunders et al., 2019). A fundamental element of random sampling is the equal chance of selecting any individual

or sample from the population (Revilla & Ochoa, 2018). Different probability sampling types include simple random sampling, stratified random sampling, systematic random sampling, and cluster random sampling methods (El-Masari, 2017). Simple random selection involves an equal representation of the study population (Saunders et al., 2019). One of the advantages of this sampling technique is the opportunity to select every member of the population. Systematic random sampling is identical to the simple random sampling technique (Revilla & Ochoa, 2018). Systematic random sampling is standard with a large study population because it is convenient and involves one random sample (Tyrer & Heyman, 2016). Systematic random sampling consists of the selection of samples from an ordered sample frame. Though there is an increased probability for representativeness in the use of systematic random and simple random sampling, these techniques are prone to sampling error (Tyrer & Heyman, 2016; Yin, 2017). Using these sampling methods might exclude essential subsets of the population.

Stratified sampling is another form of probability sampling for reducing sampling error and achieving specific representation from the sampling population (Saunders et al., 2019). Stratified random sampling involves grouping the sampling population into strata and identifying the different population subsets (Tyrer & Heyman, 2016). Identifying the population strata is one of the downsides of stratified sampling (El-Masari, 2017). The clustered sampling method is appropriate for identifying the population strata (Tyrer & Heyman, 2016). The challenges and difficulties of using other random sampling

techniques made random sampling the most preferred for the study. Thus, simple random sampling was the preferred technique for identifying the study participants.

In simple random sampling, each sample has equal opportunity and the probability of selection from the study population (Martinez- Mesa et al., 2016). These sample frames are a subset of the population to choose the research participants. Thus, the sample frame consisted of the managers from the identified beverage companies that formed part of the respondents. Each of the beverage manufacturing managers in the sample frame had equal chances of selection. Section 3 includes a detailed description of the actual sample for this study. An additional benefit of using the simple random sampling technique is the potential to generalize the research findings and outcomes (Revilla & Ochoa, 2018). This benefit enabled me to achieve an important research objective of generalizing the research outcome across the other population of beverage industries that did not form part of the target population and frame. The probability sampling techniques are more expensive than the nonprobability sampling methods (Revilla & Ochoa, 2018). Attempting to reach out to all beverage manufacturing managers might lead to additional traveling and logistics costs. There is also the threat of not having access to the respondents.

Nonprobability sampling involves nonrandom selection (Saunders et al., 2019; Yin, 2017). The researcher's judgment and the study population's availability are determinants of nonprobability samples (Sarstedt et al., 2018). Purpose sampling and convenience sampling are two standard nonprobability sampling methods (Revilla &

Ochoa, 2018). Purposeful sampling is appropriate for setting the criteria and attributes of the specific and desired population and participants for the study (Mohamad et al., 2019). The convenience sampling method involves selecting the study population and participants based on their availability for the study (Haegele & Hodge, 2015; Saunders et al., 2019). Some of the drawbacks of nonprobability sampling include the non-representation of samples and the non-generalization of research results (Martinez- Mesa et al., 2016). Thus, the random sampling technique was the preferred sampling method for this study.

Sample Size

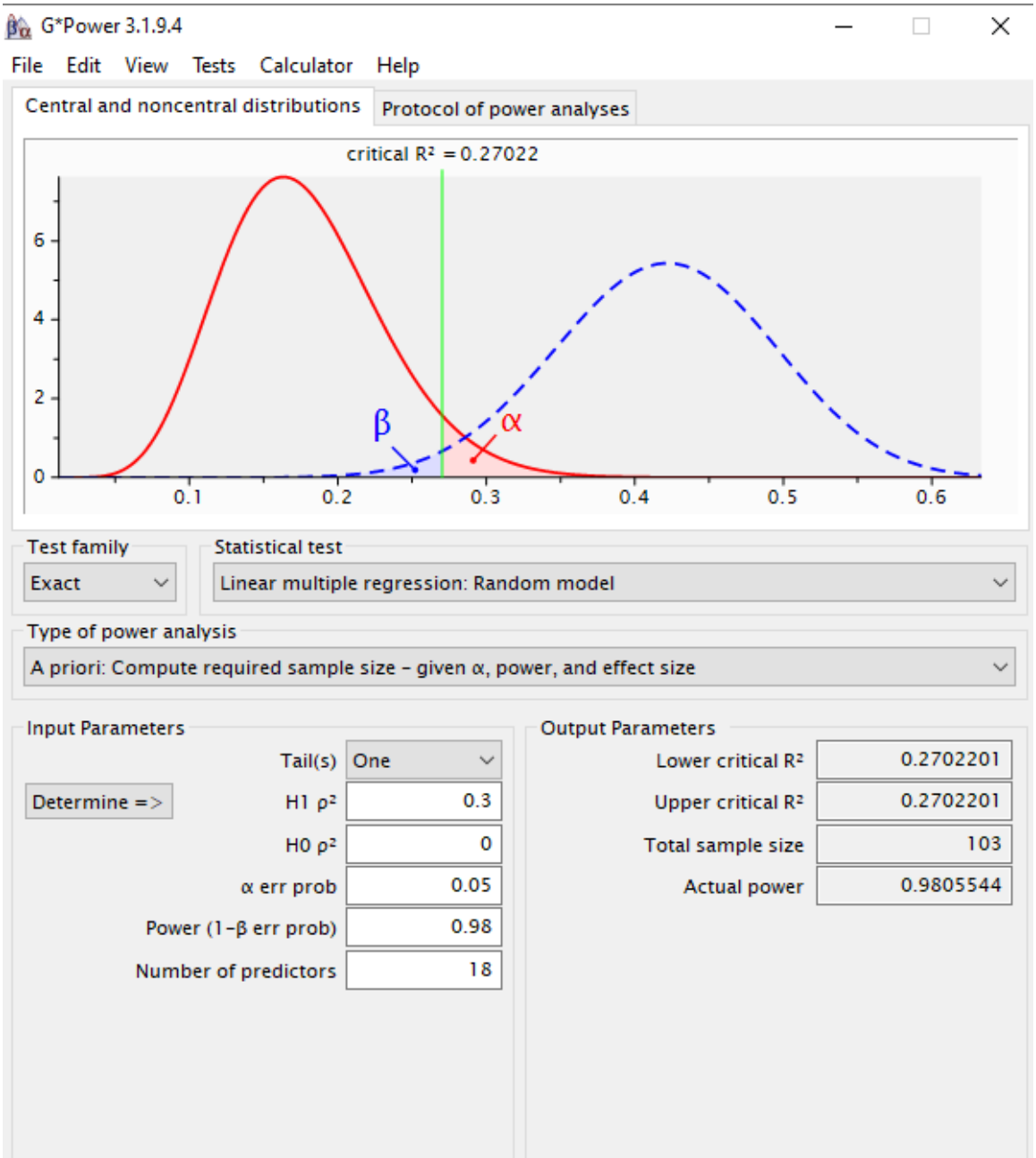
The sample size is a critical factor that affects the research quality (Saunders et al., 2019). For this non-experimental research, external validity threats might affect the extent of generalization of the study outcomes (Torre & Picho, 2016; Walden University, 2020). Sample size and related issues were some of the external validity factors of the study. Determining and selecting the appropriate sample size for a study are factors that enhance the study's validity (Finkel et al., 2017). There are different strategies for determining the proper sample size for a survey. Conducting a power analysis using v 3.9 of G*Power to estimate the appropriate sample size for a study is one of the steps a researcher might take to ensure the external validity of the study (Faul et al., 2009; Fugard & Potts, 2015).

To calculate sample size using the G*Power analysis, the researcher needs to determine the alpha, effect size, and power levels. Faul et al. (2009) proposed that a

medium-size effect of 0.3 and a power level above 0.8 are reasonable assumptions. My G*Power analysis inputs included a medium effect size of 0.3, a power level of 0.98, and an alpha of 0.05. I applied these metrics in the G*Power analysis and achieved a sample size of 103. The G*Power sample size interphase and calculation are in figure 1 below.

Figure 1

*Sample size Determination using G*Power Analysis*



Using the appropriate sample size is a critical requirement for regression analysis and could influence research results (Green & Salkind, 2017). Yusra and Agus (2020) provide a typical sample size for regression analysis in the food and beverage industry-related study. Yusra and Agus (2020) collected data using the questionnaire technique to determine the relationship between customers' perceived service quality of online food delivery (OFD) and its influence on customer satisfaction and customer loyalty, moderated by personal innovativeness. Yusra and Agus used 158 usable responses in the form of completed questionnaires for their regression analysis. Park and Bae (2020) conducted a quantitative study to determine the factors that increase customer satisfaction among delivery food customers. Park and Bae collected 574 responses from customers for multiple regression analysis using SPSS.

In the Nigerian context, Onamusis et al. (2019) and Omiete et al. (2018) presented different sample sizes for their empirical studies. Onamusi et al. (2019) examined the moderating effect of management innovation on the relationship between environmental munificence and service performance in the telecommunication industry in Lagos State, Nigeria. Onamusi et al. administered a structured questionnaire for six weeks for their regression analysis. In the first three weeks, Onamusi et al. collected 120 completed questionnaires and an additional 87 questionnaires, making 207 out of the population of 240. Out of the 207, only 162 questionnaires met the selection criteria, taking the actual response rate to 67.5%. Onamusi et al. (2019) is a typical indication of the peculiarities and expectations of sampling and survey response rate in Nigeria. The intent was to

verify the appropriateness of the 103 sample size from the G*Power analysis by using other methods. Another method for sample size determination is Taro Yamane's formula (Omiete et al., 2018). This formula is stated as:

$$n = N/ (1+N (e)^2)$$

Where:

n = determined sample size

N = study population

e = significance level of 0.05 (95% confidence level)

1 = constant.

Substituting the study population of 300 and using a significance level of 0.05 gave a determined sample size of 171. Thus the sample size for the five beverage companies was 171, and 171 surveys was distributed to the participants. Omiete et al. (2018) deployed this method to study the relationship between transformational leadership and organizational resilience in food and beverage firms in Port Harcourt, Nigeria.

Ethical Research

A researcher needs to consider and manage ethical issues related to the study. There are different lenses through which a researcher might view the subject of research ethics. In most cases, there are research ethics guidelines and research ethics review committees that regulate compliance with ethical norms and provisions (Phillips et al., 2017; Stewart et al., 2017). However, a researcher needs to take a holistic view of the

potential ethical concerns of the study beyond the scope of the provisions and ethical committee guidelines (Cascio & Racine, 2018). Thus, there might not be a complete set of rules that applies to every research to guide ethical conduct. Still, the researcher must ensure that critical ethical issues related to the study guide such processes as collecting data, privacy, and confidentiality, and protecting the rights and privileges of participants.

A common research ethics issue is the process and strategy for obtaining the participants' consent (Cascio & Racine, 2018). A researcher must ensure that the participants give their full support and voluntary agreement to participate in the study. The researcher also needs to show evidence of this consent in the form of a duly signed and acknowledged consent form by each participant. I presented the consent form to the participants. The consent form included the purpose of the study, the participants' role, the requirement for participants to give their voluntary consent, the right of participants to withdraw from the study at any time without hindrance and encumbrances. An additional research ethics consideration is the confidentiality of participants' data and information (Cascio & Racine, 2018; Stewart et al., 2017). The informed consent form included a section that will assure participants of their data and information confidentiality. The participant read, acknowledged, and proceeded to complete the survey as confirmation of their acceptance to participate in the study. Participants who intended to withdraw from the study had different options. The easiest option was for the participants to stop taking part in the survey without any notice. There was also the option of sending me an email or text message informing me of their withdrawal. The participants were not under any

obligation to give any reasons for withdrawal and were not under any legal or moral obligation to explain their decisions to withdraw. There was no material, cash, or incentive compensation for the participants.

An additional requirement of research ethics is for the researcher to take actual steps to maintain participants' confidentiality (Cascio & Racine, 2018). Though I knew a few of the participants due to our engagement in different sector activities and events, there was no intent to collect personally identifiable information such as names of the participants and other data that might reduce the chances of maintaining confidentiality and anonymity (for the participants I did not know before the study). I stored participants' data securely in an encrypted disk and safe for 5 years to protect participants' confidentiality. I had the approval of the institutional review board (IRB) of Walden University. The study IRB approval number is 07-02-21-0985850.

Data Collection Instruments

MLQ

The Multifactor Leadership Questionnaire (MLQ), developed by Bass and Avilio was the data collection instrument. The Form-5X Short is the most popular version of the MLQ for measuring leadership behaviors (Bass & Avilio, 1995). The MLQ is a data collection instrument for measuring transformational, transactional, and laissez-faire leadership theories (Samantha & Lamprakis, 2018). Bass and Avilio (1995) developed the MLQ to measure leadership behaviors on a 5-point Likert-type scale. The MLQ

consists of 45 items: 36 leadership and nine outcome questions (Bass & Avilio, 1995; Samantha & Lamprakis, 2018).

MLQ is one of the most widely used and validated tools for measuring leadership styles and outcomes (Antonakis et al., 2003; Bass & Avilio, 1995). Samantha and Lamprakis (2018) opined that the five areas of transformational leadership measured with the MLQ include: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individual consideration. Researchers such as Antonakis et al. (2003) reported a strong validity of the MLQ in their study of 3000 participants to assess the psychometric properties of the MLQ. The MLQ is a worldwide and validated instrument for measuring leadership style (Antonakis et al., 2003). Despite the criticism, there are significant correlations (R=0.48) between transformation leadership scales of the MLQ (Bass & Avilio, 1995). Lowe et al. (1996) performed thirty-three independent empirical studies using the MLQ and identified a strong positive correlation between all components of transformational leadership.

After acknowledging the MLQ criticisms by refining several versions of the instruments, the version of the MLQ, Form 5X, is appropriate in adequately capturing the full leadership factor constructs of transformational leadership theory (Bass & Avilio, 1997;). Muenjohn and Amstrong (2008) in their assessment of the validity of the MLQ, reported that the overall chi-square of the nine factor model was statistically significant ($x^2 = 540.18$; $df = 474$; $p < .01$) and the ratio of the chi-square to the degrees of freedom (x^2/df) was 1.14. Muenjohn and Amstrong further stated that the root mean square error

of approximation (RMSEA) was 0.03, the goodness of fit index (GFI) was .84, and the adjusted goodness of fit index (AGFI) was .78. Thus, the instrument is reasonably of good fit for assessing the full range leadership model

I used the MLQ to measure idealized influence and intellectual stimulation leadership constructs. My intent was to determine the relationship, if any, between the predictor variables of transformational leadership models and the outcome variable of CI. Thus, the MLQ leadership models that applied to this study are idealized influence and intellectual stimulation. Thus, the leadership items, scales, and models of interest were those related to idealized influence and intellectual stimulation. In the MLQ, these were items number 6, 14, 23, and 34 for idealized influence and 2, 8, 30, and 32 for intellectual stimulation.

Purchase, Use, Grouping, and Calculation of the MLQ Items

I purchased the MLQ from Mind Garden and received approval to use the instrument for the study. The purchased instrument included the classification of leadership models into items and scales. Administering the MLQ included presenting the actual questions and scoring scales to the participants. Upon return of the completed survey, the next step included using the MLQ scoring key (included in the purchased instrument) to group the leadership items by scale. The next step included calculating the average by scale. The process involved adding the scores and calculating the averages for all items included in each leadership scale. I used MS Excel, a spreadsheet tool to record, organize and calculate averages. I used the calculated averages for the two idealized influence and intellectual stimulation leadership items for SPSS analysis.

The Deming Institute Tool for Measuring CI

The Deming institute approved the use of the PDCA cycle and the associated questions to measure the dependent variable. The tool was not bought as the institute confirmed that students who intend to use the tool to disseminate Deming's work could do this at no cost. The tool consisted of seven questions for the four stages of the CI cycle of plan, do, check and act.

Demographic data

I collected demographic data which included gender, age, job title, years of experience, and the specific function within the beverage industry where the manager operates. The beverage industry leaders manage different operations in the brewing, fermentation, packaging, quality assurance, engineering, and related functions (Boulton & Quain, 2006; Briggs et al., 2011). Identifying the leaders' years of experience implementing CI initiatives supported the confirmation of the leaders' competencies and knowledge of the dependent variable, data analysis and selection criteria. In a similar study, Onamusi et al. (2019) included a demographic question of their respondents' number of years of experience in the questionnaires.

Data Collection Technique

The survey method was the preferred technique for data collection. The questionnaire is one of the most widely used survey instruments for collecting research data (Lietz, 2010; Saunders et al., 2016). Tan and Lim (2019), for instance, collected survey data through questionnaires for the quantitative study of the impact of

manufacturing flexibility in food and beverage and other manufacturing firms. In this study, the plan included using the questionnaire to collect demographic data and measure the three variables of idealized influence, intellectual stimulation, and CI.

There are usually two types of research questionnaires: open-ended and closed-ended (Lietz, 2010; Yin, 2017). Open-ended questionnaires contain open-ended questions, while closed-ended questionnaires have closed-ended questions (Bryman, 2016). Closed-ended questionnaire was used to collect data from participants. Administering closed-ended questionnaires to collect data in quantitative studies is a common practice.

The benefits of using the questionnaire for data collection include its relative cheapness and the structure and simplicity of laying out the questions (Saunders et al., 2016). Questionnaires are simple to use and easy to administer (Bryman, 2016). There are downsides to using the questionnaire in data collection. Saunders et al. (2016) opined that the respondents might not understand the questions, and the absence of an interviewer makes it impossible for the researcher to ask probing and clarifying questions. This challenge is a general issue for data collection instruments where the respondents complete the survey alone and without interaction with the interviewer or researcher. I managed this challenge by keeping the questions as simple, easily understood, and straightforward as possible. Another disadvantage of using the questionnaire is the potentially high rate of low response (Bryman, 2016; Yin, 2017). Scholars who use

survey questionnaires for data collection need to be aware of the challenges and take steps to mitigate the potential impacts on the study.

I used different strategies to send the questionnaires to the participants. Some participants received the survey questionnaire as emails while others received as attachments in their LinkedIn emails. Participants provide honest, objective, and full disclosures when the survey process is anonymous and confidential (Bryman, 2016; Saunders et al., 2019). Though the participant recruitment and data collection processes were not entirely confidential, I ensured that the process and identity of participants remained anonymous. Thus, the survey included disclosing little or no personal details or information. The Likert scale is one of the most popular ordinal scales to categorize and associate responses into numeric values (Wu & Leung, 2017). The 5-pointer Likert scale was used to measure the constructs on the scale of 4 being 'frequently, if not always,' and 0 being 'None.'

Latent study variables are those that the researcher cannot observe in reality (Cagnone & Viroli, 2018). One approach to measure latent variables is to use observable variables to quantify the latent variables (Bartolucci et al., 2018; Cagnone & Viroli, 2018). The observable variables were the actual survey questions. The plan included using the observable variables to quantify the latent variables by adding the unweighted scores for all the respective observable variables associated with each latent variable. For instance, summing the observable variables in questions 13-19 gave the CI latent variable score.

Data Analysis

The overarching research question was: What is the relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI? The research hypotheses were:

Null Hypothesis (H_0): There is no relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI.

Alternative Hypothesis (H_1): There is a relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI

The regression analysis was the statistical tool of interest for this study. The following section includes the definition and clarification of the regression analysis model.

Regression Analysis

Regression analysis was the statistical tool I chose for this area of study. Regression analysis is a statistical technique for assessing the relationship between two variables (Constantin, 2017) and estimating the impact of an independent (predictor) variable on a dependent (outcome) variable (Chavas, 2018; Da Silva & Vieira, 2018). Regression analysis also allows the control and prediction of the dependent variable based on changes and adjustments to the independent variable (Chavas, 2018). The linear regression is a single-line equation that depicts the relationship between the predictor and outcome variables (Chavas, 2018; Green & Salkind, 2017). These characteristics made the regression analysis suitable for analyzing the research data.

The mathematical formula for the straight-line graph captures the linear regression equation. The mathematical formula for the linear regression equation is:

$$Y = Xb + e$$

The term Y relates to the dependent (criterion) variable, while the term X stands for the independent (predictor) variable (Green & Salkind, 2017; Lee & Cassell, 2013). The regression analysis equation also includes an additive constant, e, and a slope weight of the predictor variable, b (Green & Salkind, 2017). The term Y contains m rows, where m refers to the number of observations in the dataset. The term X consists of m rows and n columns, where m is the number of observations, and n is the number of predictor variables (Gallo, 2015; Green & Salkind, 2017). Linear, multiple linear, and logistics regression are the different regression analysis types (Green & Salkind, 2017). Multiple linear regression is the preferred statistical technique for data analysis. The next section includes an exploration of the multiple regression analysis and its suitability for the study.

Multiple Regression Analysis

Multiple linear regression is a statistical method for determining the relationship between a criterion (dependent) variable and two or more predictor (independent) variables (Constantin, 2017; Green & Salkind, 2017). The research purpose was to ascertain if there was a significant relationship between the independent variables and the dependent variable. Thus, the multiple linear regression was a suitable statistical tool that aligned with the purpose of this study. The multiple linear regression is an extension of the bivariate regression/correlation analyses (Chavas, 2018). The multiple linear

regression enables the researcher to model the relationship between two or more predictor (independent) variables and a criterion (dependent) variable by fitting a linear equation to the observed data (Lee & Cassell, 2013). The multiple regression analysis allows a researcher to check if specific independent variables have a significant or no significant effect on a dependent variable after accounting for the impact of other independent variables (Green & Salkind, 2017).

The equation below (equation 2) depicts the mathematical expression of the multiple regression:

$$Yi = b0 + b1X1i + b2X2i + b3X3i + bkXki + ei$$

In the equation, the index "i" denotes the ith observation. The term, b0, is a constant that indicates the intercept of the line on the Y-axis (Constantin, 2017; Green & Salkind, 2017). The terms bi through bk are partial slopes of the independent variables, X1 through Xk. Calculating the values of bo through bk enables the researcher to create a model for predicting the dependent variable (Y) from the independent variable (X) (Green & Salkind, 2017). The term e is a random error by which we expect the dependent variable to deviate from the mean.

There are instances of the application of regression analysis in beverage industry studies. Marsha and Murtaqi (2017) examined the relationship between financial ratios of the return on assets (ROA), current ratio (CR), and acid-test ratio (ATR), and firm value in fourteen Indonesian food and beverage companies. Marsha and Murtaqi investigated this relationship between the financial ratios and independent variables and firm value as

a dependent variable using multiple regression analysis. Marsha and Muraqi (2017) reported that the financial ratios are appropriate measures for determining food and beverage firms' financial performance and found a positive correlation between these variables and the firm value.

Ban et al. (2019) assessed the correlation between five independent variables of access (A), food and beverages (FB), purpose (P), tangibles (T), empathy (E), and one dependent variable of customer satisfaction (CS) in 6596 hotel reviews. Ban et al. found a relatively low correlation between the independent and dependent variables. Ban et al. (2019) reported the overall variance and standard error of the regression analysis as 12% (R2 = 0.120) and 0.510, respectively. Tan and Lim (2019) investigated the impact of manufacturing flexibility on business performance in five manufacturing industries in Malaysia using regression analysis. Tan and Lim (2019) selected 1000 firms, using stratified proportional random sampling, from five different organizational sectors including, food and beverage firms. Generally, the regression analysis is an appropriate statistical technique for establishing the correlation between research variables in the industry.

As a predictive tool, the multiple linear regression may predict trends and future values (Gallo, 2015). The analysis of the multiple linear regression presents multiple correlations (R), a squared multiple correlations (R2), and adjusted squared multiple correlation (Radj) values (Green & Salkind, 2017). In predicting the values, R may range from 0 to 1 where a value of 0 indicates no linear relationship between the predicted and

criterion variables and a value of 1 shows that there is a linear relationship and that the predictor variables correctly predict the criterion (dependent) variable (Lee & Cassell, 2013; Smothers et al., 2016). Aggarwal and Ranganathan (2017) opined that multiple linear regression entails assessing the nature and strength of the relationship between the study variables. The linear regression analysis is suitable when there is one independent and dependent variables. The linear regression tool would not be ideal for the study as there are two independent and one dependent variable. Thus, the multiple regression analysis was the preferred statistical method for this study. The plan was to use the SPSS Statistics software for Windows (latest version) to conduct the data analysis.

Missing Data

Missing data is a common feature in statistical analysis (Gorard, 2020). Missing data may have a negative impact on the quality of results and conclusions from the data (Berchtold, 2019; Gorard, 2020). Thus, the researcher needs to identify and manage missing data to maintain the reliability of the results. Marsha and Murtaqi (2017) highlighted the implications of missing and incomplete data in their study of the impact of financial ratios on firm value in the Indonesian food and beverage sector. Marsha and Murtaqi recommended that beverage industry firms pay more attention to accurate and complete financial ratios data disclosure to indicate organizational financial performance.

Listwise deletion (also known as complete-case analysis) and pairwise deletion (also known as available case analysis) are two of the most popular techniques for addressing missing data cases in multiple regression analysis (Shi et al., 2020). In this

study, the listwise deletion strategy was the technique for addressing missing. Listwise deletion is a procedure where the researcher ignores and discards the data for any case with one or more missing data (Counsell & Harlow, 2017; Shi et al., 2020). Using the listwise deletion method to address missing data would enable the researcher to generate a standard set of statistical analysis cases. I did not prefer the pairwise deletion method, which might lead to distorted estimates, especially when the assumptions don't hold (Counsell & Harlow, 2017).

Data Assumptions

Assumptions are premises on which the researcher uses the statistical analysis tool (Green & Salkind, 2017). In this section, I discuss the assumptions of the multiple linear regression. A researcher needs to identify and clarify the assumptions related to the chosen statistical analysis. Clarifying these premises enable the researcher to draw conclusions from the analysis and accurately present the results. Marsha and Murtaqi (2017) assessed these assumptions in their study of the impact of financial ratios on the firm value of selected food and beverage firms. The assumptions of the multiple linear regression include:

(a) Outliers: as data that are at the extremes of the population. These outliers could come in the form of either smaller or larger values than others in the population. Green and Salkind (2017) opined that outliers might inflate or deflate correlation coefficients. Outliers may also make the researcher calculate an erroneous slope of the regression line.

(b) Multicollinearity: affects the statistical results and the reliability of estimated coefficients. This assumption correlates with a state of a high correlation between two or more independent variables (Toker & Ozbay, 2019). Multicollinearity affects the estimated coefficients' values, making it difficult to determine the variance in the dependent variables and increases the chances of Type II error (Green & Salkind, 2017). Using a ridge regression technique to determine new estimated coefficients with less variance may help the researcher address multicollinearity (Bager et al., 2017)

(c) Linearity: is the assumption of a linear relationship between the independent and dependent variables (Green & Salkind, 2017; Marsha & Murtaqi, 2017). This assumption entails a straight-line relationship between dependent and independent variables. The researcher may confirm this by viewing the scatter plot of the relationship between the dependent and independent variables.

(d) Normality: is the assumption of a normal distribution of the values of residuals (Kozak & Piepho, 2018). The researcher may confirm this assumption by reviewing the distribution of residuals.

(e) Homoscedasticity: is the assumption that the amount of error in the model is similar at each point across the model (Green & Salkind, 2017; Marsha & Murtaqi, 2017)). The premise is that the value of the residuals (or amount of error in the model) is constant. The researcher needs to ensure that the regression line variance is the same for all values of the independent variables.

(f) Independence of residuals: assumes that the values of the residuals are independent. The researcher needs to confirm this assumption as non-compliance may lead to overestimation or underestimation of standard errors.

Confirming that the data meets the requirements of the assumptions before using multiple regression for data analysis is a crucial requirement (Marsha & Murtaqi, 2019)

Testing and Assessing Assumptions

Ultimately, the researcher needs to clarify the process for testing and assessing the assumptions. Table 4 below includes the assumptions and techniques for testing and evaluating the multiple linear regression analysis assumptions.

Table 4

Statistical Tests, Assumptions, and Techniques for Testing Assumptions

Tests	Assumptions	Techniques for Testing
Multiple linear regression	Outliers	Normal Probability Plot (P-P)
	Multicollinearity	Scatter Plot of Standardized Residuals
	Linearity	"
	Normality	"
	Homoscedasticity	"
	Independence of residuals	"

Violations of the Assumptions

The researcher needs to be aware of instances and cases of violations of the assumptions. Violations of assumptions may lead to erroneous estimation of regression coefficients and standard errors. Inaccurate estimates of the regression analysis outcomes

lead to wrongful conclusions of the relationships between the independent and dependent variables. These outcomes would affect the quality and accuracy of the statistical analysis. There are approaches for identifying and managing violations of assumptions. The following section includes the strategies for identifying and addressing these violations.

Green and Salkind (2017) and Ernst and Albers (2017) suggested that examining scatterplots enables the identification of outliers, multicollinearity, and independence of residuals violations. One may also evaluate multicollinearity by viewing the correlation coefficients among the predictor variables. Small to medium bivariate correlations indicate a non-violation of the multicollinearity assumption. Detecting and addressing outliers, multicollinearity, and independence of residuals, included assessing the scatterplots from the statistical analysis in SPSS. The violation of these assumptions could lead to inaccurate conclusions. Examining and inspecting scatterplots or residual plots may enable the researcher to detect breaches of the linearity and homoscedasticity assumptions (Ernst & Albers, 2017). The scatterplots and residual plots helped to identify linearity and homoscedasticity violations, respectively.

Bootstrapping is an alternative inferential technique for addressing data assumption violations (Adepoju & Ogundunmade, 2019; Hesterberg, 2015). The bootstrapping principle enables a researcher to make inferences about a study population by resampling the data and performing the resampled data analysis (Hesterberg, 2015; Green & Salkind, 2017). The correctness and trueness of the inference from the

resampled data are measurable and easy to calculate. This property makes bootstrapping a favorable technique for determining assumption violations. It is standard practice to compute bootstrapping samples to combat any possible influence of assumption violations (Green & Salkind, 2017). These bootstrapped samples become the basis for estimating research hypotheses and determining confidence intervals (Adepoju & Ogundunmade, 2019). There are parametric and nonparametric bootstrapping techniques (Green & Salkind, 2017). In linear models, there is preference for nonparametric bootstrapping technique. One of the advantages of using nonparametric technique is the use of the original sample data without referencing the underlying population (Hertzberg, 2015; Green & Salkind, 2017). In addition to the methods stated earlier, the nonparametric bootstrapping approach was used evaluate assumption violations.

One of the tasks was to interpret inferential results. Green and Salkind (2017) opined that beta weights and confidence intervals are statistics for interpreting inferential results. Other measures for interpreting inferential results include (a) significance value, (b) *F* value, and (c) R^2. Interpreting inferential results for this study involved the use of these metrics. *Beta weights* are partial coefficients that indicate the unique relationship between a dependent and independent variable while keeping other independent variables constant (Green & Salkind, 2017). To use the Beta weight, the researcher needs to calculate the *beta coefficient*, defined as the degree of change in the dependent variable for every unit change in the independent variable. *Confidence interval* is the probability that a population parameter would fall between a range of values for a given number of

times (Stewart & Ning, 2020). The probability limits for the confidence interval is usually 95% (Al-Mutairi & Raqab, 2020)

Study Validity

There is the need to establish the validity of methods and techniques that affect the quality of results (Yin, 2017). Research validity refers to how well the study participants' results represent accurate findings among similar individuals outside the study (Heale & Twycross, 2015; Xu et al., 2020). Quantitative research involves the collection of numerical data and analyzes these data to generate results (Yin, 2017). Checking and assessing research validity and reliability methods are strategies for establishing rigor and trustworthiness in quantitative studies (Matthes & Ball, 2019). There are different methods for demonstrating the validity of the research and rigor. Research validity techniques could be internal or external. The next sections include an analysis of the validity techniques for the study.

Internal Validity

Internal validity is the extent to which the observed results represent the truth in the studied population and are not due to methodological errors (Cortina, 2020; Grizzlea et al., 2020; Yin, 2017). Green and Salkind (2017) opined that internal validity allows the researcher to suggest a causal relationship between research variables. Internal validity is a concern for experimental and quasi-experimental studies where the researcher seeks to establish a causal relationship between the independent and dependent variables by manipulating independent variables (Cortina, 2020; Heale & Twycross, 2015; Yin, 2017).

Non-experimental studies are those where the researcher cannot control or manipulate the independent (predictor) variable to establish its effect on the dependent (outcome) variable (Leatherdale, 2019; Reio, 2016). In non-experimental studies, the researcher relies on observations and interactions to conclude the relationships between the variables (Leatherdale, 2019). This study is non-experimental, and the objective was to establish a correlational relationship (and not a causal relationship) between the study variables. Thus, internal validity concerns did not apply to this study. Since this study involved statistical analysis and conclusions from the outcome of the analysis, statistical conclusion validity was a potential threat to and the study outcome and quality.

Threats to Statistical Conclusion Validity

Statistical conclusion validity is an assessment of the level of accuracy of the research conclusion (Green & Salkind, 2017). Statistical conclusion validity is a metric for measuring how accurately and reasonably the researcher applies the research methods and establishes the outcomes. Conditions that enhance threats to statistical conclusion validity could inflate Type I error rates (a situation where the researcher rejects the null hypotheses when it is true) and Type II error rates (accepting the null hypothesis when it is false). Threats to statistical conclusion validity may come from the reliability of the study instrument, data assumptions, and sample size.

Validity and Reliability of the Instrument. A structured questionnaire is a popularly used instrument for data collection in quantitative research (Saunders et al., 2019). A questionnaire might have internal or external validity. Internal validity refers to

the extent to which the measures quantify what the researcher intends to measure (Simoes et al., 2018). In contrast, external validity is how accurately the study sample measures reflect the population's characteristics (Heale & Twycross, 2015; Simoes et al., 2018). Different forms of validity include (a) face validity, (b) construct validity, (c) content validity, and (d) criterion validity. Reliability is the characteristic of the data collection instrument to generate reproducible results (Simoes et al., 2018). Establishing the reliability and validity of the research tools and instruments is a critical requirement for research quality. Prowse et al. (2018), Koleilat and Whaley (2016), and Roure and Lentillon-Kaestner (2018) conducted reliability and validity assessments of their questionnaire for data collection instruments. Prowse et al. and Koleilat and Whaley conducted their study in the food, beverage, and related industries. The next section includes an analysis of the reliability and validity assessments of the data collection instruments from the studies of Prowse et al. (2018) and Koleilat and Whaley (2016).

Prowse et al. (2018) assessed the validity and reliability of the Food and Beverage Marketing Assessment Tool for Settings (FoodMATS) tool for evaluating the impact of food marketing in public recreational and sports facilities in 51 sites across Canada. Prowse et al. tested reliability by calculating inter-rater reliability using Cohen's kappa (k) and intra-class correlations (ICC). The results indicated a good to excellent inter-rater reliability score ($\kappa = 0.88–1.00$, $p < 0.001$; ICC = 0.97, $p < 0.001$). The outcome confirmed the reliability and suitability of the FoodMATS tool for measuring food marketing exposures and consequences. Prowse et al. (2018) further examined the

validity by determining the Pearson's correlations between FoodMATS scores and facility sponsorships and sequential multiple regression for estimating "Least Healthy" food sales from FoodMATs scores. The results showed a strong and positive correlation ($r = 0.86$, $p < 0.001$) between FoodMATS scores and food sponsorship dollars. Prowse et al. (2018) explained that the FoodMATS scores accounted for 14% of the variability in "Least Healthy" concession sales ($p = 0.012$) and 24% of the total variability concession and vending "Least Healthy" food sales ($p = 0.003$).

In another study, Koleilat and Whaley (2016) examined the reliability and validity of a 10-item Child Food and Beverage Intake Questionnaire on assessing foods and beverages intake among two to four-year-old children. Koleilat and Whaley used such techniques as Spearman rank correlation coefficients and linear regression analysis to determine the validity of the questionnaire compared to 24-hour calls. Kolielat and Whaley (2016) reported that the 10-item Child Food and Beverage Intake Questionnaire correlations ranged from 0.48 for sweetened drinks to 0.87 for regular sodas. Spearman rank correlation results for beverages ranged from 0.15 to 0.59. The results indicated that the questionnaire had fair to substantial reliability and moderate to strong validity. Establishing the reliability and validity of the data collection instrument is a critical requirement for research quality and rigor (Koleilat and Whaley, 2016; Prowse et al., 2018). In this study, the questionnaire was the data collection instrument, and the next section includes the strategies and procedures used for determining and managing reliability and validity

Simoes et al. (2018) argued that there are theoretical and empirical methods for determining the validity of a questionnaire. Theoretical construct was used to test the validity of the questionnaire survey instrument for this study. In utilizing the theoretical construct, a researcher might use a panel of experts to test the questionnaire's validity through face validity or content validity (Hardesty & Bearden, 2004; Vakili & Jahangiri, 2018). Content validity is how well the measurement instrument (in this case, the questionnaire) measures the study constructs and variables (Grizzlea et al., 2020). Face validity is when an individual who is an expert on the research subject assesses the questionnaire (instrument) and concludes that the tool (questionnaire) measures the characteristic of interest (Grizzlea et al., 2020; Hardesty & Bearden, 2004). Content validity was used to confirm the validity of the survey questions by citing the relevance and previous application of the selected questions in similar studies in the same and related industry. Face validity was applied by sharing the survey questions with some senior executives in the beverage industry who are leaders and experts in implementing CI strategies. These experts helped assess the relevance of the survey questions in the industry.

A questionnaire is reliable if the researcher gets similar results for each use and deployment of the questionnaire (Simoes et al., 2018). Aspects of reliability include equivalence, stability, and internal consistency (homogeneity). Cronbach's alpha (α) is a statistic for evaluating research instrument reliability and a measure of internal consistency (Cronbach, 1951; Taber, 2018). The Cronbach alpha was the statistic for

assessing the reliability of the questionnaire. The coefficient of reliability, measured as Cronbach's alpha, ranges from 0 to 1 (Cronbach, 1951; Green & Salkind, 2017). Reliability coefficients closer to 1 indicate high-reliability levels, while coefficients closer to 0 shows low internal consistency and reliability levels (Taber, 2018). The intent was to state the independent variables' reliability coefficients as a measure of internal consistency and reliability.

Data Assumptions. Establishing and confirming data assumptions for the preferred statistical test enables the researcher to draw valid conclusions and supports the accurate presentation of results (Marsha & Murtaqi, 2017). The data assumptions of interest related to the multiple regression analysis. The data assumptions discussed earlier in the Data Analysis section applied in the study**.**

Sample Size. The sample size is another factor that could affect the reliability of the study instrument. Using too small a sample size may lead to excluding critical parts of the study population and false generalization (Yin, 2017). Thus, the researcher needs to ensure the use of the appropriate sample size. I discussed the strategies and rationale for sampling (in the Population and Sampling section) and confirmed the use of G*Power analysis for determining the proper sample size.

Quantitative research also involves selecting and identifying the appropriate significance level (α-value) as additional strategy for reducing Type I error (Perez et al., 2014; Cho & Kim, 2015). Cho and Kim (2015) opined that using a p value of 0.05, which is the most typical in business research, would reduce the threat to statistical conclusion

validity. Thus, these are additional measures and strategies for managing issues of statistical conclusion validity in the study.

External Validity

External validity refers to how accurately the measures obtained from the study sample describe the reference population (Chaplin et al., 2018; Wacker, 2014). Appropriate external validity would enable the researcher to generalize the results to the population sample and apply the outcome to different settings (Dehejia et al., 2021). The intention to generalize the results to the population sample made external validity of concern to the study. There is a relationship between the sampling strategy (discussed in section 2.6 – *Population and Sampling*) and external validity (Yin, 2017). Probability sampling techniques enhance external validity. Random (probability) sampling strategy was used to address the threats to external validity. The random sampling technique further reduced the risks of bias and threats to external validity by giving every population sample an equal opportunity for selection (Revilla & Ocha, 2018). Thus, complying with the population and sampling strategies addressed earlier enhanced external validity.

Transition and Summary

Section 2 included (a) description of the methodological components and elements of the study, (b) definition and clarification of the researcher's role, (c) identification and selection of research participants, (d) description of the research method and design, (e) the population and sampling techniques, (f) strategies for

establishing research ethics, (g) the data collection instrument, and (h) data collection techniques. Other components of Section 2 were the data analysis methods and procedures for establishing and managing study validity. In Section 3, I presented the study findings. This section also comprised the appropriate tables, figures, illustrations, and evaluation of the statistical assumptions. In this section, I also included a detailed description of the applicability of the findings in actual business practices, the tangible social change implications, and the recommendation for action, reflection, and further research.

Section 3: Application to Professional Practice and Implications for Change

The purpose of this quantitative correlational study was to assess the relationship between transformational leadership's idealized influence, intellectual stimulation, and CI. The independent variables were idealized influence and intellectual stimulation. The dependent variable was CI. The study findings supported the rejection of the null hypothesis and the acceptance of the alternative hypothesis. Thus, there is a relationship between beverage manufacturing managers' idealized influence, intellectual stimulation, and CI.

Presentation of the Findings

I present descriptive statistics results; discuss the testing of statistical assumptions, and present inferential statistical results in this subsection. I also discuss my research summary and theoretical perspectives of my findings in this subheading. I analyzed bootstrapping using 2000 samples to assess and ascertain potential assumption violations and calculate 95% confidence intervals. Green and Salkind (2017) opined that 2000 bootstrapping samples could estimate 95% confidence intervals.

Descriptive Statistics

I received 171 completed surveys. I discarded 11 out of these due to incomplete and missing data. Thus, I had 160 completed questionnaires for analysis. From the demographic data, 74% and 53% of the respondents were male and 30 – 40 years of age, respectively. The majority of the respondents, 41%, work in the manufacturing or

production department. For years of experience, 40% of respondents had 1 to 5 years of experience, while 31% had 5 to 10 years of experience in the beverage industry.

Table 5 includes the descriptive statistics of the study variables. Figure 2 depicts a scatterplot indicating a positive linear relationship between the independent and dependent variables. This positive linear relationship shows a relationship between the transformational leadership components of idealized influence, intellectual stimulation, and CI.

Table 5

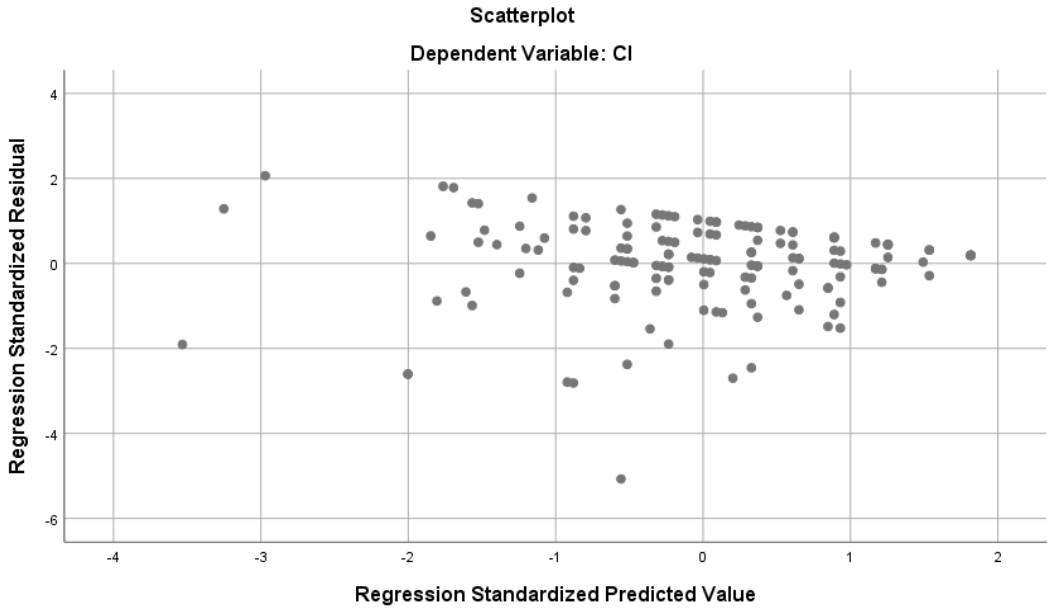
Means and Standard Deviations for Quantitative Study Variables

Variable	M	SD	Bootstrapped 95% CI (*M*)
Idealized Influence	3.12	0.57	[0.106, 0.377]
Intellectual Stimulation	3.56	0.47	[0.113, 0.443]
CI	3.52	0.52	[1.236, 2.430]

Note *N*= 160.

Figure 2

Scatterplot of the standardized residuals



Test of Assumptions

I evaluated multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals to ascertain violations and test for assumptions. Bootstrapping is an alternative inferential technique researchers use to address potential data assumption violations (Adepoju & Ogundunmade, 2019; Hesterberg, 2015). I used 1000 bootstrapping samples to minimize the possible violations of assumptions.

Multicollinearity

To evaluate this assumption, I viewed the correlation coefficients between the independent variables. There was no evidence of the violation of this assumption as all

the bivariate correlations were small to medium (see Table 6). Table 6 is a summary of the correlation coefficients.

Table 6

Correlation Coefficients for Independent Variables

Variable	Idealized Influence	Intellectual Stimulation
Idealized Influence	1.000	0.287
Intellectual Stimulation	0.287	1.000

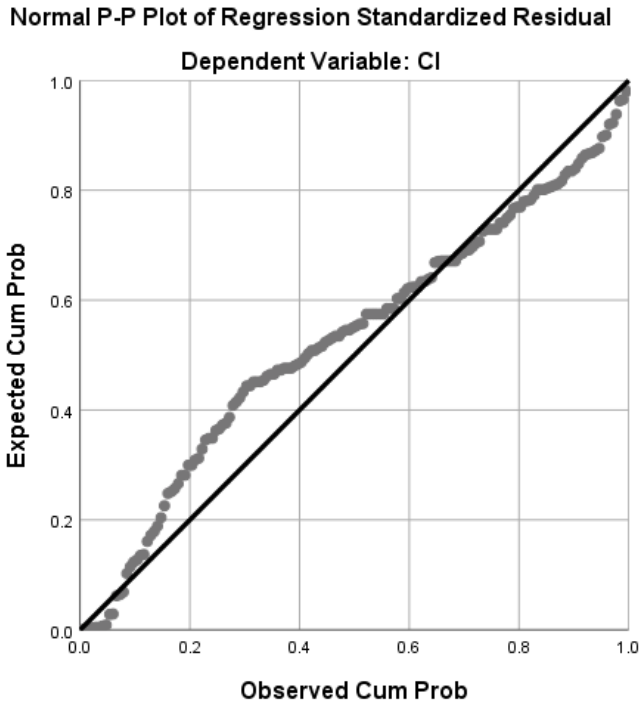
Note. *N*= 160

Normality, Linearity, Homoscedasticity, and Independence of Residuals

Other common assumptions in regression analysis include normality, linearity, homoscedasticity, and independence of residuals (Green & Salkind, 2017; Marsha & Murtaqi, 2017). A researcher might evaluate these assumptions by examining the normal probability plot (P-P) and a scatterplot of the standardized residuals (Kozak & Piepho, 2018). I evaluated normality, linearity, homoscedasticity, and independence of residuals by examining the normal probability plot (P-P) of the regression standardized residuals (Figure 3) and a scatterplot of the standardized residuals (Figure 2).

Figure 3

Normal Probability Plot (P-P) of the Regression Standardized Residuals



The distribution of the residual plot should indicate a straight line from the bottom left to the top right of the plot to confirm the non-violation of the assumptions (Green & Salkind, 2017; Kozak & Piepho, 2018). From the distribution of residual plots, there was no significant violation of the assumptions. Green and Salkind (2017) opined that a scatterplot of the standardized residuals that satisfies the assumptions should indicate a nonsystematic pattern. The examination of the scatterplots of the standardized residuals revealed a non-systematic pattern and thus no violation of the assumptions.

Inferential Results

I conducted a multiple linear regression, $\alpha = .05$ (two-tailed), to assess the relationship between idealized influence, intellectual stimulation, and CI. The independent variables were idealized influence and intellectual stimulation. The dependent variable was CI. The null hypothesis was that idealized influence and intellectual stimulation would not significantly predict CI. The alternative hypothesis was that idealized influence and intellectual stimulation would significantly predict CI.

There are various outputs and statistics from the multiple regression analysis. Some of these include the multiple correlation coefficient, coefficient of determination, and *F*-ratio. The multiple correlation coefficient, *R*, measures the quality of the prediction of the dependent variable (Green & Salkind, 2017). The coefficient of determination (R^2) is the proportion of variance in the dependent variable that the independent variables can explain. *F*-ratio (*F*) in the regression analysis tests whether the regression model is a good fit for the data (Green & Salkind, 2017). From the multiple regression analysis, the *R*-value was 0.416. This value indicates a satisfactory level of correlation and prediction of the dependent variable, CI. Table 7 includes the summary of research results.

Table 7

Summary of Results

Results	Value	Comment
Statistical analysis	Multiple regression analysis.	Two-tailed test
Multiple correlation coefficient (R)	0.416	Satisfactory level of correlation and prediction of the dependent variable, CI by the independent variables
Coefficient of determination (R^2)	0.173	The independent variables accounted for approximately 17.3% variations in the dependent variable
F-ratio (F)	16.428	The regression model is a good fit for the data at $p < 0.000$
Correlation coefficient, R, between idealized influence and CI	$R = 0.329$, $p < 0.000$	Positive and significant correlation between idealized influence and CI
Correlation coefficient, R, between intellectual stimulation and CI	$R = 0.339$, $p < 0.000$	Positive and significant correlation between intellectual stimulation and CI
Relationship between idealized influence and CI	$b = 0.242$, $p = 0.001$	A positive value indicates a 0.242 unit increase in CI for each unit increase in idealized influence
Relationship between intellectual stimulation and CI	$b = 0.278$, $p = 0.001$	A positive value indicates a 0.278 unit increase in CI for each unit increase in intellectual stimulation)
Final predictive equation	CI = 1.833 + (0.242 idealized influence) + (0.278 intellectual stimulation)	
Regression model summary	F (2, 157) = 16.428, $p < 0.000$, $R2 = 0.173$	

I conducted multiple regression to predict CI from idealized influence and intellectual stimulation. These variables statistically significantly predicted CI, F (2, 157) = 16.428, $p < 0.000$, $R^2 = 0.173$. All two independent variables added statistically significantly to the prediction, $p < .05$. The $R^2 = 0.173$ indicates that linear combination of the independent variables (idealized influence and intellectual stimulation) accounted

for approximately 17.3% variations in CI. The independent variables showed a significant relationship/correlation with CI. The unstandardized coefficient, *b*-value, indicates the degree to which each independent variable affects the dependent variable if the effects of all other independent variables remain constant (Green & Salkind, 2017). Idealized influence had a significant relationship ($b = 0.242$, $p = 0.001$) with CI. Intellectual stimulation also indicated a significant relationship/correlation ($b = 0.278$, $p = 0.001$) with CI. The final predictive equation was:

CI = 1.833 + (0.242 idealized influence) + (0.278 intellectual stimulation)

Idealized influence ($b = 0.242$): The positive value for idealized influence indicated a 0.242 increase in CI for each additional unit increase in idealized influence. In other words, CI tends to increase as idealized influence increases. This interpretation is true only if the effects of intellectual stimulation remained constant.

Intellectual stimulation ($b = 0.278$): The positive value for intellectual stimulation as a predictor indicated a 0.278 increase in CI for each additional unit increase in intellectual stimulation. Thus, CI tends to increase as intellectual stimulation increases. This interpretation is valid only if the effects of idealized influence remained constant. Table 8 is the regression summary table.

Table 8

Regression Analysis Summary for Independent Variables

Variable	B	SEB	β	t	p	B 95%Bootstrapped CI
Idealized Influence	0.242	0.069	0.266	3.514	0.001	[0.106, 0.377]
Intellectual Stimulation	0.278	0.083	0.252	3.329	0.001	[0.113, 0.443]

Note. *N*= 160

***Analysis summary*.** The purpose of this study was to assess the relationship between transformational leadership's idealized influence, intellectual stimulation, and CI. Multiple linear regression was the statistical method for examining the relationship between idealized influence, intellectual stimulation, and CI. I assessed assumptions surrounding multiple linear regression and did not find any significant violations. The model as a whole showed a significant relationship between idealized influence, intellectual stimulation, and CI, F (2, 157) = 16.428, $p < 0.000$, $R^2 = 0.173$. The independent variables (idealized influence and intellectual stimulation) indicated a statistically significant relationship with CI.

Theoretical conversation on findings. The study results indicated a statistically significant relationship between idealized influence, intellectual stimulation, and CI. The study outcomes are consistent with the existing literature on transformational leadership and CI. Kumar and Sharma (2017), in the multiple regression analysis of the relationship between leadership style and CI, reported that leadership style accounted for 95.7% of CI. Kumar and Sharma further indicated that transformational leadership significantly predicts CI. Omiete et al. (2018) opined that transformational leadership had a positive and significant impact on organizational resilience and performance of the Nigerian beverage industry.

Intellectual stimulation (R= 0.329, p < 0.000) and idealized influence (R= 0.339, p < 0.000) had significant and positive correlations with CI. From the multiple regression analysis, the overall correlation coefficient, *R*-value, was 0.416. This value indicates a

satisfactory level of correlation and prediction of the dependent variable, CI. The *R*-value of 0.416 at $p < 0.000$ aligns with the similar outcome of Overstreet (2012) and Omiete et al. (2018). Overstreet studied the effect of transformational leadership on financial performance and reported a correlation coefficient of 0.33 at $p < 0.004$, indicating that transformational leadership has a direct, positive relationship with the firm's financial performance. Overstreet (2012) also found that transformational leadership is positively correlated ($R = 0.58$, $p < 0.001$) to organizational innovativeness.

The outcome of this study also aligns with Omiete et al.'s (2018) assessment of the impact of positive and significant effects of transformational leadership in the Nigerian beverage industry. Omiete et al. reported a positive and significant correlation between idealized influence (($R = 0.623$, $p = 0.000$) and beverage industry resilience. The outcome of Omiete et al.'s study further indicated a positive and significant correlation ($R = 0.630$, $p = 0.000$) between intellectual stimulation and beverage industry adaptive capacity.

Ineffective leadership is one of the leading causes of CI implementation failure (Khan et al., 2019)**.** Gandhi et al. (2019) reported a positive relationship between transformational leadership style and CI. Transformational leadership is an effective leadership style required to implement CI successfully (Gandhi et al., 2019; Nging & Yazdanifard, 2015; Sattayaraksa and Boon-itt, 2016). Amanchukwu et al.'s (2015) and Kumar and Sharma's (2017) studies indicated that transformational leaders provide followers with the required skills and direction to implement CI and achieve business

goals. Manocha and Chuah (2017) further elaborated that beverage could successfully implement CI strategies by deploying transformational leadership styles.

Applications to Professional Practice

The results of this study are significant to Nigerian beverage manufacturing leaders in that business leaders might obtain a practical model for understanding the relationship between transformational leadership style and CI. The practical understanding of this relationship could help business leaders gain insights for leadership and organizational improvement. The practical approach could lead to an understanding and appreciation of the requirements for successful CI implementation. The practical application of effective leadership styles would help business managers reduce unsuccessful CI implementation (Antony et al., 2019; McLean et al., 2017). The findings of this study may serve as a foundation for standardized CI implementation processes in the beverage industry.

To enhance CI implementation, beverage industry leaders and managers could translate the study findings into their corporate procedures, systems, and standards. One strategy for achieving this business improvement goal is learning and adopting the PDCA cycle as a problem-solving, quality improvement, and efficiency enhancement tool (Hedaoo & Sangode, 2019; Tortorella et al., 2020). Beverage industry leaders face different process and product quality challenges and could use the PDCA cycle and total quality management practices to address these problems (Tortorella et al., 2020). Specifically, the PDCA cycle would enable business leaders to plan, implement, assess,

and entrench quality management and improvement processes and procedures for improved quality control and quality assurance. Interestingly, an inherent approach of the CI implementation cycle is standardizing the improvement learning as routines (Morgan & Stewart, 2017). This continual improvement cycle would serve as a yardstick for addressing current and future business problems.

Approximately 60% of CI strategies fail to achieve the desired results (McLean et al., 2017). There is a high rate of CI implementation failures in the beverage industry, leading to significant efficiency, financial, and product quality losses (Antony et al., 2019). Unsuccessful CI implementation could have negative impacts on business performance (Galeazzo et al., 2017). Alternatively, beverage industry leaders could utilize CI initiatives to reduce manufacturing costs by 26%, increase profit margin by 8%, and improve sales win ratio by 65% (Khan et al., 2019; Shumpei & Mihail, 2018).

The substantial losses and potential negative impacts of unsuccessful CI implementation and the potential benefits of successful CI implementation warrant business leaders to have the knowledge, capabilities, and skills to drive CI initiatives and processes. The Nigerian manufacturing sector, of which the beverage industry is a critical component, requires constant review and implementation of CI processes for growth (Muhammad, 2019; Oluwafemi & Okon, 2018). The highly competitive and volatile business environment calls for a proactive application of CI initiatives for the industry's continued viability (Butler et al., 2018). Thus, there is a need for business leaders and

managers to constantly acquaint themselves with effective leadership styles for CI and organizational growth.

Both scholars and practitioners argue that transformational leaders are effective at implementing CI. Transformational leaders influence and motivate others to embrace processes and systems for effective business improvement (Lee et al., 2020; Yin et al., 2020). Transformational leadership style is critical for successfully implementing improvement strategies (Bass, 1985; Lee et al., 2020). CI is essential for organizational growth and development (Veres et al., 2017). The positive correlation between the transformational leadership models and CI has critical implications for improved business practice. Leaders who display intellectual stimulation would improve employee performance and business growth (Ogola et al., 2017). Employee involvement and participation are necessary for CI and sustainable performance (Anthony & Gupta, 2019). Thus, business leaders could enhance employee participation in CI programs and, by extension, drive business growth and performance through intellectual stimulation.

Various CI tools, including the PDCA cycle, are relevant for improved business practice (Sarina et al., 2017). Business leaders could use these CI tools and strategies in their regular business strategy sessions and plans to drive improved performance. For instance, beverage industry managers could enhance engagement, clarification, and implementation of valuable business improvement solutions using the PDCA cycle (Singh et al., 2018). Anthony et al. (2019) argued that business leaders who succeed in

their CI and business performance drive are those who take a keen interest in stimulating the workforce and the entire organization towards embracing and using CI tools.

Using the PDCA cycle for Improved Business Practice.

One of the applicability of the research findings to the professional practice of business is that business leaders could learn how to use the PDCA cycle in their leadership efforts and tasks. Understanding the basic steps of the PDCA cycle and how to adapt these to regular business systems and processes is relevant to improved business practice (Khan et al., 2019; Singh & Singh, 2015). The Deming PDCA cycle is a cyclical process that walks a company or group through the four improvement steps (Deming, 1976; McLean et al., 2017). The cycle includes the plan, do, check, and act steps, and each stage contains practical business improvement processes. Business leaders who yearn for improvement are welcome to use this model in their organizations.

In the planning phase, teams will measure current standards, develop ideas for improvements; identify how to implement the improvement ideas, set objectives, and plan action (Shumpei & Mihail, 2018; Sunadi et al., 2020). In the ‘’Do’’ step, the team implements the plan created in the first step. This process includes changing processes, providing necessary training, increasing awareness, and adding in any controls to avoid potential problems (Morgan & Stewart, 2017; Sunadi et al., 2020). The ‘’Check’’ step includes taking new measurements to compare with previous results, analyzing the results, and implementing corrective or preventative actions to ensure the desired results (Mihajlovic, 2018). In the final step, the management teams analyze all the data from the

change to determine whether the change will become permanent or confirm the need for further adjustments. The act step feeds into the plan step since there is the need to find and develop new ways to make other improvements continually (Khan et al., 2019; Singh & Singh, 2015).

Implications for Social Change

The implications for positive social change include the potential for business leaders to gain knowledge to improve CI implementation processes, increasing productivity, and minimizing financial losses. The beverage industry plays a critical role in the socio-economic well-being of the country and communities through government revenue and corporate social responsibility initiatives (Nzewi et al., 2018; Oluwafemi & Okon, 2018). Improved productivity of this sector would translate to enhanced income and socio-economic empowerment of the people.

Improved growth and productivity may also translate to enhanced employment effect and, thus, reducing unemployment through long-term sustainable employment practices. Improved employment conditions and employee well-being enhanced CI implementation, and its positive impacts may boost employee morale, family relationships, and healthy living. Sustainable employment practices and improved conditions of employment may support employee financial stability and enhance the quality of life. Highly engaged and motivated employees can support their families and play active roles in building a sustainable society (Ogola et al., 2017). The beverage industry and organizations implementing a CI culture could drive the appropriate culture

for improvement and competitiveness. Leading an organizational cultural change for constant improvement is one of operational excellence and sustainable development drivers.

The Nigerian beverage industry could benefit from institutionalizing a CI culture to grow and contribute to the nation's GDP. The beverage industry is a strategic sector in the broader manufacturing sector and a key player in the nation's socio-economic indices. In the fourth quarter of 2020, the manufacturing sector recorded a 24.60% (year-on-year) nominal growth rate, a -1.69% lower than recorded in the corresponding period of 2019 (26.29%) (NBS, 2021). There are tangible potential improvements and performance indices from the implementation of CI strategies. As reported by Khan et al. (2019) and Shumpei and Mihail (2018), business managers can implement CI strategies to reduce manufacturing costs by 26%, increase profit margin by 8%, and improve the sales win ratio by 65%. Improvements in the Nigerian beverage manufacturing sector can positively affect the Nigerian economy by providing jobs and growth in GDP contribution (Monye, 2016). There are thus the opportunities to embrace a CI culture to improve the beverage industry and manufacturing sector

Recommendations for Action

This study indicated a statistically significant relationship between transformational leadership's idealized influence, intellectual stimulation, and CI. Thus, I recommend that beverage industry managers adopt idealized influence and intellectual stimulation as transformational leadership styles for improved business practice and

performance. Based on these findings, I recommend that business leaders have indices and indicators for measuring the success of CI initiatives. Butler et al. (2018) opined that organizations should adopt clear business assessment indicators and metrics for assessing CI. Business leaders might want to set up CI teams in their organizations with a clear mandate to deploy CI tools to address business problems. The first step could entail training and understanding the PDCA cycle and deploying this in the various sections of the company.

Transformational leaders enhance followers' capabilities and promote organizational growth (Dong et al., 2017; Widayati & Gunarto, 2017). Yin et al. (2020) argued that business leaders and managers should adopt the transformational leadership style as a yardstick for leadership success and performance. Therefore, I recommend beverage industry managers adopt transformational leadership styles for CI. Beverage industry manufacturing, production, sales, marketing, human resources, and other departmental heads need to pay attention to the findings as they have the potential to help them navigate through the complex business environment and deliver superior results.

Bass and Avolio (1995) recommended using the MLQ questionnaire in transformational leadership training programs to determine the leaders' strengths and weaknesses. The Deming improvement (PDCA) cycle is a critical tool for assessing organizational improvement initiatives (Khan et al., 2019; Singh & Singh, 2015). Thus, the MLQ and Deming improvement cycle could serve as tools for assessing leadership competencies and skills for CI. These tools could enhance effective decision-making for

leadership styles aligned with CI strategies. Transformational leaders could use the MLQ and Deming improvement cycle to improve decision-making during CI initiatives and processes. Including these tools in the employee training plan, routine shopfloor work assessment, and business strategy sessions would help create the required awareness. The PDCA cycle is a problem-solving tool relevant to addressing business problems (Khan et al., 2019). Business leaders can adopt this tool for problem-solving and enhanced performance.

Making the study's outcome available to scholars, researchers, beverage sector leaders, and business managers are some of the recommendations for action. The study's publication is one strategy to make its outcome available to scholars and other interested parties. The publication of this study will add to the body of knowledge, and researchers could use the knowledge in future studies concerning transformational leadership and CI. I plan to publish the study outcome in strategic beverage industry journals such as the Brewer and Distiller International and other related sector manuals. A further recommendation for action is to disseminate the learning and study results through teaching, coaching, and mentoring practitioners, leaders, managers, and stakeholders in the industry.

Another strategy for making the research accessible is the presentation at conferences and other scholarly events. I intend to present the study findings at professional meetings and relevant business events, as they effectively communicate the

results of a research study to scholars. I will also explore publishing this study in the ProQuest dissertation database to make it available for peer and scholarly reviews.

Recommendations for Further Research

In this study, I examined the relationship between transformational leadership's idealized influence, intellectual stimulation, and CI. Although random sampling supports the generalization of study findings, one of the limitations of this study was the potential to generalize the outcome of quant-based research with a correlational design. The correlational design restrains establishing a causal relationship between the research variables (Cerniglia et al., 2016). Recommendation for the further study includes using probability sampling with other research designs to establish a causal relationship between the study variables. A causal research method would enable the investigation of the cause-and-effect relationship between the research variables.

Subsequent studies could use mixed-methods research methodology to extend the findings regarding transformational leadership and CI. The mixed methods research entails using quantitative and qualitative methods to address the research phenomenon (Saunders et al., 2019). Combining quantitative and qualitative approaches in single research could enable the researcher to ascertain the relationship between the study variables and address the *why* and *how* questions related to the leadership and CI variables. Including a qualitative method in the study would also bring the researcher closer to the study problem and have a more extended range of reach (Queiros et al.,

2017). Thus, a mixed-method approach would help address some of the limitations of the study.

Only two transformational leadership components, idealized influence and intellectual stimulation formed the study's independent variables. The other transformational leadership components include inspirational motivation and individualized consideration. Further research includes assessing the correlation between inspirational motivation, individualized consideration, and CI. The argument for assessing the impact of inspirational motivation and individualized consideration stems from the outcome of previous studies on the impact of these leadership styles on the performance of the Nigerian beverage industry. Omiete et al. (2018), for instance, reported a positive and statistically significant correlation between individualized consideration ($R = 0.518$, $p = 0.000$) and adaptive capacity of the Nigerian beverage industries. The population of this study involves beverage industry managers from the Southern part of Nigeria. Additional research involving participants from diverse areas of the country might help to validate the research findings.

Reflections

The results of the study broadened my perspective on the research topic. The study outcome contributed to my knowledge and understanding of the role of transformational leadership in CI implementation. Through this study, I gained further insights into the importance and value of the PDCA cycle. The doctoral journey enhanced my research skills and supported my development and growth as a scholar-practitioner. I

re-enforce my desire to share the knowledge and skills acquired through teaching, coaching, and mentoring practitioners, leaders, managers, and stakeholders in the industry.

One of the advantages of using a quantitative research methodology is collecting data using instruments other than the researcher and analyzing the data using statistical methods to confirm research theories and answer research questions (Todd & Hill, 2018). Using data collection strategies appropriate for the study may help mitigate bias (Fusch et al., 2018). The use of questionnaires for data collection enabled the mitigation of bias. One of the bases for research quality and mitigating bias is for the researcher to be aware of personal preferences and promote objectivity in the research processes (Fusch et al., 2018). I ensured that my beliefs did not influence the study findings and relied on the collected data to address the research question.

Conclusion

I examined the relationship between transformational leadership's idealized influence, intellectual stimulation, and CI. The study results revealed a statistically significant relationship between transformational leadership models of idealized influence, intellectual stimulation, and CI. Adoption of the findings of this study might assist business leaders in improving the successful implementation of CI. Furthermore, the results of this study might enhance business leaders' ability to make an informed decision on leadership styles aligned with successful business improvement. The implications for positive social change include the potential for stable and increased

employment in the sector, improved financial health and quality of life, and an increased tax base, leading to enhanced services and support to communities.

References

Aadil, R. M., Madni, G. M., Roobab, U., Rahman, U., & Zeng, X. (2019). Quality Control in the beverage industry. In A. Grumezescu & A. M. Holban (Eds.). *Quality control in the beverage industry* (pp. 1 – 38). Academic Press. http://doi.org/10.1016/B978-0-12-816681-9.00001-1

Abasilim, U. D. (2014). Transformational leadership style and its relationship with organizational performance in the Nigerian work context: A review. *IOSR Journal of Business and Management*, *16*(9), 1–5. http://www.iosrjournals.org/iosr-jbm/

Abasilim, U., Gberevbie, D. E., & Osibanjo, A. (2018). Do leadership styles relate to personnel commitment in private organizations in Nigeria? *Proceedings of the European Conference on Management, Leadership & Governance*, 323–327. http://eprints.covenantuniversity.edu.ng/id/eprint/12023

Abdulmalek, F.A., Rajgopal, J., & Needy, K. L. (2016). A classification scheme for the process industry to guide the implementation of lean. *Engineering Management Journal*, *18*(2), 15–25. http://doi.org/10.1080/10429247.2006.11431690

Abhishek, J., Rajbir S. B., & Harwinder, S. (2015). OEE enhancement in SMEs through mobile maintenance: A TPM concept. *International Journal of Quality & Reliability Management, 32*(2), 503–516. http://doi.org/10.1108/IJQRM-05-2013-0088

Abhishek, J., Harwinder, S., & Rajbir, S. B. (2018). Identification of key enablers for

total productive maintenance (TPM) implementation in Indian SMEs. *Benchmarking: An International Journal, 25 (8),* 2611–2634. http://doi.org/10.1108/BIJ-02-2016-0019

Adanri, A. A., & Singh, R. K. (2016). Transformational leadership: Towards effective governance in Nigeria. *International Journal of Academic Research in Business and Social Sciences, 6,* 670–680. http://doi.org/10.6007/IJARBSS/v6-i11/2450

Adashi, E. Y., Walters, L. B., & Menikoff, J. A. (2018). The Belmont Report at 40: Reckoning with time. *American Journal of Public Health, 108*(10), 1345–1348. http://doi.org/10.2105/AJPH.2018.304580

Adepoju, A. A., & Ogundunmade, T. P. (2019). Dynamic linear regression by bayesian and bootstrapping techniques. *Studies of Applied Economics, 3*(2), 1–16. http://doi.org/10.25115/eea.v37i2.2614

Aderemi, M. K., Ayodeji, S. P., Akinnuli, B. O., Farayibi, P. K., Ojo, O. O., & Adeleke, K. (2019). Development of SME's coping model for operations advancement in manufacturing technology. *Advanced Applications in Manufacturing Engineering,* 169–190. http://doi.org/10.1016/B978-0-08-102414-0.00006-9

Aderibigbe, J. K. & Mjoli, T.Q. (2019). Emotional intelligence as a moderator in the relationship between occupational stress and organizational citizenship behavior among Nigerian graduate employees. *Journal of Economics and Behavioral Studies, 10*(6A(J), 152–163. http://doi.org/10.22610/jebs.v10i6A.2671

Adisa, T.A., Osabutey, E., & Gbadamosi, G. (2016). Understanding the causes and

consequences of work-family conflict: An exploratory study of Nigerian employees. *Employee Relations, 38*(5), 770–788. http://doi.org/10.1108/ER-11-2015-0211

Aggarwal, R., & Ranganathan, P. (2017). Common pitfalls in statistical analysis: Linear regression analysis. *Perspectives in Clinical Research, 8*(2), 100–102. http://doi.org/10.4103/2229-3485.203040

Ahmad, M. A. (2017). Effective business leadership styles: A case study of Harriet Green. M*iddle East Journal of Business, 12*(2), 10–19. http://doi.org/10.5742/mejb.2017.92943

Ali, K. S., & Islam, M. A. (2020). Effective dimension of leadership style for organizational performance: A conceptual study. *International Journal of Management, Accounting & Economics, 7*(1), 30–40. https://www.ijmae.com

Ali, S. M., Manjunath, L., & Yadav, V. S. (2014). A scale to measure the transformational leadership of extension personnel at lower manageemnt level. *Research Journal of Agricultural Science, 5*(1), 120–127. https://.www.rjasinfo.com

Al-Najjar, B. (1996). Total quality maintenance: An approach for continuous reduction in costs of quality products. *Journal of Quality in Maintenance Engineering, 2*(3), 4–20. http://doi.org/10.1108/13552519610130413

Amanchukwu, R. N., Stanley, G. J., & Ololube, N. P. (2015). A review of leadership theories, principles, styles, and their relevance to educational management.

Management, 5(1), 6–14. http://doi.org/10.5923/j.mm.20150501.02

Angel, D. C., & Pritchard, C. (2008, June). Where 'Six Sigma' went wrong. *Transport Topics,* p. 5.

Anjali, K. T., & Anand, D. (2015). Intellectual stimulation and job commitment: A study of IT professionals. *IUP Journal of Organizational Behavior, 14,* 28–41. https://www.iupindia.in

Antonakis, J., Avolio, B. J., & Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor full-range leadership theory using Multifactor Leadership Questionnaire. *The Leadership Quarterly, 14,* 261–295. doi:10.1016/S1048-9843(03)00030-4

Antony, J & Gupta, S. (2019). Top ten reasons for process improvement project failures. *International Journal of Lean Six Sigma, 10*(1), 367–374. http://doi.org/10.1108/IJLSS-11-2017-0130

Antony, J., Lizarelli, F. L., Fernandes, M. M., Dempsey, M., Brennan, A., & McFarlane, J. (2019). A study into the reasons for process improvement project failures: Results from a pilot survey. *International Journal of Quality & Reliability Management, 36*(10), 1699–1720. http://doi.org/10.1108/IJQRM-03-2019-0093

Aritz, J., Walker, R., Cardon, P., & Zhang, L. (2017). The discourse of leadership: The power of questions in organizational decision making. *International Journal of Business Communication, 54*(2), 161–181. http://doi.org/10.1177/2329488416687054

Arumugam, V., Antony, J. & Linderman, K. (2016). The influence of challenging goals and structured method on Six Sigma project performance: A mediated moderation analysis. *European Journal of Operational Research, 254*(1), 202–213. http://doi.org/10.1016/j.ejor.2016.03.022

Ayodeji, H. (2020, March 20). *Nigeria: Reinforcing footprint in food, beverage industry*. https://allafrica.com/stories/202003200824.html

Bager, A., Roman, M., Algedih, M., & Mohammed, B. (2017). Addressing multicollinearity in regression models: A ridge regression application. *Journal of Social and Economic Statistics, 6*(1), 1–20. http://www.jses.ase.ro/

Bai, Y., Lin, L., & Li, P. P. (2016). How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership. *Journal of Business Research, 69*(9), 3240–3250. http://doi.org/10.1016/j.jbusres.2016.02.025

Bai, C., Sarkis, J., & Dou, Y. (2017). Constructing a Process model for low-carbon supply chain cooperation practices based on the DEMATEL and the NK Model. *Supply Chain Management: An International Journal, 22*(3), 237–257. http://doi.org/10.1108/scm-09-2015-0361

Bai, C., Satir, A., & Sarkis, J. (2019). Investing in lean manufacturing practices: An environmental and operational perspective. *International Journal of Production Research, 57*(4), 1037–1051. http://doi.org/10.1080/00207543.2018.1498986

Bamford, D., Forrester, P., Dehe, B., & Leese, R. G. (2015). Partial and iterative lean

implementation: Two case studies. *International Journal of Operations & Production Management, 35*(5), 702–727. http://doi.org/10.1108/ijopm-07-2013-0329

Ban, H., Choi, H., Choi, E., Lee, S., & Kim, H. (2019). Investigating key attributes in experience and satisfaction of hotel customer using online review data. *Sustainability, 11*(23), 1-13. http://doi.org/10.3390/su11236570

Barnham, C. (2015). Quantitative and qualitative research. *International Journal of Market Research, 57*(6), 837–854. http://doi.org/10.2501/ijmr-2015-070

Bass, B, M. (1985). Leadership: Good, better, best. *Organizational Dynamics, 13*(3), 26–40. http://doi.org/10.1016/0090-2616(85)90028-2

Bass, B. M. (1997). Does the transactional–transformational leadership paradigm transcend organizational and national boundaries? *American Psychologist, 52*(2), 130–139. http://doi.org/10.1037/0003-066X.52.2.130

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European Journal of Work and Organizational Psychology, 8*(1), 9–32. http://doi.org/10.1080/135943299398410

Bass, B. M., & Avolio, B. J. (1995). *MLQ multifactor leadership questionnaire*. Mind Garden

Bass, B., & Avolio, B. (1997). *Full range leadership development: Manual for the Multifactor Leadership Questionnaire*. Mind Garden

Berchtold, A. (2019). Treatment and reporting on-item level missing data in social

science research. *International Journal of Social Research Methodology, 22*(5), 431–439. http://doi.org/10.1080/13645579.2018.1563978

Berraies, S., & El Abidine, S. Z. (2019). Do leadership styles promote ambidextrous innovation? Case of knowledge-intensive firms. *Journal of Knowledge Management, 23*(5), 836–859. http://doi.org/10.1108/jkm-09-2018-0566

Best, M., & Neuhauser, D. (2006). Walter A Shewhart, 1924, and the Hawthorne factory. *Quality and Safety in Health Care, 15*(2), 142–143. http://doi.org/10.1136/qshc.2006.018093

Blair, G., Cooper, J., Coppock, A., & Humphreys, M. (2019). Declaring and diagnosing research designs. *American Political Science Review, 113*(3), 838–859. http://doi.org/10.1017/S0003055419000194

Bleske-Rechek, A., Morrison, K. M., & Heidtke, L. D. (2015). Causal inference from descriptions of experimental and non-experimental research: Public understanding of correlation-versus-causation. *Journal of General Psychology, 142*(1), 48–70. http://doi.org/10.1080/00221309.2014.977216

Bloom, N., Genakos, C., Sadun, R., & Reenen, J. V. (2012). Management practices across firms and countries. *Academy of Management Perspectives, 26*(1), 12 –13. http://doi.org/10.5465/amp.2011.0077

Boulton, C., & Quain, D. (2006). *Brewing yeast and fermentation*. Blackwell Publishing.

Breevaart, K., & Zacher, H. (2019). Main and interactive effects of weekly transformational and laissez-faire leadership on followers' trust in the leader and

leader effectiveness. *Journal of Occupational & Organizational Psychology, 92*(2), 384–409. http://doi.org/10.1111/joop.12253

Briggs, D. E., Boulton, C.A., Brookes, P.A., & Rogers, S. (2011). *Brewing: Science and practice*. Woodhead Publishing Limited

Bryman, A. (2016). *Social research methods*. Oxford University Press.

Burawat, P. (2016). Guidelines for improving productivity, inventory, turnover rate, and level of defects in the manufacturing industry. *International Journal of Economic Perspectives, 10,* 88–95. https://www.econ-society.org.

Burns, J. M. (1978). *Leadership.* Harper & Row.

Butler, M., Szwejczewski, M., & Sweeney, M. (2018). A model of continuous improvement program management. *Production Planning & Control, 29*(5), 386–402. http://doi.org/10.1080/09537287.2018.1433887

Camarillo, A., Rios, J., & Althoff, K. D. (2017). CBR and PLM applied to diagnosis and technical support during problem-solving in the continuous improvement process of manufacturing plants. *Procedia Manufacturing, 13,* 987–994. http://doi.org/10.1016/j.promfg.2017.09.096

Campbell, J. W. (2017). Efficiency, incentives, and transformational leadership: Understanding collaboration preferences in the public sector. *Public Performance & Management Review*, *41*(2), 277–299. http://doi.org/10.1080/15309576.2017.1403332

Carins, J. E., Rundle-Thiele, S. R., & Fidock, J. T. (2016). Seeing through a Glass Onion:

Broadening and deepening formative research in social marketing through a mixed-methods approach. *Journal of Marketing Management, 32*(11–12), 1083–1102. http://doi.org/10.1080/0267257X.2016.1217252

Carless, S. A. (2001). Assessing the discriminant validity of the Leadership Practices Inventory. *Journal of Occupational & Organizational Psychology, 74*(2), 233–239. http://doi.org/10.1348/096317901167334

Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business & Psychology, 14*, 389–406. http://doi.org/10.1023/A:1022991115523

Cascio, M. A., & Racine, E. (2018). Person-oriented research ethics: integrating relational and everyday ethics in research. *Accountability in Research: Policies & Quality Assurance, 25*(3), 170–197. http://doi.org/10.1080/08989621.2018.1442218

Cerniglia J. A., Fabozzi, F. J., & Kolm, P. N. (2016). Best practices in research for quantitative equity strategies. *Journal of Portfolio Management, 42*(5), 135–143. http://doi.org/10.3905/jpm.2016.42.5.135

Ceri-Booms, M., Curseu, P. L, & Oerlemans, L. A. G. (2017). Task and person-focused leadership behaviors and team performance: A meta-analysis. *Human Resource Management Review, 27*(1), 178–192. http://doi.org/10.1016/j.hrmr.2016.09.010

Chaplin, D. D., Cook, T. D., Zurovac, J., Coopersmith, J. S., Finucane, M. M., Vollmer, L. N., & Morris, R. E. (2018). The internal and external validity of the regression

discontinuity design: A meta-analysis of 15 within-study comparisons. *Journal of Policy Analysis & Management, 37*(2), 403–429. http://doi.org/10.1002/pam.22051

Chavas, J. (2018). On multivariate quantile regression analysis. *Statistical Methods & Applications, 27,* 365–384. http://doi.org/10.1007/s10260-017-0407-x

Chen, R., Lee, Y., & Wang, C. (2020). Total quality management and sustainable competitive advantage: Serial mediation of transformational leadership and executive ability. *Total Quality Management & Business Excellence, 31*(5–6), 451–468. http://doi.org/10.1080/14783363.2018.1476132

Chi, N., Chen, Y., Huang, T., & Chen, S. (2018). Trickle-down effects of positive and negative supervisor behaviors on service performance: The roles of employee emotional labor and perceived supervisor power. *Human Performance, 31*(1), 55–75. http://doi.org/10.1080/08959285.2018.1442470

Chin, T. L., Lok, S. Y. P., & Kong, P. K. P. (2019). Does transformational leadership influence employee engagement? *Global Business and Management Research: An International Journal, 11*(2), 92–97. https://www.gbmrjournal.com/vol11no2.htm

Cho, E., & Kim, S. (2015). Cronbach's coefficient alpha: Well-known but poorly understood. *Organic Research Methods*, *18*(2), 207–230. http://doi.org/10.1177/1094428114555994

Chojnacka-Komorowska, A., & Kochaniec, S. (2019). Improving the quality control

process using the PDCA cycle. *Research Papers of the Wroclaw University of Economics, 63*(4), 69–80. http://doi.org/10.15611/pn.2019.4.06

Compton, M., Willis, S., Rezaie, B., & Humes, K. (2018). Food processing industry energy and water consumption in the Pacific Northwest. *Innovative Food Science & Emerging Technologies, 47,* 371–383. http://doi.org/10.1016/j.ifset.2018.04.001

Connolly, M. (2015). The courage of educational leaders. *Journal of Business Research, 26,* 77–85. http://doi.org/10.1080/17448689.2014.949080

Constantin, C. (2017). Using the Regression Model in multivariate data analysis. *Bulletin of the Transilvania University of Brasov. Series V: Economic Sciences, 10,* 27–34. http://www.webut.unitbv.ro

Cortina, J. M. (2020). On the Whys and Hows of Quantitative Research. *Journal of Business Ethics, 167*(1), 19–29. http://doi.org/10.1007/s10551-019-04195-8

Counsell, A., & Harlow, L. (2017). Reporting practices and use of quantitative methods in Canadian journal articles in psychology. *Canadian Psychology, 58*(2), 140. http://doi.org/10.1037/cap0000074

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16,* 297–334. http://doi.org/10.1007/bf02310555

Dalmau, T., & Tideman, J. (2018). The practice and art of leading complex change. *Journal of Leadership, Accountability & Ethics, 15*(4), 11–40. http://doi.org/10.33423/jlae.v15i4.168

Da Silva, F. V., & Vieira, V. A. (2018). Two-way and three-way moderating effects in regression analysis and interactive plots. *Brazilian Journal of Management, 11*(4), 961–979. http://doi.org/10.5902/1983465916968

Datche, A. E., & Mukulu, E. (2015). The effects of transformational leadership on employee engagement: A survey of civil service in Kenya. *Issues in Business Management and Economics, 3*(1), 9–16. http://doi.org/10.15739/IBME.2014.010

Debebe, A., Temesgen, S., Redi-Abshiro, M., Chandravanshi, B. S., & Ele, E. (2018). Improvement in analytical methods for determination of sugars in fermented alcoholic beverages. *Journal of Analytical Methods in Chemistry*, 1–10. http://doi.org/10.1155/2018/4010298

Dehejia, R., Pop-Eleches, C., & Samii, C. (2021). From local to global: External validity in a fertility natural experiment. *Journal of Business & Economic Statistics, 39*(1), 217–243. http://doi.org/10.1080/07350015.2019.1639407

Deming, W. E. (1967). Walter A. Shewhart, 1891-1967. *The American Statistician, 21*(2), 39–40. http://doi.org/10.1080/00031305.1967.10481808

Deming, W. E. (1986). *Out of crisis*. MIT Center for Advanced Engineering.

Desai, D.A., Kotadiya, P., Makwana, N., & Patel, S. (2015). Curbing variations in the packaging process through Six Sigma way in the large-scale food-processing industry. *Journal of Industrial Engineering International, 11*, 119–129. http://doi.org/10.1007/s40092-014-0082-6

De Souza Pinto, J., Schuwarten, L. A., de Oliveira Junior, G. C., & Novaski, O. (2017).

Brazilian Journal of Operations & Production Management, 14(4), 556–566. http://doi.org/10.14488/BJOPM.2017.v14.n4.a11

Dong, Y., Bartol, K. M., Zhang, Z. X., & Li, C. (2017). Enhancing employee creativity via individual skill development and team knowledge sharing: Influences of dual-focused transformational leadership. *Journal of Organizational Behavior, 38*(3), 439–458. http://doi.org/10.1002/job.2134

Dora, M., Van Goubergen, D., Kumar, M., Molnar, A., & Gellynck, X. (2014). Application of lean practices in small and medium-sized food enterprises. *British Food Journal, 116*(1), 125– 141. http://doi.org/10.1108/BFJ-05-2012-0107

Dowling, M., Brown, P., Legg, D., & Beacom, A. (2017). Living with imperfect comparisons: The challenges and limitations of comparative paralympic sport policy research. *Sport Management Review, 21*(2), 101–113. http://doi.org/10.1016/j.smr.2017.05.002

Downe, J., Cowell, R., & Morgan, K. (2016). What determines ethical behavior in public organizations: Is it rules or leadership? *Public Administration Review*, *76*(6), 898–909. http://doi.org/10.1111/puar.12562

Dubey, R., Gunasekaran, A., Childe, S. J., Papadopoulos, T., Hazen, B. T., & Roubaud, D. (2018). Examining top management commitment to TQM diffusion using institutional and upper echelon theories. *International Journal of Production Research, 56*(8), 2988–3006. http://doi.org/10.1080/00207543.2017.1394590

Elgelal, K. S. K., & Noermijati, N. (2015). The influences of transformational leadership

on employees' performance. *Asia Pacific Management and Business Application, 3*(1), 48–66. http://doi.org/10.21776/ub.apmba.2014.003.01.4

El-Masri, M. (2017). Probability sampling. *Canadian Nurse, 113,* 26. https:// www.canadian-nurse.com

Ernst, A. F., & Albers, C. J. (2017). Regression assumptions in clinical psychology research practice: A systematic review of common misconceptions. *PeerJ, 5,* e3323. http://doi.org/10.7717/peerj.3323

Fahad, A. A. S., & Khairul, A. M. A. (2020). The mediation effect of TQM practices on the relationship between entrepreneurial leadership and organizational performance of SMEs in Kuwait. *Management Science Letters, 10,* 789–800. http://doi.org/10.5267/j.msl.2019.10.018

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.G. (2009). Statistical power analyses using G*Power 3.1 tests for correlation and regression analyses. *Behaviour Research Methods, 41,* 1149 –1160. http://doi.org/10.3758/BRM.41.4.1149

Finkel, E. J., Eastwick, P. W., & Reis, H. T. (2017). Replicability and other features of a high-quality science: Toward a balanced and empirical approach. *Journal of Personality & Social Psychology, 113*(2), 244–253. http://doi.org/10.1037/pspi0000075

Foster, T., & Hill, J. J. (2019). Mentoring and career satisfaction among emerging nurse scholars. *International Journal of Evidence-Based Coaching & Mentoring, 17*(2), 20-35. http://doi.org/10.24384/43ej-fq85

Fugard, A. J., & Potts, H. W. (2015). Supporting thinking on sample sizes for thematic analyses: A quantitative tool. *International Journal of Social Research Methodology, 18*(6), 669–684. http://doi.org/10.1080/13645579.2015.1005453

Fusch, P., Fusch, G. E., & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Social Change, 10*(1), 19–32. http://doi.org/10.5590/JOSC.2018.10.1.02

Galeazzo, A., Furlan, A., & Vinelli, A. (2017). The organizational infrastructure of continuous improvement – An empirical analysis. *Operations Management Research, 10* (1), 33–46. http://doi.org/10.1007/s12063-016-0112-1

Gallo, A. (2015). *A refresher on regression analysis*. https://hbr.org/2015/11/a-refresher-on-regression-analysis

Gammacurta, M., Marchand, S., Moine, V., & de Revel, G. (2017). Influence of yeast/lactic acid bacteria combinations on the aromatic profile of red wine. *Journal of the Science of Food and Agriculture, 97*(12), 4046–4057. http://doi.org/10.1002/jsfa.8272

Gandhi, S. K., Singh, J., & Singh, H. (2019). Modeling the success factors of kaizen in the manufacturing industry of Northern India: An empirical investigation. *IUP Journal of Operations Management, 18*(4), 54–73. https://www.iupindia.in

Garcia, J.A., Rama, M.C.R., & Rodríguez, M.M.M. (2017). How do quality practices affect the results?: The experience of thalassotherapy centers in Spain. *Sustainability, 9*(4), 1–19. http://doi.org/10.3390/su9040671

Gardner, P. & Johnson, S. (2015). Teaching the pursuit of assumptions. *Journal of Philosophy of Education, 49*(4), 557–570. www.philosophy-ofeducation.org/publications/jope.html

Garvin D.A. (1984). What does “product quality” really mean?. *Sloan Management Review, 26*(1), 25–43. https://www.slaonreview.mit.edu

Geuens, M., & De Pelsmacker, P. (2017). Planning and conducting experimental advertising research and questionnaire design. *Journal of Advertising, 46*(1), 83-100. http://doi.org/10.1080/00913367.2016.1225233

Geroge, G., Corbishley, C., Khayesi, J. N. O., Hass, M. R., & Tihanyi, L. (2016). Bringing Africa in: Promising direction for management research. *Academy of Management Journal, 59*(2), 377–393. http://doi.org/10.5465/amj.2016.4002

Ghasabeh, M. S., Reaiche, C., & Soosay, C. (2015). The emerging role of transformational leadership. *Journal of Developing Areas, 49*(6), 459–467. http://doi.org/10.1353/jda.2015.0090

Godina, R., Matias, J.C.O. & Azevedo, S.G. (2016). Quality improvement with statistical process control in the automotive industry. *International Journal of Industrial Engineering and Management, 7* (1), 1–8. http://ijiemjournal.uns.ac.rs/

Godina, R., Pimentel, C., Silva, F. J. G., & Matias, J. C. O. (2018). Improvement of the statistical process control certainty in an automotive manufacturing unit. *Procedia Manufacturing, 17,* 729-736. http://doi.org/10.1016/j.promfg.2018.10.123

Gorard, S. (2020). Handling missing data in numerical analyses. *International Journal of*

Social Research Methodology, *23*(6), 651–660. http://doi.org/10.1080/13645579.2020.1729974

Gottfredson, R. K., & Aguinis, H. (2017). Leadership behaviors and follower performance: Deductive and inductive examination of theoretical rationales and underlying mechanisms. *Journal of Organizational Behavior, 38*(4), 558–591. http://doi.org/10.1002/job.2152

Govindan, K. (2018). Sustainable consumption and production in the food supply chain: A conceptual framework. *International Journal of Production Economics, 195,* 419–431. http://doi.org/10.1016/j.ijpe.2017.03.003

Graham, K. A., Ziegert, J. C., & Capitano, J. (2015). The effect of leadership style, framing, and promotion regulatory focus on unethical pro-organizational behavior. *Journal of Business Ethics, 126*, 423–436. http://doi.org/10.1007/s10551-013- 1952-3

Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th ed.). Pearson

Grizzlea, A. J., Hines, L. E., Malonec, D. C., Kravchenkod, O., Harry Hochheiserd, H., & Boyce, R. D. (2020). Testing the face validity and inter-rater agreement of a simple approach to drug-drug interaction evidence assessment. *Journal of Biomedical Informatics*, 1–8. http://doi.org/10.1016/j.jbi.2019.103355

Guarientea, P., Antoniolli, I., Pinto Ferreira, L., Pereira, T., & Silva, F. J. G. (2017). Implementing autonomous maintenance in an automotive components

manufacturer. *Manufacturing, 13,* 1128–1134. http://doi.org/10.1016/j.promfg.2017.09.174

Hansbrough, T. K., & Schyns, B. (2018). The appeal of transformational leadership. *Journal of Leadership Studies, 12*(3), 19–32. http://doi.org/10.1002/jls.21571

Haegele, J. A., & Hodge, S. R. (2015). Quantitative methodology: A guide for emerging physical education and adapted physical education researchers. *Physical Educator, 72*(5), 59–75. http://doi.org/10.18666/tpe-2015-v72-i5-6133

Hardesty, D. M., & Bearden, W. O. (2004). The use of expert judges in scale development Implications for improving face validity of measures of unobservable constructs. *Journal of Business Research, 57*(2), 98–107. http://doi.org/10.1016/S0148-2963(01)00295-8

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-Based Nursing, 18*(3), 66–67 http://doi.org/10.1136/eb-2015-102129

Hedaoo, H. R., & Sangode, P. B. (2019). Implementation of Total Quality Management in manufacturing firms: An empirical study. *IUP Journal of Operations Management, 18*(1), 21–35. https://.www.iupindia.in.

Hesterberg, T. C. (2015). What teachers should know about the bootstrap: Resampling in the undergraduate statistics curriculum. *The American Statistician, 69*(4), 371–386. http://doi.org/10.1080/00031305.2015.1089789

Higgins, K. T. (2006). The state of food manufacturing: The quest for continuous improvement. *Food Engineering, 78,* 61-70.

https://www.foodengineeringmag.com

Hirzel, A. K., Leyer, M., & Moormann, J. (2017). The role of employee empowerment in implementing continuous improvement: Evidence from a case study of a financial services provider. *International Journal of Operations & Production Management, 37*(10), 1563–1579. http://doi.org/10.1108/IJOPM-12-2015-0780

Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2016). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *Journal of Management, 44*(2), 501–529. http://doi.org/10.1177/0149206316665461

Imai, M. (1986). *Kaizen: The key to Japan's competitive success*. Random House

Islam, T., Tariq, J. & Usman, B. (2018). Transformational leadership and four-dimensional commitment: Mediating role of job characteristics and moderating role of participative and directive leadership styles. *Journal of Management Development, 37(9),* 666–683. http://doi.org/10.1108/jmd-06-2017-0197

ISO 9000:2015. (2020). *Quality management systems- Fundamentals and vocabularies*. https://www.iso.org/standard/45481.html

Jain, P., & Duggal, T. (2016). The influence of transformational leadership and emotional intelligence on organizational commitment. *Journal of Commerce & Management Thought, 7*(3), 586–598. http://doi.org/10.5958/0976-478X.2016.00033.1

Jasti, N. V. K., & Kodali, R. (2015). Lean production: Literature review and trends. *International Journal of Production Research, 53*(3), 867–885.

http://doi.org/10.1080/00207543.2014.937508

Jelaca, M. S., Bjekic, R., & Lekovic, B. (2016). A proposal for a research framework based on the theoretical analysis and practical application of MLQ questionnaire. *Economic Themes, 54,* 549–562. http://doi.org/10.1515/ethemes-2016-0028

Jing, F. F., & Avery, G. C. (2016). Missing links in understanding the relationship between leadership and organizational performance. *International Business & Economics Research Journal, 15,* 107–118. https://clutejournals.com/index.php/IBER

Johansson, P. E., & Osterman, C. (2017). Conceptions and operational use of value and waste in lean manufacturing – An interpretivist approach. *International Journal of Production Research, 55*(23), 6903–6915. http://doi.org/10.1080/00207543.2017.1326642

Johnson, R. (2014). *Perceived leadership style and job satisfaction: Analysis of instructional and support departments in community colleges* (Doctoral dissertation, University of Phoenix).

Jurburg, D., Viles, E., Jaca, C., & Tanco, M. (2015). Why are companies still struggling to reach higher continuous improvement maturity levels? Empirical evidence from high-performance companies. *TQM Journal, 27*(3), 316–327. http://doi.org/10.1108/TQM-11-2013-0123

Jurburg, D., Viles, E., Tanco, M., & Mateo, R. (2017). What motivates employees to participate in continuous improvement activities? *Total Quality Management &*

Business Excellence, *28*(13-14), 1469–1488. http://doi.org/10.1080/14783363.2016.1150170

Kailasapathy, P., & Jayakody, J. A. (2018). Does leadership matter? Leadership styles, family-supportive supervisor behavior, and work interference with family conflict. *International Journal of Human Resource Management, 29*(21), 3033-3067. http://doi.org/10.1080/09585192.2016.1276091

Kakouris, P., & Sfakianaki, E. (2018). Impacts of ISO 9000 on Greek SME's business performance. *International Journal of Quality & Reliability Management, 35*(10), 2248–2271. http://doi.org/10.1108/IJQRM-10-2017-0204

Kang, N., Zhao, C., Li, J., & Horst, J (2016). A hierarchical structure for key performance indicators for operation management and continuous improvement in production systems. *International Journal of Production Research, 54*(21), 6333–6350. http://doi.org/10.1080/00207543.2015.1136082

Karim, R. A., Mahmud, N., Marmaya, N. H., & Hasan, H. F. (2020). The use of Total Quality Management practices for Halalan Toyyiban of halal food products: Exploratory factor analysis. *Asia-Pacific Management Accounting Journal*, *15* (1), 1–21. https://www. apmaj.uitm.edu.my

Kark, R., Van Dijk, D., & Vashdi, D. R. (2018). Motivated or demotivated to be creative: The role of self-regulatory focus in transformational and transactional leadership processes. *Applied Psychology*, *67*(1), 186–224. http://doi.org/10.1111/apps.12122

Kayode, A.P., Hounhouigan, D. J., Nout, M. J. ., & Niehof, A. (2007). Household production of sorghum beer in Benin: Technological and socio-economic aspects. *International Journal of Consumer Studies, 31*(3), 258–264. http://doi.org/10.1111/j.1470-6431.2006.00546.x

Khan, S. A., Kaviani, M. A., Galli, B. J., & Ishtiaq, P. (2019). Application of continuous improvement techniques to improve organization performance: A case study. *International Journal of Lean Six Sigma, 10*(2), 542–565. http://doi.org/10.1108/IJLSS-05-2017-0048

Khattak, M. N., Zolin, R., & Muhammad, N. (2020). Linking transformational leadership and continuous improvement: The mediating role of trust. *Management Research Review, 43*(8), 931–950. http://doi.org/10.1108/MRR-06-2019-0268

Kim, M., & Beehr, T. A. (2020). The long reach of the leader: Can empowering leadership at work result in enriched home lives? *Journal of Occupational Health Psychology, 25*(3), 203–213. http://doi.org/10.1037/ocp0000177

Kim, S. S., & Vandenberghe, C. (2018). The moderating roles of perceived task interdependence and team size in transformational leadership relation to team identification: A dimensional analysis. *Journal of Business & Psychology, 33*, 509–527. http://doi.org/10.1007/s10869-017-9507-8

Kirkwood, A., & Price, L. (2013). Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Education Technology, 44*(4), 536–543.

http://doi.org/10.1111/bjet.12049

Kirui, J. K., Iravo, M. A., & Kanali, C. (2015). The role of transformational leadership in effective organizational performance in state-owned banks in Rift Valley, Kenya. *International Journal of Research in Business Management, 3,* 45–60. https://www.ijrbsm.org

Klamer, P., Bakker, C., & Gruis, V. (2017). Research bias in judgment bias studies – A systematic review of valuation judgment literature. *Journal of Property Research, 34*(4), 285–304. http://doi.org/10.1080/09599916.2017.1379552

Kohler, T., Landis, R. S., & Cortina, J. M. (2017). Establishing methodological rigor in quantitative management learning and education research: The role of design, statistical methods, and reporting standards. *Academy of Management Learning & Education*, *16*(2), 173–192. http://doi.org/10.5465/amle.2017.0079

Koleilat, M., & Whaley, S. E. (2016). Reliability and validity of food frequency questions to assess beverage and food group intakes among low-income 2- to 4-year-old children. *Journal of the Academy of Nutrition and Dietetics*, *16*(6), 931–939. http://doi.org/10.1016/j.jand.2016.02.014

Kozak, M., & Piepho, H. P. (2018). What's normal anyway? Residual plots are more telling than significance tests when checking ANOVA assumptions. *Journal of Agronomy and Crop Science, 204*(1), 86–98. http://doi.org/10.1111/jac.12220

Krafcik, J. F. (1988). Triumph of the Lean Production System. *MIT Sloan Management Review*, *30*(1), 41–52. https://www.sloanreview.mit.edu

Kumar, V., & Sharma, R. R. K. (2017). Leadership styles and their relationship with TQM focus for Indian firms: An empirical investigation. *International Journal of Productivity and Performance Management, 67,* 1063–1088. http://doi.org/:10.1108/IJPPM-03-2017-007

Kuru, O., & Pasek, J. (2016). Improving social media measurement in surveys: Avoiding acquiescence bias in Facebook research. *Computers in Human Behavior, 57,* 82–92. http://doi.org/10.1016/j.chb.2015.12.008

Laohavichien, T., Fredendall, L. D., & Cantrell, R. S. (2009). The effects of transformational and transactional leadership on quality improvement. *Quality Management Journal, 16*(2), 7–24. http://doi.org/10.1080/10686967.2009.11918223

Le, B. P., & Hui, L. (2019). Determinants of innovation capability: The roles of transformational leadership, knowledge sharing and perceived organizational support. *Journal of Knowledge Management, 23*(3), 527–547. http://doi.org/10.1108/jkm-09-2018-0568

Lean Manufacturing Tools. (2020). *Autonomous maintenance.* https://leanmanufacturingtools.org/438/autonomous-maintenance/

Leatherdale, S. T. (2019). Natural experiment methodology for research: a review of how different methods can support real-world research. *International Journal of Social Research Methodology, 22*(1), 19–35. http://doi.org/10.1080/13645579.2018.1488449

Lee, B., & Cassell, C. (2013). Research methods and research practice: History, themes, and topics. *International Journal of Management Reviews, 15*(2), 123–131. http://doi.org/10.1111/ijmr.12012

Lee, Y., Chen, P., & Su, C. (2020). The evolution of the leadership theories and the analysis of new research trends. *International Journal of Organizational Innovation, 12*, 88–104. http://www.ijoi-online.org/

Lietz, P. (2010). Research into questionnaire design. *International Journal of Market Research, 52*(2), 249–272. http://doi.org/10.2501/S147078530920120X

Louw, L., Muriithi, S. M., & Radloff, S. (2017). The relationship between transformational leadership and leadership effectiveness in Kenyan indigenous banks. *South African Journal of Human Resource Management, 15*(1), 1–11. http://doi.org/10.4102/sajhrm.v15i0.935

Luu, T. T., Rowley, C., Dinh, C. K., Qian, D., & Le, H. Q. (2019). Team creativity in public healthcare organizations: The roles of charismatic leadership, team job crafting, and collective public service motivation. *Public Performance & Management Review, 42*(6), 1448–1480. http://doi.org/10.1080/15309576.2019.1595067

Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. The Leadership Quarterly, 7, 385–425. doi:10.1016/S1048-9843(96)90027-2

Mahmood, M., Uddin, M. A. & Fan, L. (2019). The influence of transformational leadership on employees' creative process engagement: A multi-level analysis. *Management Decision, 57*(3), 741–764. http://doi.org/10.1108/md-07-2017-0707

Malik, W. U., Javed, M., & Hassan, S. T. (2017). Influence of transformational leadership components on job satisfaction and organizational commitment. *Pakistan Journal of Commerce & Social Sciences, 11(1),* 146–165. https://www.jespk.net

Manocha, N., & Chuah, J. C. (2017). Water leaders' summit 2016: Future of world's water beyond 2030 – A retrospective analysis. *International Journal of Water Resources Development, 33*(1), 170–178. http://doi.org/10.1080/07900627.2016.1244643

Marchiori, D. & Mendes, L. (2020). Knowledge management and total quality management: Foundations, intellectual structures, insights regarding the evolution of the literature. *Total Quality Management & Business Excellence, 31*(9–10), 1135–1169. http://doi.org/10.1080/14783363.2018.1468247

Marsha, N., & Murtaqi, I. (2017). The effect of financial ratios on firm value in the food and beverage sector of the IDX. *Journal of Business and Management, 6*(2), 214-226. http://jbm.johogo.com/

Martinez- Mesa, J., Gonzalez-Chica, D. A., Duquia, R. P., Bonamigo, R. R., & Bastos, J. L. (2016). Sampling: How to select participants in my research study? *Anais Braseleros de Dermatologia, 91,* 326–330.

http://doi.org/10.1590/abd18064841.20165254

Matthes, J. M., & Ball, A. D. (2019). Discriminant validity assessment in marketing research. *International Journal of Market Research, 61*(2), 210–222. http://doi.org/10.1177/1470785318793263

McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative, or mixed methods and choice based on the research. *Perfusion, 30*(7), 537–542. http://doi.org/10.1177/0267659114559116

McKay, S. (2017). *Quality improvement approaches: Lean for education*. https://www.carnegiefoundation.org/blog/quality-improvement-approaches-lean-for-education

McLean, R. S., Antonya, J., & Dahlgaard, J. J. (2017). Failure of CI initiatives in manufacturing environments: A systematic review of the evidence. *Total Quality Management, 28*(3–4), 219–257. http://doi.org/10.1080/14783363.2015.1063414

Meerwijk, E., & Sevelius, J. M. (2017). Transgender population size in the United States: A meta-regression of population-based probability samples. *American Journal of Public Health, 107*(2), 1–8. http://doi.org/10.2105/AJPH.2016.303578

Metz, T. (2018). An African theory of good leadership. *African Journal of Business Ethics, 12*(2), 36–53. http://doi.org/10.15249/12-2-204

Mihajlovic, M. (2018). Methods and techniques of quality process improvement in the milk industry in the Republic of Serbia. *Economic Themes, 56,* 221–237. http://doi.org/10.2478/ethemes-2018-0013

Mohajan, H. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University, 17*(14), 58–82. https://mpra.ub.uni-muenchen.de/83458/

Mohamad, W. N., Omar, A., & Kassim, N. (2019). The effect of understanding companion's needs, companion's satisfaction, companion's delight towards behavioral intention in Malaysia medical tourism. *Global Business & Management Research, 11*, 370–381. https://www.gbmrjournal.com

Mohamed, N.A. (2016). Evaluation of the functional performance for carbonated beverage packaging: A review for future trends. *Arts and Design Studies, 39,* 53–61. https://www.iiste.org

Montgomery, D. C. (2000). *Introduction to statistical quality control* (2nd ed.). Wiley

Monye, C. (2016, June 6). Nigeria's manufacturing sector. *The Guardian*, p. 22.

Morgan, S. D., & Stewart, A. C. (2017). Continuous improvement of team assignments: Using a web-based tool and the plan-do-check-act cycle in design and redesign. *Decision Sciences Journal of Innovative Education, 15,* 303–324. http://doi.org/:10.1111/dsji.12132

Morganson, V., Major, D., & Litano, M. (2017). A multilevel examination of the relationship between leader-member exchange and work-family outcomes. *Journal of Business & Psychology*, *32,* 379–393. http://doi.org/10.1007/s10869-016-9447-8

Mosadeghrad, M. A. (2014). Essentials of Total Quality Management: A meta-analysis.

International Journal of Health Care Quality Assurance, 27(6), 544– 558. http://doi.org/10.1108/IJHCQA-07-2013-0082

Muenjohn, M., & Armstrong, A. (2008). Evaluating the structural validity of the Multifactor Leadership Questionnaire (MLQ): Capturing the leadership factors of transformational-transactional leadership. *Contemporary Management Research, 4*(1), 3–4. http://doi.org/10.7903/cmr.704

Muhammad, M. (2019). The emergence of the manufacturing industry in Nigeria. *Journal of Advances in Social Science and Humanities, 5*, 807– 833. http://doi.org/10.15520/jassh53422

Muhammad, R., & Faqir, M. (2012). An application of control charts in the manufacturing industry. *Journal of Statistical and Econometric Methods*, *1*(1), 77–92. https://www.scienpress.com/journal_focus.asp?main_id=68&Sub_id=139

Murimi, M. M., Ombaka, B., & Muchiri, J. (2019). Influence of strategic physical resources on the performance of small and medium manufacturing enterprises in Kenya. *International Journal of Business & Economic Sciences Applied Research, 12,* 20–27. http://doi.org/10.25103/ijbesar.121.02

Murshed, F., & Zhang, Y. (2016). Thinking orientation and preference for research methodology. *Journal of Consumer Marketing, 33*(6), 437–446. http://doi.org/10.1108/jcm01-2016-1694

Nagendra, A., & Farooqui, S. (2016). Role of leadership style on organizational performance. *International Journal of Research in Commerce & Management,*

7(4), 65–67. https://www.ijrcm.org.in

Ngaithe, L., & Ndwiga, M. (2016). Role of intellectual stimulation and inspirational motivation on the performance of commercial state-owned enterprises in Kenya. *European Journal of Business and Management, 8*(29), 33–40. https://www.iiste.org

Nguyen, T. L. H., & Nagase, K. (2019). The influence of total quality management on customer satisfaction. *International Journal of Healthcare Management, 12*(4), 277–285. http://doi.org/10.1080/20479700.2019.1647378

National Bureau of Statistics (NBS, 2014). *Nigerian manufacturing sector: Sectoral analysis*. http://www.nigerianstat.gov.ng

Nigerian Bureau of Statistics (NBS, 2019). *Nigerian Gross Domestic Product report*. https://www.nigerianstat.gov.ng

Nwanya, S. C., & Oko, A. (2019). The limitations and opportunities to use lean based continuous process management techniques in Nigerian manufacturing industries – A review. *Journal of Physics: Conference Series, 1378*(2), 1–12. http://doi.org/10.1088/1742-6596/1378/2/022086

Nkogbu, G. O., & Offia, P. A. (2015). Governance, employee engagement, and improved productivity in the public sector: The Nigerian experience. *Journal of Investment and Management, 4*(5), 141–151. http://doi.org/10.11648/j.jim.20150405.12

Nohe, C., & Hertel, G. (2017). Transformational leadership and organizational citizenship behavior: A meta-analytic test of underlying mechanisms. *Frontiers in*

Psychology, 8, 1–13. http://doi.org/10.3389/fpsyg.2017.01364

Northouse, P. G. (2016). *Leadership: Theory and practice* (7th ed.). Sage.

Nwanza, B. G., & Mbohwa, C. (2015). Design of a total productive maintenance model for effective implementation: A case study of a chemical manufacturing company. *Manufacturing, 4,* 461–470. http://doi.org/10.1016/j.promfg.2015.11.063

Nzewi, H. P., Ekene, O., & Raphael, A. E. (2018). Performance management and employees' engagement in selected brewery firms in south-east Nigeria. *European Journal of Business and Management*, *10*(12), 21–30. https://www.iiste.org/

Oakland, J. S., & Tanner, S. J. (2007). A new framework for managing change. *The TQM Magazine, 19*(6), 572 –589. http://doi.org/10.1108/09544780710828421

Ogola, M. G., Sikalieh, D., & Linge, T. K. (2017). The influence of intellectual stimulation leadership behavior on employee performance in SMEs in Kenya. *International Journal of Business and Social Science*, *8*(3), 89–100. https://www.ijbssnet.com

Okpala, K. E. (2012). Total quality management and SMPS performance effects in Nigeria: A review of Six Sigma methodology. *Asian Journal of Finance & Accounting*, *4*(2), 363–378. http://doi.org/10.5296/ajfa.v4i2.2641

Oluwafemi, O. J., & Okon, S. E (2018). The nexus between total quality management, job satisfaction, and employee work engagement in the food and beverage multinational company in Nigeria. *Organizations and Markets in Emerging*

Economies, 9(2), 251–271. http://doi.org/10.15388/omee.2018.10.00013

Omiete, F. A., Ukoha, O., & Alagah, A. D. (2018). Transformational leadership and organizational resilience in food and beverage firms in Port Harcourt. *International Journal of Business Systems and Economics, 12*(1), 39–56. https://arcnjournals.org

Onah, F. O., Onyishi, E., Ugwu, C., Izueke, E., Anikwe, S. O., Agalamanyi, C. U., & Ugwuibe, C. O. (2017). Assessment of capacity gaps in Nigeria public sector: A study of Enugu State Civil Service. *International Journal of Advanced Scientific Research and Management, 2*, 24–32. https://www.ijasrm.com

Onamusi, A. B., Asihkia, O. U., & Makinde, G. O. (2019). Environmental munificence and service firm performance: The moderating role of management innovation capability. *Business Management Dynamics*, *9*(6), 13–25. https://www.bmdynamics.com

Onetiu, P. L., & Miricescu, D. (2019). Analysis regarding the design and implementation of a just-in-time system at an automotive industry company in Romania. *Review of Management & Economic Engineering*, *18*, 584–600. https://www.rmee.org

Orabi, T. G. A. (2016). The impact of transformational leadership style on organizational performance: Evidence from Jordan. *International Journal of Human Resource Studies 6*(2), 89–102. http://doi.org/10.5296/ijhrs.v6i2.9427

Owidaa, A., Byrne, P. J., Heavey, C., Blake, P., & El-Kilany, K. S. (2016). A simulation-based CI approach for manufacturing-based field repair service contracting.

International Journal of Production Research, 54(21), 6458–6477. http://doi.org/10.1080/00207543.2016.1187774

Park, M. S., & Bae, H. J. (2020). Analysis of the factors influencing customer satisfaction of delivery food. *Journal of Nutritional Health, 53*(6), 688–701. http://doi.org/10.4163/jnh.2020.53.6.688

Park, J., & Park, M. (2016). Qualitative versus quantitative research methods: Discovery or justification? *Journal of Marketing Thought, 3*(1), 1–7. http://doi.org/10.15577/jmt.2016.03.01.1

Park, S., Han, S. J., Hwang, S. J., & Park, C. K. (2019). Comparison of leadership styles in Confucian Asian countries. *Human Resource Development International, 22* (1), 91–100. http://doi.org/10.1080/13678868.2018.1425587

Passakonjaras, S., & Hartijasti, Y. (2020). Transactional and transformational leadership: a study of Indonesian managers. *Management Research Review, 43*(6), 645–667. http://doi.org/10.1108/MRR-07-2019-0318

Perez, R. N., Amaro, J. E., & Arriola, E. R. (2014). Bootstrapping the statistical uncertainties of NN scattering data. *Physics Letter B, 738,* 155–159. http://doi.org/10.1016/j.physletb.2014.09.035

Petrucci, T., & Rivera, M. (2018). Leading growth through the digital leader. *Journal of Leadership Studies*, *12*(3), 53–56. http://doi.org/10.1002/jls.21595

Phan, A. C., Nguyen, H. T., Nguyen, H. A., & Matsui, Y. (2019). Effect of Total Quality Management practices and JIT production practices on flexibility performance:

Empirical Evidence from international manufacturing plants. *Sustainability, 11*(11), 1–21. http://doi.org/10.3390/su11113093

Phillips, A., Borry, P., & Shabani, M. (2017). Research ethics review for the use of anonymized samples and data: A systematic review of normative documents. *Accountability in Research: Policies & Quality Assurance, 24*(8), 483–496. http://doi.org/10.1080/08989621.2017.1396896

Po-Hsuan, W., Ching-Yuan, H., & Cheng-Kai, C. (2014). Service expectations, perceived service quality, and customer satisfaction in the food and beverage industry. *International Journal of Organizational Innovation, 7*(1), 171–180. https://www.ijoi-online.org

Poksinska, B., Swartling, D., & Drotz, E. (2013). The daily work of Lean leaders – lessons from manufacturing and healthcare. *Total Quality Management & Business Excellence, 24*(7–8), 886–898. http://doi.org/10.1080/14783363.2013.791098

Powel, T. C. (1995). Total Quality Management as a competitive advantage: A review and empirical study. *Strategic Management Journal, 16*(1), 15–27. http://doi.org/10.1002/smj.4250160105

Prati, L. M., & Karriker, J. H. (2018). Acting and performing: Influences of manager emotional intelligence. *Journal of Management Development, 37*(1), 101–110. http://doi.org/10.1108/JMD-03-2017-0087

Price, J. H., & Judy, M. (2004). Research limitations and the necessity of reporting them.

American Journal of Health Education, 35(2), 66–67. http://doi.org/10.1080/19325037.2004.10603611

Prowse, R. J. L., Naylor, P. J., Olstad, D. L., Carson, V., Masse, L. C., Storey, K., Kirk, S. F. L., & Raine, K. D. (2018). Reliability and validity of a novel tool to comprehensively assess food and beverage marketing in recreational sport settings. *International Journal of Behavioral Nutrition and Physical Activity, 15*(38), 1–12. http://doi.org/10.1186/s12966-018-0667-3

Quddus, S. M. A., & Ahmed, N. U. (2017). The role of leadership in promoting quality management: A study on the Chittagong City Corporation, Bangladesh. *Intellectual Discourse, 25,* 677–703. http://journals.iium.edu.my/intdiscourse/index.php/id

Queiros, A., Faria, D., & Almeida, F. (2017). Strengths and weaknesses of qualitative and quantitative research methods. *European Journal of Education Studies, 3*(9), 369–387. http://doi.org/10.5281/zenodo.887089

Rafique, M., Hameed, S. & Agha, M.H. (2018). Impact of knowledge sharing, learning adaptability and organizational commitment on absorptive capacity in pharmaceutical firms based in Pakistan. *Journal of Knowledge Management, 22*(1), 44–56. http://doi.org/10.1108/JKM-04-2017-0132

Reio, T. G. (2016). Nonexperimental research: Strengths, weaknesses and issues of precision. *European Journal of Training and Development, 40*(8/9), 676–690. http://doi.org/10.1108/EJTD-07-2015-0058

Revilla, M., & Ochoa, C. (2018). Alternative methods for selecting web survey samples. *International Journal of Market Research*, *60*(4), 352–365. http://doi.org/10.1177/1470785318765537

Riyami, A. T. (2015). Main approaches to educational research. *International Journal of Innovation and Research in Educational Sciences*, *2*, 412–416. http://doi.org/10.13140/RG.2.2.13995.54569

Robinson, M. A., & Boies, K. (2016). Different ways to get the job done: Comparing the effects of intellectual stimulation and contingent reward leadership on task-related outcomes. *Journal of Applied Social Psychology*, *46*(6), 336–353. http://doi.org/10.1111/jasp.12367

Ross, M. W., Iguchi, M. Y., & Panicker, S. (2018). Ethical aspects of data sharing and research participant protections. *American Psychologist*, *73*(2), 138–145. http://doi.org/10.1037/amp0000240

Roure, C., & Lentillon-Kaestner, V. (2018). Development, validity, and reliability of a French Expectancy-Value Questionnaire in physical education. *Canadian Journal of Behavioural Science*, *50*(3), 127–135. http://doi.org/10.1037/cbs0000099

Sachit, V., Pardeep, G., & Vaibhav, G. (2015). The impact of Quality Maintenance Pillar of TPM on manufacturing performance. *Proceedings of the 2015 International Conference on Industrial Engineering and Operations Management*, 310–315. http://doi.org/10.1109/IEOM.2015.7093741

Sahoo, S. (2020). Exploring the effectiveness of maintenance and quality management

strategies in Indian manufacturing enterprises. *Benchmarking: An International Journal*, *27*(4), 1399–1431. http://doi.org/10.1108/BIJ-07-2019-0304

Saltz, J., & Heckman, R. (2020). Exploring which agile principles students internalize when using a Kanban process methodology. *Journal of Information Systems Education*, *31*(1), 51–60. https://jise.org/

Samanta, I., & Lamprakis, A. (2018). Modern leadership types and outcomes: The case of the Greek public sector. *Journal of Contemporary Management Issues*, *23*(1), 173–191. http://doi.org/10.30924/mjcmi/2018.23.1.173

Sarid, A. (2016). Integrating leadership constructs into the Schwartz value scale: Methodological implications for research. *Journal of Leadership Studies*, *10*(1), 8–17. http://doi.org/10.1002/jls.21424

Sarina, A. H. L., Jiju, A., Norin, A., & Saja, A. (2017). A systematic review of statistical process control implementation in the food manufacturing industry. *Total Quality Management & Business Excellence*, *28*(1–2), 176–189. http://doi.org/10.1080/14783363.2015.1050181

Sarstedt, M., Bengart, P., Shaltoni, A. M., & Lehmann, S. (2018). The use of sampling methods in advertising research: The gap between theory and practice. *International Journal of Advertising*, *37*(4), 650–663. http://doi.org/10.1080/02650487.2017.1348329

Sashkin, M. (1996). *The visionary leader: Trainer's guide*: Human Resource Development Pr.

Sattayaraksa, T., & Boon-itt, S. (2016). CEO transformational leadership and the new product development process: The mediating roles of organizational learning and innovation culture. *Leadership & Organization Development Journal*, *37*(6), 730–749. http://doi.org/10.1108/lodj-10-2014-0197

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson Education Limited

Sharma, P., Malik, S. C., Gupta, A., & Jha, P. C. (2018). A DMAIC Six Sigma approach to quality improvement in the anodizing stage of the amplifier production process. *International Journal of Quality & Reliability Management*, *35*(9), 1868–1880. http://doi.org/10.1108/IJQRM-08-2017-0155

Shamir, B., & Eilam-Shamir, G. (2017). Reflections on leadership, authority, and lessons learned. *Leadership Quarterly*, *28*(4), 578–583 http://doi.org/10.1016/j.leaqua.2017.06.004

Shariq, M. S., Mukhtar, U., & Anwar, S. (2019). Mediating and moderating impact of goal orientation and emotional intelligence on the relationship of knowledge oriented leadership and knowledge sharing. *Journal of Knowledge Management*, *23*(2), 332–350. http://doi.org/10.1108/jkm-01-2018-0033

Shi, D., Lee, T., Fairchild, A. J., & Maydeu-Olivares, A. (2020). Fitting ordinal factor analysis models with missing data: A comparison between pairwise deletion and multiple imputations. *Educational & Psychological Measurement*, *80*(1), 41–66. http://doi.org/10.1177/0013164419845039

Shumpei, I., & Mihail, M. (2018). Linking continuous improvement to manufacturing performance. *Benchmarking, 25*(5), 1319–1332. http://doi.org/10.1108/BIJ-06-2015-0061

Simoes, L., Teixeira-Salmela, L. F., Magalhaes, L., Stuge, B., Laurentino, G., Wanderley, E., Barros, R., & Lemos, A. (2018). Analysis of test-retest reliability, construct validity, and internal consistency of the Brazilian version of the Pelvic Girdle questionnaire. *Journal of Manipulative and Physiological Therapeutics, 41*(5), 425–433. http://doi.org/10.1016/j.jmpt.2017.10.008

Singh, J., & Singh, H. (2015). CI philosophy—literature review and directions. *Benchmarking: An International Journal, 22*(1), 75–119. http://doi.org/10.1108/bij-06-2012-0038

Singh, J., Singh, H., & Gandhi, S. K. (2018). Assessment of TQM practices in the automobile industry: An empirical investigation. *Journal of Operations Management, 17,* 53–70. https://www.iupindia.in/

Singh, J., Singh, H., & Pandher, R. P. (2017). Role of the DMAIC approach in manufacturing unit: A case study. *Journal of Operations Management, 16,* 52-67. https://www.iupindia.in/

Smothers, J., Doleh, R., Celuch, K., Peluchette, J., & Valadares, K. (2016). Talk nerdy to me: The role of intellectual stimulation in the supervisor-employee relationship. *Journal of Health & Human Services Administration, 38*(4), 478–508. https://www.jhhsa.spaef.org

Sokovic, M., Pavetic D., & Kern Pipan, K. (2010). Quality improvement methodologies – PDCA Cycle, RADAR Matrix, DMAIC, and DFSS. *Journal of Achievements in Materials and Manufacturing Engineering, 43*(1), 476–483. https://www.journalamme.org

Stalberg, L., & Fundin, A. (2016). Exploring a holistic perspective on production system improvement. *International Journal of Quality & Reliability Management, 33*(2), 267–283. http://doi.org/10.1108/ijqrm-11-2013-0187

Stewart, I., Fenn, P., & Aminian, E. (2017). Human research ethics – is construction management research concerned? *Construction Management & Economics, 35*(11–12), 665–675. http://doi.org/10.1080/01446193.2017.1315151

Subbulakshmi, S., Kachimohideen, A., Sasikumar, R., & Devi, S. B. (2017). An essential role of statistical process control in industries. *International Journal of Statistics and Systems, 12*(2), 355–362. http://www.ripublication.com

Sunadi, S., Purba, H. H., & Hasibuan, S. (2020). Implement statistical process control through the PDCA cycle to improve potential capability index of Drop Impact Resistance: A case study at aluminum beverage and beer cans manufacturing industry in Indonesia. *Quality Innovation Prosperity, 24*(1), 104–127. http://doi.org/10.12776/qip.v24i1.1401

Supratim, D., & Sanjita, J. (2020). Reducing packaging material defects in the beverage production line using Six Sigma methodology. *International Journal of Six Sigma and Competitive Advantage, 12*(1), 59–82.

http://doi.org/10.1504/IJSSCA.2020.107477

Swensen, S., Gorringe, G., Caviness, J., & Peters, D. (2016). Leadership by design: Intentional organization development of physician leaders. *Journal of Management Development, 35*(4), 549–570. http://doi.org/10.1108/JMD-08-2014-0080

Taber, K.S. (2018). The use of Cronbach's Alpha when developing and reporting research instruments in science education. *Research in Science Education, 48,* 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Tan, K. W., & Lim, K. T. (2019). Impact of manufacturing flexibility on business performance: Malaysian's perspective. *Gadjah Mada International Journal of Business, 21*(3), 308–329. http://doi.org/10.22146/gamaijb.27402

Teoman, S., & Ulengin, F. (2018). The impact of management leadership on quality performance throughout a supply chain: An empirical study. *Total Quality Management & Business Excellence, 29*(11–12), 1427–1451. http://doi.org/10.1080/14783363.2016.1266244

Thaler, K. M. (2017). Mixed methods research in the study of political and social violence and conflict. *Journal of Mixed Methods Research, 11*(1), 59–76. http://doi.org/10.1177/1558689815585196

Todd, D. W., & Hill, C. A. (2018). A quantitative analysis of how well financial services operations managers are meeting customer expectations. *International Journal of the Academic Business World, 12*(2), 11–18. https://ijbr-journal.org

Toker, S., & Ozbay, N. (2019). Configuration of sample points for the reduction of multicollinearity in regression models with distance variables. *Journal of Forecasting*, *38*(8), 749–772. http://doi.org/10.1002/for.2597

Tominc, P., Krajnc, M., Vivod, K., Lynn, M. L., & Freser, B. (2018). Students' behavioral intentions regarding the future use of quantitative research methods. *Our Economy*, *64*, 25–33. http://doi.org/10.2478/ngoe-2018-0009

Torre, D. M., & Picho, K. (2016). Threats to internal and external validity in health professions education research. *Academic Medicine*, *91*(12), 21. http://doi.org/10.1097/acm.0000000000001446

Torlak, N. G., & Kuzey, C. (2019). Leadership, job satisfaction, and performance links in private education institutes of Pakistan. *International Journal of Productivity & Performance Management*, *68*(2), 276–295. http://doi.org/10.1108/IJPPM-05-2018-0182

Tortorella, G., Giglio, R., Fogliatto, F. S., & Sawhney, R. (2020). Mediating role of a learning organization on the relationship between total quality management and operational performance in Brazilian manufacturers. *Journal of Manufacturing Technology Management*, *31*(3), 524–541. http://doi.org/10.1108/JMTM-05-2019-0200

Tyrer, S., & Heyman, B. (2016). Sampling in epidemiological research: Issues, hazards, and pitfalls. *British Journal of Psychiatry Bulletin*, *40*(2), 57–60. http://doi.org/10.1192/pb.bp.114.050203

Vakili, M. M., & Jahangiri, N. (2018). Content validity and reliability of the measurement tools in educational, behavioral, and health sciences research. *Journal of Medical Education Development, 10*(28), 106–118. http://doi.org/10.29252/EDCJ.10.28.106

Valente, C. M., Sousa, P. S. A., & Moreira, M. R. A (2020). Assessment of the lean effect on business performance: The case of manufacturing SMEs. *Journal of Manufacturing Technology Management, 31*(3), 501–523. http://doi.org/10.1108/JMTM-04-2019-0137

Van Assen, & Marcel, F. (2018). Exploring the impact of higher management's leadership styles on lean management. *Total Quality Management & Business Excellence 29*(11–12), 1312–1341. http://doi.org/10.1080/14783363.2016.1254543

Van Assen, M. F. (2020). Empowering leadership and contextual ambidexterity: The mediating role of committed leadership for continuous improvement. *European Management Journal, 38*(3), 435–449. http://doi.org/10.1016/j.emj.2019.12.002

Varga, A., Gaspar, I., Juhasz, R., Ladanyi, M., Hegyes-Vecseri, B., Kokai, Z., & Marki, E. (2019). Beer microfiltration with static turbulence promoter: Sum of ranking differences comparison. *Journal of Food Process Engineering, 42*(1), 1–9. http://doi.org/10.1111/jfpe.12941

Ved, P., Deepak, K., & Rakesh, R. (2013). Statistical process control. *International Journal of Research in Engineering and Technology, 2*, 70–72.

http://www.ijret.org

Veres, C., Marian, L., & Moica, S. (2017). A case study concerning the effects of the Japanese management model application in Romania. *Procedia Engineering, 181*, 1013–1020. http://doi.org/10.1016/j.proeng.2017.02.501

Wacker, J., Hershauer, J., Walsh, K. D., & Sheu, C. (2014). Estimating professional service productivity: Theoretical model, empirical estimates and external validity. *International Journal of Production Research, 52*(2), 482–495. http://doi.org/10.1080/00207543.2013.836611

Walden University. (2020). *Doctoral study rubric and research handbook*. http://academicguides.waldenu.edu/doctoralcapstoneresources/bda

Widayati, C. C., & Gunarto, W. (2017). The effects of transformational leadership and organizational climate on employee's performance. *International Journal of Economic Perspectives, 11*(4), 499–505. https://www.econ-society.org

Williams, R., Raffo, D. M., & Clark, L. A. (2018). Charisma as an attribute of transformational leaders: What about credibility? *Journal of Management Development, 37*(6), 512–524. http://doi.org/10.1108/JMD-03-2018-0088

Wong, S. I., & Giessner, S. R. (2018). The thin line between empowering and laissez-faire leadership: An expectancy-match perspective. *Journal of Management, 44*(2), 757–783. http://doi.org/10.1177/0149206315574597

Wu, H., & Leung, S. (2017). Can Likert scales be treated as interval scales?—A Simulation Study. *Journal of Social Service Research, 43*(4), 527–532.

http://doi.org/10.1080/01488376.2017.1329775

Xu, H., Zhang, N., & Zhou, L. (2020). Validity concerns in research using organic data. *Journal of Management, 46*(7), 1257–1274. http://doi.org/10.1177/0149206319862027

Yang, I. (2015). Positive effects of laissez-faire leadership: Conceptual exploration. *Journal of Management Development, 34*(10), 1246–1261. http://doi.org/10.1108/JMD-02-2015-0016

Yin, R. K. (2017). *Case study research: Design and methods* (6th ed.). Sage.

Yin, J., Jia, M., Ma, Z., & Liao, G. (2020). Team leader's conflict management styles and innovation performance in entrepreneurial teams. *International Journal of Conflict Management, 31*(3), 373–392. http://doi.org/10.1108/IJCMA-09-2019-0168

Yin, J., Ma, Z., Yu, H., Jia, M., & Liao, G. (2020). Transformational leadership and employee knowledge sharing: Explore the mediating roles of psychological safety and team efficacy. *Journal of Knowledge Management, 24*(2), 150–171. http://doi.org/10.1108/JKM-12-2018-0776

Yusra, Y., & Agus, A. (2020). The influence of online food delivery service quality on customer satisfaction and customer loyalty: The role of personal innovativeness. *Journal of Environmental Treatment Techniques*, *8*(1), 6–12. http://www.jett.dormaj.com

Zagorsek, H., Stough, S. J., & Jaklic, M. (2006). Analysis of the reliability of the

Leadership Practices Inventory in the Item Response Theory framework. *International Journal of Selection & Assessment, 14*(2), 180–191. http://doi.org/10.1111/j.1468-2389.2006.00343.x

Zeng, J., Phan, C.A., & Matsui, Y. (2013). Supply chain quality management practices and performance: An empirical study. *Operations Management Resource, 6*, 19–31. http://doi.org/10.1007/s12063-012-0074-x

Zyphur, M., & Pierides, D. (2017). Is quantitative research ethical? Tools for ethically practicing, evaluating, and using quantitative research. *Journal of Business Ethics, 143*(1), 1–16. http://doi.org/10.1007/s10551-017-3549-8

Appendix A: Permission to use MLQ and Sample Questions

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To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

Multifactor Leadership Questionnaire

The three sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

As a leader ….

I talk optimistically about the future.
I spend time teaching and coaching.
I avoid making decisions.

The person I am rating….

Talks optimistically about the future.
Spends time teaching and coaching.
Avoids making decisions

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix B: Multiple Linear Regression SPSS Output

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
intellectual stimulation	160	1.5	4.0	3.356	.4696
idealized influence	160	1.3	4.0	3.123	.5698
CI	160	1.0	4.0	3.520	.5172
Valid N (listwise)	160				

Correlations

		intellectual stimulation	CI
intellectual stimulation	Pearson Correlation	1	.329**
	Sig. (2-tailed)		.000
	N	160	160
CI	Pearson Correlation	.329**	1
	Sig. (2-tailed)	.000	
	N	160	160

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		CI	idealized influence
CI	Pearson Correlation	1	.339**
	Sig. (2-tailed)		.000
	N	160	160
idealized influence	Pearson Correlation	.339**	1
	Sig. (2-tailed)	.000	
	N	160	160

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416[a]	.173	.163	.4733

a. Predictors: (Constant), idealized influence , intellectual stimulation

b. Dependent Variable: CI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.360	2	3.680	16.428	.000[b]
	Residual	35.169	157	.224		
	Total	42.529	159			

a. Dependent Variable: CI

b. Predictors: (Constant), idealized influence , intellectual stimulation