


2016

Closing the Innovation Gap for Business Sustainability

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Walden University

College of Management and Technology

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Walden University
2016

Abstract

Closing the Innovation Gap for Business Sustainability

by

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MBA, Wilfrid Laurier University, 1995

BA, Trinity Western University, 1984

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

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Abstract

Senior business leaders may deliberately impede innovation or inadvertently fail at creating a culture of innovation to foster new product development. The gap between desired and achieved levels of innovation is cause for concern. Addressing the innovation gap may require new ways of thinking from senior executives and a departure from a locked-in mindset to make the linkage between innovation, branding, and financial performance. In this quantitative research study, multiple regression analyses were used to examine and analyze the relationship between innovation rankings, brand valuation, and economic sustainability to address possible reasons for an innovation gap. The theoretical framework of the study included Legrand and Weiss's innovation gap theory, Sood and Tellis's theory of limited market disruption, and Morris's theory of innovation. Furthermore, Dierk and Dover's definition of ambidexterity elucidated the failure of some senior leaders to balance short and long-term innovation objectives. A sample of 190 global companies was used in the study and taken from the Forbes World's Most Innovative Companies ranking, Interbrand Brand Value Index, and the Dow Jones Sustainability Index. The results of the regression model indicated a small, statistically significant positive correlation between innovation and long-term sustainability using 2015 data. Using 2012 data for the predictor variables and 2015 data for the dependent variable indicated no statistically significant relationship between innovation and branding efforts on sustainability. Though marginal, the correlation found between innovation and sustainability may encourage senior business leaders to support specific innovation practices in order to improve sustainability and close the innovation gap.

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Dedication

This doctoral study is dedicated to my best friend and wife, Sonya, who has been a constant source of support and encouragement during the challenges of postgraduate school and life. I am truly thankful for having you in my life. This work is also dedicated to my parents, Marjorie and Peter, who loved me unconditionally and whose virtuous examples have taught me to work hard for the goals I aspire to achieve.

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Section 1: Foundation of the Study

Senior business leaders have identified that a gap exists between desired and achieved levels of innovation (Legrand & Weiss, 2011). Senior leaders, however, may have locked-in mindsets and leadership styles that prevent them from challenging existing business models (Morris, 2013). Senior leaders tend to focus on short-term goals rather than create a culture of innovation to facilitate meaningful innovation leading to sustainability (Dierk & Dover, 2012; Kotter, 2013). The purpose of this study was to demonstrate the relationship between innovation, brand valuation, and sustainability.

Background of the Problem

The background of the problem lies in the debate surrounding the relationship between innovation and economic sustainability. Senior corporate leaders tend to focus on elevating the level of short-term financial performance rather than making financial investments in innovation due to their tendency to be risk averse (Dierk & Dover, 2012). Top management teams (TMTs) also tend to gravitate towards exploitation behaviors (Buyl, Boone, & Matthyssens, 2012; Eccles & Serafeim, 2013). The purpose of this study was to examine whether companies that achieve high levels of innovation and high brand valuation also have long-term economic sustainability.

Shafie, Siti-Nabiha, and Cheng Ling (2014) noted that the business environment is dynamic and increasingly competitive on a global scale. Given the rapidly changing and evolving business environment, innovation is an important source of sustainable competitive advantage. As such, Shafie et al. suggested that organizations must continuously pursue advancements through innovation to remain competitive and

profitable. Even when companies bring innovations to market, without the necessary communication or brand association, Shalfie et al. estimated 90% of such product introductions will fail (Shafie et al., 2014). Shafie et al. noted that quality TMTs may be a critical factor in driving strong innovation and branding efforts. Issues associated with the TMT appear to be central to the ability of firms to innovate (Shafie et al., 2014). For example, some TMTs would prefer to settle for the status quo. TMTs also indicate the difference between the level of innovation they desire for their firms versus the level of innovation achieved is substantial (Legrand & Weiss, 2011). The difference between the level of desired and achieved innovation is the innovation gap. Shafie et al. posited that there is also no correlation between the level of spending on research and development (R&D) and market share. Specifically, some firms fail to address other factors such as corporate strategy and business models, corporate culture, and the ability to effectively commercialize innovation and gain market acceptance. Given the innovation gap appears to be multifaceted in nature, it requires further examination to determine whether there is a relationship between innovation and firm sustainability.

Problem Statement

An innovation gap exists due to the failure of top management teams (TMTs) to promote a culture of innovation (Hunter, 2012). TMTs prefer instead to maintain the status quo (Haynes & Hillman, 2010) despite the known risk of perishing (Aubrey & Judge, 2012; Hunter, 2012). Legrand and Weiss (2011) found over 80% of leaders surveyed stated that innovation is important for the sustainability of their firms and yet less than 30% reported satisfaction with the level of innovation achieved. The general

business problem was that senior organizational business leaders focus on short-term strategies rather than closing the innovation gap to achieve long-term economic sustainability. The specific business problem was that some senior organizational business leaders do not have a predictive model to understand the relationship between innovation rankings, brand valuation, and economic sustainability.

Purpose Statement

The purpose of this quantitative correlation study was to examine the relationship between innovation rankings, brand valuation, and economic sustainability. The independent variables were innovation ranking and brand valuation. The dependent variable was economic sustainability. The targeted population for this study are senior business leaders of publicly traded, multinational companies that operate under global brands within the service and manufacturing sectors. The implications for positive social change include the potential to encourage senior business leaders to embrace ambidextrous business models by recognizing the importance of investing in innovation initiatives to support long-term economic sustainability.

Nature of the Study

In this quantitative correlational research study, I used archival data to determine whether a relationship exists between the independent variables innovation and brand value, and the dependent variable sustainability. The research method selected must be appropriate for the business problem and the context of the study (Iacono, Brown, & Holtham, 2009). Typically using qualitative research methods helps the researcher explore the study of social and cultural phenomena using case study research methods

and ethnography within certain contexts (Iacono et al., 2009). Categorizing research methods as quantitative and qualitative delineates between using numerical or verbal data respectively (Iacono et al., 2009). Often in qualitative research, parallel activities such as data collection, analysis, interpretation, and reporting require that a change in one activity requires modifying the direction of the other activities (Iacono et al., 2009). However, using quantitative research requires the collection of numerical data and subsequent analysis to develop the findings (Iacono et al., 2009). The use of mixed methods research requires the use of more than one research method by combining both qualitative and quantitative methods (Iacono et al., 2009). Combining the methods from mixed methods can add breadth and depth to an inquiry (Johnson, Onwuegbuzie, & Turner, 2007). The business problem in this study required the use of numerical indices to examine whether a correlation exists between variables. A study to determine whether a correlation exists between variables requires the use of quantitative (Iacono et al., 2009). Simon (2013) supported the use of correlational methods as the primary function of correlational studies is to assess the relationship between variables. Given that the hypotheses in this study required testing the relationship between variables, the use of quantitative methods is appropriate (Simon, 2013). The use of qualitative methods is appropriate for the exploration of concepts but not suitable for a correlational study (Simon, 2013).

In this research study, I incorporated a correlational design to examine the relationship between the independent variables and the dependent variable. Given that the intent of the study was to examine and describe the relationships between predictor variables and a dependent variable, a correlational design was the most appropriate study

(Simon, 2013). Using a correlational design between known variables provides insight into social phenomena suitable to test the hypotheses (Simon, 2013). Correlational research does not imply causation nor does it attempt to infer cause-and-effect as in causal-comparative research (Craig & Metze, 1979; Simon, 2013). Given that the use of correlational research method infers a relationship exists between variables in a study (Craig & Metze, 1979; Simon, 2013), the use of correlational research methods was appropriate to assess the relationship between variables for my study. Other quantitative research methods such as the use of pure experimental designs were not appropriate. The use of an experimental design would require the manipulation of variables and a control group to determine the effect of treatment on the dependent variable (Campbell & Stanley, 2010) and was not practical to address my research questions.

Research Question

The specific business problem was senior organizational business leaders do not have a predictive model to understand the relationship between innovation rankings, brand valuation, and economic sustainability. Addressing the specific business problem required determining whether innovation ranking or brand valuation can be a predictor of economic sustainability. Based on the specific business problem, the central research question was: What is the relationship between innovation ranking and economic sustainability, and the relationship between brand valuation and economic sustainability? By posing this question, my intent was to determine whether innovation or brand valuation were predictors of economic sustainability.

Hypotheses

The following hypotheses were tested to support the central research question regarding the nature of the relationship between innovation, brand valuation, and economic sustainability:

Null Hypothesis (H_01): There is no relationship between innovation ranking and economic sustainability.

Alternative Hypothesis (H_{a1}): There is a relationship between innovation ranking and economic sustainability.

Null Hypothesis (H_02): There is no relationship between brand valuation and economic sustainability.

Alternative Hypothesis (H_{a2}): There is a relationship between brand valuation and economic sustainability.

Theoretical Framework

Within the doctoral study, I utilized several theories that deal with innovation concepts and systems thinking by TMTs. The theoretical frameworks I used in this study are Sood and Tellis's (2011) theory of limited market disruption, Morris's (2013) three-dimensional theory of innovation, and Legrand and Weiss's (2011) innovation gap theory. Key constructs include Sood and Tellis's theory of limited market disruption that challenges Christensen's (2015) theory of disruptive innovation of lower-priced alternatives to create market disruption by new entrants first introduced in 1995. Challenging Christensen's theory of innovative disruption, Sood and Tellis noted that the introduction of lower-priced technologies is a fallacy auguring most innovation is higher-

priced and introduced by incumbents. Morris builds on Christensen's disruptive innovation theory by introducing three dimensions of innovation (a) continuous incremental innovation, (b) discontinuous or disruptive innovation, and (c) business model innovation warfare based on systems thinking. Of the three dimensions, business model innovation warfare is the most important (Morris, 2013). The challenge noted by Morris is that TMTs fail to understand or focus on systems thinking to close the innovation gap to achieve sustainability. Legrand and Weiss put forth the theory of an innovation gap to illustrate reasons why TMTs need to create a culture of innovation. With the need to innovate being challenged, TMTs are under pressure from shareholders to focus on immediate financials even though innovation has a long-term orientation and is important to brand valuation and economic sustainability (Kotter, 2013). Short-term profitability and simultaneously making investments in innovation to help ensure future revenues is a balancing act (Kotter, 2013). Balancing short-term and long-term goals to create an ambidextrous organization is the role of a capable Chief Executive Officer (CEO) (Dierk & Dover, 2012). While Morris suggested that the mandate of the TMTs and boards is to foster innovation, this objective may be disingenuous and their desire to innovate hollow given the prevalence of short-term goals (Kotter, 2013). The innovation gap, the dimensions of innovation, and ambidexterity act as the theoretical framework for understanding the role TMTs have in innovation efforts to achieve sustainability.

Operational Definitions

Throughout this study, several unfamiliar terms appeared that may have several meanings depending on their unique connotation or context. Definitions for these terms

help provide the reader with necessary subject matter to delineate the meaning and context of these unique terms.

Ambidexterity. Ambidexterity is the ability of TMT members to simultaneously balance short-term business objectives with long-term goals (Dierk & Dover, 2012). Such objectives may include financial objectives as well as innovation objectives (Dierk & Dover, 2012).

Business model innovation. Business model innovation is the practice of using adaptive systems thinking to substantially alter or replace existing business models to improve overall business performance by intentionally reaching beyond existing business parameters (Morris, 2013).

Continuous innovation. Continuous innovation is the practice of making incremental improvements to business processes or products (Morris, 2013).

Disruptive innovation. Disruption innovation is defined by the activities whereby incumbents and new entrants introduce new products and services wishing to compete primarily on price and first introduced as an integral component of Christensen's theory of disruptive innovation (Christensen, Raynor, & McDonald, 2015; Sood & Tellis, 2011). Breakthrough innovation is often interchangeable with disruptive innovation (Morris, 2013).

Top management team. The top management team (TMT) includes members of the senior leadership team of a business organization and is interchangeable with senior leadership team or c-suite (Blackshaw, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are the underlying and inherent beliefs that may not have a clear definition but have acceptance as a state of being or as an enabler that may be out of the control of the researcher (Simon, 2013). Once identifying the research problem, a tentative or plausible explanation forms. The plausible explanation or assumptions should be explicitly clear and testable to help narrow the focus of the data collection requirements. Also, the assumptions should inform the inherent research method and design (Craig & Metze, 1979). As such, this research study has several assumptions.

The assumptions for this study were (a) many TMTs believe an innovation gap exists and yet do not know how to address this within their organizations; (b) resource allocation to fund innovation will result in higher levels of innovation; (c) resource allocation to support innovation is a possible means of closing the perceived innovation gap and building brand value; (d) TMTs' perception that funding innovation hurts short-term financial performance given that budgeting for innovation is a tradeoff between short-term financial performance and long-term economic sustainability; (e) funding innovation may require a change in business models, a change in TMT capabilities, and a departure from prevailing locked-in mental models; and (f) the metrics provided by Forbes, Interbrand Brand, and Dow Jones are accurate. The assumption was that the metrics from the noted third-party database stakeholder are well-respected and find acceptance in other scholarly research. As such, these indices were reliable sources of data for this study.

Limitations

Certain factors or conditions that are beyond the control of a researcher limit research studies (Simon, 2013). The limitations may represent inherent attributes or forces that may influence the accuracy of the measurements as they pertain to the variable interaction or threaten validity (Brutus & Duniewicz, 2012). Without defined limitations, the study would become irrelevant (Simon, 2013) and clearly defining the research problem within the appropriate parameters would be difficult (Craig & Metze, 1979).

The first limitation was the companies selected were not chosen by industry but on the innovation ranking by the third-party. This limitation underscores that there are different types of innovation that require a range of capital allocation, and a vast array of business industries with varying levels of complexity. Therefore, no distinction was made between company industries in the selection process.

The second limitation was the restriction of data available. Given archival data was used in this study, the researcher had no control over how the data providers collected the data, evaluated the companies, and reported the data. Some data for companies may be missing or incomplete. The selection of companies for the study did not all have a corresponding assigned ranking or data available on the Forbes World's Most Innovative Companies List (WMIC), Interbrand Brand Index, and the Dow Jones Sustainability Index (DJSI). Companies without the requisite corresponding indices data required the elimination of some firms from the study sample and reduced the overall sample size accordingly.

The third limitation was the study was limited in time and scope. Using data from the Forbes WMIC List, Global Innovation 1000 Index, and the Interbrand Brand Index, the scope was to examine whether innovation and brand valuation are predictors of economic sustainability as listed in the DJSI. Due to the limitations of available resources and time, the timeframe of the research study was restricted to the period of 2012 to 2015. A fourth limitation was the findings may not necessarily apply to firms that do not have public information available, do not have global operations, or who do not operate under recognizable brands.

A final limitation was the effect of innovation or brand valuation on sustainability may not be evident immediately, and the results may be subject to inaccuracies.

Bogliacino and Pianta (2013) noted that the existence of a lag between innovation efforts linked to process improvements and profits is typically 3 to 4 years. Given there may be limitations attributable to the possible delay between innovation implementation and the resultant metrics, the alignment in years between the metrics may have influenced the results. As such, the years of available metrics were adjusted in the study to incorporate Bogliacino and Pianta's approach to compensate for this limitation.

Delimitations

Delimitations define the boundaries and scope of the study that are within the control of the researcher (Simon, 2013). The delimitations applied to this study included

- Not making a distinction between the three types of innovation as defined within this study on the data collection and computations;

- Only companies ranked by Forbes (e.g., publicly listed firms that have issued shares and provide information to stock market regulators, available within the public domain, and have a minimum market capitalization of US\$10B) were part of this study;
- The exclusion of private companies from this study regardless of their level of innovation due to the limited information available within the public domain;
- Financial results of subsidiary companies included in the subsidiary's parent company's financial information; and
- Scope limitations to the firms where information was available from Interbrand Brand Index and the DJSI for the companies on the Forbes WMIC List.

Significance of the Study

Contribution to Business Practice

The findings of this study may be of value to the practice of business because, although top management teams and boards stated that long-term innovation objectives are a priority, their actions do not reflect this. This paradox arises given the focus of senior leadership teams is on short-term objectives to meet quarterly financial results (Sonnenfeld, Kusin, & Walton, 2013). While TMTs indicated they are not happy with the level of innovation achieved within their firms, the level of innovation achieved may relate to the investment in innovation and their brands. In fact, TMTs noted the innovation gap may have emerged given that the TMTs may have inadvertently or

deliberately starved innovation by not having allocated sufficient or dedicated resources (Legrand & Weiss, 2011). TMTs that fund innovation are typically looking for either incremental or disruptive technologies as the sole output of their innovation efforts (Blank, 2013). TMTs may find there are other forms of innovation and systemic challenges they have failed to recognize and appropriately address. Morris (2013) posited the area that has the most influence on organizational sustainability is its business model. While TMTs have tended to focus on short-term financial results, Morris argued that business model warfare is the most important area of innovation. However, business model warfare success requires TMTs understand systems thinking theory (Kotter, 2013). Subsequently TMTs need to be able to apply such thinking in a manner that would facilitate the development and implementation of a culture of innovation to achieve economic sustainability (Kotter, 2013).

The emergence of an innovation gap between innovation expectations and achieved innovation is evident in the research literature and underscored by Legrand and Weiss (2011). The importance of this study was to understand whether innovation leaders are more likely to have achieved a higher level of economic sustainability than firms that are low or moderate innovators. The intent of this research was to determine whether investing in R&D is in the best interest of TMTs and boards to address the innovation gap. The mindset that appears to dominate seems to be that once an organization achieves a level of success the TMT deems to be acceptable, the organization arrives at a crossroad (Xu & Yan, 2014). The crossroad requires judgment to determine whether investing and engaging in innovation is more beneficial to the organization and to themselves

personally (Xu & Yan, 2014). At the core of this senior leadership mindset is the decision to manufacture short-term financial performance or to invest in innovation. For firms to foster innovation, firms must allocate and consume resources in the innovation process that can affect short-term profitability (Rubera & Kirca, 2012). The assumption is that the long-term sustainability of firms appears to be at risk if top management teams and boards do not recognize the emergence of this gap. The intent of this research study was to determine whether addressing and closing the innovation gap, and higher brand valuations are predictors of economic sustainability. Within the literature, there is the suggestion that innovation laggards are unlikely to be ambidextrous organizations (Buyl, Boone, & Matthyssens, 2012; Smith & Tushman, 2005). Innovation laggards may deliberately bolster short-term profits at the expense of sustainability. The significance of this research was to determine whether companies that invest in innovation are more likely to garner higher levels of brand valuation and economic sustainability. The intent of this research study was to examine the innovation gap to determine whether innovation and brand valuation are predictors of economic sustainability. The findings could be used to make a case that senior leaders should balance short-term objectives with investments in innovation to achieve higher brand valuation and economic sustainability.

Implications for Social Change

The implications for positive social change include the potential to encourage senior business leaders to challenge existing business models and embrace an ambidextrous business model by recognizing the importance of investing in innovation initiatives to support long-term sustainability along several dimensions. Brem and Ivens

(2013) noted that sustainability has three considerations with a triple bottom line view for firms including environmental, economic, and social. Sayem (2012) identified three categories to measure innovation success (a) environmental and social factors, (b) technical effects, and (c) economic effects. Brem and Ivens asserted that positive benefits from innovation efforts must address industrial sustainability including product design, manufacturing, and services to meet the needs of the present generation while not negatively affecting economic, social, and environmental factors over the long-term. Brem and Ivens argued that three layers of performance along a firm's value chain affecting the triple bottom line that innovation effort must address to achieve social benefits including (a) a reduction in input resources to foster stewardship of raw materials and input, (b) optimizing the manufacturing process to reduce pollutants and carbon emissions, and (c) a reduction of outcomes including how a product or service affects the environment by reducing energy use and how it can be recycled or disposed. Sayem asserted that the capacity to innovate is a catalyst of growth and influences performance for sustainability not on simply an economic basis but also contribute to environmental and social sustainability. As noted by Sayem, innovation efforts have the potential to positively affect overall sustainability beyond economic factors and in the broader context of the environment and society (Sayem, 2012). Given the assertions by Brem and Ivens and by Sayem, innovation efforts offer the potential to address social and environmental issues for the overall good of society.

Review of the Professional and Academic Literature

The organization of the literature review is by section and theme. Included in the literature review is an analysis and synthesis of the literature in the context of the theoretical framework discussed within this study and on the variables in this research study. Conducting the searches yielded more than 235 articles of which approximately 128 are relevant to the topic of study, excluding regulations and data. Of the 128 references, 109 (85%) are peer-reviewed, and 116 (87%) published within the last 5 years. Of the articles reviewed, 108 articles support the literature review. In the literature review section, 95 (88%) are peer-reviewed, and 101 (94%) published within the last 5 years.

While not exhaustive, the articles within the literature review provided an analysis of the relevance and importance of the independent and dependent variables. Where appropriate, I compare and contrast various points of view to support the relevance of this study. The sources in the literature search include refereed journal articles, professional websites that produce metrics that relate to this study, transcripts of academic conferences, and dissertations. The articles in the literature review are accessible through various databases including Business Source Complete, Google Scholar, ProQuest Central, and from publishers' websites. Searching keywords and phrases was also part of the strategy to locate relevant articles. The strategy to search the databases included using a list of relevant keywords and phrases such as *innovation theory*, *innovation types*, *innovation performance*, *brand performance*, *brand metrics*, *economic sustainability*, and *financial sustainability*.

According to Legrand and Weiss (2011), the innovation gap is a business problem that requires further study. To understand the factors that contribute to the innovation gap, I addressed key findings within the literature concerning why the innovation gap occurs. An overarching notion is leaders deliberately or inadvertently create an innovation gap (Legrand & Weiss, 2011) based on a variety of practices. The innovation gap senior leaders create may show a lack of willingness to change locked-in thinking about innovation, new product development (NPD) experimentation, business models, and financial metrics (O'Connor & Rice, 2013). The focus of senior leadership is on short-term goals around immediate financial performance at the expense of long-term opportunities and sustainability (O'Connor & Rice, 2013). In the literature review, using a range of relevant sources and scholarly journals addresses three areas within the scholarly literature: innovation, branding, and sustainability. These three areas coincide with the variables in the study: innovation ranking, brand valuation ranking, and sustainability index ranking. I provide an in-depth discussion of each variable in the literature review. The topics I address in the literature review include innovation, barriers to innovation, the relevancy of brand, predominant brand valuation methods, and issues that drive sustainability.

Innovation. Innovation is one of the three variables discussed within this study. Innovation efforts enablers and detractors are many. Following are several factors that contribute to the level of innovation in firms and may explain possible reasons for the emergence of the innovation gap.

Ambidexterity. Morgan (2014) found a locked-in mindset and short-term focus are detrimental to innovation efforts. Senior leaders must recognize that to close the innovation gap and become a truly ambidextrous organization, they must intentionally shift their organization's culture to a learning environment (Morgan, 2014). Weber and Tarba (2014) noted that ambidexterity consists of simultaneous exploration and exploitation, best framed as *strategic agility*. The role of the TMT is to frame learning and sharing knowledge as a means to alter the corporate culture and create a sustainable innovation pipeline within an organization (Weber & Tarba, 2014). Mootee (2012) asserted that effective CEOs should have the capability to make a distinction between competitive strategy and strategic innovation. A competitive strategy represents the choices firms make to compete effectively against industry rivals or new entrants within today's product-marketplace context (Mootee, 2012). On the other hand, strategic innovation is the application of strategic foresight into the future to prognosticate and capitalize on tomorrow's opportunities (Mootee, 2012). Strategic innovation is an attempt to create new markets or disrupt an established market with new products, new service categories, processes, and business models (Mootee, 2012). According to Mootee, developing strategic ambidexterity is critical if an organization wishes to maximize value creation for long-term sustainability. Ambidexterity, as defined by Mootee, is the ability to design and execute a competitive strategy to exploit current opportunities while simultaneously engaging in strategic innovation. Ambidexterity also includes undertaking strategic innovation to lay the groundwork to compete in the future for long-term sustainability.

Buyl et al. (2012) defined ambidexterity as an organization's ability to be as efficient as possible by exploiting current opportunities while simultaneously being adaptive to changes in the environment for long-term sustainability. Exploitation behaviors enhance efficiencies, remove uncertainty, and reduce variance to maximize profitability in the short-term. Juxtaposed to exploitation are exploratory organizational behaviors that are committed to searching for new opportunities, innovation, and increasing variance, and focus on long-term perspective (Buyl et al., 2012). While organizations have many parts, changes in one area can have an effect in other areas. Mootee (2012) argued that while TMTs should understand how to balance competitive strategy, they should also have the foresight to imagine a future thereby making investments in strategic innovation. However, developing ambidexterity capabilities within TMTs is rare (Mootee, 2012). As such, Dierk and Dover (2012) developed an assessment tool to assess ambidexterity skills of TMTs based on three archetype behaviors. Dierk and Dover's assessment tool provides additional insights specifically into the TMTs' innovation capabilities.

The three archetypes put forth by Dierk and Dover (2012) included managers who optimize operational productivity and efficiencies, entrepreneurs whose role is to search for new opportunities and continuously push for greater levels of innovation, and the leader who is responsible for keeping the manager and entrepreneur archetypes in balance. While assessment tools can help firms evaluate TMTs' innovation capabilities and ability, achieving ambidexterity requires TMTs to possess innovation capabilities including an entrepreneurial orientation. In fact, Dierk and Dover found placing

managers into roles and asking them to act entrepreneurially to spur innovation would refrain from doing so unless they had a genuine entrepreneurial orientation. Without this authentic entrepreneurial orientation, an innovation stalemate transpires negatively affecting long-term sustainability (Dierk & Dover, 2012). Leiponen's (2012) research supports the importance of developing better professional and systematic managerial capabilities to broaden innovation objectives as managerial capabilities are critical to innovation. Leiponen noted that better managerial capabilities generated direct and indirect returns to both service and manufacturing firms.

Buyl et al. (2012) found an organization's long-term success may be attributable to its ability to simultaneously exploit current capacities while exploring fundamentally new competencies. Buyl et al. cited Smith and Tushman (2005) who argued that long-term organizational performance is dependent on the TMT's ability to effectively explore and exploit simultaneously. Striking a balance between exploitation and exploration to achieve ambidexterity seems to be a challenge for senior leadership teams. Smith, Binns, and Tushman's (2010) noted that CEOs must have the skills and the motivation to consistently balance core business unit objectives to exploit existing opportunities while simultaneously fostering innovation unit objectives to explore future opportunities. Given that some stakeholders will adhere to a short-term agenda of exploitation while other stakeholders will advocate for exploration and long-term sustainability, the role of the CEO is to manage ambidexterity by striking a balance between exploitation and exploration. For an organization to embrace ambidexterity and fund R&D for NPD with the intent of narrowing the innovation gap, CEOs must accomplish several objectives

(Smith et al., 2010). CEO objectives include not relegating innovation to lower levels of the organization, forcing the abandonment of feudal battles within the TMT, and engaging in practical and future-oriented debates (Smith et al., 2010).

Chang, Franke, Butler, Musgrove, and Ellinger (2014) noted that TMTs fail their companies by not encouraging ambidexterity. The reason for this failure is that TMTs do not understand radical innovation and incremental innovation (Chang et al., 2014). Some companies emphasize incremental over radical innovation and miss significant opportunities for competitive success. TMTs emphasize and support incremental innovation given the payoffs seem more certain and quantifiable (Chang et al., 2014). TMTs have the inclination that incremental innovation contributes to normal profits and is less risky (Chang et al., 2014). TMTs also maintain the belief that radical innovation is uncertain, produces less predictable financial contributions, and requires a longer timeframe (Chang et al., 2014). Taking a balanced approach to managing incremental and radical innovation simultaneously requires strategic expertise that is often lacking within TMTs (Buyl et al., 2012; Chang et al., 2014; Dierk & Dover, 2012; Leiponen, 2012; Mootee, 2012; Smith & Tushman, 2005).

Adding support to Smith et al.'s (2010) assertion that capable TMTs need to champion innovation efforts, Lin, McDonough, Lin, and Lin (2013) hypothesized the combination of three capabilities associated with innovation ambidexterity led to higher business performance in strategic business units. By opening corporate culture to learning, Lin et al. noted that both intraorganizational and extraorganizational learning capability links to ambidextrous innovation and financial performance. Lin et al. asserted

that enhanced shared learning capabilities have a positive effect on innovation ambidexterity. By combining internal learning and external partnering with the development of an open culture, more simultaneous explorative and exploitative activities emerge (Lin et al., 2013). An open culture ultimately leads to effectively generating incremental and radical innovation simultaneously (Lin et al., 2013). Lin et al. noted that combining the three practices and their interaction maximizes the success of ambidextrous innovation. By building an open organizational culture, it provides a climate for individuals to engage in collaborative behaviors essential to fostering incremental and radical innovation simultaneously (Lin et al., 2013). Several themes pertain to innovation and the critical role of senior organizational leaders that requires consideration.

The innovation gap and status quo retention. When TMTs speak about the level of desired innovation versus the level of innovation achieved or realized, the difference between desire and reality is the innovation gap (Legrand & Weiss, 2011). Legrand and Weiss (2011) asserted that the two factors that contribute to the innovation gap included the lack of knowledge or skills needed by TMTs to lead organizational change, and locked-in mindsets leading to the desire of TMTs to rely on past strategies to preserve the status quo. These two contributing factors to the innovation gap are consistent with the assertions in other research findings (Morris, 2013; Smith et al., 2010). Legrand and Weiss found most TMTs make every effort to preserve the status quo since it is the only reality they have experienced. Although companies may develop and adopt an existing business model in response to a past competitive environment and market context,

stability and predictability may no longer be the norms rendering the existing business model inappropriate. While retaining the status quo seems to be the default position of many TMTs, the tendency is for TMTs to rely on past experiences and analytical skills to solve issues (Legrand & Weiss, 2011). TMTs were, however, not able to apply innovative thinking designed to look at the overall business context from a different lens (Buyl et al., 2012; Legrand & Weiss, 2011). This oversight on the part of TMTs is that they fail to establish and resource innovation teams that have been trained to address current problems in ways that differ from the skills of TMTs (Legrand & Weiss, 2011; Morris, 2013). In fact, using forward-looking, innovative, and systems thinking are the skills required to move away from the status quo but tend to be in short supply by many TMTs (Legrand & Weiss, 2011).

According to Schoemaker, Krupp, and Howland (2013), sources of the innovation gap may be attributable to the lack of immutable skills necessary to think strategically about innovation by senior leaders. Without the necessary skills to understand innovation and innovative thinking, TMTs are not able to navigate the unknown effectively nor adapt and react to shifting environmental circumstances (Schoemaker et al., 2013). As sectors become more dynamic, the requisite leadership skills to foster innovation include the abilities to anticipate, challenge the status quo, interpret trends, make decisions, align the organization with the core strategy, and to learn from successes and failures (Schoemaker et al., 2013). Schoemaker et al. (2013) argued that leaders must have the ability to apply these skills simultaneously. A significant limitation of TMTs is that most are not adept at perceiving ambiguous opportunities and threats on the periphery of their

business (Schoemaker et al., 2013). According to Schoemaker et al., the most important skill that senior leaders can exhibit is the ability to zoom into the details and out to see the big picture. Understanding the details and seeing the big picture helps TMTs interpret conflicting information, identify missing information, and subsequently be able to form and test hypotheses (Schoemaker et al., 2013). Strategic thinkers do not get prematurely locked into a simplistic set of go or no-go choices but instead look for a range of multiple options and trade-offs (Schoemaker et al., 2013). Competent TMTs have the ability to take into account both long-term and short-term organizational goals (Schoemaker et al., 2013).

Predominant theories of innovation. While innovation is critical to sustainability, there are many definitions of innovation. The predominant definition of disruptive technology tends to be Christensen's *theory of disruptive innovation* (Sood & Tellis, 2011). Christensen asserted in his 1997 disruption theory that smaller companies with fewer resources and known as new entrants often introduce disruptive technology in the form of new products and services to challenge established incumbents (Christensen et al., 2015). New entrants introduce and design products with fewer features to compete primarily on price (Christensen et al., 2015; Sood & Tellis, 2011) and replication rather than innovation (Hunter, 2012). Other researchers define innovation differently. When defining innovation, Morris (2013) noted there are three types of innovation to consider. The first two types of innovation that Morris identified are continuous innovation that tends to be incremental, and breakthrough innovation that may be disruptive. While Morris's definition of breakthrough innovation is somewhat analogous to Christensen's

theory of disruptive innovation, Morris departed from Christensen's theory. Morris argued that the third type of innovation is the most important type of innovation: business model innovation.

Other researchers have provided different perspectives on innovation. Nagji and Tuff (2012) defined innovation as core, adjacent, and transformational. Nagji and Tuff defined core innovation initiatives as the efforts required to make incremental changes to existing products and efforts to make additional inroads into new markets. At the opposite end of the spectrum, the intention of transformational innovation is to create new offers and possibly new businesses that do not yet exist (Nagji & Tuff, 2012). In between are adjacent innovation initiatives that typically share characteristics with core and transformational innovations and could allow a company to draw on existing capabilities. However, adjacent innovation initiatives require putting existing capabilities to new uses (Nagji & Tuff, 2012). Morris (2013) posited business model innovation is the most significant type of innovation as it has a profound effect on many parts of an organization. Morris asserted that business model innovation has its roots in adaptive systems thinking and is the most challenging for business leaders for several reasons. Morris posited business model innovation is the most important yet predominantly overlooked within the research literature and ideally part of the discussion on innovation.

Systems thinking drives business model innovation—replication versus renewal.

To provide additional context on systems thinking, business model innovation may include changes made to the value chain (Morris, 2013). Morris suggested that the possibility of applying systems thinking to organizations with the intent of making

substantial and tangible changes to the process of value creation along the value chain. The resultant delivery of products and services are substantially deviant to that of competitors within a given system. An example of deviating from an existing business model is Tesla's direct distribution model that is unlike the traditional dealership model. Given that business model innovation is a source of competitive advantage, business model innovation may be a crucial factor in understanding differences in firm performance.

Heij, Volberda, and van den Bosch (2014) examined the influence of two business model innovation types on firm performance. The two business models include replication consisting of leveraging an existing business model, and renewal through the introduction of a new business model onto an existing framework (Heij et al., 2014). Of the two business model innovation types, Heij et al. (2014) noted that business model replication provides several cost advantages because it allows firms to operate more efficiently, involves economies of scale, increased revenues, captures more value, extends a firm's competitive advantage, establishes close relationships, increases the difficulty of competitors to imitate such a business model, and ultimately increases a firm's profit. Juxtaposed to business model replication is business model renewal. Business model renewal permits firms to redefine industry profitability by reshaping the world in a firm's existing industry (Heij et al., 2014). Over time, reshaping the existing industry provides stronger firm performance versus retaining the older business model (Heij et al., 2014). Heij et al. found TMTs often fail to understand the markets and industry dynamics of their environment within the context of defining existing

parameters and constraints. Heij et al. asserted that TMTs should learn when each of the two types of business innovation models, replication and renewal, are appropriate along the innovation continuum. The challenge of applying the appropriate business innovation models is that TMTs often run the risk of blindly adhering to the status quo by falling into the *complementaries trap* (Heij et al., 2014). TMTs fall into the complementaries trap by wishing to preserve an existing business model more appropriate to a past business environment (Heij et al., 2014). Unfortunately, the complementaries trap promotes blind adherence to the status quo (Heij et al., 2014).

Obstacles to innovation. Considering the obstacles to innovation is pertinent when discussing the innovation gap and the effect of innovation performance. Innovation initiatives can underperform because senior leaders often fail to confront internal obstacles to innovation given their fixation on short-term financial performance and associated metrics (Hess, 2012). While chief financial officers (CFOs) are responsible for managing their companies' return on investment (ROI) and operational efficiencies, simultaneously they attempt to manage investment in innovation initiatives (Hess, 2012). Each activity is distinct and requires TMTs to have a fundamentally different mindset to distinguish the different activities. The innovation gap is a serious issue tied to the natural proclivity of individuals and organizations wishing to maintain the status quo (Hess, 2012). TMTs using best practices to innovate require that leaders adopt a distinctively new mindset that promotes innovation by internally aligning systems with the correct processes to create deliberate innovation (Hess, 2012). Aligning systems require a willingness on the part of the TMT to explore and challenge assumptions that underlie

existing practices outside of a companies' comfort zone (Hess, 2012). In essence, the TMT must have the ability to take a holistic systems approach to innovation (Hess, 2012). Taking a holistic systems approach to innovation requires aligning business strategy, culture, structure, leadership behaviors, human resources policies, measurements, and rewards to promote innovation (Hess, 2012).

Solely focusing on operational excellence and efficiencies juxtaposes meaningful innovation (Hess, 2012; Schoemaker et al., 2013). The TMTs of incumbent firms note that newer organizations often are more nimble and flexible to innovate (Blank, 2013; Legrand & Weiss, 2011). New firm nimbleness may simply be true given that newer firms are not bound by legacy TMTs, culture, or organizational processes that often hamper the incumbents (Legrand & Weiss, 2011). Sood and Tellis (2011) provided a warning to incumbents not to be complacent about new entrants. TMTs of incumbents need to understand and pay close attention to their internal cultures and values given that Sood and Tellis specifically noted that internal issues have the potential to be more disruptive than external factors. Paradoxically, larger firms typically have slack resources and the financial depth to deliberately address their innovation gap (Legrand & Weiss, 2011).

TMTs typically do not have the knowledge to challenge current management systems nor the capabilities to make innovation systematic and part of the culture (Legrand & Weiss, 2011). Mollick (2012) asserted that the traditional thinking by TMTs is the belief that only individual innovators make significant contributions and that hollowing out middle management positions is prudent. Mollick found, in addition to the

organizational structure and culture, the quality of middle management is a financial variant that drives innovation outputs and branding efforts more so than do individual contributors or senior executives. Mollick asserted that overlooking the contribution of middle managers by executives explaining why executives noted gaps between the levels of innovation they expect within their organizations and the actual amount of innovation delivered (Mollick, 2012). Hollowing out middle management may explain why innovation levels do not meet the expectations of senior executives. Several of these impediments to innovation require further consideration.

Lock-in mindsets impede innovation. Building on Morris's (2013) notion of business model innovation, a contributing factor to the innovation gap may be that senior leaders have a locked-in mindset that prevent them from challenging existing business models. Legrand and Weiss (2011) attributed the innovation gap to senior leadership teams limiting their existing frames of reference. In other words, TMTs rely on their locked-in mentality to analyze problems adding to their inability to think innovatively about problems (Legrand & Weiss, 2011). Organizations rely on rigid short-term metrics, process standardization, hierarchy and delegation, and a propensity for short-term profitability that exacerbates locked-in thinking (Legrand & Weiss, 2011). A short-term orientation often forces investment in innovation and R&D initiatives to suffer (Legrand & Weiss, 2011). Others researchers have also noted that exhibiting a locked-in mentality is an impediment to innovation. Lampikoski, Westerlund, Rajala, and Möller (2014) found TMTs thwart meaningful innovation because they often do not understand the range of innovation types or the innovation process. Lampikoski et al. found senior

leaders often possess preconceived negative views of revolutionary innovation due to their short-term orientation and related lack of urgency, and the misconception that funding any sustainability effort only represents costs rather than an investment. Senior leaders often fail to understand how systems thinking, the lack of TMT skills, and organizational culture can negatively affect innovation.

Supporting the notion that a TMT's locked-in mindset hinders innovation, Seebode, Jeanrenaud, and Bessant (2012) developed a four-quadrant innovation model. Seebode et al.'s model plots *established context* and *new contexts* from left to right along the X-axis, and *incremental innovation* and *radical innovation* from bottom to top respectively along the Y-axis. Seebode et al. found most firms operate in quadrants on the left side that represents business as usual. The researchers noted that most innovation is incremental or is in response to regulatory requirements for sustainability. Plotting firms within one of the left quadrants is analogous to firms retaining the status quo. Left quadrant firms innovate at the component level as innovation usually takes place within the current framework or core configuration. On the right side of the model, Seebode et al. found there is a need within firms to develop new routines, co-evolution, and modification of existing systems. Quadrant four, in particular, represents the *edge of chaos* and results from complex transactions and interaction required by sustainability-led innovation (SLI). What is significant is that in most cases, the development of SLI requires the adoption of new systems thinking and the abandonment of existing business models to move forward (Seebode et al., 2012). Seebode et al. provided a salient example and noted that Royal Philips Electronics' (Philips) TMT utilizes a similar matrix to map

innovation types against the market life cycles of their products. The three innovation types that Philips uses to classify its products and processes include roadmap innovation, adjacencies, and breakaway innovation (Seebode et al., 2012). Roadmap innovations strengthen Philips' core business, adjacencies create profitable adjacent businesses that are new to Philips, and breakaway innovations are new to the world (Seebode et al., 2012). Philips is not locked-in to one type of innovation to the exclusion of others (Seebode et al., 2012).

Key steps in the process Philips utilized to innovate and optimize products are documented by Arnold and Hockerts (2011). To drive the innovation process, Philips' TMT developed and implemented a process strategy driven by specific sustainability targets (Arnold & Hockerts, 2011). The overarching targets that Philips' TMT established have several focal areas including energy efficiency, weight reduction, recycling, recyclability and disposal, reduction and eventual elimination of hazardous substances, reduction in packaging, and an increase in lifetime product reliability (Arnold & Hockerts, 2011). To facilitate the achievement of these targets, the innovation process that Philips' developed and implemented included: (a) having a robust vision; (b) alignment of strategies, policies, and systems to support the vision; (c) setting unambiguous sustainability targets for all business units and holding managers accountable; (d) ensuring that the TMT drives the process; (e) forming an intra-firm education program to share innovation across the organization; (f) establishing sustainability accounting and reporting; and (g) changing product labeling and marketing communications to emphasize sustainability benefits (Arnold & Hockerts, 2011). To

survive, Philips' TMT created clear objectives supported by a deliberate process designed to challenge their business model.

Systems thinking and the innovation paradigm – value chain considerations. A discussion on how innovation along an organization's value chain is necessary within the context of systems thinking. Kock, Gemünden, Salomo, and Schultz (2011) noted that technical innovation is a continuous construct related to the newness of technologies embedded within products. While Kock et al.'s definition is analogous to Morris's (2013) definition of continuous innovation, Morris made the observation that most TMTs tend to view innovation in individual parts rather than from a holistic perspective. Viewing innovation from a holistic perspective or along a continuum must, however, be done within the context of being part of a larger value chain situated within a larger system (Morris, 2013).

Applying systems thinking to innovation changes the paradigm of innovation within an organization along the entire value chain (Seebode et al., 2012; Tung, 2012). When looking at innovation within a larger system, Morris (2013) suggested that firms often fail to look for innovative ideas in the most noticeable places along the value chain. Morris noted that firms often fail to ask their customers for direct feedback and ideas for improvement through surveys and face-to-face meetings to identify areas of learning and improvement. Morris argued that typically senior leadership teams believe they can create a competitive advantage through incremental innovation to products and services. Undertaking incremental innovation requires the absence of systems thinking understanding and customer feedback. While incremental innovation often includes a

reduction in process time, reduction in paperwork (Morris, 2013), this approach may not be sufficient. Discontinuous or radical innovation is the result of deliberate large-scale R&D programs to develop innovation typically associated with NPD. Managing R&D for continuous and discontinuous innovation is a challenging process (Dierk & Dover, 2012; Morris, 2013).

As noted by Morris (2013), most TMTs look at innovation through the lens of a defensive strategy to keep the competition in check within an existing system. A defensive innovation strategy is akin to incremental changes to products and services, and incremental changes to processes. TMTs use defensive innovation strategies to enhance internal efficiencies and short-term profitability (Morris, 2013). A defensive approach to innovation is, however, very different from acting creatively to look for new opportunities, new approaches, or develop new systems within the context of the entire value chain. Vuorinen, Uusitalo, and Vos (2012) provided a different perspective by defining innovation as a multistage process that affects the value chain. Vuorinen et al. noted that TMTs better serve their organizations by enabling the transformation of ideas into new and substantially improved products, services, or processes with the clear intent of differentiating themselves in the marketplace against their competitors. Vuorinen et al. asserted that connecting with changing markets and emerging consumer needs requires co-creating value with customers. Co-creating value with customers requires engaging in intensive dialog about needs along the entire value chain (Vuorinen et al., 2012). Gathering customer feedback includes engaging in a discussion about brand values (Vuorinen et al., 2012). Taking a systems approach to innovation as asserted by Vuorinen

et al. goes beyond taking a defensive approach to innovation but is closer to the innovation ambidexterity that Dierk and Dover (2012) and Morris (2013) asserted.

Need for ambidexterity. Mootee (2012) asserted that developing strategic ambidexterity is critical if an organization wishes to maximize value creation for long-term sustainability. Regardless of the leadership approach that TMTs may choose to employ within their organizations, Latham (2014) was adamant that modern organizations must become ambidextrous and achieve a level of ambidexterity as it relates to innovation and sustainability. Latham's findings are consistent with Dierk and Dover's (2012) findings. Having a meaningful discussion on innovation requires addressing a broader internal context around leadership behaviors. Latham asserted that senior leaders must have the skills to execute and innovate simultaneously to successfully manage multiple stakeholders. Organizations that are only capable of focusing on one or the other are unlikely to survive according to Latham. Organizations that are only adept at executing an innovation strategy will likely experience boom-bust cycles (Latham, 2014). Organizations that are only good at product execution will likely produce reliable products that few will desire to purchase (Latham, 2014). Latham noted that it is possible for skilled TMTs to run their business profitably yet simultaneously change the business as noted early in this discussion.

Latham (2014) noted that 88% of academic researchers use quantitative methods to generalize their findings of successful leadership accomplishments. Reallocation of resources and value from one stakeholder group to another does not take great leadership to accomplish (Latham, 2014). Buyl et al. (2012) noted that the need for organizations to

be as efficient as possible to exploit current opportunities while simultaneously being adaptive to changes in the environment for long-term sustainability. Buyl et al. asserted that TMTs require specific skills and knowledge to create an ambidextrous organization. Buyl et al. asserted that TMTs are responsible for developing an ambidextrous organization for long-term organizational success. Christensen et al. (2015) posited TMTs of incumbents must recognize the patterns of new entrants and respond by creating new divisions to simultaneously explore and exploit new business models. Larson, Latham, Appleby, and Harshman (2012) noted that Baldrige CEOs were more likely to drive continuous improvement, exhibit dissatisfaction with the status quo, and demonstrate behaviors and attitudes to deliberately transform organizational capabilities to one of a culture of innovation rather than rely on an existing business model. Latham noted that the intention of leadership should be to create sustainable value for multiple stakeholders. Creating value for the various stakeholders goes beyond addressing customer needs but also requires a synthesis of leadership theories for TMTs to exhibit innovation competencies (Latham, 2014). To create value for stakeholders, Larson et al. asserted that collaborative CEOs tend to foster higher degrees of willingness to change and integrate new organizational policies and process changes along the entire value chain.

Ability to navigate ambiguity is an important TMT skill. Ideally, incremental innovation creates greater operational efficiencies where possible (Cristina, 2013). Other forms of innovation such as disruptive innovation targets customer needs and creates market demand based on a new idea or technology (Cristina, 2013). For genuine and

meaningful innovation to flourish, Morris (2013) argued that TMTs must have the capabilities to view innovation through an adaptive system lens and be capable of challenging the firm's business model. Capable CEOs should be skilled and prepared to make changes to the firm's structure and culture to engage in business model warfare (Morris, 2013).

Most CEOs and TMTs are not equipped to lead innovation initiatives within their organizations (Kaplan, 2012). Even when applying more resources, when different models and new tools are brought to bear to help companies innovate, many executives who have risen through the ranks of management have done so because many organizations value and reward predictability and control (Kaplan, 2012). Fostering innovation often requires new mindsets, new behaviors, new skills, and new attitudes and motivations to address and lead the organization through the complexities associated with problems stemming from disruptive innovation (Kaplan, 2012). Creating or responding to hyper-competitive market changes and disruptive innovation from competitors often involves extreme uncertainty that is unlike operations management (Kaplan, 2012). Few leaders possess formal preparation to confront crisis and critics, nor do they have the resilience to lead or respond to disruptive innovation and hyper-competitiveness (Kaplan, 2012). Simply stated, most CEOs and TMTs are not equipped to deal with problems and crisis associated with extreme ambiguity (Kaplan, 2012). Many TMTs lack the understanding that the innovation journey is not predictable nor follows a linear path (Kaplan, 2012).

Conflicting stakeholders objectives. Strategic leaders must be adept at aligning and securing buy-in from stakeholders particularly among those who may have disparate views (Schoemaker et al., 2013). Some stakeholders have long-term organizational goals while others fixate on short-term objectives. Latham (2014) noted that balancing the competing interests of various TMT members is an essential attribute of competent leadership. While Latham found creating value was relevant to most stakeholders, not all could agree on what value represented. Yuan, Guo, and Fang (2014) asserted that conflicting stakeholder goals concerning innovation within the TMT requires consideration when assessing the value and quality of the TMT.

Role of the CEO and TMT in the innovation gap. The skills and the roles of the CEO and TMT are appropriate considerations within the context of the innovation gap. TMT leadership capabilities drive successful innovation within an organization (Cristina, 2013). Cristina (2013) argued that TMTs are responsible for creating an optimal environmental culture for innovative thinking. According to Latham (2014), organizations require specific leadership behaviors from TMTs to create an organizational environment that facilitates innovation, systems thinking, and design thinking. Ideally, TMTs should have the ability to bring all favorable cultural and organizational factors together (Cristina, 2013). The organizational factors should include financial resources, necessary human talent, and the ability to clearly articulate the vision and mission to divisional managers throughout the organization (Cristina, 2013). Cristina argued that the most important role of the TMT is providing favorable conditions for healthy risk-taking, stipulating organizational direction, and setting targets to drive

innovation in a very deliberate manner. Latham argued the need for CEOs to articulate and set aggressive organizational targets to challenge status quo thinking. Nadkarni and Herrmann (2010) asserted that organizations must recruit individuals for the TMT who are extroverts and assertive in idea generation about innovation, and open to new ideas rather than maintain the status quo. For TMTs to facilitate innovation within an organization, TMT must depart from the status quo and adopt new competencies that promote innovation practices (Latham, 2014). According to Cristina, setting innovation targets should have the unequivocal intent of transforming innovative ideas into successful products, services, and processes that add value to the organization. The notion of setting aggressive targets is analogous to viewing innovation more holistically and setting targets that will affect the entire organization (Larson et al., 2012).

TMT behaviors influence innovation efforts. To develop new TMT competencies and depart from the perceived status quo, understanding the significant role that TMTs perform and their approach to innovation within an organization is important (Larson, Latham, Appleby, & Harshman, 2012). To deliberately depart from the status quo for innovation efforts to be successful, Parker, Abdul-Ghaffar, Campbell, and Vickers-Johnson (2012) asserted that TMTs must exhibit specific behaviors and personality traits such as cooperation, open-mindedness, be communicable, sympathetic, and helpful. Parker et al. asserted that, for organizational followers to view the TMT as competent and capable, TMTs must exhibit specific visible behaviors.

Nadkarni and Herrmann (2010) found the importance of CEO personality attributes affects the overall ability of innovation and firm performance. Nadkarni and

Herrmann found a correlation between CEO personality attributes such as CEO strategic flexibility and openness to new idea generation with innovation. Specifically CEO strategic flexibility is directly related to financial performance and important when considering the relationship between TMT innovation capabilities and financial performance. Given the failure rate of 70% to 80% and a success rate of only 20% to 30% of organizational transformation initiatives, Larson et al. (2012) asserted that the value of looking beyond CEO behaviors and examining further CEO motivation and attitudes on organizational innovation.

TMT skills can affect innovation. Yuan et al. (2014) noted that when TMTs are puzzled by the fact that their firms are not more innovative and experience an innovation gap, TMTs should look beyond conflicting TMT objectives. Yuan et al. suggested that TMT skills, background, and the overall quality of the TMT require a review in detail given that the TMT factors listed have a significant influence on innovativeness. Dierk and Dover (2012) asserted that TMTs often fail to take a hard look at their skill deficiency to determine why their company is experiencing a persisting innovation gap. Yuan et al. noted that bringing different perspectives and information into the innovative process may have a positive effect on efforts to close the innovation gap. Nadkarni and Herrmann (2010) asserted that CEOs should recognize TMT deficiencies and actively recruit individuals into senior leadership roles who are more assertive in the area of idea generation to address innovation deficiencies. According to Nadkarni and Herrmann, TMT members who possess superior R&D experience allow the CEO to focus on balancing goal achievement, and on creating a culture of innovation by fostering

employee engagement. Yuan et al. found TMTs with high levels of R&D experience enhance a firm's propensity to invest in R&D and a firm's effectiveness in deploying innovation resources. Adding TMT members with enhanced marketing experience helps leverage R&D investments as background diversity directly contributes to a firm's innovativeness within the context of customer needs (Yuan et al., 2014). In other words, TMTs with higher background diversity including innovation and marketing skills are better equipped at soliciting feedback from customers on their needs. However, when there are deficiencies in the diversity of experience within the TMT, boards may need to intervene and address the TMT experience deficiency. A deficiency of TMT skills and diversity of skill is likely a source of the innovation gap (Dierk & Dover, 2012; Yuan et al., 2014).

Lack of TMT skills influences innovation ambidexterity. Understanding innovation within the context of systems thinking along the value chain appears challenging for organizations. Legrand and Weiss (2011) recognized that the inability of firms to adopt business model innovation is because of the lack of skills and abilities of senior leadership teams. Legrand and Weiss argued that many TMTs do not possess the skills to use systems thinking to facilitate innovative thinking beyond their companies' existing business models (Legrand & Weiss, 2011). To provide additional context around why TMTs may find innovation efforts challenging within their firms, Smith et al. (2010) provided two approaches to innovation that CEOs tend to adopt. The first approach identified by Smith et al. is a hub and spoke model. The hub and spoke model places the CEO at the center and has the business unit leaders formally communicating directly to

the CEO. The hub and spoke model limits communication with other senior leadership peers to informational updates. The second approach to innovation identified by Smith et al. is a ring-team model. The ring-team model promotes collaboration between business unit leaders and CEO. The ring-team model facilitates the TMT to make decisions collectively on resource allocation and trade-offs. The second approach to innovation is not without its challenges as the ring-team model approach creates a great deal of tension amongst the TMT members themselves and with the CEO (Smith et al., 2010). The cause of this tension is the perception that investing in innovation hurts the short-term performance of some business units as well as the firm as a whole (Smith et al., 2010). The perceived net result is investing in innovation negatively affects resultant TMT compensation in the form of bonus incentives at the business unit level and the corporate level (Smith et al., 2010). Regardless of the innovation approach adopted, Smith et al. illustrated why TMTs tend to favor short-term financial results rather than invest in innovation and long-term sustainability.

Smith et al. (2010) asserted that hub-spoke and ring-team models create different TMT dynamics around innovation. Smith et al. found TMTs speak about long-term objectives yet TMT behaviors reflect a short-term perspective. The dichotomy TMTs create when talking long-term yet acting short-term, results in innovation areas not securing a share of an organization's capital resources for innovation (Smith et al., 2010). TMTs push the allocation of capital and key decisions down to business units to fight it out like feudal territories according to Smith et al. Smith et al. noted that both approaches create tension among the TMT. Short-term performance suffers by funding innovation

and prioritizing TMT compensation and bonus incentives. Alternatively, not funding innovation may sacrifice long-term performance. Smith et al. suggested that TMTs adopt the ring-team approach where business unit leaders collectively make decisions on resource allocation and trade-offs. Smith et al. asserted that TMTs abandon the hub-spoke approach and adopt the ring-team approach and deliberately hold tension and accountability within the TMT. Having the TMT take full responsibility for funding innovation is less likely to result in starving innovation business units of critical resources (Smith et al., 2010). Smith et al. noted that the two types of business units, innovation and operational, have distinct purposes, objectives, and culture. Hall (2012) and Morris (2013) asserted that firms should review their approach to innovation and adopt a different business model to facilitate innovation apart from business operations. Smith et al. noted that the role of the CEO is to balance the inconsistency of innovation units and operational business units by creating different metrics, incentives, and timeframes.

Given the predominant short-term agenda and inability of TMTs to view innovation in a broader context, Smith et al. (2010) noted that TMTs should replace their existing hub-spoke approach and adopt the ring-team approach. The rationale for changing the approach to innovation is the necessity to create a dialog among the TMT around innovation within a broader strategic context (Smith et al., 2010). The notion of challenging existing models and creating a different business model to encourage innovation for economic sustainability is analogous to the research findings presented by Morris (2013). Morris suggested that the lack of systems thinking dialog was attributable to the notion that TMTs find it easier and less challenging to focus on individual parts of

their business rather than taking a holistic perspective. When viewing only individual parts of an organization, there is a tendency to regress towards maintaining the status quo (Morris, 2013). TMTs locked-in mental models are their frame of reference (Morris, 2013) that prevent them from viewing their business from a different perspective and actively promoting innovation at the business model level. This new perspective requires the ability to use and apply systems thinking to challenge the entire value chain (Smith et al., 2010).

Business models for innovation. According to Smith et al. (2010), successful innovation requires a realignment of specific management models and reporting lines. The purpose of realigning management models and reporting lines is to foster higher degrees of cooperation among members of the TMT. Innovation-specific management models may force cooperation among TMT member and their business units to allocate resources in an appropriate manner to foster innovation (Smith et al., 2010). Ironically and unknowingly, the TMTs of many organizations develop and implement policies and procedures to make their organizations more efficient while stifling innovation (Blank, 2013). Even when the resources available for innovation are enormous, TMTs cannot seem to develop their business model to facilitate meaningful innovation (Blank, 2013).

The foremost difference between start-ups and larger organizations, according to Blank (2013), is their business models are different as is their focus. Start-up firms tend to focus on searching for a repeatable and scalable business model while large companies tend to concentrate on implementing and executing a repeatable and scalable business model to gain efficiencies (Blank, 2013). While Sood and Tellis (2011) asserted that new

entrants can cause unintentional disruption to markets without insightful market knowledge or expertise, Blank asserted that the traditional business models of large organizations could have a detrimental effect on innovation. For example, the traditional business growth model requires the development of a strategic business plan including step-by-step implementation of an NPD plan (Blank, 2013). Traditional firms require NPD plans use a waterfall development approach to build products iteratively. Traditional firms will hire for traditional experience and the ability to execute. Operationally, Blank argued that most large companies tend to drive their organizations by accounting metrics and focus on their income statement and balance sheet. Failure to be operationally efficient or to follow the step-by-step implementation plan will result in firing executives (Blank, 2013).

Large firms can learn from lean start-up firms as their approach to strategy development, and execution tends to be different. Seebode et al. (2012) noted that the core competencies of incumbents often becomes core rigidities that severely limits their ability to deal with changing conditions and dynamic markets. Lean start-ups, for example, tend to develop a hypothesis-driven business model whereby lean start-ups develop new products for testing by customers (Blank, 2013). Lean start-ups are different in that they hire personnel for their ability to learn, be nimble, and do not waste time assigning existing TMT members into roles where they lack innovation skills (Blank, 2013). Lean start-ups base their accounting metrics on customer acquisition costs and customer lifetime value (Blank, 2013). When a product or model fails, lean start-ups pivot away from business models that no longer work and move towards testing new

models (Blank, 2013) whereas incumbents must unlearn old ways of thinking about their business before they are open to thinking about innovation and their business differently (Seebode et al., 2012). Blank (2013) asserted that the critical lesson often lost on TMTs is as follows. While large companies understand they need to deal with external threats by continually innovating to ensure their survival and growth, most TMTs fail to realize that the importance of experimenting is to reinvent new business models. Hess (2012), Lampikoski et al. (2014), and O'Connor and Rice (2013) suggested that experimentation runs contrary to maintaining the status quo by allowing feedback, permitting critical thinking, learning from failure, and observe an organization holistically to challenge the dominant business model. The central tenant of Blank's assertion is to develop good guesses and test their hypothesis with the intent of creating value for themselves and their customers. Blank noted that testing a hypothesis is about customer development, needs discovery, and validation. Blank noted that lean start-ups ask potential users, purchasers, and partners for feedback on all elements of their business model and products. Areas solicited for feedback include product features, pricing, and channels of distribution (Blank, 2013). By using customer feedback, agile development works hand-in-hand with customer development and is unlike the traditional long product development cycles that large firms use (Blank, 2013). According to Blank, large companies presume they know their customers' needs when they do not. Hung-Jung and Hsien (2013) noted that CEOs should be open to experimentation to garner customer feedback on needs and act to change the business model. While tempting to rely on current business models and metrics, Blank argued that TMTs require an understanding of how to affect their

company's business model through rapid innovation rather than rely on otherwise traditional business models and financial metrics. O'Reilly & Tushman (2013) asserted that managers are responsible for optimizing the efficiencies of core business units. TMT are responsible for reshaping their firm's business model by deliberately creating an ambidextrous organization by directing and encouraging innovation units to experiment (O'Reilly & Tushman, 2013). Relying on traditional business models and financial metrics are innovation killers (Blank, 2013). Blank pointed to large companies, such as General Electric and Qualcomm, that have adapted lean start-up business model thinking within certain divisions to foster innovation.

Applying systems thinking to challenge the status quo ensconced in the value chain. To provide insight into the importance of applying systems thinking to the value chain, Lu (2013) examined the criteria used to evaluate applicants for the Malcolm Baldrige National Quality Award (MBNQA). Lu noted the factors behind why Lockheed Martin Missiles and Fire Control (MFC) won the MBNQA in 2012. While there are several factors used to evaluate all MBNQA applicants, Lu noted that many organizations place excessive emphasis on financial gains that leads to shortcuts, sub-standard workmanship, and disappointing outcomes. Lu noted that the MBNQA applicants that pursued excellence across their entire value chain tended to achieve superior performance over the long-term (Lu, 2012). The commitment of the TMT of MBNQA applicants to support innovation is congruent with other research that asserts that a short-term focus has specific consequences while a long-term perspective leads to durability and sustainability. Lu found innovation and the perception of quality were evident in the

brand image of the MBNQA applicants as brand image drives brand value and superior overall performance. Larson et al. (2012) found six distinct differences in attitudinal and motivational patterns between the CEOs of Baldrige Award recipient organizations and MBNQA applicant CEOs. Baldrige Award winning CEOs are likely to drive continuous improvement, be discontent with the status quo, and create tension among the TMT (Larson et al., 2012). Smith et al. (2010) found new business models such as the ring-team approach fosters tension among the TMT, can spur discontentment with the status quo, and can lead to investment in innovation efforts. Larson et al. found the Baldrige Award winning CEOs are more supportive of continuous learning, sponsor break-through innovation, and strongly focus on systems thinking to move their organizations forward. While Larson et al. found CEO motivation and the attitude for change requires the ability of systems thinking by the CEO, Morris (2013) found true transformative innovation also requires a change to the business model to develop and implement systematic processes to facilitate innovation.

Deliberately creating an organizational imbalance to foster innovation. Given an aversion to uncertainty and the inability to cope with uncertainty, Kaplan (2012) argued that TMTs tend to articulate significant visions then follow up with detailed roadmaps and action plans. While roadmaps have their place within the context of innovation, roadmaps can also hinder innovation. To create and respond to disruptive innovation, Kaplan asserted that TMTs must recognize that they must proactively create disruption to avoid a business-as-usual-mentality to settle within their organizations. By changing the internal business model, deliberate tension within the TMT challenges the

lock-in mentality of the status quo (Larson et al., 2012; Smith et al., 2010). By deliberately creating an imbalance and tension as noted by Latham (2014), innovation is spurred by disrupting the most fundamental mindsets and behaviors that led to current successes. Kaplan noted that without the opportunity to experience and subsequently fail, there is no opportunity to learn, gain new insights, uncover new opportunities, or to progress forward with any meaningful innovation. Blank (2013) supported Kaplan's assertion. Blank found as start-ups test new hypotheses, it provides an opportunity to learn and alter their business model accordingly. Kaplan noted that the role of the TMT was not to merely articulate a vision associated with the status quo but rather transform the organization to one of innovation.

Innovation transformation commences with the CEO creating an imbalance to experiment proactively with disruptive innovation in response to hyper-competitiveness (Kaplan, 2012). To transform the direction of an organization, Latham (2014) noted the importance of leadership skills and approach. While there are many theories and approaches to leadership including transformational, transactional, stewardship, spiritual, and Theory X-Y for example, Kamisan and King (2013) found to optimize leadership effectiveness, CEOs must possess the skills to exhibit and consistently balance both transformational and transactional leadership styles. While leadership continues to be a popular research topic, Latham argued that there is not one universal approach that researchers can agree on that fits all organizations. Cristina (2013) posited innovation priorities differ between various types of organizations and industries. Therefore, leadership styles, management structures, business practices, and business models will

not be identical across all industries and must be adapted according to their industry context (Cristina, 2013).

TMT motivation and attitudes affect the culture of innovation. For organizational change such as innovation initiatives to be successful, Larson et al. (2012) noted that TMTs and particularly CEOs must exhibit specific motivation and attitudinal patterns. The key attitudes and motivational patterns at the senior level appear to be necessary to drive change at all three levels of innovation: incremental, breakthrough, and business model innovation (Larson et al., 2012). This change in motivation and attitude often requires the ability to grasp systems thinking. Morris (2013) asserted that genuine transformative innovation requires systems thinking with the intent of challenging and changing existing business models to develop and implement systematic processes and integration. While Parker et al. (2012) focused on highlighting desirable personality traits drawn from the antithesis of Theory X leadership to encourage innovation, anosognosic and inept managers can directly and significantly harm an organization's ability to innovate and change (Parker et al., 2012).

To transform organizational culture to one of innovation, TMTs must create trust by exhibiting traits such as warmth and approachability (Parker et al., 2012). Without establishing trust, even the most competent TMTs are unlikely to successfully prompt their organization to adopt new business models and foster a culture of innovation. CEO motivation and attitudes must go beyond the leadership theory models or the typical personality traits that Parker et al. put forward. Larson et al. (2012) noted that while

personality traits are typically genetic, learning, altering, and adjusting motivation and attitudinal patterns is possible and specific to the context.

By comparing and contrasting the differences in motivation and attitudinal patterns between the CEOs of Baldrige Award recipients' organizations and non-Baldrige recipients, several differentiating motivation and attitudinal patterns emerged (Larson et al., 2012). There are several distinctions in motivation and attitudinal patterns between Baldrige, and non-Baldrige recipients including possessing a dissatisfaction with the organizational status quo, the need to learn continuously from experience and understand future trends, a desire to drive cultural change and evolve the organization, and a desire to create deliberate tension among TMT members. Larson et al. (2012) posited motivation and attitudinal patterns of Baldrige Award winning CEOs includes a desire to pursue growth opportunities beyond the typical 3% to 5% that continuous improvement might produce by setting aggressive growth targets of 20%. To achieve aggressive growth, Baldrige Award winning CEOs sponsor breakthrough innovation projects, and engage in systems thinking to align functions, policies, and processes with strategies to drive change and deviate from the status quo (Larson et al., 2012). Motivation and attitudinal patterns of Baldrige Award winning CEOs include the desire to elevate team orientation and employee engagement, diminish self-orientation to foster collaboration, use facts and a comprehensive scorecard to benchmark, and actively experiment, test, and trial proposed new products and services to garner feedback from customers. Baldrige Award winning CEOs also engage external stakeholders to ensure that TMTs understand environmental ethics and the need for sustainability (Larson et al., 2012).

With the potential for TMTs to do damage to their organizations (Brookmire, 2012), Hill, Brandeau, Sal, and Lineback (2014) suggested that a deliberate innovation agenda must be driven by CEO motivation and attitudes to set the priorities for the organization. CEO support for innovation is likely to have a positive effect on the success of organizational transformation initiatives (Larson, 2012). Bhattacharyya (2006) asserted that several positive traits such as visionary leadership help inspire and motivate the organization and are essential to encourage innovation. Negative traits associated with transactional leadership, however, tended to derail innovation efforts (Bhattacharyya, 2006).

TMT self-interest inhibits innovation. Apart from TMTs having a locked-in mindset that impedes their understanding of innovation on its various levels, Xu and Yan (2014) suggested that a lack of investment in R&D may starve radical or incremental innovation. Starving innovation may be attributable to other priorities set out by TMTs. Short-horizon CEOs tend to make managerial decisions that enhance short-term firm performance at the expense of long-term firm value given there are self-serving incentives for this seemingly managerial myopia. Managerial myopic behaviors are evident in other variables such as the small number of patent applications, Tobin's Q comparisons, R&D budgets, and other metrics (Xu & Yan, 2014). Xu and Yan found retiring CEOs often have a personal interest to increase short-term earnings to boost pension contributions and performance incentives by supporting incremental and safe innovation initiatives. Xu and Yan found CEO self-interest is evident by their effort to maximize retirement payouts and why some companies do not invest in radical

innovation. Instead, the self-interest of such CEOs favors investment in incremental innovation. Schoemaker et al. (2013) asserted that some stakeholders have long-term organizational goals while others fixate on short-term objectives. According to Latham (2014), balancing various competing interests among stakeholders is essential to effective leadership. While a locked-in mindset or the lack of skill within the C-suite may contribute to the innovation gap, a short-term focus is detrimental to innovation efforts (Hess, 2012). As CEOs approach retirement, the number of patent applications also tended to decline. Xu and Yan found retiring CEOs with vested in-the-money options holdings preferred to support safe, incremental innovation by making choices that would reduce their personal risk exposure at the expense of long-term firm growth. Sonnenfeld et al. (2013) asserted that the role of boards is not to maintain the status quo and avoid risk and but to push the CEO to plan beyond the next quarter's earnings and think long-term. When independent directors had high stock ownership and the best interest of shareholders in mind, they tended to not only sanction incremental innovation but to fund radical innovation understanding that radical innovation is required to secure long-term performance (Xu & Yan, 2014). CEOs may deliberately create the innovation gap when CEOs limit investment to incremental innovation efforts rather than radical innovation efforts as CEO self-interest is to maximize performance bonus and retirement benefits (Xu & Yan, 2014). Xu and Yan's findings support Dover and Dierk's (2009) assertion that the composition of TMTs are typically risk adverse managers who exhibit a preference for focusing on short-term goals at the expense of long-term planning.

Directors influence the innovation horizon. Related to self-serving members of the TMT, Boyd, Haynes, and Zona (2011) looked at CEO-board relations to determine whether duality affects financial performance. Boyd et al. noted that despite inter-firm ties, board members and TMTs may have social links. The duality between TMT and boards tended to be a nonfactor in corporate performance. Nevertheless, Boyd et al. found a clear difference in time orientation specifically between Western and Eastern cultures. Specifically, cultural values, norms, behaviors, and attitudes for Asian-based firms tended to have a longer-term orientation consisting of a ten-year horizon. Western firms, however, tend to focus on short-term profitability in one-year increments. To address the difference in time orientation, Sonnenfeld et al. (2013) noted that Western boards should recognize the preoccupation with short-term objectives and intervene by conveying a longer-term perspective on shareholder value to all shareholders. In doing so, Sonnenfeld et al. suggested that boards push their CEOs and themselves to plan beyond the next quarterly or yearly earnings. Prudent oversight, support for risk-taking, encouragement, and wise counsel is what most CEOs expect from their boards. However, Sonnenfeld et al. asserted that many boards do not have the courage for the level of risk-taking required for long-term sustainability and related innovation investments. Instead, boards and CEOs tend to engage in adversarial posturing to ensure short-term priorities prevail (Sonnenfeld et al., 2013).

CEO organizational fit contributes to cultural change. CEO fit within an organization is a major factor in leading organizational change (Blettner, Chaddad, & Bettis, 2012). Blettner et al. found CEOs can elect to preserve the status quo or act as

agents of change and challenge the existing mindset of the TMT. CEO fit may be appropriate or not suitable for the firm at any particular point in time given several factors (Blettner et al., 2012). Fit factors include internal strengths and weaknesses, environmental dynamics, market opportunities, and threats may present at a particular point in time requiring appropriate responses (Blettner et al., 2012). CEO priorities, shared values that focus on long-term objectives, and clear rules of engagement to support innovation efforts are considerations for effective CEO fit (Hill et al., 2014). Blettner et al. noted a distinction between internal and external fit CEOs and the effect on innovation. Blettner et al. found CEOs who have high levels of internal fit may find it difficult to take the necessary actions that are necessary to respond to dynamic external challenges. Loose fit CEOs implied they had more freedom of action to respond to the challenges of changing current approaches and strategies. Blettner et al. noted that loose fit CEOs were readily prepared to make changes to address the experience deficiencies within the TMT, and to realign organizational priorities to address a lack of R&D experience to foster higher levels of innovation efforts. In other words, the quality and experience of TMTs have a direct effect on innovation priorities and efforts. Changes to the experience and composition of the TMT may require hiring outsiders who have a loose-fit (Yuan et al., 2014). CEOs with a high level of internal fit tend to retain the status quo about innovation efforts and may show a reluctance to alter organizational priorities and culture (Blettner et al., 2012; Yuan et al., 2014). High fit CEOs are reluctant to execute transformational change needed to foster a culture of innovation (Blettner et al., 2012).

Organizational enablers facilitate a culture of innovation prioritization.

Legrand and Weiss (2011) put forward a model of enablers that senior leadership teams and specifically CEOs should consider implementing to address the innovation gap within their organization. The enablers suggested by Legrand and Weiss included the need for TMTs to lead by example and make innovation an organizational priority. This assertion is consistent with the discussion on the role that TMTs and specifically CEOs should play in developing a culture of innovation. Legrand and Weiss asserted that in making innovation an organization priority, the CEO must lead by example. TMTs must commit resources to foster innovative thinking, encourage organizational learning, and make changes to TMT composition and acquire new talent with needed skills to address the deficiency of experience. To foster innovation and organizational thinking, TMTs will need to create and implement a top-down culture of systematic innovation to ensure that everyone understands the corporate direction (Legrand & Weiss, 2011). Achieving a culture of systematic innovation is possible by creating cross-functional teams that have the ability, tolerance, and backing of the TMT to take risks associated with delivering value throughout the value chain (Legrand & Weiss, 2011). Legrand and Weiss suggested that TMTs implement a formal top-down innovation plan. Implementing a formal innovation plan ensures that the entire senior leadership team has a thorough understanding that innovation resources are not to be cut even when quarterly results may not be stellar.

An example of the important role CEOs play in setting innovation priorities is provided by Miller (2012). Miller noted that when Apple was once a struggling company,

Steve Jobs stated that the way out of their difficulties was not to cut NPD R&D costs.

The mandate from Jobs was for Apple to innovate its way out of their predicament.

Investment in innovation and the cognizance to align various parts of the organization is, therefore, essential to foster innovation (Legrand & Weiss, 2011).

Organizational alignment. Cultural transformational efforts require the alignment of organizational resources to foster innovation (Kahn, Barczak, Nicholas, Ledwith, & Perks, 2012). Aligning departments such as marketing, human resources (HR), R&D, and information technology (IT) enables cross-functional innovation projects (Hall, 2012; Hess, 2012; Holland & Weathers, 2013). The HR department must work with the CEO and make the correct hires at the TMT level to address the TMT organizational experience deficiencies (Kahn et al., 2012). HR must align TMT incentives to promote rather than penalize innovation (Kahn et al., 2012). An NPD strategy best practice identified by Kahn et al. (2012) requires the innovation strategy and the overall corporate strategy and mission be aligned. Kahn et al. noted that aligning innovation strategy with corporate strategy must touch the entire organization, be highly visible, and promote a long-term perspective. To align innovation efforts with the strategic plan and support meaningful innovation, the plan should be flexible, not to thwart innovation through rigidity, engage cross-organizational groups, establish clear go or no-go criteria, and provide funding for the NPD process (Kahn et al., 2012).

Role of creativity in innovation. Whether product innovation is incremental or radical, product design affects consumer perception (Mugge & Dahl, 2013). Specifically, there is a learning cost associated with becoming familiar with a new product or service

to realize its benefits. This interaction potentially affects a brand and the economic sustainability of a company. A poorly chosen product design and introduction strategy can have an adverse effect on the short-term financial results and negatively affect the sustainability of the brand over the long-term (Mugge & Dahl, 2013). Remarkably, many organizations tend to compete with their competitors on replication and price rather than on adding value to the products and services they provide (Hunter, 2012). While first mover advantage and lower pricing strategies are motivating factors that spur innovation and NPD activities, organizations often overlook creativity and design when innovating.

Often misunderstood is that creativity is an essential ingredient behind innovation, not the need or the trigger to fill the gap by using some predetermined formula or through replication (Hunter, 2012). Hunter (2012) asserted that there is no such thing as a lock-in success formula, but the use of creativity creates the opportunity to recognize needs and fill the innovation gap. Placing more value and emphasis on creativity skills will help organizations develop alternative business models rather than continue to cling to traditional business models (Hunter, 2012). Without innovation, both start-up companies, and large firms are unlikely to be sustainable (Hunter, 2012). Heij et al. (2014) asserted that business model replication focuses on the reduction of transaction costs, operational efficiencies, economies of scales, and growing revenue. Business model renewal requires innovation and creativity and contributes to overall firm performance specifically in dynamic market environments.

Closing the innovation gap requires innovative thinking (Legrand & Weiss, 2011). Enhancing consumer appreciation of radical innovations requires that firms find a

way to ensure a positive response by consumers to radical innovations. Positive consumer response to radical innovations is possible by highlighting the new benefits through imagination-focused visualization (Mugge & Dahl, 2013). While Boyd et al. (2011) and Sonnenfeld et al. (2013) found the TMTs of Western firms may not inadvertently but deliberately starve transformational innovation through self-interest and short-term perspective, their findings did not explain why many Eastern firms also struggle with innovation given their long-term perspective. Instead, Eastern firms tend to focus on creative adaptation (Abrami, Kirby, & McFarland, 2014).

Innovative thinking is different from analytical thinking and should not be confused with creativity (Legrand & Weiss, 2011). Using creativity can help develop new ideas that may or may not be relevant or implementable. Innovative thinking requires small teams to deliberately work hard to develop products and services to define and create value for an organization (Legrand & Weiss, 2011). Misinterpreting creativity or absolute innovation as creative adaptation can create confusion in the context of creativity or innovation (Abrami et al., 2014). While creative adaptation can also provide value to an organization, noting the distinction between creative adaptation and absolute innovation requires consideration. Creative adaptation is the modification of existing technology, but it is not absolute innovation (Abrami et al., 2014). The best example of creative adaptation is China where absolute innovation is severely limited (Abrami et al., 2014). Creative adaptation stems from the political structure that emphasizes rote learning in universities, the lack of respect for intellectual property rights, and the preference to buy companies through foreign acquisition rather than pay licensing fees

(Abrami et al., 2014). The results show that despite the fact that China has spent the last forty years mandating innovation from the top of its political hierarchy and by erecting trade barriers and foreign ownership restrictions, China has effectively created an insular market where creative adaptation thrives but absolute innovation does not (Abrami et al., 2014). While creative adaptation may create some short-term value for state-run organizations, at best creative adaptation is similar to incremental innovation. Without the state insulating its domestic market, sustainability of many state-run companies is unlikely. Abrami et al. (2014) questioned whether absolute innovation is overvalued. Abrami et al. argued that as a precondition of innovation to pursue ideas, freedom of minds and markets is a prerequisite. To illustrate the lack of true innovation within Chinese companies, Abrami et al. noted that the Global Innovation 1000 Study lists only a handful of Chinese-based brands.

Role of strategic planning in innovation. To establish the role that leadership behaviors have on innovation performance, understanding the role of strategic planning in the innovation process requires consideration. Song, Im, Bij, and Song (2011) asserted that strategic planning is more effective in increasing the number of NPD projects in larger firms than in smaller firms. Song et al.'s findings are contrary to the finding of other researchers (Abril & Martos-Partal, 2013; Carayannopoulos, 2009; Tung, 2012). Song et al. found the TMTs of smaller firms are quicker at exploiting opportunities as the TMTs of smaller firms tend to not possess locked-in mindsets and a propensity to preserve the status quo. Song et al. noted that TMTs of larger firms have sufficient R&D resources they can mobilize to undertake innovation and NPD activities. Large firms with

high levels of R&D intensity and resources can overcome the adverse effects of formal strategic planning on the number of NPD projects (Song et al., 2011). Allocating and deploying a firm's resources for NPD activities signals the high priority and importance of NPD activities within the firm.

A significant finding was that the number of NPD projects initiated also enhanced return on investment and overall firm performance despite the adverse relationship between strategic planning and the number of NPD projects (Song et al., 2011). Formal strategic planning was more effective at spurring the number of NPD projects due to sufficient resources than were smaller firms (Song et al., 2011). While there is an inverse relationship between the effectiveness of formal strategic planning and firm size and an inverse relationship between R&D intensity and formal strategic planning, R&D intensity has a significant positive effect on the number of NPD projects (Song et al., 2011). Large firms may have an advantage over smaller firms given the resources available to increase the number of R&D projects. Larger firms can generate more R&D projects than smaller firms using formal strategic planning as more resources are available (Song et al., 2011). Hoonsopon and Ruenrom (2012) found centralization has a positive influence on incremental product innovation. Formalization also has a partial relationship with incremental product innovation (Hoonsopon & Ruenrom, 2012). However, senior leaders must signal the importance of R&D as a priority given its link to firm performance (Song et al., 2011), its positive effect on marketing performance and subsequent market performance (Hoonsopon & Ruenrom, 2012). While meaningful innovation may enhance customer loyalty, innovation efforts that fail to provide meaningful improvements or

meet specific customer needs can negatively affect customer loyalty (Stock & Zacharias, 2013).

Transformational innovation moves from earning to learning to earning. To succeed at innovation and yield results, the challenge TMTs face according to Nagji and Tuff (2012) is that most senior leadership teams do not understand or deny that transformational innovation is necessary. Undertaking transformational innovation requires companies to rethink and do things differently throughout their value chain (Nagji & Tuff, 2012). Most companies rely on existing personnel and existing analytical skills to look at existing markets and customer data that may be appropriate for core and adjacent innovation initiatives (Nagji & Tuff, 2012). TMTs that understand they need to do things differently will make an effort to shift their thinking and priorities from earning to learning (Blank, 2013; Nagji & Tuff, 2012). An essential element of this shift from earning to learning is simply gaining and acting on feedback from existing and potential customers (Blank, 2013; Nagji & Tuff, 2012). To enhance learning, TMTs tend to focus on five important areas to enhance the results of their transformational innovation efforts including hiring for different skills, integrating new skills into initiatives, providing adequate R&D funding, using pipeline management, and adopting specific innovation metrics (Nagji & Tuff, 2012). Nagji and Tuff noted that TMTs must clearly communicate their innovation goals, identify the processes that the organizing will fund, and subsequently act to orchestrate innovation effects as a coordinated portfolio. Nagji and Tuff's proposed approach is complementary to Smith et al.'s (2010) assertion that the current business model of organizations needs to change by adopting a ring-team model.

The change in model helps to better manage and fund innovation more effectively and address the innovation gap. The findings of Kahn et al. (2012) and Morgan (2014) also support Nagji and Tuff's findings. Kahn et al. and Morgan found NPD metrics must be very different from ongoing operational process metrics and instead focus on driving and providing support for the desired innovation behaviors.

Chang et al. (2014) found TMTs must change the way they view and approach innovation within their business. To change how TMTs approach innovation, Chang et al. suggested the need for organizations to employ looped-back learning. For organizations to develop an environment of learning, Chang et al. noted that firms must continually study and adapt to their ever-changing environments and act on this input. Chang et al. argued that the future success of firms to innovate is a function of double-loop learning. They found double-loop learning helps to provide valuable feedback to change TMT actions and expected outcomes. Double-loop learning may challenge the TMT's locked-in mindset, its underlying values, assumptions, and goals. Double-loop learning involves explorative, generative learning, and exploitative, adaptive learning to generate knowledge around deficiencies (Chang et al., 2014). Once TMTs identify deficiencies, TMTs can leverage the gaps to make fundamental changes in marketing mixes (Chang et al., 2014). Such changes could lead to enhancing radical innovation efforts (Chang et al., 2014). Chang et al. argued that conducting incremental and radical innovation simultaneously helps to maximize exploitation that can also fund the exploration of future opportunities. This assertion around ambidexterity made by Chang et al. is consistent with Dierk and Dover's (2012) findings. Chang et al. noted that a strategy of

ambidexterity can foster financial performance in the short-term while funding radical innovation for long-term economic sustainability. While some firms are capable of implementing both types of innovation simultaneously, other firms seem to survive with little innovation or limited looped learning (Chang et al., 2014).

Lampikoski et al. (2014) asserted that TMTs believe that if their organizations greenwashed only 1% of their products, this approach to innovation would be sufficient. The view by TMTs that embrace greenwashing is simply to create the perception of being an innovative and responsible corporate citizen in the marketplace (Olsen, Slotegraaf, & Chandukala, 2014). Seebode et al. (2012) noted that Philips is an example of a firm that has gone beyond simply greening their operations by deliberately seeking to create radical products. Philips changed their manufacturing processes through intensive innovation. Philips' TMT reframed their business strategy towards sustainability-led innovation and encouraged transformation innovation beyond incremental adjustments (Seebode et al., 2012). Often the core competencies of incumbent firms become core rigidities that severely limit the ability of the TMT to deal with changing conditions and dynamic markets (Seebode et al., 2012). Incumbents must unlearn old ways of thinking about their business before they are open to thinking about innovation differently (Seebode et al., 2012). Seebode et al. found Philips' TMT had a clear understanding that they needed to embrace transformational innovation and become ambidextrous. In other words, Philips' TMT realized they needed to exploit the present opportunities deliberately while simultaneously exploring future opportunities to become economically sustainable. Seebode et al. noted that Philips' TMT realized the need to address long-term

sustainability and set clear innovation targets around sustainability along with new financial metrics. The alignment of corporate and innovation strategy illustrates that Philips' TMT understood that ambidexterity requires balancing both incremental and radical innovation, and that transformational innovation is linked to economic performance (Seebode et al., 2012).

Innovation portfolio management. When attempting to manage innovation, Kahn et al. (2012) found TMTs think they may not have a grasp on all dispersed NPD initiatives because they feel that innovation is often haphazard and episodic. TMTs suspect that the returns on the company's total innovation investment are low (Nagji & Tuff, 2012) particularly when not managing initiatives as a portfolio. Nagji and Tuff (2012) noted that the tendency is for TMTs to react and drastically intervene to understand what R&D initiatives are underway. In the absence of a structured portfolio management process, vacillating strategies only make matters worse as the senior leadership team often responds by instructing R&D teams to proliferate their existing products into variants (Nagji & Tuff, 2012). Proliferating existing products into variants only serves to split the revenue pie into even smaller slices without actually growing the overall business (Nagji & Tuff, 2012).

To structure innovation initiatives within a portfolio, Kahn et al. (2012) and Morgan (2014) suggested that NPD metrics and the management process must be very different from ongoing operational process metrics. Different metrics and processes are required to drive the desired innovation behaviors throughout an organization (Nagji & Tuff, 2012). Managing a total innovation portfolio requires constructing a portfolio that

produces the highest overall returns and requires allocating funds among growth initiatives rather than funding a collection of ad hoc standalone efforts (Nagji & Tuff, 2012). Nagji and Tuff found some firms could change their cultures to one of innovation by managing innovation as part of a larger strategic portfolio.

Implementing balanced scorecard metrics to encourage innovation. The example of Philips' innovation process illustrates that their TMT was not afraid to alter Philips' business model and metrics (Arnold & Hockerts, 2011). Arnold and Hockerts (2011) found innovation metrics can change behaviors when aligned with a longer-term organizational strategy. Arnold and Hockerts noted that by Philips' TMT utilizing an organizational-wide approach to innovation and establishing specific innovation metrics, the result was the occurrence of a change to Philip's organizational culture. As Philips repositioned new products by rationalizing labels and promoting environmental sustainability, Philips' TMT was attempting to strike a balance between short-term issues and long-term market opportunities. TMTs that understand innovators tend to adopt a different mindset about costs and metrics (Reeves, Haanaes, Love, & Levin, 2012). Reeves et al. found innovators should take a holistic, systems thinking approach to gain overall efficiencies rather than rely on the conventional approach of focusing on reducing individual component costs.

Firms committed to realizing the benefits of innovation and sustainability efforts developed and implemented a balanced scorecard with nonfinancial metrics including environmental and social efforts (Reeves et al., 2012). Reeves et al. (2012) found tying the compensation of executives, managers, and employees to a triple-bottom-line

accounting system incentivize and accelerates growth and earnings before interest, taxes, and depreciation (EBITDA), rather than impeding growth and earnings. Reeves et al. posited many TMTs fail to understand the need to become more innovative in their thinking. TMTs will typically dismiss a possible link between innovation, sustainability, and financial performance. While Philips' innovation process may not be implementable by firms in other industries without adaptation, adaptation alone may not be sufficient to address TMTs who desire to maintain the status quo (Arnold & Hockerts, 2011).

Internationalization requires added innovation effort. A factor for consideration is the effect of internationalization on R&D and sustainability. Chakrabarty and Wang (2012) found R&D and internationalization must converge together for firms to move from a mindset of market development to one of embracing a longer-term perspective. Internationalization and R&D intensity ideally should complement each other within an innovation portfolio rather than be undertaken as unique practices (Chakrabarty & Wang, 2012). When multinational corporations' (MNCs) internationalization exceeds its R&D capabilities, an increase in the level of innovation and R&D is typically a requirement to catch up. When internationalization is low, the level of innovation tends to be constrained by its domestic market limitations. As international exposure increases, TMTs must address their innovation efforts in a broader global context (Chakrabarty & Wang, 2012). Chakrabarty and Wang noted that when internationalization and investment in innovation are low, sustainability practices are likely to decline thereby affecting ambidexterity though the self-sabotaging efforts of TMTs. Slotegraaf (2012) supported Chakrabarty and Wang's notion and found firms operating in international markets exhibit a wide variance

in environmentally sustainable innovation efforts. In other words, some innovation efforts have sustainability as a goal while others do not and resist pressure from governments to address environmental sustainability. Chakrabarty and Wang suggested that the lack of a global orientation is a possible reason for the emergence of an innovation gap and inability to achieve sustainability within some organizations. However, Slotegraaf asserted that innovation efforts must address sustainability as a component of product and process design. Slotegraaf noted that innovation efforts are often incremental and insignificant. Partnering along a global value chain may provide access to expertise and specific knowledge in areas such as packaging or environmental technologies to help firms alter their thinking and catch up (Slotegraaf, 2012).

Developing an innovation portfolio to gain NDP R&D efficiencies. To successfully develop and balance an innovation portfolio designed to address dynamic markets associated with internationalization, TMTs must have proprietary insight into several areas (Nagji & Tuff, 2012). Several areas that TMTs must have insight into include an organizational understanding of customer needs, trends, market structure, competitive dynamics, technology trends, demand requirements, and other market variables (Nagji & Tuff, 2012). Concerning the overall strategy of firms to innovate, Nagji and Tuff found there is an optimal mix for investing in core, transformation, and adjacent innovation to yield the best return on investment. Typically striking the right balance to optimize the return on investment requires an allocation mix of 70% in core innovation initiatives, 20% in adjacent initiatives, and 10% in transformational initiatives (Nagji & Tuff, 2012). This proposed mix tends to outperform their peers with a price-to-

earnings ratio (P/E) premium of between 10% and 20% (Nagji & Tuff, 2012). The proposed innovation investment allocation of 70%–20%–10% balance typically yields a return on investment of 10% for core initiatives, 20% for adjacent innovation initiatives, and 70% for transformational initiatives (Nagji & Tuff, 2012). Nagji and Tuff (2012) underscored the importance of managing innovation initiatives as a portfolio. Given that a heavy orientation towards core innovation may be appropriate for certain industries, many firms tend to ignore or avoid investing in transformational innovation initiatives when they should be investing in transformational innovation within their industry. Investing in transformational innovation initiatives is often the engine of future growth, but is an area that TMTs most often ignore (Nagji & Tuff, 2012).

While Nagji and Tuff (2012) recommended an allocation mix 70%-20%-10% as an average, there are optimal investment mixes for different industries as different ambitions drive the various sectors. For example, Nagji and Tuff found consumer goods companies should allocate innovation investments based on a formula of 80% to core initiatives, 18% to adjacent innovations, and 2% to transformational innovations. Industrial companies should allocate 70% to core, 20% to adjacent and 10% to transformational innovations while a mid-stage technology firm should allocate only 45% to core initiatives, 40% to adjacent innovation initiatives, and 15% to transformational initiatives. For mid-stage technology firms that may not have much of a core business to build on, Nagji and Tuff noted a disproportional investment in transformational and adjacent innovation technologies is appropriate. Kahn et al. (2012) supported Nagji and Tuff's notion of managing innovation as a portfolio. Some firms are unable to innovate

successfully because TMTs do not establish a clear NPD process for managing innovation as a portfolio (Kahn et al., 2012). Instead of managing innovation efforts as a portfolio, some firms support pet products, focus on short-term projects, fail to align NPD with the organizational mission, fail to establish appropriate NPD-specific metrics (Kahn et al., 2012), and fail to create a corporate climate of innovation (Kahn et al., 2012; Larson et al., 2012; Lu, 2013). While most companies attempting to enter new businesses have a 99% failure rate, senior leadership teams should develop a process for managing innovation efforts as a portfolio and arrive at a specific ratio that they believe will deliver an optimal ROI of future revenue growth and market capitalization (Nagji & Tuff, 2012). The challenge to accepting the notion of using a strategic NPD portfolio strategy to manage innovation initiatives requires TMTs address the issue of corporate culture and transformation on several levels (Kahn et al., 2012; Larson et al., 2012; Lu, 2013).

Firm size agility and innovation. Firm size may also be a factor that has an affect on innovation. Carayannopoulos (2009) developed a model to compare the differences between large firms and small firms who innovate and commercialize disruptive technologies. Carayannopoulos found while larger firms had more resources available to innovate, smaller firms were often able to modify their activities due to a lack of ingrained routines or locked-in mindset often found within the TMTs of larger firms. Fuller (2014) found smaller firms often possess agility and can innovate rapidly by developing online communities to collaborate with and create innovative technologies to fill gaps. Carayannopoulos found small firms were more agile than large incumbents and were more likely to modify their activities given their lack of ingrained routines and

locked-in mindset. This finding is significant given that young technology firms can use their agility to innovate and stay ahead of the incumbents. Smaller firms have the intention of gaining first mover advantage and higher margins, as noted by Tung (2012) and Abril and Martos-Partal (2013), through differentiation. Larger firms tend to want to achieve legitimacy through isomorphism (Carayannopoulos, 2009). The fact remains, however, that in some smaller firms and communities, innovation occurs based on the perceived necessity to fill the gaps that larger firms in some industries have not yet fulfilled (Füller, 2014).

Some of these communities comprised of smaller firms have also created brands for new innovative products they have developed including Firefox, Apache, and Linus (Füller, 2014). These community-based brands have evolved somewhat accidentally as mere byproducts of community interactions (Füller, 2014). Often smaller firms and communities innovate successfully through collaboration because they are unencumbered by the rigid structure that stifles innovation within larger firms (Füller, 2014). Füller (2014) noted that corporate decisions made by the TMTs of larger firms tend to develop incremental products and brands that do not entirely meet the needs of their customers or fill a void in the market. Füller's findings also support the findings of Nagji and Tuff (2012) who noted that the TMTs of large firms tended to avoid transformational innovation due to the short-term orientation of the leadership team.

Innovation provides low probably results. To address the innovation gap and locked-in mindset that inhibits innovation as elucidated elsewhere, Hess (2012) noted that innovation initiatives tend to underperform because leaders fail to confront internal

obstacles to innovation. Hess suggested that organizations must develop a parallel system to promote innovation. Hess' notion that meaningful innovation is counter to senior business leaders' and capital markets' short-term focus is consistent with the findings of Boyd et al. (2011), and Sonnenfeld et al. (2013). The challenge is that TMTs must recognize that innovation is a low probability process much like blackjack players do not expect to win every hand (Hess, 2012). Venture capitalists realize that if 10% of their investments are big winners and 20% are perhaps small hits, the investment strategy is successful (Hess, 2012). Venture capitalists recognize that the other 70% are important failures as such failure contributes to learning what works (Hess, 2012). The opportunities that typically are more attractive to venture capitalists focus on disruptive innovation, not incremental innovation (Morgan, 2014). The critical decision factors venture capital firms use to judge a firm's ability to innovate include potential market size, senior leadership team integrity, and the ability to turn creative ideas into working prototypes for testing and evaluation with prospective customers (Morgan, 2014). Venture capitalists look for further refinement as part of the commercialization process (Morgan, 2014) so that products are scalable (Blank, 2013) and likely to affect existing business models (Morgan, 2014). Morgan (2014) asserted that additional key decision factors venture capital firms use to judge a firm's ability to innovate include the persistence to learn from mistakes and keep moving forward. The likelihood that commercialization will result in profitability over the longer term is a critical decision factor (Morgan, 2014).

Innovation requires collaboration from a wider network of talent. Many firms attempt to undertake innovation in-house without utilizing sufficient or appropriate resources, or they fail to solicit feedback from a larger network regarding commercialization (Partanen, Chetty, & Rajala, 2014). Slotegraaf (2012) found innovation is a collaborative process. Collaboration on innovation should include soliciting input from open innovation sources, experts, and consumers to incorporate new knowledge into a firms' innovation process where they may not have in-house expertise (Slotegraaf, 2012). Morgan (2014) noted that successful innovators require the development of an extended network to provide input into the commercialization process. Such a network is typically comprised of universities, research institutes, suppliers, customers, distributors, and agents (Partanen et al., 2014). Fostering collaboration may include holding design competitions that involve consumers in an innovation initiative. Partanen et al. (2014) suggested that firms need to be open and honest about prototyping their products. Providing prototypes to customers facilitates customer feedback to determine whether the prototypes work or require modification as part of the commercialization process (Partanen et al., 2014).

Firms that engaged in a large number of alliances increased the persistence of superior performance and decreased the persistence of the inferior performance (Lazzarini, Brito, & Chaddad, 2013). Lazzarini et al. (2013) noted that alliances can be beneficial for firms that enjoyed a competitive advantage and superior performance. Alliances were even more critical for firms that were facing some competitive disadvantage or subpar performance (Lazzarini et al., 2013). For firms with a competitive

disadvantage, the benefits of alliances may include improved access to valuable resources held by other firms that allow them to leave their position of disadvantage (Lazzarini et al., 2013). While interfirm alliances confirm the link between and financial performance above the norm, Lazzarini et al. could not confirm the link between interfirm alliances and innovation. Slotegraaf (2012) provided a different perspective. Slotegraaf found partnering in a value chain potentially enhances a firm's innovation capabilities in a global context. Li, Qian, and Qian (2014) supported the use of international strategic alliances (ISAs) as ISAs can moderate the negative relationship between the inconsistencies of product strategies across countries and firm performance. Utilizing ISAs may be helpful when firms use foreign partners to adapt and implement various products strategies to fit individual markets on behalf of the focal firm (Li et al., 2014). Lazzarini et al. noted that there is little evidence to show an association of extensive partnering or alliances with superior performance in all industries. The industry and the nature and context of alliances must be a consideration in the context of actual benefits as different industries such as high tech may require alternative approaches to ISAs than other industries.

Separate innovation division. The notion of structuring a separate division also provides the requisite resources and distance needed to create future value through radical innovation. Bhattacharyya (2006) found generating meaningful innovation requires the development and implementation of policies and practices that establish a separate innovation entity. A separate innovation entity requires dedicated resources and the appropriate talent to focus on innovation within the organization's area of business

expertise (Bhattacharyya, 2006; Hess, 2012). To spur innovation, Morgan (2014) suggested that an incubator model separate from the primary business operations is more appropriate for large companies. A separate incubator model requires separate funding, resources, and appropriate metrics (Morgan, 2014). Establishing an innovation incubator to spur innovation requires embracing a long-term focus and adequately funding R&D efforts that operate independently from existing operational processes and metrics (Morgan, 2014). Bhattacharyya suggested that after establishing a separate innovation department, TMTs must trust the ability of the innovation team to deliver the vision rather than meddle in the innovation process. As a caveat to the findings of Bhattacharyya, and of Morgan, Hoonsopon and Ruenrom (2012) found securing the support of TMTs does not positively correlate with incremental product innovation. Incremental improvements or further development of existing products may not always require the support of the TMT and the allocation of additional resources. However, radical innovation requires the support of TMT but too much control or formalization of the innovation effort by the TMT decreases the success of radical product innovation (Hoonsopon & Ruenrom, 2012). Hoonsopon and Ruenrom found, while incremental product innovation can increase the marketing performance for firms, radical innovation does so as well. Hoonsopon and Ruenrom found market performance attributable to innovation had a positive correlation to financial performance.

An example of radical innovation by one of the oldest brand-driven firms is that of Nestlé's use of digital technology on a global scale. Blackshaw (2014) found to facilitate innovation and its potential effect on the brand, Nestlé established an innovation

outpost. Nestlé's innovation outpost allowed it to create a digital acceleration team (DAT) at its head office in Switzerland that was responsible for adapting and adopting the latest digital technology developed in Silicon Valley. The DAT partnered with firms in Silicon Valley with the intent of bringing speed and agility in real time to Nestlé's brand communications. Nestlé's objective was to facilitate greater collaboration and distribution of shared learning and best practices across its global operations. Nestlé adopted the use of an internal Facebook-like tool called Chatter from Salesforce.com to foster increased levels of hands-on communication between divisions, and between the TMT and employees. Blackshaw found the DAT enabled Nestlé to push its digital strategy to real-time listening, engaging, and transforming opportunities by facilitating collaboration and more employee engagement. While ROI metrics are relevant to Nestlé, Nestlé's TMT realized that the duality of managing ROI and funding innovation is akin to managing the tension between various objectives. Creating and managing TMT tension was important according to Latham (2014), and advocated by Dierk and Dover (2012). According to Blackshaw, ROI can coexist with intuition and innovation. Blackshaw asserted that all brand-building processes should integrate the use of digital tools, particularly when the firm's TMT desires to move decisively away from the status quo and alter an existing business model. As the Nestlé example illustrates, their TMT set up a separate division to innovate that in turn facilitated input from customers. Gathering input and listening to customers resulted in Nestlé's TMT changing their business model to communicate better with consumers. In essence, leveraging innovation helped Nestlé

effectively change their business model and balance short and long-term objectives effectively.

Brand value. Brand value is one of the three variables discussed within this study. Brand value is measurable in several manners and may influence sustainability. Branding and brand valuation warrant a discussion as part of the literature review.

Defining the brand construct. According to Chang et al. (2014), innovation only explains part of the influence on market orientation. The effect of innovation and the link to firm performance has an association with other factors including corporate culture, employee attitudes, executive skill sets, distribution, and industry-specific factors (Chang et al., 2014). Ideally, brand should be part of any discussion on innovation given that the intent of NPD R&D teams is to work closely with the marketing leaders to commercialize innovations to meet customer needs. Given the myriad of brand definitions, understanding what constitutes a brand requires the realization that understanding a brand goes beyond simply using a logo in advertising. Larson (2011) asserted that a brand is not a logo, trademark, or corporate identity that TMT can choose to ignore. A brand is a collection of perceptions in the mind of the customer (Larson, 2011). Larson noted that brand perception is attributable to the experience customers have with a firm's products and services. Larson noted that managing a company's perception in the minds of customers is not an easy task but a complex undertaking. The undertaking to influence the perception of a brand in the mind of customers requires understanding, cultivation, and carefully management by the TMT (Larson, 2011). Any definition of a brand should ideally encompass many different dimensions including the importance of an emotional

connection with a brand and the effect that innovation has on enhancing the customer experience (Daley, 2014). Understanding brands requires an articulation that brands are the sum of a company's marketing efforts, customer experiences, emotional effect on customers, place within a particular culture, and is the mark of quality and status (Daley, 2014). A brand is the sum of these components and provides the underlying reason one company may succeed while another company fails (Daley, 2014).

Engaged employees deliver a branded experience. Leadership style may affect a brand and enhance or diminish overall brand equity and ultimately long-term financial performance (Punjaisri, Evanschitzky, & Rudd, 2013). Daley (2014) found the top brands were not companies that engaged in star-studded commercials or marketing hype but rather firms that deliver on their brand promises consistently giving consumers the highest level of service and best products. Holland and Weathers (2013) noted that while companies spend millions on advertising using celebrity endorsements to convince consumers to do business with them, they often have misguided priorities when they fail to address the *people strategy* and delivery on the brand promise. Many TMTs believe that the business strategy, the brand strategy, and the people strategy are independent when in reality the components are interdependent (Holland & Weathers, 2013). When companies fail to address the people strategy, this failure prevents firms from delivering on the brand promise through engaged employees (Holland & Weathers, 2013). Holland and Weathers asserted that CEOs must carefully align the three strategic components and improve employee engagement to deliver a consistent and positive brand experience. Perkins (2012) found engaged employees working in an extraordinary work environment

are more likely to deliver higher quality work, superior customer service, and meaningful innovation for their organizations. Daley (2014) noted that engaged employees and strategic alignment of components contribute to delivering a firm's brand specifically when employees view their work as meaningful (Perkins, 2014).

Daley (2014) argued that great brands fulfill a larger purpose than being profitable but rather create dynamics where the customer feels valued. To improve the client experience and achieve and retain brand relevancy, Daley asserted that great brands employ both incremental and continuous disruptive innovation efforts. Brands such as Sephora, Hilton, and Ritz-Carlton place innovation at the heart of their brand to create new and positive experiences for clients delivered by engaged employees (Daley, 2014). By reframing innovation as the impetus for organizational change, owning change initiatives by engaged employees often results in aggressive target setting (Blackshaw, 2014). Blackshaw (2014) noted that Nestlé's was able to improve brand perception by creating a corporate culture of highly engaged employees with an external focus on customer engagement. Blackshaw noted that Nestlé's TMT found innovation is a component of a larger process to fundamentally create superior brand experiences for customers. Creating of meaningful brand experiences requires the full engagement of employees in both the delivery of the brand and in the change process (Blackshaw, 2014). In other words, Nestlé became brand-driven rather than product-driven realizing that a relevant brand requires personification through employee engagement.

The importance of brand and the influence on sustainability. Carefully managing a brand may support sustainability. Hung-Jung and Hsien-Bin (2013) provided

insight into the transformational journey that Giant Manufacturing (Giant) took over the last 40 years. On the verge of bankruptcy, the CEO of Giant Bicycle took the firm from being an original equipment manufacturer (OEM) bicycle parts manufacturer to a global brand powerhouse. Giant now has over 10,000 distributors in 50 countries. However, as a component of creating a brand powerhouse, Giant realized the need to develop new innovative products and support new products with a brand. Pure survival was the impetus for Giant to innovate including the use of new materials and designs. Giant moved away from simply being a contracted OEM to a firm producing products under its brand (Hung-Jung & Hsien-Bin, 2013). While Hung-Jung and Hsien-Bin did not delve into the management traits and behaviors exhibited by the CEO, Giant's CEO was open to substantially changing the organization's business model with input from employees and its value chain. Being flexible to change the product line provided an environment of experimentation at Giant whereby they garnered customer feedback to look for products that filled various gaps. While Giant was investing in NPD, it was also building Giant into a brand powerhouse.

Brand valuation. There are several methods and points of view on brand valuation. Given investor pressure and fixation on short-term profitability, funding NPD and innovation research often create a battle of wills (Hess, 2012). Long-term economic sustainability is what is at risk according to Eccles and Serafeim (2013). Short-term pressure to produce immediate financial results is apparent by the application of high discount rates in calculating net present values (Eccles & Serafeim, 2013). Eccles and Serafeim suggested that there may be a need to develop and adopt a new valuation model

that explicitly incorporates environmental factors into brand valuation methods. Such factors may take into account long-term sustainability that this study attempts to address. Companies that innovated, according to Eccles and Serafeim, improved their financial performance by approximately 30% above those firms that did not innovate. To move away from a short-term fixation of quarterly financials, Eccles and Serafeim suggested that TMTs should have the courage to communicate the need to adopt longer-term objectives. The specific goal is to attract farsighted investors rather than bowing to the demands of short-term investors (Eccles & Serafeim, 2013).

Underestimating the importance of brands and their effect on shareholder value may be unwise. J.P. Morgan considers that established brands could account for as much as one-third of shareholder value (Duguleană & Duguleană, 2014). Brand valuations typically use three brand multiples including intangible earnings on a per country basis, brand contribution as a proportion of the intangible earnings attributable to the brand, and growth potential and customer loyalty data (Duguleană & Duguleană, 2014). Attila (2014) noted three other measurements of brand value including price premium, revenue premium, and profit premium. Each method has advantages and disadvantages. Of these three brand value measurements, Attila asserted that the price premium method has a strong correlation to brand equity than the other measurements. The rationale for this assertion is that stock market pricing usually contains information referring to brand equity as there is typically a positive relationship between new products and stock return. However, a brand's value may signal a product's past performance and experience attributes, but not necessarily future performance (Attila, 2014).

Price premium component of valuation. Pfoertsch (2012) developed a model to calculate brand equity or Brand Caused Earnings (BCEs). Pfoertsch's model has four components comprising price premium depicting quality, discounted cash flow and growth over time, growth from operations, and the growth rate of profits. The four components contribute to calculating future expected free cash flows. Future cash flows calculation are the Net Operating Profits Less Adjusted Taxes (NOPLAT), price premium, sales, and BCE over a specific period (Pfoertsch, 2012). The calculations show a firm's growth rate that is attributable to operations and BCE (Pfoertsch, 2012). While Pfoertsch's model calculates brand equity from future revenue and earnings separate from operations, the method has limits attributable to its theoretical nature given that this method does not interpret the underlying attributes of brand value.

Keller and Lehmann's brand value chain (BVC) framework (as cited by Huang & Sarigollu, 2014) make a significant contribution to the understanding of how brand equity develops and operates beyond purely quantitative brand valuation models. Huang and Sarigollu asserted that the BVC framework follows a persuasive hierarchy model whereby cognition drives behavior. To drive behaviors, marketers assume there is relationship flow from making investments in marketing to drive brand effect, and that brand effect drives purchasing behaviors (Huang & Sarigollu, 2014). While the revenue premium in the BVC framework is a convenient and practical measure for tracking brand equity, the assumption is that the BVC can measure and assess the customer mindset and the revenue premium together as part of the same underlying construct. Huang and Sarigollu noted that when researchers compare mindset measures, revenue premium

provides an easier and more convenient method to track brand equity continuously. Using revenue premium to track brand equity is more convenient as information is readily available for managers (Huang & Sarigollu, 2014). Customer mindset measures are laborious to construct and use (Huang & Sarigollu, 2014). For example, the use of customer mindset data requires questionnaire design, sample selection, and surveying on an ongoing basis to continuously track and understand the underlying drivers and perception of the customer mindset (Huang & Sarigollu, 2014). While revenue premium is simpler to use as a measurement component of brand equity, there are shortcomings because of the need to establish a baseline brand using a manufacturer's national brand (Huang & Sarigollu, 2014). The use of revenue premiums can confound the logic of this method when private labels also command revenue premiums (Huang & Sarigollu, 2014).

Brand valence component of valuation. In most cases of high volume brands, revenue premium measures are a good choice for continuous tracking of brand equity because they reveal the real changes in brand equity (Huang & Sarigollu, 2014). Using revenue premium metrics is practical and convenient to use since data is readily available and typically flag any changes in brand equity before customer mindset measures (Huang & Sarigollu, 2014). Given that user experience often precedes brand awareness in certain contexts, changes to revenue premium measures can signal a potential change in brand equity (Huang & Sarigollu, 2014). However, TMTs must utilize customer mindset measurement feedback to diagnose the underlying problems and make the requisite adjustments accordingly. Adjustments might include generating new products,

conducting new product trials, increasing distribution intensity, and using advertising to frame and reinforce a positive product experience in customers' minds (Huang & Sarigollu, 2014). While the BVC framework tested by Huang and Sarigollu illustrates the importance of revenue premium in brand equity models, it is merely one component. This richness of information around customer mindset is unlikely to be evident by relying entirely on revenue premium measures.

While there is the predominant notion that revenue premium or the *pay more* metric is the best predictor of brand valuation, Riedesel (2011) found this not to be true. Among a range of services, food products, and electronics, the use of the revenue premium was only average at predicting conjoint based brand utility scores. Riedesel found using brand valence is the best method of predicting brand utility scores. Valence measures are incremental and can assess emotional responses to brands (Riedesel, 2011). Riedesel asserted that the use of conjoint analysis to predict brand utility scores is not entirely contrary to Huang and Sarigollu's (2014) findings. Riedesel suggested not to dismiss brand valence in favor of only using a price premium in brand equity assessments. Riedesel noted that the assessment of brand valence may be complementary to Huang and Sarigollu's suggestion that factoring in the customer mindset into brand valuation models is a basis for understanding user experience with a brand. Factoring in consumers' purchasing consideration as a metric is not a surrogate for pricing power as pricing power often measures factors other than the intrinsic value of a brand (Riedesel, 2011). Riedesel found measuring feelings towards a brand could evoke non-cognitive, strongly positive or strongly negative visceral feelings. While Riedesel asserted that when

associating human feelings towards a brand with future consumer behavior during assessments, the responses draw on past feelings and experiences of consumers and not future intentions. In other words, consumers often buy products or services they know or are comfortable with, and how good they feel using a brand even if those brands cost a little more (Riedesel, 2011). Heavily weighting conjoint analysis factors including pricing metrics or financial market premiums when assessing brands tends only to assess hyper-rationality. Valence scaling taps into consumer feelings about brands beyond assessing a pricing premium (Riedesel, 2011).

Using valence scaling provides an insight into the human reaction to brands (Riedesel, 2011). While the inclusion of a valence scale when assessing brand valuation is isomorphic in that it can capture how the human brain works (Riedesel, 2011), some brand valuation calculations ignore or downplay isomorphic factors. Stock and Zacharias (2013) found customer loyalty has a powerful effect on brand performance and ultimately on economic sustainability. Given that innovativeness can evoke both positive and negative customer responses, companies must be sensitive that the innovativeness they introduce is not only new but also meaningful for customers (Vuorinen et al., 2012; Stock & Zacharias, 2013). New and meaningful innovation must meet specific customer needs (Vuorinen et al., 2012; Stock & Zacharias, 2013). Chang et al. (2014) found incremental service innovations are typically less risky to adopt than radical innovations. Introducing radical service innovation contributes to an increase in customer loyalty, enhances brand image and firm reputation by attracting new customers (Chang, 2014). Riedesel (2011) asserted that the use of valence measures provides insights into the underlying factors

that merit a pricing premium for a brand. Discussion around the different approaches to brand valuation must include the acknowledgment that intangibles such as the brand valence of consumers may not be prominent in the metric calculations of different consultancies that provide valuations (Riedesel, 2011).

Focus of different brand valuation consultancies. While there are several brand valuation methodologies that emphasize different valuation components, different brand valuation consultancies also focus on the range of brands. Some brand consultancies include sports brands, cosmetic brands, technology brands, and service brands (Duguleană & Duguleană, 2014). Other brand consultancies include energy, heavy industry, auto manufacturing, electronics, technology, telecoms, and conglomerates (Gent, 2014). Duguleană and Duguleană (2014) asserted that the brands that are the most highly valued tended to be global with the majority being more than 60 years old. Gent (2014) noted that the 2014 Brand Finance Global 500 brand valuation from the brand consultancy firm Brand Finance provided a different perspective. Brand Finance reported (as cited by Gent, 2014) that eight out of the ten global brands were technology firms including Apple and Samsung. While technology firms dominate the top 50 global brands in the 2014 Brand Finance Global 500 list, many technology companies at the bottom of the list are old school companies (Gent, 2014). Those at the top of the list tend to be less traditional (Gent, 2014). While the data from the two perspectives may appear paradoxical, Gent noted that firms can create brand value. Brand value drivers include innovation, capturing the public's imagination and monetizing a brand to generate multi-

billion dollar revenues across product categories. Gent found aligning innovation efforts with a firm's carefully orchestrated approach is a key component of managing its brand.

Intangible assets of a brand. Duguleană and Duguleană (2014) suggested that brand valuation must include intangibles. Measuring a brand's intangible assets must include factors closely connected with an organization's culture, values, and its business strategy (Duguleană & Duguleană, 2014). Intangible assets may also include attitudes and behaviors that help create a shared sense of purpose and partnership, a deep understanding of their customers' industry, trustworthiness, and sense of professionalism for business-to-business (B2B) brands (Ryan & Silvanto, 2013). Tangible assets may include additional services that a firm is able and willing to offer to accommodate consumers and provide expert advice on their products (Ryan & Silvanto, 2013). Leveraging intangible and tangible assets through effective marketing efforts can build customer loyalty, awareness, and effective management of customer relationships (Duguleană & Duguleană, 2014). By considering all of these factors, together these factors form brand equity (Duguleană & Duguleană, 2014).

Attila (2014), Narayan (2012), and Riedesel (2011) noted that some brand valuation methods are indicators of the present value of future cash flows. The generation of future earnings and future economic benefits are the primary objective of using present value methods for the forecasted future period (Narayan, 2012). While B2B commerce is often more complicated than business-to-consumer (B2C), within B2B relationships there is often a perception by buyers that the seller is acting as a trustworthy, reliable partner

available to offer expert advice. Trust and expert advice are crucial components to building the seller's brand equity (Ryan & Silvanto, 2013).

Duguleană and Duguleană (2014) found strong brands have a competitive advantage over their competitors and tend to be profitable over the long-term. Firms with high brand values tend to garner higher levels of trust, loyalty, receive more recommendations, and have the perception of being of better value (Duguleană & Duguleană, 2014). To build a sustainable business, McKinney and Benson (2013) found brands need to develop trust to attract and retain customers. Strong brands command higher prices and consumers are willing to pay for the perceived worth of such brands (Duguleană & Duguleană, 2014). Attila (2014) found firms with one product achieve a higher price premium for their brand but also more likely to realize a reduction in revenue and profit. Attila noted that as companies increase their offerings with multiple products, the correlation between revenue premium and profit premium was positive regardless of firm size.

Strong brands are one of the few assets that can provide a long-term competitive advantage to a firm (Duguleană & Duguleană, 2014). Like other assets, a brand requires careful management (Narayan, 2012). Tait (2012) noted support for the careful management of brands. Tait asserted that effective branding required the alignment of brand values and consumer values while high levels of brand loyalty often equate to higher top and bottom line financial performance. Strong brands can help firms successfully weather a significant crisis or turbulence and prevent them from falling further (Duguleană & Duguleană, 2014). While the most prominent brand consultancy

reports include Interbrand's Brand Value Index and Millward Brown Optimor's BrandZ report, the metrics are inconsistent among the brand valuation companies (Duguleană & Duguleană, 2014). The inconsistency of brand valuation methods persists despite the British Standard Institute (BSI) and the International Organization for Standardization (ISO) creating the BSI ISO 10668 Brand Valuation: Requirements for Monetary Brand Valuation standard in 2010 (Duguleană & Duguleană, 2014). To address the inconsistency of brand valuation methods and overcome the limitations of subjectivity, Narayan (2012) proposed the use and implementation of a multidimensional, holistic approach to brand valuation. No general agreement on brand valuation methods exists because each brand consultancy computes brand valuations based on different accounting objectives that each may have (Narayan, 2012).

Developing the ISO standard was an attempt to create a framework for standardizing the method of brand valuation by using common subcomponents (Duguleană & Duguleană, 2014). The common subcomponents include financial value, brand contribution, and brand value in their valuation (Duguleană & Duguleană, 2014). Other firms such as Brand Finance use a market approach, cost approach, and income approach to determine a brand's value (Duguleană & Duguleană, 2014). While the methodology that the brand valuation consultancies use broadly complies with the ISO standard, the specific methodology garners different results by each firm. While the brand valuation firms loosely comply with the ISO standards for brand valuation, reaching a common methodology and compliance is unlikely. Each brand valuation firm regards their specific methodology as proprietary and claims it as a point of differentiation from

each of their competitors. The principle of homogeneity of brand valuation methods is not equivalent resulting in brand equity valuations and rankings being different among the consultancies (Duguleană & Duguleană, 2014). While the brand equity valuations methods and rankings are different, data availability and global perspective are considerations for selecting and using one consultancy's data over the other for this study. Selecting one brand evaluation metric over another may affect the findings.

TMT behaviors influence brand. While the use of ISO standards is an attempt to standardize brand valuation, it is not possible to distill brands entirely to a metric. Morhart, Herzog, and Tomczak (2011) asserted that the personification of the brand vision through brand-based behaviors such as employees acting as brand ambassadors is a key component of an organization's overall brand. The exhibition of brand-based behaviors reflects brand valuation (Duguleană & Duguleană, 2014; Morhart et al. 2011; Punjaisri et al., 2013). Punjaisri et al. (2013) found leaders who adopt a brand-specific transformational leadership style tend to foster service recovery behaviors in their employees that align with the brand values. Achieving a shift in culture requires the adoption of brand-specific behaviors that can create value for stakeholders (Kamisan & King, 2013; Punjaisri et al., 2013). While brand-specific behaviors are imperative, TMTs must intervene to change their organizational culture by setting an example that employees can learn from and adopt (Morhart et al., 2011).

When determining the reasons why some organizations can repeatedly innovate while most cannot, Hill et al. (2014) suggested that the role of an effective organizational leader is to build a community that is willing and able to innovate over a longer period.

Hill et al. found CEOs who simply paint an organizational vision is insufficient given that innovation requires hard work, is taxing on the leadership and employees, and can be an uncomfortable process both emotionally and intellectually for stakeholders. Hill et al. asserted that three organizational capabilities are required. The first of these three capabilities include collaboration using creative abrasion to create a productive debate and tension within the organization. The second organizational capability is creative agility using a repeatable discovery-driven learning process to foster experimentation using looped-back learning from stakeholders and customers. The third capability cited by Hill et al. is the ability to integrate organizational decision-making with guidance from the TMT to arrive at optimal solutions. Hill et al. found Google and Volkswagen emphasize brand attributes that create a common sense of purpose to guide the innovation effort within their respective organizations. Hill et al. asserted that organizations that have a clear understanding of their brand values tend to innovate to create long-term sustainability and addition value for shareholders.

NPD initiatives affect brand. While innovation and NPD can further strengthen a brand, Abril and Martos-Partal (2013) found some brands with higher value and able to command premium pricing are not always able to garner the highest market share. Abril and Martos-Partal found, for certain product categories in Europe, 39% of households are loyal to a private label brand while manufacturers' brands are not able to command price premiums for products in some categories over the long-term. While the price premium market share is paradoxical, Abril and Martos-Partal suggested that unless manufacturers with well-known brands launch innovative products offering significant advantages to

consumers, the brand equity of the manufacturers' brand will erode. The brand equity of national brands is vulnerable to erosion in categories where private labels tend to dominate (Abril & Martos-Partal, 2013). While innovation allows firms to garner a price premium from the reputation of a brand, market share could decline if innovation efforts are unable to produce products or services others firms cannot easily replicate (Abril & Martos-Partal, 2013). For well-known brands to command a price premium, they must offer some advantage over their nearest competitors' products and services (Abril & Martos-Partal, 2013). Abril and Martos-Partal asserted that when the use of brand premium is a proxy for innovation in the context of sustainability, it requires the use of caution since imitation products introduced under private labels may be a substitute for capturing market share. The approach of creating brand equity around private labels has the potential to command brand equity for private labels and negatively affect the brand valuation of established manufacturers' brands (Abril & Martos-Partal, 2013). Negatively affecting brand valuation is possible when firms position private brands as prestige brands such as Loblaw's President's Choice brand (Huang & Sarigollu, 2014).

Brand reputation and corporate social responsibility. In addition to the various challenges with brand valuation methods, McNeal (2013) found using innovative marketing to market innovative product affects brand valuation. McNeal noted that innovative brands achieved higher pricing premiums for a nonconventional marketing approach that goes outside of strategic boundaries of what seems *normal*. In other words, innovative brands tend to push conventional marketing boundaries (McNeal, 2013). McNeal found firms that do not have a strong brand reputation or enjoy the perception of

being innovative were less likely to garner pricing premiums. Marketing campaigns must be out of the ordinary as consumers may consider such an approach as negative (McNeal, 2013). Once a brand achieves the status and recognition of being an innovator by consumers, innovative brands have more flexibility to experiment with unconventional marketing strategies without risking their brand reputation (McNeal, 2013). Firms that do not attempt to build their brand equity through innovation attribution tend to limit themselves (McNeal, 2013).

Smart marketers examine the potential benefits they can derive from their innovative products and services (McNeal, 2013). McNeal asserted that firms should leverage innovative products and services in an unconventional manner through innovative advertising campaigns to bolster the value of their brand. For brands to be relative, the messaging must be salient and top of mind by illustrating their relevance to specific consumer needs rather than using overtly persuasive messaging. Brand messaging should utilize positive messaging and be highly visible through consistent advertising over an extended period to build brand awareness (McNeal, 2013).

Utilizing corporate social responsibility (CSR) actions can affect consumer attitudes by shifting the perception of how consumers humanize corporations (Olsen et al., 2014). When surveying CEOs, Aschaiek (2012) found the stakeholders who had the most influence to shift CEOs' mindset to embed sustainable strategies into their operations were consumers followed by employees. Aschaiek found CEOs recognized the business value of doing the right thing concerning sustainability and social responsibility given that embracing sustainability strategies affects their brand image,

grows revenues, and reduces costs. Tarnawska (2013) noted that firms need to do more than rely on resource efficiency as this approach is insufficient to reduce input costs through the implementation of incremental innovation. Tarnawska found eco-innovation has a positive effect on developing radical innovation and leads to new disruptive technologies that potentially create higher demand for their products based on positive brand perception. Edvardsson and Enquist (2011) found CSR is a prerequisite for a sustainable business model in the longer-term. Edvardsson and Enquist posited firms to build on customer values using ethical, social, and environmentally responsible strategies. Miller (2012) asserted that TMTs jettison the status quo and realize that innovation has the potential to play a prominent role in securing future social, environmental, and economic sustainability. Miller argued that as citizens become more vocal about environmental sustainability via social networks, greater awareness of sustainability issues will dictate the need for higher levels of disruptive innovation. Chernev and Blair (2015) found CSR behaviors are likely to have a positive effect on consumers' perception of a corporate brand by conferring a halo effect on the products and services it offers. The presence of a halo effect derived from CSR behaviors positively affects the financial performance of a brand (Chernev & Blair, 2015). CSR actions can influence the perception of quality and the demand for a firm's products and services Olsen et al. For example, green new product introductions (GNPIs) often require that firms invest in NPD research to innovate. Given that CSR actions and GNPI positively affect consumer perception of brands, firms must innovate to invest in their

corporate brand just as they would invest in other financial assets as CSR is a subcomponent of the overall brand asset (Gregory, 2013; Olsen et al., 2014).

Aschaiek (2012) found while some CEOs are recognizing that CSR actions can provide a competitive advantage, the majority of corporations largely ignore the benefits of CSR. Edvardsson and Enquist (2011) asserted that TMTs are responsible for their firm's CSR actions. As exemplars, TMTs must set an example for all employees to follow by outlining how to work with one another, and how to interact responsibly and innovate with customers. Edvardsson and Enquist suggested that TMT members must work towards developing the trust of followers and customers by the actions they exhibit. Developing trust requires TMT to trust in their employees starting by referring to them as partners, coworkers, and colleagues rather than as employees. TMTs that exhibit trust through their messaging sets the tone for how employees interact with each other and with customers (Edvardsson & Enquist, 2011).

Brand values embedded in cultural DNA. Olsen et al. (2014) argued that most senior leadership teams lack a clear understanding of the implications on how the messaging around GNPI affects consumer attitudes. Olsen et al. noted that TMTs tend to fall short in understanding the importance of CSR. Gregory (2013) asserted that TMTs must align CSR positioning with a firm's fundamental values or mission, be relevant, and connect to the messaging and activities of the firm. To create the perception of authenticity, Gregory noted that CSR activities must be unique and innovative. Gregory found for CSR to be authentic, CSR initiatives must become part of a company's DNA rather than an add-on or one-time event. Rather than embedding CSR activities into an

organization, Holland and Weathers (2013) found most CEOs think that their firm's use of IT systems is the most important enabler of a brand. Holland and Weathers noted that IT systems are enabling tools for employees to use. Holland and Weathers argued that embedding a brand promise into a firm's cultural DNA enables the firm to deliver product and service in a manner that authentically engages the customers. Holland and Weathers suggested that the value of a brand must encompass the alignment of the business strategy, the brand strategy, and the people strategy.

Olsen et al. (2014) noted that the introduction of environmentally sustainable new products can change consumer attitudes towards a brand. Consumers tend to build and maintain their identity by identifying with brands (Olsen et al., 2014). As consumers actively monitor brands that take purposeful CSR actions, CSR actions reinforce consumers' central association for desired brands (Olsen et al., 2014). Brands not perceived as authentic tend to be negatively affected (Gregory, 2013). McKinney and Benson (2013) found when a bond develops between people and brand, trust in a brand emerges. When the bond between people and brand is strong, customers loyal to a brand tend to work hard to sell the brand to others (McKinney & Benson, 2013). Tait (2012) found functional brands that define their market context as benefits often garner the perception of existing only to make money. Tait noted that values-based branding is different because it leverages market context from neuroscience. Values-based brands tend to garner a deeper sense of loyalty when consumers can relate to brand values. Tait noted that most companies use a brand-values ladder to define product features and benefits, emotional connection, values connection, and movement. Tait argued that the

importance of extending the top section of the brand-values ladder to include some brands that provide seemingly mythical benefits. Tait suggested that the mythical benefit of the Gucci Woman brand included enjoyment of life, job success, and desire to leave a lasting impression when wearing the brand. Tait noted that Gucci's shift to a brand-driven company smashed sales records and profits in 2006 jumping 20 spots on the Global Brand Valuation list between 2004 and 2011. Gucci's brand value was greater than Lexus and Starbucks combined (Tait, 2012).

Social media's effect on brand. There has been a shift away from trust in traditional *paid* media such as advertising and product placement given a 42% trust level (McKinney & Benson, 2013). The shift in *trust in media* is towards *earned* media. Earned media consists of recommendations and opinions, with a trust level of 92% (McKinney & Benson, 2013). Therefore, the trust gap has widened between what companies say about their brand and consumers' perception of the brand based on other's opinion (McKinney & Benson, 2013). Accordingly, the trust gap is widening because consumers believe less of what a brand says and more about how a brand behaves and what it does (McKinney & Benson, 2013). To build brand trust consisting of a strong emotional bond, three distinct factors are required including (a) creditability that a brand does what it says it will do by keeping its promise, (b) brand representatives understand their customers and practice active listening and empathy to create quality interpersonal exchanges to create emotional trust, and (c) the brand values are congruent with the values of customers (McKinney & Benson, 2013).

Given that brand loyalty is related to trust levels, Gouws and van Rheede van Oudtshoorn (2011) used the diffusion of innovation theory to outline how brand loyalty is often a product of the social network. Within the context of a social network to diffuse information about a brand, Gouws and van Rheede van Oudtshoorn found innovation can help drive brand perception to be desirable by followers. There is the potential for tapping this enhanced perception by the larger social network of feeders. The challenge according to Quinton (2013) is that some TMTs do not understand the shift and progress of brand management paradigm as a result of digital media. Brand management is no longer about controlling consumers and based on internal-external thinking and locked-in thinking (Quinton, 2013). Brand as a social community paradigm is the basis for accepting that stakeholders from external communities will provide input to brand managers. Brand managers will, in turn, realize the need for and the power available through co-creation innovation initiatives (Quinton, 2013). However, co-creation also requires brand managers to influence and affect internal stakeholders such as the TMT when formulating a strategy. There must be a clear understanding that the social media approach is interactive, fluid, and echoes real world activities of consumers within these communities (Quinton, 2013). However, while defining innovation as incremental-continuous, or radical-discontinuous, this categorization is secondary to innovation that addresses business model warfare. Business model warfare has the potential to generate innovation ambidexterity along the entire value chain including perceived attractiveness of brands as Lin et al. (2013) noted.

Given that social networking can drive brand loyalty, failure to innovate does not create a social magnetic effect and is likely to put a brand's reputation at risk (Gouws & van Rheede van Oudtshoorn, 2011). Liao and Cheng (2013) also found other factors such as service innovation failures could affect brand equity rather than strictly a lack of innovation. How firms handle service failures has implications on perceived brand equity and recovery efforts (Liao & Cheng, 2013).

Using brand authenticity to develop consumer trust, Gregory (2013) noted that the influence brands can have on stock market performance is approximately 5% to 7% for the average public company. According to the Corporate Branding Index (CBI), brand power uses and incorporates corporate advertising, sector affiliation, and market capitalization. While CSR typically makes up over 5% of a firm's reputation, the size of a brand's effect on market performance can vary depending on the specific industry (Gregory, 2013). Utilities have a range of 0% to 4% while the brand power of beverage and food manufacturers may go as high as 20% (Gregory, 2013). Therefore, the importance of brand in this discussion is not trivial.

Olsen et al. (2014) noted that brands that have high levels of GNPI are more likely to continue these initiatives moving forward which tends to positively affect consumer attitude towards that brand. Greenwashing or positioning products as environmentally sustainable when they are not, and other deceptive environmental efforts, will create consumer skepticism and a negative brand valence (Olsen et al., 2014). Given that consumer attitudes towards brands could affect brand valuation, senior leadership teams need to address how the use of innovation can help develop GNPI and

influence brand perception and value. In fact, the importance of CSR activities on brand performance cannot be underestimated (Gregory, 2013).

McNeal's (2013) approach requires careful reconsideration in selecting investments in NPD innovation efforts. Perpetuating the status quo, researchers and marketing practitioners continue to quantify an investment in innovation as a return on investment. Senior leaders should understand how product development and innovation strategies have an interdependency that drives brand value. Many senior leadership teams overlook this interdependence. Addressing the interdependence of product and marketing campaign innovation should be part of any proposed marketing and pricing strategy within the context of marketplace dynamics (McNeal, 2013). Unfortunately, senior leadership teams do not seem to know when to deviate from maintaining the status quo to gain rewards for innovation. Instead, strict adherence to ROI metrics and the prevalence of the status quo sets the stage for the perception of brands and ultimately whether consumers value or penalize brands. In other words, firms that are recognizable as market innovators could inflate their brand valuation whereas the lack of perceived innovation negatively affects brand valuation. Consumer perception of a brand is an important factor when looking at the importance of innovation and brand valuation. To challenge the status quo, Nadkarni and Herrmann (2010) asserted that CEOs should recruit more assertive individuals in the area of idea generation for the TMT to drive innovation. Larson et al. (2012) found Baldrige CEOs dissatisfied with the status quo and more likely to drive continuous improvement in the value chain by implementing balanced scorecards beyond traditional financial metrics. Eccles and Serafeim (2013) noted that TMTs must

consider valuation models and incorporate innovation around environmental considerations to influence brand perception and drive long-term brand valuation over the long-term.

Brand preference versus brand relevancy. Building on McNeil's (2013) findings, Aaker (2012) provided a model of brand preference and brand relevancy strategies that requires discussion in the context of innovation and effect on the brand. Aaker asserted that a brand preference strategy involves incremental innovation to make a product or service offering more attractive, reliable, or less costly, but almost never moves the marketplace. A brand preference strategy at best is a recipe for retention of existing market positions, eventual price and margin erosion, and possibly a decline into irrelevance. However, a brand relevancy strategy involves transformational innovation and can be a game changer. Substantial innovation, not incremental innovation, tends to offer enhancements, or new *must have* characteristics that are so significant that customers will reject any option without it (Aaker, 2012). Aaker asserted that to create a new category or subcategory of products and services, firms must ensure customers can relate to the offering on an emotional level and not simply analyzing product features. In fact, Beverland, Napoli, and Farrelly (2010) noted that there is a need for alignment between brand positioning and new-product innovation. Beverland et al. found when a follower and/or a craft-designer leader brand attempted to introduce radical innovations that were well beyond the brands' core promise, they were not able to garner consumer support for the new products. Conversely, product and category leader brands were more likely to survive if they continue to innovate radically (Beverland et al., 2010). However,

firms may unintentionally reposition the brand from a leader to a follower brand because a firm wishes to make only incremental changes to products to extend their brand. This approach can cause brand perception challenges when customers are expecting to see radically new products emerge (Beverland et al., 2010).

Unfortunately, many established and successful firms will be fearful of altering their business model (Aaker, 2012; Beverland et al., 2010). Such firms will continue to maintain the status quo by focusing on building their brands through intense marketing campaigns, sponsorships, incremental innovation, and by maintaining their current business models (Aaker, 2012). Their TMTs will be fearful of diverting resources and taking a risk to innovate other products and services that create new categories or subcategories with *must have* relevancy (Aaker, 2012). Also, TMTs will fail to understand the significance of alignment required between brand positioning and new product innovation to create new product categories (Beverland et al., 2010). Examples of game changers who created new categories or subcategories through radical product innovation include Dell, Apple, Chrysler's minivan, and Toyota's Prius (Aaker, 2012).

While some companies have unique capabilities to engage in disruptive innovation on an ongoing basis, many do not have similar capabilities and thus should innovate based on their unique capabilities. Given that disruptive innovation tends to be risky, companies without the capabilities or leadership to engage in disruptive innovation are better to leverage their core capabilities using incremental innovation (Aaker, 2012). Based on Aaker's (2012) assertion, most firms are not ambidextrous as their TMTs continue to erect barriers to maintain the status quo. Retaining the status quo tends to be

the preferred strategy (Aaker, 2012; Beverland et al., 2010) rather than viewing innovation as a viable means to achieve sustainability.

Economic sustainability. Economic or financial sustainability is one of the three variables discussed within this study. Financial sustainability is the notion that a firm will be sustainable over the long-term due to factors such as investments in innovation and careful management of brand assets. The literature review requires a discussion on sustainability.

Economic sustainability metrics. There is precedence to using secondary data to gauge company performance as Rubera and Drogue (2013) noted a significant positive correlation between design innovation and corporate branding. Also, an increase in Tobin's q ratio found an increase in the level of technological innovation. Decreasing marginal effects have a relationship with the limits of corporate brand name extensions. Therefore, given the perception by investors around future cash flows, the performance value of innovation has a relationship with the branding strategy selected. With this in mind, it is important to note that Rubera and Drogue's research is an example of attempting to use secondary data to link innovation, branding, and financial performance. However, while Rubera and Drogue's findings focus on Tobin's q, in my research study I examined the longer-term prospects of innovation on brand valuation and economic sustainability.

Kajander, Sivunen, Vimpari, Pulkka, and Junnila (2012) suggested that defining corporate sustainability using the DJSI is a business approach to gauge long-term shareholder value. To assess the long-term value of firms, Kajander et al. analyzed 500

announcements filed with various securities exchanges from 30 firms in a 200 day period. Kajander et al. found firms that issued a higher number of sustainability business innovation (SBI) announcements had a significant positive correlation with financial performance when compared with firms that issued a lower number of SBI announcements. Kajander et al. noted using SBI announcements as a proxy for a firm's innovation capability and as a subcomponent of a firm's ability to generate future cash flows. Kajander et al.'s use of the DJSI sets a precedent to use third party metrics.

Economic sustainability within the value chain. Hynds (2013) noted that some companies use sustainability as a *vogue* marketing tool while other firms realize that sustainability efforts reduce costs, improve efficiencies, mitigate risk, and create new competitive revenue opportunities. Achieving the benefits from a firm's sustainability efforts requires firms to utilize their R&D capabilities to innovate ways to minimize the resources consumed by their operations, eliminate toxic materials from their processes, and provide solutions and improve the lives of their employees and customers (Hynds, 2013). Hynds asserted that companies must learn how to address sustainability as a strategic objective and incorporate sustainability into their innovation processes along the entire value chain. Morris (2013) asserted that TMTs must innovate by first understanding systems thinking and second engaging in business model warfare to affect a firm's overall value chain. Morris noted that embracing systems thinking moves an organization from a short-term defensive mentality to a holistic view of their organization and critical for sustainability efforts. Hynds argued that sustainability efforts are a powerful business lever as are quality, reliability, and the voice of the customer but

sustainability efforts should be a component of a firm's overall business strategy by embedding it into the NPD innovation process (Hynds, 2013). While applying a sustainability lens helps customers do their jobs more efficiently throughout the value chain (Hynds, 2013), Yuan et al. (2014) noted that TMTs must possess diverse backgrounds and different points of view to facilitate strategic innovation. Hynds noted that TMTs should apply a sustainability lens during the creative phase of NPD concept development to identify where to add value to meet the needs of customers.

Gobble et al. (2012) found a link between R&D spending and financial performance. High-level innovators such as Apple, Google, and Honda deliver high-performance innovation that contributes to the bottom line of each firm year after year. Gobble et al. noted that the Global Innovation 1000 Index suggests that strategic alignment between innovation and the overall corporate strategy is important to successful innovation. Gobble et al. asserted that innovation is a tool of strategy that can create the future that a strategy envisions. Gobble et al. suggested that firms must fit innovation into the larger corporate strategy and carefully decide where to focus R&D resources. Gobble et al. noted that Porter believes that the only competition that matters is the competition for profits and success is only measurable by the bottom-line. Gobble et al. challenged Porter's notion by asserting that competition is about capturing value from products or services as a function of differentiation and sustainability. Blank (2013) suggested that when TMTs solely focus on financial and operational efficiency they rob innovation efforts of resources. Gobble et al. argued that focusing solely on maximizing profitability is often at the expense of innovation. Gobble et al. asserted that stifling

innovation efforts could have a profoundly negative effect on the long-term economic sustainability of firms when TMTs deny there is a connection between disruptive, radical, and systems innovation and sustainability.

Interdependencies of sustainability. Sayem (2012) asserted that the capacity to innovate is a catalyst for growth and likely the most important factor influencing firm performance. Sayem identified three categories to measure innovation success including environmental and social facts, technical effects, and economic effects. Sayem created a conceptual framework using market orientation, learning orientation, entrepreneurial orientation, and sustainability orientation to plot relative sustainability factors. Sayem found when factors in the model occur together, higher degrees of sustainability and competitiveness as measured by business performance tend to be present. While Sayem did not provide empirical evidence to support the link between the four noted factors and economic sustainability, the four dimensions are complementary and necessary for firms to enhance the likelihood of their economic performance and long-term sustainability.

Edvardsson and Enquist (2011) attempted to link innovation and financial performance using case studies of Ikea, H&M, Starbucks, and The Body Shop. Edvardsson and Enquist argued that value resonance, innovation, and service excellence drive sustainability and corporate social responsibility. Edvardsson and Enquist found to innovate in a meaningful manner to create value and achieve sustainability, TMTs must address several dimensions within an organization. Edvardsson and Enquist found the dimensions linking innovation to sustainability include implementing new business models that focus on serving and providing new solutions to customers, and articulating

the logic behind and the need to create and incorporate values along the value chain. Additional dimensions that link innovation to sustainability noted by Edvardsson and Enquist include delivering great service experience for customers, positioning the brand and marketing communications to reflect the corporate vision, achieving service leadership by aligning culture and image with the delivery of customer service, and creating employee trust through bilateral knowledge flows.

Rubera and Kirca (2012) developed a chain-of-effects model to determine whether there is a direct or indirect relationship between organizational innovativeness and performance outcomes. The impetus behind Rubera and Kirca's research was their assertion that most of the scholarly literature on innovation and its relationship to firm performance was fragmented. Rubera and Kirca noted that most of the literature failed to provide a clear definition of the variables. While factoring the role of brand into their model, Rubera and Kirca examined the relationship between innovation and six factors including

- Performance metrics consisting of market position and revenue metrics, return on investment (ROI), return on assets (ROA), return on earnings (ROE), profitability, stock market performance, Tobin's q, market capitalization, market-to-book ratio;
- Firm size;
- Advertising intensity;
- High-tech versus low-tech industry;
- Western versus non-Western country and orientation; and

- Conceptualization of innovativeness comprising innovativeness inputs versus innovativeness outputs, innovativeness outputs versus innovativeness culture, and incremental innovations versus radical innovations.

Rubera and Kirca (2012) found TMTs should focus on innovation because innovation has a greater direct effect on firm value rather than focus on sales, profits, or stock returns. Rubera and Kirca found TMTs were reluctant to invest in innovation because they fear that investing in long-term innovation will affect short-term profitability. While stock markets recognize innovative efforts before new product commercialization, TMTs were reluctant to invest in innovation (Rubera & Kirca, 2012). Research by Ba, Lisic, Lin, and Stallaert (2013), and Gregory (2013) supports a positive link between innovation announcements and stock market valuation performance. Rubera and Kirca found 51% of firms who experienced past stock gains reduced their innovation budgets even when TMTs had the knowledge of a positive relationship between innovation announcements and market value. Rubera and Kirca asserted that the reason behind the reduction in innovation budgets was due to TMTs adopting myopic behaviors and their quest to avoid an unexpected earnings shortfall. In other words, TMTs tend to focus on the immediate future even though innovativeness has a direct relationship with firm value (Rubera & Kirca, 2012).

To successfully create value for stakeholders, addressing both the functional and the emotional aspects of a brand value proposition is imperative (Palma & Visser, 2012). The functional aspects of a brand may range from simple compliance with legislation to

adding value from achieving energy efficiency, materials management, and waste reduction that environmentally responsible products provide (Palma & Visser, 2012). The emotional appeal of a brand may go beyond mere compliance and includes creating products that are exciting and enhance people's lives through clever design and style (Palma & Visser, 2012). Palma and Visser (2012) asserted that Philips is an example of a company that integrates sustainability into its business divisions and processes to create value for its stakeholders. Philips's TMT understands that sustainability is a key element in every business strategy, decision-making process, and in value chain management (Palma & Visser, 2012). Philips embeds sustainability strategies into how it positions its businesses to enhance the value of its brand (Palma & Visser, 2012). Palma and Visser found while 39% of Philips total sales came from green products, Interbrand estimated that customer perception of Philips' sustainability efforts contributes 10% to the company's brand value. Palma and Visser noted that asking buyers to provide reasons for recommending Philips' products, there was a 25% to 30% correlation between the customer perception of Philips respecting the environment and a brand worth paying more for. Palma and Visser found the prevailing perception that Philips' energy efficient products offered better value for money even when pricing their products significantly higher than less energy efficient products of their competitors. Philips is a good example of how a concerted and deliberate focus on innovation affects brand value and long-term sustainability as measured by economic performance (Palma & Visser, 2012).

Economic sustainability affected by a holistic approach. Sayem (2012) suggested that the environment, social, and economic pillars of sustainability are

interdependent and comprise the dimension that innovation efforts should address. Sayem noted that innovation efforts that address sustainability might require that a new business model emerge. Adopting a new business model may result in the realization of benefits including economic profitability, social benefits accruing to employees and other stakeholders, environmental and planetary concerns, and technological innovation. New business models that emerge from embracing an innovation orientation may result in TMTs taking a more holistic view of their business strategies (Sayem, 2012). Sayem asserted that the adoption of new business models may prompt TMTs to shift from a short-term orientation to a longer-term perspective that produces meaningful and sustainable results. Sayem noted the possibility of organizational cultures morphing into cultures that thrive on innovation. Sayem found several relationships linking innovation to sustainability. The links follow a logical progression whereby (a) market orientation positively links to innovativeness, (b) learning orientation positively correlates with business performance, (c) entrepreneurial orientation positively correlates with business performance, (d) sustainability orientation positively correlates with business performance, (e) sustainability orientation leads to innovation, and (f) innovation leads to business performance providing a sustainable competitive advantage. Sayem found innovation affects sustainability and that a sustainability orientation affects innovation such that there is a circular yet interdependent relationship resulting in superior economic performance.

Sayem (2012) noted that a shift from short-term to long-term thinking is a function of innovation. Innovation efforts can provide cost savings and produce green

products that consumers desire and influence sustainability and profitability (Sayem, 2012). Yandava (2012) noted that shifting towards a long-term orientation to change organizational thinking, culture, and capabilities are necessary if an organization wishes to be successful at a turnaround initiative. Yandava asserted that firms that use adaptive systems thinking move from a short-term focus to a longer-term orientation. Yandava noted that shifting orientation changes firm capabilities and subsequently enhances sustainability and profitability. Yandava found when TMTs took a holistic approach to addressing several factors as part of their firm's turnaround effort, financial performance improved and was higher than firms that undertook a traditional turnaround strategy. Yandava noted that when firms employed a traditional turnaround strategy there was a tendency to make only one or two financial or operational improvements. Firms that took a holistic approach during difficult economic conditions as part of their turnaround effort invested in strategic capabilities (Yandava, 2012). Yandava noted that the firms that invested in their strategic capabilities invested in people, innovation, process and operational improvements, leadership training, and cultural change in addition to traditional financial responses. Yandava found the successful turnaround firms collaborated with both customers and partners within their value-chain to push their organization toward a sustainable long-term strategy.

While focusing on core capabilities is necessary, Yandava (2012) asserted that adopting a holistic approach transforms TMT thinking whereby traditional *cost centers* become *value centers*. Yandava found by changing thinking towards the creation of value centers, operations become better strategically aligned and more efficient and capable of

creating greater customer value. Yandava asserted that the adoption of longer-term strategic goals often become the backbone of organizational transformation efforts that help lead organizations through financial challenges and become sustainable. Yandava found when market conditions change, firms that invested in innovation efforts to create a sustainable organization are better equipped to adapt efficiently to additional external changes.

Potential lag between innovation and economic results. Lampikoski et al. (2014) found firms that invest in innovation become more sustainable. Gobble et al. (2012) noted that meaningful innovation effort requires TMT support including the provision of resources, careful coordination, orchestration, and organizational alignment of innovation with business strategy. Gobble et al. found the financial results attributable to innovation efforts may not be apparent immediately given that time is required for innovation efforts to affect the financial results. Bogliacino and Pianta (2013) developed a model that attempted to determine if there was a link between profitability, R&D, and innovation. Bogliacino and Pianta found a circular relationship between innovation efforts and financial performance. In other words, the lagged profits of past product R&D activities supports R&D activities and the adoption of technology for the specific purpose of increasing process innovation, efficiency, and competitiveness (Bogliacino & Pianta, 2013). An increase in process innovation and competitiveness led to higher profits and reinvested in product R&D efforts (Bogliacino & Pianta, 2013). Bogliacino and Pianta found the overall average lag between innovation efforts and profits was typically 3 to 4 years with manufacturing industries having less of a lag than service industries.

Bogliacino and Pianta found the best results occur when technological process improvements are made simultaneously with product innovation rather than improve one at the exclusion of the other.

Bogliacino and Pianta (2013) found some firms increase profitability through cost cutting measures and reducing their workforce. Bogliacino and Pianta noted that process improvements from incremental innovation do not readily lead to higher product innovation, and making improvements in process efficiency is not typical in response to growing demand or product pull. Bogliacino and Pianta noted that short-term speculative gain is one of the most significant obstacles to innovation success because immediate profits are often too attractive to resist by TMTs. While some firms consider outsourcing innovation to achieve immediate profits, Gobble (2013) found there are risks with outsourcing innovation if not handled thoughtfully. Gobble asserted that short-term cost savings could easily spiral into a loss of innovation, loss of control, and loss of knowledge creation and negatively affect long-term financial performance. Bogliacino and Pianta argued that TMTs tend to make decisions not to reinvest profits into radical R&D thereby reducing the resources available for knowledge generation required for longer-term sustainability. Gobble noted that 70% of senior leaders surveyed indicated that outsourcing innovation had contributed to their firms' financial performance. The motivation for outsourcing innovation was to maximize the value of R&D dollars spent by reducing costs and increasing development speed to bring products to market quicker.

Gobble (2013) found outsourcing innovation is not without its dangers. Gobble noted that Boeing's 787 Dreamliner development initiative was an example of a TMT

failing to plan for risks, failing to coordinate, failing to share knowledge, failing to address cultural barriers, and failing to measure the progress of innovation efforts. The Boeing example illustrates that focusing on short-term financial performance led to a lack of attention to detail by Boeing's TMT. Managing innovation outsourcing poorly creates major problems and has significant negative cost and time implications (Gobble, 2013). Gobble noted that the loss of innovation knowledge may translate into the inadvertent creation of competitors. To illustrate the negative effect of the loss of innovation knowledge, Dell and Apple are examples. Gobble noted that the disruption to Dell's business was the result of its suppliers developing products to compete with Dell, and Samsung started its smartphone business having been only a component supplier to Apple. The risks of outsourcing innovation include the loss of innovation capabilities and the loss of knowledge. Outsourcing innovation requires trusted partners. TMTs that lack the foresight to see the risks of innovation outsourcing may negatively affect long-term financial performance in their zeal for short-term profits (Gobble, 2013).

Gregory (2013) found a connection between innovation and sustainability using the Corporate Branding Index (CBI) model. Gregory noted that the CBI shows the connection between innovation and sustainability and the relationship to financial performance and economic sustainability using shareholder value and stock price. Kock et al. (2011) tested several hypotheses to determine whether technical innovativeness had a positive or negative moderating effect on commercial success. Kock et al. found innovativeness does not necessarily have a direct, statistically significant positive relationship with commercial success. Kock et al. noted that technological innovation can

have both a positive and a negative effect on firm performance. Kock et al. noted that innovation may provide a competitive advantage but innovation efforts can also fundamentally alter the technological trajectory of a firm. Altering a firm's technological trajectory may lead to the suppression of existing technologies when new technologies are not complementary to existing resources particularly when building new capabilities require additional effort or resources during adoption. Cannibalizing existing capabilities may occur, and unforeseeable constraints could prevent the successful commercialization of new technologies (Kock et al., 2011). Kock et al. found technical innovation did not have a direct correlation with commercial success but had an indirect effect on three other variables that includes organizational effectiveness, market innovativeness, and environmental innovativeness. Kock et al. found market innovativeness has a statistically significant positive relationship and effect on commercial success. Organizational innovativeness and environmental innovativeness has a statistically significant negative relationship and effect on commercial success. While Kock et al. noted that the existence of the indirect effects of technological innovativeness, Koch et al. provided a possible explanation concerning why there is not a significant and direct link between technological innovativeness and commercial success in the empirical literature.

Multichannel innovation conundrum affecting sustainability. Some retailers stymied by the innovations taking place view e-commerce technology as a threat to their traditional bricks and mortar business and financial sustainability (Aubrey & Judge, 2012). Aubrey and Judge (2012) noted that innovation creates a multichannel ecosystem that can add value to a brand's offer and drive consumer preference, particularly when

the store network becomes integrated into their supply chain. Examples of innovatively integrating multiple channels into an eco-system include Adidas stores, Nespresso Boutiques, Levi's, and Diesel (Aubrey & Judge, 2012). The retailers in the previous examples use their flagship stores to showcase their products while their network of smaller footprint stores specializes in certain products and services designed to target the needs of local consumers and provide locations for customers to click and pick-up products (Aubrey & Judge, 2012). Aubrey and Judge asserted that retail brands must innovate at the business model level plus leverage technology to reinvent their retail store business model and integrate all channels seamlessly to provide a superior, channel-agnostic customer experience. Retailers that fail to innovate their business model or leverage technology put their sustainability at risk (Aubrey & Judge, 2012).

Innovation failure negatively affects brand and sustainability. The reasons why firms actively attempt to close the innovation gap are evident in Kock et al.'s (2011) findings. Kock et al. asserted that while innovation may be a two-edged sword, the non-significant effect of technological innovation on commercial success may influence variables and act as barriers to innovation. Influential variables may include a variety of management practices, existing or lack of skilled product champions, TMT support, quality of communication, marketing strategies, and brand support. Other barriers to commercialization success include the desire by senior leadership teams to retain the status quo within its defined market environment, a limitation in TMT abilities, organizational competencies, process efficiency, power distribution, and willingness to change to address dynamic markets.

Traub and Brettel (2014) found a link between brand image volatility and financial performance using financial markets data. Talke and Colarelli O'Connor (2011) noted that many new innovative products fail commercially not because of the product itself but because the innovating firm does exhibit sophistication to formulate key messages that address specific customer informational needs. Talke and Colarelli O'Connor asserted that the innovating firms' messaging might not adequately address the perceived risks of new product adoption by potential purchasers along three specific dimensions. To determine the most relevant product launch message content, Talke and Colarelli O'Connor tested three dimensions including the usability of information and product advantages, technical information and the consequences of adoption to reduce adopter uncertainty, and the financial viability of adoption such as value, risk mitigation, and warranty. Talke and Colarelli O'Connor found messages that address a product's advantages, benefits, usage, and compatibility were effective when launching a new innovative product. Embedding messages that highlight positive product attributes can help create positive consumer perceptions to adopt the product. Financial messages that justify investing in a product purchase and support a purchasing decision were the strongest predictors of market performance (Talke & Colarelli O'Connor, 2011). Talke and Colarelli O'Connor found technical message elements were counterproductive because they have significant negative correlation with market performance. The counterproductivity of technical messaging seems to support the notion that consumers make purchasing decisions using factors other than just technical information. Information about new technical features may only confuse or overload consumers when

making purchasing decisions by inducing negative perceptions thereby impeding product adoption (Talke & Colarelli O'Connor, 2011). Talke and Colarelli O'Connor asserted that when firms launch new innovative technical industrial products, the messaging should emphasize usability benefits, ease of adoption, and financial advantages such as the value of the capital invested. The content of the messages firms select helps drive the market success of new innovative products and enhances financial performance (Talke & Colarelli O'Connor, 2011).

Tung (2012) noted that innovation has a relationship with firm performance and sustainability. Tung found innovation helps enhance profitability by improving productivity and reducing costs. Tung suggested that introducing new products and services and gaining first mover advantage can help firms to maximize profits before competitors replicate and introduce substitutes (Tung, 2012). Tung suggested that investing in R&D is necessary to fuel innovation. Tung argued that many products have a limited lifecycle and require investments in R&D to ensure new products are available as older ones reach the end of their lifecycle. Li, Qian, and Qian (2014) suggested adopting different market entry timing and customer quality strategies particularly when entering dynamic international markets. Li et al. asserted that different stages of a product lifecycle may generate above average profits and certain market segments on a temporary basis. While Tung suggested that TMTs better manage the lifecycle of their firm's offerings, TMTs must identify strategic responses to competitors and invest in R&D efforts to address gaps that hamper profitability or lack of differentiation that could affect both long and short-term prospects. Tung posited while innovation efforts may include

using brand extensions when a brand is strong and can support additional variants to tap new markets, TMT should be cognizant of not using brand extensions to cannibalize existing markets. Li et al. noted that TMTs cannot always predict product demand and the reception of new products and extensions. Hill (2014) noted that innovation teams should be cross-functional with looped-back learning mechanisms to develop integrated marketing strategies that address the entire lifecycle of each new model. Hill underscored the value of a cross-functional approach to product and brand innovation efforts to capture market share rather than cannibalize existing products. Li noted that some new products and extensions may be met with hostility across different markets (Li et al., 2014). Li et al. noted that in some situations, international strategic alliances may be a source of gathering information on the dynamics of international markets to enhance the prospect of success in the short-term and over the long-term. Tung argued that the survival or death of an organization have a dependency on using innovation as a tool to better manage gaps in a brand's product lifecycle to provide long-term financial sustainability.

Reverse-frugal innovation is not appropriate for all markets. Brem and Ivens (2013) asserted that reverse innovation and frugal innovation use a bottom-up approach and may not be true innovation. In other words, by reverse-engineering existing technology from developed, industrialized economies, technology moves in a reverse direction whereby frugal or reverse innovation meets basic needs of consumers at a low-cost level. Typically, firms that engage in reverse innovation and frugal innovation are located in Asia and receive funding from governments (Brem & Ivens, 2013). While

reverse innovation and frugal innovation is similar to Abrami's et al. (2014) description of creative adaptation, Brem and Ivens asserted that reverse and frugal innovation puts pressure on the long-term sustainability of Western firms that engage in radical innovation. The objective of reverse and frugal innovation is to develop a simpler product with a high benefit but at a very low-cost specifically for low-income market segments (Brem & Ivens, 2013). Brem and Ivens asserted that frugal and reverse innovation offers the potential to help firms reduce levels of input resources, become more efficient, increase competitiveness, and increase sales revenue and enhance financial performance. Brem and Ivens found little empirical evidence concerning the innovation-sustainability link from a financial performance perspective given some reverse and frugal innovation efforts are successful in some markets while other are not. When comparing the similarities of Abrami's et al.'s notion of creative adaptation and Brem and Ivens' construct of reverse and frugal innovation, the approaches produce incremental product variants of existing technologies, not radical innovation.

From the evidence presented in the literature review, there are several possibilities why the innovation gap exists. TMTs may contribute to the innovation gap as some senior leaders have locked-in mindsets (Legrand & Weiss, 2011; Morgan, 2014; O'Connor & Rice, 2013) preventing TMTs from moving from the status quo preferring to retain the status quo and existing business models. Chang et al. (2014) thought challenging the status quo is required to change the innovation paradigm within the ranks of TMTs. Senior leaders may not understand concepts like ambidexterity as noted by several researchers (Buyl et al. 2012; Boone, & Mattysens, 2012; Dierk & Dover, 2012;

Lin et al., 2013; Mottee, 2012; O'Reilly & Tushman, 2013; Smith et al., 2010). While employing ambidexterity allows TMTs to simultaneously balance short-term goals with long-term objectives, TMTs fail to understand ambidexterity when setting organizational priorities (O'Reilly & Tushman, 2013). Changing the mindsets of TMT members may be challenging given TMTs must review their organizational business models (Morris, 2013) and align innovation strategy with the business strategy (Kahn et al., 2012). Nagji and Tuff (2012) asserted that managing innovation effort as a portfolio rather than as individual initiatives by establishing separate divisions or entities (Bhattacharyya, 2006; Morgan, 2014). Some TMTs fail to exhibit the behaviors necessary to motivate and enable followers to create a culture of innovation (Dierk & Dover, 2012; Morris, 2013; Schoemaker et al., 2013; Smith et al., 2010; Yuan et al., 2014). O'Reilly and Tushman (2013) noted that the strategic capabilities TMTs must address include the quality of TMTs, business models, ambidexterity, quality of communications, training, corporate culture, and TMT incentives.

Innovation efforts may link to brand perception and brand valuation. McNeal (2013) asserted that firms should leverage innovative products and services in an unconventional manner using innovative advertising campaigns to bolster the value of their brand. Beverland et al. (2010) noted that alignment between brand positioning and new product innovation requires careful management to influence brand perception. While a brand is an important asset to manage, some brands may suffer when there is a perception they are product or service laggards rather than leaders. Fostering brand awareness based on the authenticity of the brand adds brand value (Gregory, 2013).

Perceiving brands as being less than authentic in how they interact with customers can negatively affect brand valuation (McKinney & Benson, 2013). Corporate social responsibility efforts and green product innovation also contribute to positive brand perception and help foster long-term economic sustainability (Arnold & Hockerts, 2011; Ba et al., 2013; Lampinski et al., 2014; Olsen et al., 2014; Rubera & Kirca, 2012).

Summary and Transition

In Section 1 of this quantitative research study, the objective was to introduce the reader to my research study and provide a review of the professional and academic literature. Within the literature review, possible reasons that contribute to the emergence of the innovation gap include TMTs prioritizing short-term profits at the exclusion of resourcing innovation efforts. TMTs may also lack the skills and abilities to create a culture of innovation and embrace ambidexterity, but instead TMTs prefer to maintain the status quo. I discussed brand as a valuable asset that enhances stakeholder value. Noted in the literature review is the notion TMTs often fail to understand innovation and brand management helps drive brand value. I also provided insight into the importance of innovation and brand value on sustainability.

In my research study, I examined whether a statistically significant correlation exists between the level of innovation and brand valuation with economic sustainability using archival research. The independent variables were innovation based on the Forbes WMIC ranking, and brand valuation based on the Interbrand Brand Value Index. The dependent variable was economic sustainability based on the DJSI.

In Section 2, I provide a description of the role of the researcher, the research method and design, population and sampling, data analysis, ethical considerations of the data providers, and issues concerning validity and instrumentation. Section 3 contains a presentation of the findings from the study including the data analysis, application of the findings, implications for social change, recommendations for further research, summary and reflections, and the conclusion.

Section 2: The Project

Based on the literature review, innovation and brand appear to have an effect on the innovation gap and prospects for long-term sustainability. As noted in the literature review, many factors influence innovation, branding capabilities, and sustainability. Several factors noted in the literature review appear to be within the sphere of control of the TMT. The TMT can set the tone for innovation culture through several available levers should innovation be a priority. Given brands are a valuable corporate asset, brands also need to be carefully managed given brands can affect long-term sustainability. By expanding on the literature review, the intent of my research study was to determine whether there is a significant correlation between innovation, brand, and sustainability.

Purpose Statement

The purpose of this quantitative correlation study was to examine the relationship between innovation rankings, brand valuation, and economic sustainability. The independent variables were innovation ranking and brand valuation. The dependent variable was economic sustainability. The targeted population for this study was senior business leaders of publicly traded multinational companies that operate under global brands within the service and manufacturing sectors. The implications for positive social change include the potential to encourage senior business leaders to embrace ambidextrous business models by recognizing the importance of investing in innovation initiatives to support long-term economic sustainability.

Role of the Researcher

The role of the researcher is to identify the problem, form hypotheses, define terms, secure and collect data, organize and analyze data, and interpret the data and provide conclusions (Craig & Metze, 1979). The data collection process requires the researcher to select the most viable data sources to test the stated hypotheses and not degrade the potential accuracy of the results (Craig & Metze, 1979). In this quantitative research study, I selected archival data and tested the hypotheses put forward in my study. Given that I utilized archived data and did not use human subjects in my research study, the Belmont Report protocol (Belmont, 1979) that addresses the ethical treatment of live participants was not relevant for this specific study.

After completing the data collection, Craig and Metze (1979) asserted that researchers must organize data to generate statistics that describe and summarize the characteristics of the data. Green and Salkind (2014) asserted that standardizing data to determine the significance of data outputs and to provide inferences about the population in the study. I organized and used the data to generate several statistics that describe and summarize the vital characteristics of the generated data sets. The regression model standardizes the data to determine the significance of the data outputs and to make inferences about the larger population based on the subjects used in the study. Green and Salkind noted that SPSS is a useful computer program capable of analyzing data into information a researcher can use to compute and report the results requiring statistical analysis. To analyze my data, I used the Statistical Package for the Social Sciences (SPSS) statistical program, Version 23 (v23.02) to perform the requisite computations

needed for statistical testing. The interpretation phase of the research process requires the interpretation of the results to explain the means of the statistical computations to offer and support conclusions (Craig & Metze, 1979). Campbell and Stanley (2010) suggested exercising caution when generalizing results beyond as the interaction effects of selection biases and the variables could influence external validity. The interpretation phase of the research process requires an interpretation of the results generated from the statistical analysis, an explanation of the meaning of results, and the provision of conclusions. From the statistical analysis, I provided generalizations and exercised caution so that the interaction effects of selection biases and the variables may affect external validity. Justifying the findings to another field not represented in the sample requires caution to maintain external validity (Campbell & Stanley, 2010). Given there are challenges with justifying the findings to another field not represented in the sample, I did not attempt to generalize the findings beyond the noted field to ensure external validity.

Green and Salkind (2014) and Minium (1978) noted that rejecting or accepting the null hypotheses using the correlational computations as the basis for interpreting the data. I outlined whether to reject or accept the forecasts contained in the null hypotheses using the correlational computations and an interpretation of the data. Craig and Metze (1979), Green and Salkind (2014), and Minium (1978) asserted that avoiding incorrect support for untrue hypotheses requires the correction of possible Type I errors. I corrected for Type I errors to avoid incorrect support for an untrue hypothesis. Upon completion of the analysis and interpretation, I summarized and presented the findings, outlined limitations of the study, and offered recommendations for future research.

Participants

Given I used archival data in this research study, live subjects were not required. As I did not use live subjects, a further discussion on the use of ethical treatment of participants and protection of human subjects as outlined in the Belmont Report protocol (Belmont, 1979) was not a requirement nor appropriate. Given I utilized archival data in this research study, it was appropriate to disclose that I did not have any relationship, affiliation, or arrangement between myself and the organizations whose data I used in this research study. I also did not provide nor receive support, paid or otherwise, with the organizations. There were no known conflicts of interest between myself and the organizations used in the study.

Research Method and Design

The following section addresses the research method and the research design of the research study.

Research Method

The objective of the research method used in this study was to determine whether a relationship exists between innovation, brand valuation, and sustainability by examining companies that are deemed to be innovators in their operations from an innovation and sustainability perspective. The best approach to examine the research question is employing a quantitative methodology and a correlational research design using archival data analysis. According to Craig and Metze (1979), quantitative designs are systematic, empirical, controlled, and a critical investigation of hypothetical propositions about conceivable relationships among phenomena. Researchers consider

causality before choosing a research method given the assumption the universe is uniform, orderly, and governed by cause-and-effect laws (Craig & Metze, 1979). Factors associated with quantitative methods include generalizability of results and objectivity associated with quantitative measures (Minium, 1978). My research study contains the noted factors. Quantitative research is an objective and systematic process to quantify information about the world and allow for generalizability (Craig & Metze, 1979). The generalizability of the findings to other populations and settings is likely (Campbell & Stanley, 2010). The quantitative correlational research method I selected for my study used a correlation design to examine variables and quantify the relationship between variables and facilitates generalizability of the findings to other populations.

The quantitative research method of correlational design is the best method to use when examining the relationship between variables (Craig & Metze, 1979; Green & Salkind, 2014; Minium, 1978). An objective of my research study was to examine the relationship between variables. If a relationship exists between the variables, using quantitative methods allows a researcher to make predictions about the population of the study that other methods would be unable to make (Craig & Metze, 1979; Simon, 2013).

Selecting quantitative methods to examine the relationship between variables facilitates the testing of null hypotheses and can predict and confirm the relationship between the variables (Craig & Metze, 1979; Minium, 1978; Simon, 2013). According to Craig and Metze (1979), Minium (1978), and Simon (2013), quantitative methods are most appropriate to test the hypotheses while other methods such as qualitative methods are best for learning through observation and experience. I considered other research

methods, but there were challenges to overcome including time, resource constraints, and inability to use scientific methods to examine relationships. Qualitative methods has validity and reliability issues because the research occurs in a natural setting making the study difficult to replicate (Simon, 2013). I did not select qualitative methods given the objective of my research was to examine a particular social phenomenological interaction or event and develop appropriate hypotheses for testing rather than use methods associated with observation and experience. While mixed methods research can provide rich information to enhance the research findings, the use of mixed methods also requires extensive data collection and analysis (Simon, 2013). Using mixed method is not appropriate given the challenges associated with time constraints and resources limitations required to conduct mixed method studies (Creswell & Plano Clark, 2007). Given the limitations and challenges of time and data collection, quantitative research methods were appropriate for me to address the research questions and the constraints of time and resources.

Research Design

The selection of the research design is dependent on the business problem and context of the study (Craig & Metze, 1979). Using correlational analysis allows a researcher to examine hypothesized relationships between variables while excluding other plausible hypotheses or explanations (Campbell & Stanley, 2010; Craig & Metze, 1979)I hypothesized relationships between variables in my research study while excluding other plausible hypotheses or explanations; the appropriate research design I selected was correlational analysis to examine the relationship between variables.

According to Simon (2013), correlational design is a data analysis procedure that examines the relationship between variables and describes the direction and strength of relationships among variables (Campbell & Stanley, 2010; Craig & Metze, 1979). Using a correlational design to examine the relationship between known multiple variables is suitable for testing hypotheses and providing insight into social phenomena, and is effective at identifying and describing possible relationship between several variables under examination (Craig & Metze, 1979; Green & Salkind, 2014; Minium, 1978).

Correlational research does not imply causation nor does it attempt to infer cause-and-effect as in causal-comparative research (Craig & Metze, 1979; Simon, 2013).

Correlational research only infers a relationship exists between variables, and the use of correlational research is appropriate to assess the relationship between the variables in this study (Campbell & Stanley, 2010). Research problems having two or more variables require a correlational design to examine relationships among variables (Craig & Metze, 1979; Green & Salkind, 2014). Using a regression procedure determines the direction and strength of the interaction between the predictor variables and the dependent variable (Minium, 1978).

While correlation does not equate to causation, statistically significant correlations provide the ability to interpret the data to assess a plausible causal hypothesis to explain the relationships (Campbell & Stanley, 2010; Craig & Metze, 1979; Simon, 2013). A correlational research design is a suitable method of examining the research question and underlying predictive assumptions about relationships between variables (Minium, 1978). Analysis of variance enables a researcher to use multiple independent

variables and determine the effect on the dependent variable (Minium, 1978).

Establishing a significant relationship between the variables allows a regression equation to offer predictions about the study's population (Simon, 2013).

I considered other research designs. In quasiexperimental and experimental research designs, establishing a baseline, administering treatment, imposing sequencing, and assessing the effects of treatment is possible (Campbell & Stanley, 2010; Craig & Metze, 1979). Quasiexperimental or experimental designs allow a researcher to control or manipulate treatment and observe the effect (Campbell & Stanley, 2010; Craig & Metze, 1979). Correlational methods are unlikely to establish causation (Campbell & Stanley, 2010) and provide an indication of an association between variable (Simon, 2013). Claiming causation is not possible when the manipulation of an independent variable and resultant effect is not possible as correlation is not an indicator of causation (Craig & Metze, 1979; Simon, 2013). Using a quasiexperimental or experimental design requires establishing a baseline, administering treatment, and assessing the treatment effect that might create causation and change the performance variables (Campbell & Stanley, 2010; Craig & Metze, 1979). In my study, it was not possible to claim causation given the manipulation of an independent variable and resultant effect is not possible particularly when using archival data. Using a quasiexperimental or experimental design was clearly not suitable for my study as establishing a baseline, administering treatment, and assessing the treatment effect that might create causation and change the performance variables is not possible. Given my research study relied on archival data rather than on the manipulation or control of variables to determine the effect of treatment as in

experimental or quasiexperimental designs, neither design was appropriate to address the research problem.

Population and Sampling

Population

A population refers to a group of persons a researcher wishes to make observations, measurements, and draw conclusions about (Minium, 1978). Craig and Metze (1979) noted that after the formulation of plausible hypotheses a researcher must be clear on the study population and the best method to select a sample from the population. The choice of the populations must be appropriate, not too narrow or too broad, for testing hypotheses (Craig & Metze, 1979). The selection of the population also outlines the general descriptive characteristics for the intended group of a research study (Simon, 2013). In other words, a population consists of the subjects a researcher intends to study. The intended population of this study included companies judged to be innovative by Forbes WMIC. Forbes WMIC lists and ranks the innovativeness of companies in their database (Dyer & Gregersen, 2015). The Forbes WMIC is a research database that measures the R&D expenditures as a percent of revenue, and the innovative performance of over 1,000 companies in global markets (Dyer & Gregersen, 2015). The Forbes WMIC is limited to publicly listed companies (Dyer & Gregersen, 2015). In this study, I used a population of global companies ranked by the Forbes WMIC in 2015 and 2012. The Forbes WMIC utilizes stock market filings from global regulatory agencies and corporate annual reports and assembles the financial components for use in their database (Dyer & Gregersen, 2015). Forbes WMIC applies a propriety formula from the

HOLT division of Credit Suisse to determine a firm's innovation premium and the rankings (Dyer & Gregersen, 2015). Since 2011, there is recognition the Forbes WMIC is a comprehensive assessment examining the relationship between R&D investment and innovation (Dyer & Gregersen, 2015).

The companies listed in Strategy&'s 2015 Global Innovation 1000 Index study account for approximately 40% of global R&D spending while the next 1,000 largest R&D spenders represent 3% of global R&D expenditures (Jaruzelski et al., 2014). However, Dyer and Gregersen (2015) noted that companies that spend more on R&D to bolster their innovative efforts are not necessarily innovative, nor are they good investments but rather spend on continuing historical programs. Forbes WMIC stresses its innovation premium approach stresses projected future cash flows for the next 2 years derived from expected growth and revenues. Expected revenues are attributable to true innovation associated with new products, services, or markets (Dyer & Gregersen, 2015). Forbes and Credit Suisse HOLT do not disclose detailed information on the components that comprise the Forbes WMIC or its methodology. Forbes WMIC does not normalize its ratings across the overall company domain or individual industry categories when reporting financial data (Dyer & Gregersen, 2015). However, while the rankings provided are ordinal, they do not correlate to total company R&D expenditures or as a percentage of revenue (Dyer & Gregersen, 2015). Some firms, such as Apple and Google, who spend billions on innovation slipped in ranking in 2015 from previous years because other firms had higher innovation premiums. Given Forbes WMIC ranks firms by their level of

innovation premium, the ranking was relevant to this study to determine whether the level of innovation was a predictor of sustainability.

In this study, the brand valuation data was from the Interbrand Brand Value Index. Interbrand conducts brand valuations to determine how a brand contributes to the business results of a company's metrics and predicts how likely the brand will contribute to financial performance in the future (Interbrand Methodology, 2015). Interbrand evaluates brands using criteria including financial analysis, the role brands play in the purchasing decision separate from other purchasing factors, and brand strength using loyalty and demand for a brand's offerings (Interbrand Methodology, 2015). Interbrand utilizes financial data feeds from Thomson Reuters, consumer goods data on volumes and values from Datamonitor data feeds, and from social media data feeds such as Twitter as input into its rankings (Interbrand Methodology, 2015). Interbrand's criteria for inclusion in the Brand Value Index requires a brand to have: (a) publicly available performance data; (b) the expectation of positive after-tax operating profit with a return above the company's cost of capital; (c) a public profile to generate brand awareness; (d) global presence with a minimum of 30% of its revenue derived from outside of its home region; (e) coverage in emerging markets; and (f) a significant presence in Asia, Europe, and North America (Interbrand Methodology, 2015).

Narayan (2012) noted that three valuation methods including business finance-oriented models using stock market capitalization, behaviorally-oriented models using assets and liabilities linked to a brand's image and perception, and a composite of business finance and behavior oriented models plus estimates of risk to adjust potential

earnings. Attila (2014) noted that three measurements of brand value measurements includes price premium, revenue premium, and profit premium, price premium was more strongly correlated to brand equity when comparing other methods. Duguleană and Duguleană (2014) noted that strong brands usually offer a competitive advantage over their competitors and tend to be profitable over the long-term. Narayan (2012) asserted that while there is no general agreement on one valuation method because firms compute brand valuations based on different accounting objectives each may have, there is a preference for a multidimensional, integrated, and holistic approach. Given the arguments to use a brand valuation index that focus on a composite of price premium, profitability, and brand perception, there is value in selecting a brand valuation that captures these metrics in a standardized manner. Interbrand's brand valuation methodology meets strict standardization requirements making it appropriate for this research study. In 2010, the British Standard Institute (BSI) and the International Organization for Standardization (ISO) created the BSI ISO 10668 Brand Valuation: Requirements for Monetary Brand Valuation (Duguleană & Duguleană, 2014). The ISO 10668 standard is a framework for standardizing the method used to derive brand valuation based on financial value, brand contribution, and brand value (Duguleană & Duguleană, 2014). Interbrand's brand valuation methodology complies with the ISO 10668 standard (Duguleană & Duguleană, 2014) and is an important consideration for the selection of database for use in this study. Selecting the values from the Interbrand database must align with the sample selected from the Global Innovation 1000 Study and the DJSI.

Using data from the DJSI (2014) provided sustainability scores for the research study. The composition of the DJSI is 1,813 global companies (Robecosam Sustainability Investing, 2014). The corporate sustainability data provides an assessment of companies by monitoring news media, publicly available information from stakeholders, consumer organizations, nongovernment organizations (NGOs), and government agencies (Robecosam Sustainability Investing, 2014). Ongoing assessment of companies includes the monitoring of companies' involvement and responses to environmental, economic, and social crises that affect a firm's core business and reputation (Robecosam Sustainability Investing, 2014). DJSI uses a Total Sustainability Score (TSS) to create an assessed universe and subsequently segments data by geographical regions and industry (Robecosam Sustainability Investing, 2014). Key criteria included tax strategy and transparency, social and environmental reporting, human capital development, and performance scoring on best-in-class occupational health and safety practices (Robecosam Sustainability Investing, 2014). The DJSI uses the Global Industry Classification System (GICS) to classify industries but excludes some industries for various reasons (Robecosam Sustainability Investing, 2014). The assessment of sustainability by Dow Jones excludes companies who derive their revenue from *vice* products and services including tobacco, alcohol, gambling, adult entertainment, armaments, weapons, firearms, and nuclear power generation (Robecosam Sustainability Investing, 2014). Dow Jones assigns a sustainability score by assessing eligible companies (Robecosam Sustainability Investing, 2014). The DJSI updates the sustainability assessments annually and delists companies when substantial changes

occur to a company's status due to a merger, acquisition, or divestiture activity, or delisting from capital markets (Robecosam Sustainability Investing, 2014). Financial reporting is in U.S. dollars (Robecosam Sustainability Investing, 2014). Eligible U.S.-based companies listed in the DJSI's North America Report rolls up to the DJSI World Report (Robecosam Sustainability Investing, 2014). The scores from the DJSI represent a sustainability metric to determine whether innovation levels and brand value influence sustainability scores that the Dow Jones reports.

A further discussion regarding reliability and validity of the data appears in the results section of this study.

Sampling

A sample consists of a subset or part of a population (Minium, 1978; Simon, 2013). There are several methods of sampling a population including systematic sampling using a predetermined procedure, representative or a deliberate sample using assumed characteristics that resemble a population, and casual sampling using a human randomizer where the researcher attempts to choose at random from available subjects often using subconscious preference (Minium, 1978). Random sampling is a technique to select participants from a population with the equal probability of selection for the purpose making statistical inferences that apply to the population (Craig & Metze, 1979; Minium, 1978; Simon, 2013). There are advantages of using random sampling including the elimination of sampling bias by impartially assigning extraneous influence among the comparative groups (Minium, 1978). According to Minium, randomization provides a type of control over known or unknown extraneous influences and tends to produce

equality. Craig and Metze (1979) noted that randomization could minimize the chance of systematically relating or confounding extraneous variables with the independent variable. The tendency to produce equality increases as sample size increases (Minium, 1978). Randomization also provides the ability to generalize the findings of a study to a larger population (Craig & Metze, 1979; Simon, 2013). The disadvantage of random sampling is that even as the size of a random sample increases, sometimes sample variances cause sample differences that are not attributable to the independent variable (Craig & Metze, 1979). According to Simon, and Craig and Metze, random sampling requires careful planning to avoid confounding extraneous factors with the independent variable.

Drawing a random sample from a population is sometimes difficult and using a representative sample of convenience is necessary (Craig & Metze, 1979; Simon, 2013). Selecting a nonprobability sample of convenience requires choosing characteristics that closely resemble the population (Craig & Metze, 1979; Simon, 2013). The advantage to using convenience sampling is the ability to use data results readily available (Simon, 2013). There are limitations of using convenience sampling. By using a sample of convenience, there is a possibility of not selecting any member of a population, which introduces bias and limits the generalizability of the results to a broader population (Minium, 1978). Also, appropriate generalizations and inference of the findings to a broader population is sometimes difficult due to the possible introduction of bias (Craig & Metze, 1979; Minium, 1978; Simon, 2013). Given the approach of this study and

reliance on using existing index and ranking data, convenience sampling was the sampling method for this research study.

The selection of companies for this study required using a sample of convenience. Using the data available, I examined the relationship between innovation, brand valuation, and economic sustainability in this research study. As noted in the limitations section of this study, I did not have control over the collection of archival data. While many companies undertake continuous incremental innovation or engage in R&D activities to develop disruptive technologies, the criteria for this study requires that companies had a listing in Forbes WMIC 2015. The sample of companies used in this research study have a brand value and rating assigned by Interbrand Brand for 2015, and a sustainability rating by the DJSI for 2015. A sampling of ordinal data points from the Forbes WMIC fits with the purpose of the study and uses the criteria required to conduct this study. Determining the final and total number of valid data points required an examination of the datasets from each data provider. I expected the availability of sufficient data from the data providers to meet the minimum sample size required for this study.

Given I used archival data rather than live subjects in this study, committing Type I errors when interpreting the results of the statistical analysis was possible. A Type I error occurs when a true hypothesis is falsely rejected and more serious than a Type II error (Craig & Metze, 1979; Simon, 2013). According to Minium (1978) and Armstrong (2014), ensuring statistical validity and committing Type I errors requires a sufficient sample size. Simon (2013) also noted the importance of selecting an appropriate sample

size to avoid sampling errors. A sample size that is sufficient is less prone to overlap between the two distributions and reduces the risk of drawing a sample that leads to the false acceptance of the hypothesis (Minium, 1978). To calculate the correct sample size, using the G*Power software tool can determine the appropriate sample size for a study (Faul, Erdfelder, Buchner, & Lang, 2009; Simon, 2013). According to Faul et al., using the G*Power tool provides the minimal sample size sufficient to address errors of statistical validity. To calculate the sample size, I used the G*Power software tool Version 3.1.9.2 to determine the appropriate sample size for this research study. Given there are no expectations of a correlation, a medium effect size ($f^2 = 0.15$) is appropriate (Cohen, 1992). Using the parameters of the power of error probability of $1 - \beta = 0.80$, the error probability of 95% ($\alpha = 0.05$), and the number of predictors variables set at two, the appropriate study sample size is 68 as shown in Figure 1. Using the G*Power tool to increase the power of error probability to 95 ($1 - \beta = 0.95$) yielded a sample size of 107. The sample sizes calculated using the G* Power tool match the sample sizes in Cohen's table of effect size for the appropriate confidence level. The original intent was to use over 100 data points for the final sample size depending on aligning the data from selected indices.

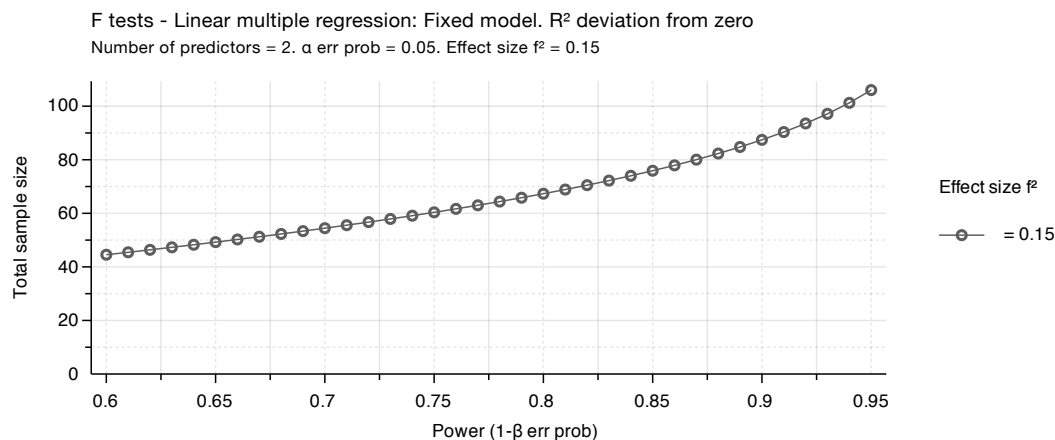


Figure 1. Power as a function of the sample size to minimize statistical errors.

Ethical Research

The Belmont Report is a standard protocol that addresses the ethical treatment of live participants (Belmont, 1979). There are several categories of live participants that the Belmont Report protocol addresses (Belmont, 1979). In the Belmont Report protocol document, decision trees help determine whether a research activity involves human subjects or uses existing data documents (Belmont, 1979). Subject to the Code of Federal Regulation Part 46 (CFR 46), Chart 5 of the Belmont Report decision tree illustrates that research using existing and publically available data documents is exempt from the Belmont Report protocol (Belmont, 1979). Given that this research study relies on using existing data, does not use live participants to collect data, and does not identify organizations in the presentation of the findings, the Belmont Report protocol was not relevant to this research study.

Walden University requires Walden University students obtain IRB approval for research studies that use archival data (Guide for Archival Researchers, 2015). Before

proceeding with the study, I obtained approval from Walden University's Institutional Review Board (IRB) to comply with the standards and principles of ethical research set out by Walden University (Guide for Archival Researchers, 2015). Walden University provided an IRB approval number to verify compliance and approval of this study (Research Ethics, 2015). To safeguard the use and treatment of the existing data from database stakeholders, I complied with Walden University's directive that I complete the standard IRB application and leave items 37-51 blank (Guide for Archival Researchers, 2015). My research study IRB approval number (01-15-16-0479729) was issued by Walden University to authorize my research study.

No known or anticipated relationship existed between the database stakeholders and myself. No known or anticipated incentives or payment exchange arrangements existed between the data providers and myself to conduct the research. Therefore, the conduct of my research was in compliance with Walden University ethical research guidelines (Research Ethics, 2015). Walden University's Internal Review Board (IRB) requires retaining data for 5 years (Research Ethics, 2015). The 5-year data retention rule applies to the data obtained from and provided by Forbes, Interbrand, and Dow Jones. Data storage and retention of data on a password-protected portable thumb drive locked in a secure Sentry fireproof safe for 5 years complies with Walden University's standards for data retention (Research Ethics, 2015). Permanent destruction of the data files will occur upon expiry of the retention period (Research Ethics, 2015).

Data Collection

Instrumentation

Given I used archival data in my study, the discussion on data collection is limited due to the proprietary nature of the instruments each data provider uses. Although the indices from third parties use proprietary methodologies that are not available for enhanced levels of scrutiny, there is precedence in using indices. Scholars such as Gobble (2013) have used Forbes WMIC since its inception. Larson (2011) has used the Interbrand rating and ranking as part of addressing the value and importance of brands. Lourenço, Branco, Curto, and Eugénio (2012) have used data from the DJSI as a component of their research. Given the purpose of this study, the following is a discussion of the three indices representing the variables in this research study and the data collection methodology of each index.

Data from Forbes WMIC ranking represents the independent variable of innovation in this research study. Forbes developed the Forbes WMIC ranking and methodology in 2011 to investigate the difference between a firm's market capitalization and net present value (NPV) of the next two years of projected cash flows using a proprietary formula from Credit Suisse HOLT. The difference between market capitalization and net present value of cash flows is the premium attributable to profitable new growth from future new products, services, and processes (Dyer & Gregersen, 2015). Forbes does not rank companies by R&D expenditures to rank innovativeness within industry categories (Dyer & Gregersen, 2015). Forbes and Credit Suisse HOLT obtain and analyze key financial metrics on over 45,000 companies from publicly available

sources and indices (Dyer & Gregersen, 2015). The companies Forbes and Credit Suisse HOLT analyze must have 7 years of financial data available including market capitalization, R&D expenditures, profits, sales, and surveys innovation leaders to gauge their views on innovation (Dyer & Gregersen, 2015). However, the number of patents filed is not a benchmark for innovation as the patent filing benchmark may be meaningful within an industry classification (Dyer & Gregersen, 2015). Brand value and other tangible assets do not contribute to the innovation premium calculation (Dyer & Gregersen, 2015). Forbes and Credit Suisse HOLT exclude mining and financial service companies from the innovation premium formula (Dyer & Gregersen, 2015). Detailed information on the instrumentation Forbes and Credit Suisse HOLT use to calculate the innovation premium and rankings is sparse due to the proprietary nature of their research methodology (Dyer & Gregersen, 2015). Forbes provides an ordinal ranking metric that represents a comparison to other peer companies on the overall level of innovativeness (Dyer & Gregersen, 2015).

Data from Interbrand's Best Brands represents the independent variable of brand value in this research study. The Interbrand Best Brands study began in 1988 and ranks brand valuation (Interbrand Methodology, 2015). From the beginning of brand valuation methodology, firms have evolved the brand value metrics to assess factors including the ability of a brand to influence consumer choice, to attract, create, and retain brand loyalty (Interbrand Methodology, 2015). The three components in Interbrand's brand valuation methodology include financial performance of the brand, the role of the brand in purchasing decisions, and the competitive strength of the brand (Interbrand Methodology,

2015). The Interbrand uses several sources to assess financial data including annual reports, data feeds from Thomson Reuters, brand volumes and values from Datamonitor, and social media posts on Twitter (Interbrand Methodology, 2015). Detailed information on the instrumentation used by Interbrand is limited although brand valuation, and brand ranking is relative to their other peer companies (Interbrand Methodology, 2015). In my research study, I used ordinal data based on Interbrand's reported brand value rankings.

The DJSI launched in 1999 as a family of indices to evaluate the sustainability performance of the largest 2,500 companies listed on the Dow Jones (Robecosam Sustainability Investing, 2014). Since its inception, the DJSI evolved to provide regional indices (Robecosam Sustainability Investing, 2014). The DJSI uses information that includes the use of the annual RobecoSAM questionnaire, company annual reports, media coverage, social media, and direct contact with companies (Robecosam Sustainability Investing, 2014). RepRisk ESG Business Intelligence tracks corporate risk and is input to assess sustainability as a component of the overall methodology (Robecosam Sustainability Investing, 2014). The DJSI uses three dimensions of sustainability that include environmental, social, and economic as part of their sustainability assessment criteria (Robecosam Sustainability Investing, 2014). Detailed information on the DJSI instrumentation is limited since Dow Jones claims it is proprietary (Robecosam Sustainability Investing, 2014). In my research study, I used ordinal data from the DJSI's reported rankings.

In my research study, I used archival data that provides a relative ranking based on several criteria, and the scale of measurement. Given that the data from the database

providers report rank order to present their findings, using ordinal data was appropriate for my research study. Ahn and Choi (2012) noted that the use of ordinal data is sometimes the best alternative over a multitude of alternatives. Where a multiple of alternative bases for making decisions exists such as criteria, attributes, objectives, or data to choose from, the decision-making process should have two phases (Ahn & Choi, 2012). The first phase of the decision-making process is the construction of the problem and data preparation with the second phase being aggregation and exploitation (Ahn & Choi, 2012). According to Ahn and Choi, sometimes there is difficulty developing a construct using a theory that is completely consistent with the data available. The use of ordinal scales for each of the indices does not imply the magnitude of the difference between the construct represented by each index, but that one company exhibits the construct represented by the index in amounts greater than others (Craig & Metze, 1979). Ordinal scales represent not only differences but also the relative magnitude of differences (Craig & Metze, 1979). The number identifies an event, object, or phenomenon as belonging to a category that has similar attributes or criteria that are distinct from another category (Craig & Metze, 1979). Also, the magnitude of the difference between the criteria or attribute within the construct or category is not indicative of the number on the ordinal scale (Craig & Metze, 1979). A number on the ordinal scale only reflects the relative difference where one value is bigger or smaller than the other (Minium, 1978). The use of ordinal ranking methods spans over 200 years, but the challenge of using ordinal data lies in how to differentiate among the rank positions (Ahn & Choi, 2012). Differentiation among the rank positions can be difficult

and for the researcher to specify their preference for using weighted averages or rank orders (Ahn & Choi, 2012). The method used by the database providers produces other metrics that may not account for other criteria captured within each of the indices.

Data Collection Technique

Data collection for this study proceeded after receiving IRB approval to comply with Walden University's guideline for data collection using archival data (Guide for Archival Researchers, 2015). I collected data by accessing archival data contained in the Forbes WMIC database that comprises the innovation data required for this research study. I contacted the data provider and requested datasets via e-mail request from the appropriate resource. The archival data is available to the public without charge. I collected additional data from existing archival data records for the brand valuation measure contained in the Interbrand Brand Value Index. Archival data on sustainability rankings came from Dow Jones. Archival data is normally available to the public without charge from Dow Jones. To facilitate sampling, I used a sample of convenience as outlined by Craig and Metze (1979) and Simon (2013). While randomization provides control over known or unknown extraneous influences and tends to produce equality (Minium, 1978), I used a sample of convenience because the data was available and the sample best represented the companies with the desired characteristics of the population to be studied. Using a convenience sample has limitation including the ability to generalize the findings of a study to the population represented by the sample (Craig & Metze, 1979; Simon, 2013). Once I collected data on innovation, brand valuation, and

economic sustainability, I entered the data into the into a Microsoft Excel spreadsheet consisting of rows and columns to facilitate data capture and to prepare the data analysis.

The use of archival data has its advantages over other methods including a reduction in time and cost to initially collect and analyze data (Simon, 2013). However, the use of archival data also has some drawbacks. Access to the correct secondary data sources and format of the data may present challenges to the researcher. The disadvantages include limitations to the sample size given the parameters estimated in each of the data providers' models, unknown researcher bias, and the reliance on the accuracy, reliability, and validity of the underlying data collection tools (Yuan et al., 2014). Also, a researcher may not be able to control for confounding variables for observed differences that a true experimental design would allow for as noted by Campbell and Stanley (2010).

Data Analysis

Based on the research question developed, I used quantitative methodology in my research study to answer the following questions:

For the entire sample, does brand value have a correlation with sustainability?

For the entire sample, does innovation have a correlation with sustainability?

According to Craig and Metze (1979), in quantitative research the researcher establishes hypotheses that offer a tentative explanation or a prediction of an expected outcome among variables. For a hypothesis to be useful in research, it must be definable and testable (Craig & Metze, 1979). Interpreting correlation results requires caution by a researcher given that a causal interpretation of a correlation depends on a plausible causal

hypothesis and the absence of plausible rival hypotheses (Campbell & Stanley, 2010). By testing hypotheses using statistical processes, researchers can develop inferences about the attributes of specific populations (Craig & Metze, 1979). According to Minium (1978), formulating a hypothesis provides specific parameters of a test population for determining whether the hypothesis is true or rejected. To address the research questions and infer certain attributes to specific populations and to avoid Type II errors, I tested the null and alternative hypotheses using a p value of less than .05 to reject the null hypotheses. According to Simon (2013), p values measures the level of confidence in rejecting a null hypothesis. According to Minium, using a p value of less than .05 to reject the null hypotheses is satisfactory given that the level of significance keeps Type II errors under control while adequately controlling for Type I errors. According to Craig and Metze, the level of significance is typically 0.05 to control for Type I and Type II errors. According to Simon, a p value of between 0.01 and 0.05 indicates significant statistical evidence to reject a null hypothesis and to accept the alternative hypothesis. A p value above 0.05 indicates insufficient evidence to reject the null hypothesis such that the null hypothesis is accepted, and the alternative hypothesis is rejected. The null and alternative hypotheses tested were:

Null Hypothesis (H_0): There is no relationship between innovation ranking and economic sustainability.

Alternative Hypothesis (H_a): There is a relationship between innovation ranking and economic sustainability.

Null Hypothesis (H_0): There is no relationship between brand valuation and economic sustainability.

Alternative Hypothesis (H_a): There is a relationship between brand valuation and economic sustainability.

I tested the hypotheses using 2015 data for all variables and repeated using 2013 data for the independent variable and 2015 data for the dependent variable to determine if there was a delay effect. I collected innovation data from the Forbes WMIC, brand valuation data from the Interbrand Brand Value Index database, and sustainability data from the DJSI database. According to Craig and Metze (1979), once data collection is complete, the data requires scrutinization. While missing data is beyond my control, missing data is less likely when using archival data (Simon 2013). When data cases are missing, rather than transform data and compute a mean for the affected variable as that process carries risk, missing cases should be excluded (Green & Salkind, 2014). Once obtaining the dataset, I entered the values into a Microsoft Excel spreadsheet. Next, I imported data from the Microsoft Excel spreadsheet into SPSS Version 23 software for statistical analysis. To address research questions 1 and 2, I performed a multiple regression test to determine whether there is a statistically significant relationship between the variables. Regression testing is suitable to examine the overall effect and effect size of the predictor variables on the dependent variable in a study (Green & Salkind, 2014; Minium, 1978). Using a regression procedure is appropriate for the use of multiple independent variables (Craig & Metze, 1979; Green & Salkind, 2014; Simon, 2013). In my research study, I tested two independent predictor variables using a

regression procedure. Simon (2013) noted that the effect on the results may not be serious if there are departures from normal distributions. Given the possibility of having limited data and needing to resample residuals and remodel the data to normalize the distribution, bootstrapping is an appropriate procedure for regression models (Freedman, 1981; Simon, 2013). Using bootstrapping is suitable when parametric assumptions are in doubt, when questions of normality arise, size of variance is large, and the sample size may be inadequate (Simon, 2013). A bootstrapping also tests the reliability of the dataset and control for the stability of the results (Simon, 2013). To address potential issues of parametric inference that may not be apparent, performing a bootstrapping procedure is appropriate when using regression to normalize the data during analysis. While conducting a follow-up test assesses a claim of a possible correlation between variables (Green & Salkind, 2009), its use is not typical with regression procedures but is more appropriate for ANOVA procedures (Simon, 2013).

A positive correlation where the R value is between 0 and +1, or a negative correlation where the R value is between 0 and -1 (Green & Salkind, 2014; Simon, 2013). Where the R value is close to 0, likely no significant linear correlation exists between the variables (Green & Salkind, 2014; Simon, 2013). Calculating the R^2 value provides an indication of the strength of the effect size a predictor variable has on the dependent variable (Green & Salkind, 2014; Simon (2013). Levine and Hullett (2002) noted that eta squared known as η^2 for ANOVA procedures and R^2 for regression procedures, provides the direction of a correlation and specifically an indication of the effect size of the predictor variable on the dependent variable. Levine and Hullett noted that reporting

partial eta rather than reporting R^2 or adjusted R^2 provides misleading results. I computed the R^2 value using SPSS version 23 to determine the strength of the correlation and specifically the effect size of the predictor variables on the dependent variable. I considered other statistical procedures such as the Pearson's r correlation procedure, but this procedure is more suitable to compare two continuous and quantitative variables (Minium, 1978; Simon, 2013). I considered using the Spearman's Rho correlation, a technique suitable for rank order correlation, but the Spearman's Rho correlation is better suited for smaller sample sizes and two variables (Minium, 1978; Simon, 2013). Using an ANOVA procedure is possible and considered but Levine and Hullet noted that in some instances effect sizes are misreported in SPSS outputs for 2+ way ANOVAs. Using the Mann-Whitney U test is possible but using this test has limitations when comparing internal-scaled dependent variables with scores from the same distributions that are normal, and the sample sizes tend to be small (Craig & Metze, 1979; Green & Salkind, 2014; Minium, 1978).

The datasets from Forbes and Interbrand are publically available. Data from Dow Jones is not publically available and I was required to submit a formal request to Dow Jones requesting access to and use of the data in compliance with Walden University's guidelines (Guide for Archival Researchers, 2015). A signed nondisclosure agreement with Dow Jones appears in Appendix B of this study. The data from the database stakeholders use proprietary instruments as outlined in detail in this study. Once obtaining the datasets, I reviewed the data and selected the companies that had the required variables and met the data needs. I used archival data for this research study

using the assumption that the archival data provided by the firms is complete and accurate. I used a sample of convenience from the available data although using a random sampling technique is more desirable to address the issue of external validity (Craig & Metze, 1979; Minium, 1978; Simon, 2013). Addressing the issue of external validity in this research study has limitations given I used a sample of convenience thereby limiting generalizability to the population represented by the sample.

Conducting the regression procedure required importing raw data into SPSS Version 23 software for statistical analysis. I interpret and present the results from the regression procedure regarding the statistical correlation between the independent variables and the dependent variable, and provide the results for the strength of the model and the effect size of the variables. Using a confidence level set at 95%, results that show $p < 0.05$ require the acceptance of the null hypotheses (Green & Salkind, 2014; Minium, 1978; Simon, 2013). For values where $p > .05$, I reject the null hypotheses.

Study Validity

Reliability and validity of the instrument to assess sustainability for this study requires discussion. Given I used archival data, my research study relied on three proprietary instruments (a) the Forbes WMIC rankings which assesses innovation (Dyer & Gregersen, 2015), (b) the Interbrand Best Brands Report that assesses the brand value component of a firm's valuation (Interbrand Methodology, 2015), and (c) the DJSI that assesses sustainability performance (Robecosam Sustainability Investing, 2014). Discussing the choice of each instrument ensures reliability and validity for this type of study.

Study Validity

Issues of internal validity from testing effects include history, maturation, testing effects on participants, instrumentation bias and decay, respondent biases, experiential mortality, and confounding interactions (Campbell & Stanley, 2010). According to Craig and Metze (1979), there are several methods used to control experimental conditions that affect systematic variables issues such as randomization of participants and the research design to prevent extraneous variables from confounding the results. While Minium (1978) noted that randomization is a type of control over extraneous influences, Campbell and Stanley (2010) noted that the use of randomization in laboratory experiments may address issues of internal validity rather than only external validity. Simon (2013) noted that other threats to validity including the Hawthorne Effect, sensitization from pre and posttesting, novelty effect, and inadequate power that could lead to Type I errors. Threats to statistical conclusion validity may include a Type I error given the possibility of falsely rejecting a null hypothesis when testing more than one hypothesis. To minimize Type I errors, the alpha used in each correlation tested was set at 0.05. As noted by Freedman (1981), bootstrapping is a resampling procedure for regression models when the data may be parametric. While Armstrong (2014) and Green and Salkind (2014) noted that the Holm's sequential Bonferroni method is the preferred method for evaluating hypotheses to minimize Type I errors, this procedure is not available for regression models. To minimize Type I errors, I used a bootstrapping procedure in this research study. Given that I used archival data in this research study from other database stakeholders and not primary research, I must rely on the database

stakeholders' data collection process and their efforts to address issues of internal validity related to instrumentation. The Forbes WMIC ranking launched in 2011 (Dyer & Gregersen, 2015), the Interbrand Best Brands Report launched in 2000 (Interbrand Methodology, 2015), and the DJSI launched in 1999 (Robecosam Sustainability Investing, 2014). While each database stakeholder has updated their criteria, data collection processes, and computational processes, issues of internal validity may affect the archival data that I selected and used in my study. Factors that may have affected the internal validity of the data include statistical validity, the reliability of each instrument, data assumptions, and bias. I cannot control for these factors given my reliance on archival data generated by third parties.

Sample size validity. Sample size validity is a consideration to ensure the use of an adequate sample size (Cohen, 1992). The probability of committing Type I errors and rejecting a true hypothesis relates to sample size (Armstrong, 2014; Craig & Metze, 1979; Minium, 1978). G*Power software tool can determine the appropriate sample size for a study (Faul, Erdfelder, Buchner, & Lang, 2009; Simon, 2013). Calculating the minimum sample size for this research study was performed by using G*Power (Version 3.1.9.2). The sample size calculation from G*Power was 107 for this study.

Generalizability to larger populations. External validity and the ability to generalize the findings to a larger population, according to Campbell and Stanley (2010), is dependent on whether test samples are selected randomly from a larger population or assigned based on a specific population. The selection of companies in this research study included criteria that indices assess public companies that have undertaken innovation

efforts and have visible brands. Therefore, generalizing the findings of this study to broader populations that may not strictly meet the selection criteria may be difficult. Also, Campbell and Stanley suggested that reverse correlation could also be a factor. Therefore, excising caution is necessary when reporting the results of correlation as quasiexperiments differ from pre and post results of true experiments (Craig & Metze, 1979). Latham (2014) also noted the importance of taking caution when generalizing the findings of quantitative research when evaluating senior leadership performance given the difficulty in isolating all possible variables. While the sample size may be large enough to address statistical errors of sample size and Type I errors, Ongori and Agolla (2008) noted there are limitations concerning the generalizability of the results to populations located in other countries due to sample size, cultural differences, and business practices. Therefore, conducting additional research or replicating this research using companies located in specific countries may help to address the noted constraints.

Reliability of the instruments. As noted by Simon (2013), the reliability of an instrument refers to the consistency of assessment scores derived from its use. In other words, scores derived from the repeated use of an instrument should be consistently stable and accurate with repeated use of the instrument (Simon, 2013). As Drummond and Vowler (2012) noted, independent variables are known as the input values that provides an explanation for the change in the dependent variable. Having confidence in the use of an instrument to provide accurate and consistent results with repeated use provides instrumentation reliability (Simon, 2013). While Campbell and Stanley (2010) noted that reliability is a requirement for establishing validity, a reliable assessment is not

always deemed to be valid. Simon suggested using the most reliable instrument available when conducting a study. To address the reliability of the Forbes WMIC, Forbes and Credit Suisse HOLT uses several processes to maintain the consistency and accuracy of its research including monitoring of publically available data from news sources, financial markets, and company financial reports. Other data metrics include R&D spending, key financial metrics such as sales, profit margins, and market capitalization based on averaging share prices (Dyer & Gregersen, 2015). The methodology remains consistent from the original launch date (Dyer & Gregersen, 2015).

To address the reliability of the Brand Value Index, Interbrand uses several processes to maintain the consistency and accuracy of its research (Interbrand Methodology, 2015). Interbrand uses publicly available financial data, monitors daily financial data feeds from several sources including Thomson Reuters, social media feeds such as Twitter, and consumer goods data on volumes and values from Datamonitor (Interbrand Methodology, 2015). Interbrand uses the information it collects to predict the future financial performance of company brands (Interbrand Methodology, 2015).

To address the issue of reliability of the DJSI, Dow Jones uses several processes to maintain the consistency and accuracy of its research (Robecosam Sustainability Investing, 2014). The DJSI launched in 1999 through a collaborative effort between the Dow Jones Indices and RobecoSAM (Robecosam Sustainability Investing, 2014). As part of the assessment process since its inception, the DJSI reviews, refines, and updates the DJSI annually (Robecosam Sustainability Investing, 2014). DJSI collects data from companies using a proprietary questionnaire and from disclosures to stock exchange

commissions (Robecosam Sustainability Investing, 2014). In addition to the annual questionnaire and review of stock exchange filings, other components used to assess corporate sustainability include ongoing monitoring of media news feeds, publicly available information from stakeholders, consumer organizations, NGOs, and government agencies (Robecosam Sustainability Investing, 2014). Contacting companies directly helps to clarify discrepancies between information captured in a company's questionnaire response and on-going media reports (Robecosam Sustainability Investing, 2014). Several analysts review the information from all sources annually to ensure the quality, consistency, and reliability of the data collection, analysis and reporting process (Robecosam Sustainability Investing, 2014). The database stakeholders do not provide detailed information on the reliability of their respected instruments.

Transition and Summary

In Section 2, I reiterated the purpose of this study and the rationale for conducting the research, outline the role of the researcher, and identified and provided the rationale for the selected research method and design. In Section 2, I addressed ethical research issues, the data collection process, sampling, instrumentation, and statistical validity of the study. In Section 3, I present my research findings including the provision of the data analysis, descriptive statistics, an interpretation of the findings, a discussion on applying the findings to professional practice, implications for social change, and recommendations for action and further research. I also conclude Section 3 with a brief summary.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlation study was to examine the relationship between innovation rankings, brand valuation, and economic sustainability. The specific business problem addressed whether TMTs exhibit a perception that investing in innovation and brand valuation has an effect on long-term financial sustainability. While senior business leaders have indicated an innovation gap may exist, TMTs may act consistently without understanding the relationship between innovation and sustainability and between brand valuation and sustainability. I hypothesized that if TMTs supported higher levels of innovation and brand building in the short-term, such actions could narrow the innovation gap and contribute to sustainability. For the first set of related hypotheses, I rejected the null hypothesis. The findings of the study illustrated there is a small statistically significant positive relationship between innovation ranking and sustainability. The study findings provide an indication that no statistically significant relationship between brand valuation and sustainability existed. For the second set of related hypotheses, I did not reject the null hypothesis. In Section 3, I provide a description of the study, present the findings, and discuss the applicability of the findings to the professional practice of business. I also provide recommendations and with implications for social change, recommendations for further study, a summary, and conclusions.

Presentation of the Findings

To examine the research question, using standard multiple regression with $\alpha = .05$ (two-tailed), I examined innovation ranking and brand value to predict the variation in sustainability index scores. The independent variables were innovation ranking and brand value. The dependent variable was sustainability index scores. The null hypothesis was that innovation and brand would not significantly predict sustainability index scores. The alternative hypothesis was that innovation and brand would significantly predict sustainability scores. Reported observations for innovation ranking ranged from 0 to 100, with a mean observation of 26.580 ($SD = 32.864$). Brand value measurement is in millions of dollars and observations ranged from \$1,000 to \$170,276 with a mean observation of \$9,498.06 ($SD = 18,908.897$). Sustainability index observations ranged from a score of 1.00 to 7.00, with an average observation of 1.99 ($SD = 1.612$). The presentation of descriptive statistics for continuous variables is in Table 1.

Table 1

Means and Standard Deviations for Continuous Variables (N = 190)

Variable	<i>M</i>	<i>SD</i>
Innovation Rank	26.580	32.864
Brand Value	9,498.060	18,908.897
Sustainability Score 2015	1.99	1.612

Using preliminary analyses, I assessed the assumptions of normality, linearity, homoscedasticity, and independence of residuals. Tests to determine if the data met the assumption of collinearity indicated that multicollinearity was not violated (Innovation Rank, Tolerance = .910, VIF = 1.099; Brand Value, Tolerance = .910, VIF = 1.099). The

data met the assumption of independence of residuals as the Durbin-Watson value = 2.31, which is close to the desired value of 2, and indicative of no serious violations. The output of the model as a whole was able to significantly predict sustainability index at the .05 level, $F(2,187) = 6.382$, $p = .002$, $R^2 = .064$. The effect size of $R^2 = .064$ indicated that approximately 6.4% of the variation in sustainability index accounts for the linear combination of the predictor variables (innovation and brand). The adjusted R^2 of $R^2 = .054$, where 5.4% accounted for the effect that innovation and brand had on the sustainability index when R^2 was adjusted. An effect size of less than .06 ($R^2 < .06$) is considered small (Green & Salkind, 2014). The variation of the predictor variables on sustainability index in the model is considered small. In the preliminary model using a confidence level of .05, innovation ranking ($\beta = -.199$, $p = .008$) accounted for a higher contribution to the model than brand and provided a variation in sustainability. Brand value ($\beta = .107$, $p = .149$) was not statistically significant as shown in Table 2.

Table 2

Results for Multiple Linear Regression with 2015 Data for Innovation Ranking and Brand Value predicting Sustainability Index (N = 190)

Model	<i>B</i>	<i>SE</i>	<i>Std. B</i>	<i>t</i>	<i>p</i>
(Constant)	2.167	.171		12.642	.000
Innovation Ranking	-.010	.004	-.199	-2.680	.008*
Brand Value	9.157	.000	0.107	1.448	.149

Note. * $p < .05$; $F(2,187) = 6.382$, $p = .002$, $R^2 = .064$.

Bootstrapping contributes to the final regression model. In the final model, innovation was statistically significant with innovation ranking contributing to the model

($p = .010$). Brand value was not statistically significant ($p = .149$) and did not provide a variation to sustainability.

Main Research Question

The overall research question asked, *What is the relationship between innovation ranking, brand valuation, and economic sustainability?* The intent of the research question was to determine whether innovation ranking and brand valuation are predictors of economic sustainability.

Research Question 1

Research question 1 had two related sets of hypotheses:

Null Hypothesis (H_0 1): There is no relationship between innovation ranking and economic sustainability.

Alternative Hypothesis (H_a 1): There is a relationship between innovation ranking and economic sustainability.

The first hypothesis represented by Null Hypothesis 1 predicted that innovation ranking and sustainability were not related. From the regression model, the results showed that innovation ranking does contribute to the variation in sustainability although the effect size is considered small. Innovation ranking contributed a small statistically significant effect on sustainability. Based on the findings, the null hypothesis was rejected. Rejecting the null hypothesis requires caution considering the small effect size innovation ranking contributed to variation in sustainability index.

Research Question 2

The second hypothesis Null Hypothesis 2 predicted that brand value and sustainability were not related:

Null Hypothesis (H_02): There is no relationship between brand valuation and economic sustainability.

Alternative Hypothesis (H_a2): There is a relationship between brand valuation and economic sustainability.

From the regression model, the results showed that brand value does not contribute to the variation in sustainability given that brand value was not statistically significant. Based on the findings, the null hypothesis was not rejected. Accepting the null hypothesis indicates that brand value does not contribute to sustainability index.

Delay Effect

As noted by Bogliacino and Pianta (2013), the existence of a lag between innovation efforts linked to process improvements and profits is typically 3 years. Given a possible delay between the occurrence of innovation efforts and the measurement of sustainability, I replicated the test procedure with same cases ($N = 190$). Innovation ranking and brand value data from 2012 was used to determine variations in 2015 sustainability scores. The data met the assumption of independence of residuals as the Durbin-Watson value = 1.763. However, the output of the model as a whole indicated the model was not able to significantly predict a variance in the sustainability index at the .05 level, $F(2,187) = .804, p = .449, R^2 = .009$. The effect size of $R^2 = .009$ indicated that approximately <1% of the variation in sustainability index was accounted for by the

linear combination of the predictor variables. Using a confidence level of .05, innovation ranking, innovation rank yielded ($\beta = .320, p = .432$), and brand value was calculated at ($\beta = -.388, p = .342$). Innovation ranking or brand value were not statistically significant and did not provide a variation in sustainability scores as noted in Table 3.

Table 3

Results for Multiple Linear Regression with 2012 Data for Innovation Ranking and Brand Value predicting 2015 Sustainability Index (N = 190)

Model	B	SE	Std. B	t	p
(Constant)	2.067	.130		15.860	.000
Innovation Ranking	.020	.026	.320	.788	.432*
Brand Value	-4.484	.000	-.388	-.953	.342*

Note. * $p > .05$; $F(2,187) = .804, p = .449, R^2 = .009$.

Consideration of the findings derived from the model indicated it is possible to answer the research question, *What is the relationship between innovation ranking, brand valuation, and economic sustainability?* In summary, innovation ranking has a small but statistically significant relationship with sustainability and brand valuation does not have a statistically significant relationship with sustainability. Exercising caution is necessary when interpreting the findings given innovation had a small effect on sustainability using 2015 data to drive the model. Using 2012 data for the predictor variables and using 2015 data for the dependent variable to address a possible delay from innovation efforts and sustainability measurement, no statistically significant relationship exists. Given the findings, the overall research question can be answered, but caution must be exercised interpreting the findings.

The theoretical frameworks used to formulate the research questions included Sood and Tellis's (2011) theory of limited market disruption auguring that most innovation is higher-priced and introduced by incumbents; Morris's (2013) theory of innovation on a continuum from continuous incremental, discontinuous disruptive innovation, and business model innovation warfare; and Legrand and Weiss's (2011) innovation gap theory attributable to TMTs focus on immediate financials. To address the innovation gap, Kotter (2013) and Dierk and Dover (2012) noted that CEOs must push their TMTs and boards to balance short-term with long-term goals. To develop an ambidextrous organization, Dierk and Dover suggested that balancing short-term exploitation to address immediate financial objectives is possible, but long-term exploration derived from innovation efforts is a requirement for sustainability. Legrand and Weiss suggested that when TMTs focus on short-term goals at the exclusion of investing in innovation activities, achieving the desired level of innovation is impeded and potentially affects sustainability negatively.

While the research results could not provide a definitive relationship between innovation ranking, brand value, and sustainability, some companies in the sample were ranked high on sustainability but not on innovation. For example, Palma and Visser (2012) noted that companies such as Philips are highly innovative, have a strong global brand presence, and are led by a TMT focused on innovation and sustainability. However, Philips is evaluated as not being innovative according to the innovation ranking. In reviewing cases in the raw data, some top companies that operate in the technology sector and exhibited strong brand value and presence received notable

evaluations as not sustainable or highly innovative by the data providers. Some firms evaluated as highly innovative tended not to be as well-known as the top brands. The equivocal firm rankings on different measures may explain why innovation ranking had only a small statistically significant effect on sustainability and why brand value did not have a statistically significant effect on sustainability using 2015 data. Although there was an expectation of a stronger relationship between innovation ranking and brand value, and sustainability in my study, innovation efforts should not be abandoned by organizations nor should investing in brands be suspended. My research findings might apply to the sample I analyzed and may not generalize to a larger population. Innovation efforts are still required to meet long-term objectives including goals of sustainability as outlined in the literature.

Applications to Professional Practice

In this quantitative research study, I examined the relationship between innovation ranking, brand valuation, and the effect on sustainability using a sample of global companies. The results of the study indicate a small statistically significant relationship between innovation and sustainability. A relationship between brand and sustainability was not statistically significant.

The statistically significant relationship between innovation and sustainability and the lack of a statistically significant relationship between brand and sustainability is relevant given the range and mix of firms that were part of the sample used to conduct the study. A stronger correlation between innovation and sustainability would ideally provide further evidence to TMTs and boards to support investing in innovation efforts.

Correlation between brand and sustainability would provide evidence that efforts to create strong brands positively affect sustainable performance. The positive linkage between innovation and sustainability provides a case for TMTs to take an ambidextrous approach and balance short-term exploitative goals with long-term investments in innovation. Given the strength of the relationship between innovation and sustainability, and the lack of a relationship between brand and innovation, limits on the generalization of the findings should be to the sample used. Several organizations included in this study did not rank as top innovators, nor were some organizations ranked as highly sustainable yet they invest billions annually in innovation efforts, have highly recognizable brands, and invest in sustainability efforts. Some organizations are consistently ranked as top innovators with well-recognized brands while their innovation rankings, brand value, and sustainability index scores tend to fluctuate year-to-year.

TMTs, boards, and financiers who make decisions between immediate and long-term fiscal objectives do not necessarily have to trade off short- and long-term objectives. Cristina (2013) noted that innovation efforts must be deliberate. As innovation efforts increase, organizations can develop unique and differentiated product and service offerings that create demand over other offerings adding value to the organization (Cristina, 2013). When products and services are unique, new markets and market share gains can contribute additional revenue (Kotter, 2013). Coupled with innovation, brand valuation allows firms to develop greater awareness of new products, services, and new processes by using advertising to differentiate, frame and reinforce a positive product experience in customers' minds (Huang & Sarigollu, 2014). Riedesel (2011) asserted that

consumers often buy products or services they know, are comfortable with, and make them feel good. Positive emotional responses to brands requires effort on the part of companies to build brand awareness and a connectedness to brand to realize a revenue premium. The implication is innovation efforts contribute to the development of differentiated products and services. Branding efforts build awareness and connectedness to products and services to increase revenue. As such, the results of this study point out (a) innovation has a statistically significant relationship to sustainability, (b) TMTs should continue to invest in innovation efforts because innovation is important to sustainability, and (c) TMTs should pursue innovation strategies to support their brand with products and services customers perceive as being CSR to which customers can relate.

Implications for Social Change

The implications for social change from the study results follow. In this research study, the research questions were the basis for examining the relationship between the independent variables innovation and brand, and the dependent variable sustainability. In the literature review, Legrand and Weiss (2011) asserted that TMTs observed a gap between the expected level of innovation and the level of innovation achieved. Achieving sustainability is important given that the three components of sustainability include the interdependence of (a) environmental responsibility, (b) social responsibility, and (c) financial performance (Sayem, 2012). Business strategy, brand strategy, and people strategy also have an interdependency (Holland & Weathers, 2013). Given the

interdependencies, innovation efforts at various levels are required to support true change.

In my study, the effect size between innovation and sustainability was small yet statistically significant indicating possible improvement to organizational and social performance. Given society's demand for more socially responsible products and behaviors (Edvardsson & Enquist, 2011), innovation efforts should be a top priority for organizations. Positive social implications of innovation include the ability of firms to create employment opportunities and underpin a better standard of living for society as a whole. Innovation is a means of securing future social, environmental, and economic sustainability (Miller, 2012). The positive linkage of innovation to sustainability should provide impetus for organizations to innovate and develop environmentally responsible products, processes, and services. The business community and society as a whole are likely to benefit from ongoing innovation efforts and the associated rewards of employment, living standards, and environmental stewardship.

While the findings of this research did not provide evidence of a relationship between brand and sustainability, greater awareness of sustainability issues dictate the need for organizations to heighten their perception as CSR leaders. Consumer perceptions of corporate brands are likely to benefit from CSR efforts given the halo effect placed on the products and services of organizations perceived to be CSR leaders (Chernev & Blair, 2015). Given CSR behaviors affect brand and financial performance, brands are rewarded or punished by consumer perception (Chernev & Blair, 2015). Awareness of CSR actions on brand perception influence how companies develop new products, services, and

processes (Chernev & Blair, 2015). Organizations investing in their corporate brand through innovation efforts and CSR behaviors are likely to develop products and processes that benefit consumers, the environment, and society as a whole. As companies understand brand perception can affect demand for an organization's products and services (Olsen et al., 2014), the social implication is firms should engage in positive CSR behaviors.

Recommendations for Action

Assessing the research findings provided an opportunity to recommend actions. As evidenced in this study and as noted in Section 1, innovation efforts positively contribute to sustainability and financial performance. Innovation efforts may assist organizations to develop new products, services, and processes to achieve higher levels of competitiveness, reduce emissions, and support responsible use of resources and labor. Based on the findings from the research study, TMTs should prioritize the development of new products, services, business models, and processes through innovation efforts that can deliver the social, environmental, and economic benefits associated with sustainability. While brand did not have a statistically significant relationship with sustainability in this study, CSR behaviors are closely associated with brand perception (Chernev & Blair, 2015). CSR behaviors associated with the responsible use of resources, labor, and the reduction in emissions will require innovation (Olsen et al., 2014). Therefore, it is recommended organizations engage in innovation efforts to develop products, services, and processes that contribute to sustainability as such action will also positively affect consumer brand perception. To disseminate the results of this study, I

intend to develop an article and explore publishing the results in a scholarly journal such as the Journal of Executive Education, Business Strategy and the Environment, the Strategic Management Journal, or the Journal of Leadership, Accountability & Ethics.

Recommendations for Further Research

As noted in the Applications to Professional Practice section, a small statistically significant relationship between innovation ranking and sustainability index scores is a result of this research. The study results indicate the relationship between brand and sustainability is not statistically significant and possibly attributable to limitations of the research. While the data collected met the objectives for this research study, limited generalizations can only be made given the sample of companies used and noted constraints. The limitations of the research include restrictions on the companies used in the study and specifically how each measurement evaluated the companies examined. While each data provider evaluated thousands of companies on an annual basis, including less than the top 10% in the study constrained the ability to use both larger and more comprehensive data sets. Future researchers might utilize additional data, or consider using other measurements from other data providers who use different methodologies to evaluate innovation and brand as noted in Section 1. Data from companies used in the study were from a variety of industry sectors as reported by the data providers. Future researchers might segment and examine data for specific industries or industrial classifications given that the overall performance metrics may differ between industries. Examining the variables by sector is recommended. Opportunities for future research may also focus on examining the variance between companies for each measurement tool

as measurement scores for some companies are consistent year-to-year while others exhibited fluctuations. The reasons behind significant fluctuation between measures require further examination. A future researcher might also consider using other statistical approaches such as ANOVA and Spearman's correlation using industry sector specific data to strengthen the analysis of future studies.

Reflections

The research I performed in this study examined the relationship between innovation, brand, and sustainability. The research experience was gratifying for several reasons. First, the literature review provided insight into the innovation gap as cited by many TMTs. The research opportunity provided a deeper understanding of how the innovation gap is a business problem affecting TMTs, boards, and investors. The challenge for senior leaders is to balance short-term goals and need for immediate financial results with long-term goals (Dierk & Dover, 2012; Kotter, 2013). Additionally, when scrutinizing possible sources for the innovation gap, the evidence of locked-in mindsets specific to CEO and TMT behaviors as noted by Morris (2013) is enlightening. Short-term and long-term goals tend to be in a state of conflict, as some stakeholders prefer to retain the status quo demanding immediate financial results while eschewing risks associated with funding innovation efforts (Dierk & Dover, 2012). Second, the literature review uncovered the importance of several elements TMTs must address within their organizations including (a) the distinctive dimensions of innovation (Morris, 2013), (b) the importance of innovation efforts to remain competitive or lead in dynamic markets (Heij et al., 2014), (c) the contribution and role of brand to position an

organization as relevant and sought after by customers (Daley, 2014; Gregory, 2013), (d) the role CEOs play in setting the organizational agenda concerning ambidexterity and innovation efforts (Dierk & Dover, 2012), and (e) the effectiveness of establishing innovation divisions outside of operational businesses to foster experimentation (Bhattacharyya, 2006; Blackshaw, 2014; Hess, 2012). Third, the literature review elucidated imperative elements of branding underscoring the need for valence, repetition, the uniqueness of messaging, the power of earned media over paid media, the authenticity of messaging, and customer expectations for proactive CSR (Edvardsson & Enquist, 2011; McKinney & Benson, 2013; Riedesel, 2011). Fourth, the research experience (a) provided greater awareness of known research methods and designs, (b) challenged and broadened my knowledge of the research process, and (c) provided an effective lens to evaluate challenging business problems. Finally, the research experience provided an enhanced appreciation of the need to apply research principles and standard practices to address important business problems.

Summary and Study Conclusions

Addressing a perceived innovation gap by TMTs was the impetus for this research study. The purpose of the investigation was to examine whether a relationship existed between the independent variables innovation and brand, and the dependent variable sustainability. The intent of the research was to gain insight into the innovation gap causes, remedies, and the potential effect on financial performance. To understand the linkage between innovation, brand, and sustainability, the relationship between innovation, brand, and sustainable financial performance was examined using global

companies. The relationship between innovation, brand, and sustainability is relevant to TMTs who must balance short-term and long-term goals given that innovation requires a deliberate decision to exploit immediate financial gains or invest in uncertain future opportunities. The results from the research revealed a small statistically significant relationship between innovation and sustainability, and no relationship between brand and sustainability using 2015 data. To determine if the results could be attributable to a delayed effect given innovation efforts results or branding efforts may not be immediately apparent, the test procedure was repeated using 2012 data for innovation and brand to determine the variation in 2015 sustainability. The results of the delayed measurement procedure showed no statistically significant relationship between innovation, brand, and sustainability. The results derived from the second procedure are likely due to the year-to-year fluctuation of innovation and brand measurements. Based on the research findings, the correlation between variables may be attributable to the restricted range of company data available. Employing an industrial segmentation strategy may have also yielded different results. In summary, a small relationship exists between innovation and sustainability thereby reinforcing encouragement for TMTs to invest in innovation efforts.

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Appendix A: Data Use Agreement

Data Use Agreement

This Data Use Agreement (“Agreement”), effective as of January 17, 2016 (“Effective Date”), is entered into by and between Wayne Stamler (“Data Recipient”) and Dow Jones Robecosam (“Data Provider”). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set (“LDS”) for use in research **in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient’s educational program.** In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. Definitions. Due to the study’s affiliation with Laureate, a USA-based company, unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the USA “HIPAA Regulations” and/or “FERPA Regulations” codified in the United States Code of Federal Regulations, as amended from time to time.
2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient’s educational program.
3. Data Fields in the LDS. **No direct identifiers such as names may be included in the Limited Data Set (LDS).** In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research: the datapoints the partner site will be providing include the ranking of every global company who participated and was evaluated by DJSI for each year between 2010 and 2015 inclusive.
4. Responsibilities of Data Recipient. Data Recipient agrees to:
 - a. Use or disclose the LDS only as permitted by this Agreement or as required by law;
 - b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
 - c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;
 - d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

- e. Not use the information in the LDS to identify or contact the individuals who are data subjects.
5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS **for its Research activities only.**
6. Term and Termination.
- a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.
 - b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.
 - c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.
 - d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.
 - e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.
7. Miscellaneous.
- a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.
 - b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

- c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.
- d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.
- e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

DATA RECIPIENT

Signed: _____

Signed:  _____

Print Name: _____

Print Name: Wayne Stamler

Print Title: _____

Print Title: DBA Candidate
Walden University

DJSI Personal Code: XXXXXXXX

Appendix B: Confidentiality and Nondisclosure Agreement

Confidentiality and Nondisclosure Agreement

RobecoSAM AG, its licensors (including, without limitation, DJI Opco, LLC, a subsidiary of S&P Dow Jones Indices LLC), its successors and affiliates (collectively, the "Group") may provide Wayne Stamler (collectively, "Research Team" or "Recipient") with confidential information concerning any of the Dow Jones Sustainability World Index (the "Index") and related indexes and sub indexes (the "Sub-Indexes") (collectively, the "Indexes") so that Recipient may use it for the sole purpose of conducting academic research within and limited to the scope as described in the Appendix A and with no intention to commercialize the results of the research. For this research, the Group has disclosed and will be disclosing Confidential Information to the Recipient and the parties agree to protect such Confidential Information according to the terms and conditions set forth in this Agreement.

In consideration of the Group's providing Recipient with the Confidential Information, and for other good and valuable consideration the receipt and sufficiency are hereby acknowledged by the parties.

1. Confidential Information. The Confidential Information is comprised of proprietary or confidential information and may include, without limitation (a) a list of the component stocks of the Indexes, (b) the weightings of such components, (c) the divisor of the Indexes, (d) information concerning the methodology of calculating the Indexes, (e) securities data related to the Indexes (including, without limitation, component identifiers, shares outstanding and exchange-rate information) and (d) technical information related to the compilation, calculation and distribution of the Indexes.

2. Restrictions on Use. The Recipient shall keep in strict confidence the Group's Confidential Information and undertakes to share the Confidential Information solely with the persons defined in Appendix B. Such persons shall personally respect the confidentiality obligations as defined under this Agreement and the Recipient shall therefore have all persons sign an agreement by which they undertake to comply with said obligations. The Recipient may add additional persons to Appendix B of this confidentiality agreement.

The Recipient agrees that neither the Confidential Information nor any results or products derived thereof must be neither used for any other purpose than stated above nor disclosed to any third Party unless explicitly approved by the Group in writing.

The Recipient agrees to use the Confidential Information solely for the research described and shall not make any commercial use of any such Confidential Information.

The Recipient agrees to publish any results strictly in a way that does not allow linking the findings to any particular entity of which the Group has disclosed or will disclose Confidential Information, and agrees that any publication in writing via any means or media of any results obtained with the help of the Confidential Information is withheld until the Group has given its approval.



Upon completion of the project, the Recipient will provide the Group with at least one electronic copy of their final report or study (or similar end product).

3. Exclusions. Notwithstanding the foregoing, Confidential Information shall not include any information to the extent it: (i) is or becomes a part of the public domain through no act or omission on the part of Recipient or its agents; (ii) is disclosed to third parties by the Group without restriction; (iii) is in Recipient's possession, without actual or constructive knowledge of an obligation of confidentiality with respect thereto, at or prior to the time of disclosure under this Agreement; (iv) is disclosed to Recipient by a third party having no obligation of confidentiality with respect thereto; (v) is independently developed by Recipient without reference to the Confidential Information; or (vi) is required to be disclosed by law.

4. Disclaimer. Recipient understands and agrees that the Group shall have the right at any time to change or discontinue all or any portion of the Confidential Information. ALL CONFIDENTIAL INFORMATION IS PROVIDED "AS IS". THE GROUP DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, GUARANTIES OR REPRESENTATIONS AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, COMPLETENESS AND COMPLIANCE WITH SUSTAINABILITY PRINCIPLES, WITH RESPECT TO THE CONFIDENTIAL INFORMATION.

5. Miscellaneous. Recipient acknowledges and agrees that the Indexes, divisors, formulas and methods used to compute the Indexes, are (i) the exclusive intellectual property of the Group or its licensors, (ii) trade secrets, (iii) not within the public domain and (iv) protected by copyright. The Group does not grant Recipient any license, by implication or otherwise, to use any Confidential Information, except as expressly provided herein. The Group may terminate this Agreement at any time upon written notice to Recipient. Immediately upon such termination, Recipient shall, at its expense, return or destroy, at the Group's option, all copies (including electronic copies) of Confidential Information in Recipient's possession. If Recipient breaches this Agreement, the Group shall be entitled, in addition to any other rights available at law or in equity, to immediate injunctive

relief without requirement to post a bond or other security. The confidentiality and nonuse obligations hereunder shall survive the termination of this Agreement in perpetuity. This Agreement shall be governed by the laws of Switzerland, without regard to principles of conflicts of laws.

By  DJSI Personal Code: 

Name: Wayne Stamler DBA Candidate

Date: January 15, 2016


Name: Dr. John Hannon Committee Chair

Date: January 15, 2016