LEADERSHIP STYLE AND SUSTAINABLE INNOVATION ADOPTION: A SYSTEMATIC REVIEW

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Abstract

Leadership style and adoption of sustainable innovation have been the focus of many research studies during the last two decades. There are an increasing number of primary research studies and traditional literature reviews on the subject. Both management researchers and practitioners argue that leadership style plays a key role in sustainable innovation adoption. However, there is no collective body of evidence examining this relationship. This paper is a systematic review of the literature on the relationship between leadership style and sustainable innovation adoption. A thematic analysis of 15 studies randomly selected from a sampling frame of 100 screened and qualified research papers was performed. The analysis revealed that sustainable, strategic, transformational, and transactional leadership are the leadership styles most commonly associated with sustainable innovation adoption, and that strategic and transformational leadership are components of sustainable leadership. The review also found that there are certain factors that moderate the relationship between leadership style and sustainable innovation adoption. These factors include stakeholder engagement, leadership commitment, knowledge management, and organizational culture. In light of these findings, a theoretical framework was proposed, implications for practitioners were defined, and an agenda for future research was provided.

Key words: leadership style, leader behavior, sustainability, sustainable innovation adoption

Leadership Style and Sustainable Innovation Adoption

Leader behavior has been associated with both organizational success (Beatty & Quinn, 2010; Lopez & Ensari, 2014) and failure (McCartney & Campbell, 2006). Similarly, culture has been identified by both management professionals and researchers as a critical success factor in organizations (Mintzberg, 1992, p.40). In fact, Schein (2010) argued that senior managers and organizational leaders have the responsibility to develop organizational processes and espouse an organizational culture that is aligned with their strategic objectives (p. 23). Therefore, one may hypothesize that there is a direct relationship between leadership style, organizational culture, and organizational goal achievement. Organizational objectives may vary from one period to another or from one organization to another, but broadly speaking, organizations want to either maintain or develop a competitive advantage. According to Porter (1998), a firm's intentions are usually expressed in its strategies, which include corporate, competitive, and functional strategies. However, Hammer and Champy (1993) argued that an organization's processes provide valuable insights on its direction.

One business process that has recently been associated with competitive advantage is sustainable innovation (Avery & Bergsteiner, 2011; Gauthier & Wooldridge, 2012; Goleman & Lueneburger, 2010; Larson, 2000; Trifilova, Bessant, Jia, & Gosling, 2013). If, as is argued by the aforementioned scholar practitioners, leadership style significantly affects organizational objectives, and sustainable innovation leads to a competitive advantage, it is of utmost importance for both management theorists and practitioners to understand the types of leadership style that enable sustainable innovation adoption. One way to facilitate this understanding is through a systematic review of the literature. Prior literature reviews on the relationship between leadership style and sustainable innovation adoption were unsystematic in their processes and unclear in their objectives; they focused on narrow aspects of sustainable innovation such as sustainable new product development (Gmelin & Seuring, 2014) and resonant leadership or sustainable innovation in India (Lenka & Tiwari, 2016). These reviews are integrated in this study for continuity purposes.

This systematic review addresses one fundamental question: what leadership styles enable sustainable innovation adoption? The aim of the study is to develop a theoretical framework which can provide management researchers, organizational decision makers, and practitioners a better understanding of the leadership styles that enable sustainable innovation adoption and concurrently define an agenda for future research.

Leadership Styles

House and Aditya (1997) defined leadership style as "the manner by which leaders express specific behaviors" (p. 23). This definition implies that leadership is both a process and an observed behavior. Hersey and Blanchard (1974) proposed a similar definition. They defined leadership style as "the consistent patterns of behavior which you exhibit, as perceived by others, when you are attempting to influence the activities of people" (p.34). Hersey and Blanchard highlighted four dimensions of leadership: personality, situation, task or activity, and the attributes of the followers/subordinates. The concept of leadership style may be traced back at least to the Old Testament. The book of Exodus 18:17-23 (New International Version) explains the struggle of Moses, to delegate power and authority. Under the advice of his father-in-law, Jethro, Moses changed his leadership style from centralistic to delegative. However, the modern literature on leadership style is rooted in the work of Kurt Lewin and his colleagues (Lewin, Lippit, & White, 1939). In a series of controlled laboratory experiments, Lewin, Lippitt, and White (1939) simulated various leader behaviors, namely, autocratic, democratic, and laissez-faire, to study aggressive behavior of boys in boy's clubs. The experiments showed that leaders could successfully adjust their behavior to create a particular social atmosphere based on social norms and group activity requirements. These experimental studies provide a solid underpinning for all leadership research studies on leader behavior. Many researchers have built on the idea of leadership style (Katz et al., 1951; Fleishman, 1953; Blake

& Mouton, 1964/1982; Bass et al., 1975; Bass, 1985; Likert, 1977) and leadership as a process (Vroom, 1973) and an adaptive behavior (Nelson, Zaccaro, & Herman, 2010) which depends on the environment or the context (Fiedler, 1972; Hersey & Blanchard, 1974; House, 1971). However, there is the issue of ecological validity (Burns & Burns, 2008; Denzin & Lincoln, 2011; Furlong & Oancea, 2007) of the experiments that cannot be ignored. Ecological validity affects the generalizability of a research study's findings to other environmental contexts, which is a considerable weakness of Lewin's studies. Studies of 10 year old boys in a laboratory setting do not reflect the workplace reality in any way, shape, or form.

The Survey Research Center Institute for Social Research at the University of Michigan - Ann Arbor conducted a series of empirical studies on leader behavior, employee morale, and productivity (Katz, Maccoby, Gurin, & Floor, 1951). Researchers involved in the research program included Daniel Katz, Robert L. Kahn, Rensis Likert, Floyd C. Mann, Stanley E. Seashore, Dorwin Cartwright, Ronald Lippitt (a student of Kurt Lewin), to name only a few. The objectives of the study were 1) to examine the relationship between supervisory attitudes and behavior, and group productivity of railroad workers; and 2) to assess the relationship between productivity and worker morale (p.1). Data were collected using both interviews and survey questionnaire. Data were collected from workers, supervisors, and the supervisors of the supervisors. Using correlation and factor analyses, two dimensions of leadership were identified: production-orientation and employee-orientation behavior. The study found that supervisors who emphasized employee-relationship were more productive than those who were more work-oriented (p. XI).

These research programs were a significant contribution to the leadership literature and remain an essential subject in all leadership debates. These studies have also served as the foundation for many leadership theorists (Blake & Mouton, 1964/1982; Likert, 1977). For many, however, the results of these studies were not very convincing. Many argued that the positive relationship found between employee-

relationship behavior and productivity could have been due to so-called Hawthorne effect; that is, the tendency for workers to adjust their behavior due to the awareness of being watched (McCambridge, Witton, & Elbourne, 2014; Parsons, 1974). Concurrent to the studies conducted at the University of Michigan, was a series of study conducted by the Bureau of Business Research at the Ohio State University. These studies are accurately described in Fleishman (1953) and Stogdill, Shartle, Scott, Coons, and Jaynes (1956). Fleishman (1953) reported the development of a research instrument to measure socio-psychological aspects of leadership in various leader-group situations (p. 153). The original instrument was designed with 1,800 items classified into nine categories. After expert judgment, the number of items was reduced to 150 (Fleishman, 1953, p. 1). Fleishman used the instrument to collect data from 122 foremen, 394 workers, and 60 supervisors in one plant. Fleishman used factor analysis to analyze several dimensions of leadership and two factors were properly loaded: initiating structure behavior and consideration behavior. The study found that the dimensions of initiating structure behavior and consideration behavior were significant as demonstrated through factor loading and were as meaningful and as independent in the attitudinal domain of leadership as in the behavioral realm (pp. 155-156). Initiating structure was defined to mean "the extent to which the supervisor facilitates or defines group interactions toward goal attainment" (p. 154). The consideration behavior factor was defined to mean "the extent to which you are considerate of the feelings of those you supervise" (p. 154).

Similar to studies conducted at the University of Michigan, Fleishman took a positivist stance in this study. He used factor analysis to assess the fit of each component in a factor. There is, however, an important technical issue that needs to be addressed; that is, to provide reliable information, factor analysis requires data that meet certain assumptions (Burns & Burns, 2008). If the data don't meet these assumptions, the statistical analysis may be misleading (Cryer & Miller, 1994). A key assumption in factor analysis is that the data approximately follow a normal distribution. Although Fleishman had a

large enough sample of 325 workers and 122 foremen, no normality test was performed. This sample may seem to be adequate, but a sampling adequacy test would have also been enlightening (Fisher, 1983). Stogdill et al. (1956) unsatisfactorily addressed the issue of normality (p. 124). In contrast to the studies at the University of Michigan, the Bureau of Business Research at the Ohio State University argued that the two leadership dimensions, namely, initiating structure behavior and consideration factors, are independent factors; that is, they do not exist on a single continuum (Fleishman, 1953). A conceptual but more serious criticism of this study is that the leadership dimensions were oversimplified (Yukl, 1999, 2012). For example, the context of the work environment was not integrated in the study. Lewin (1936/1967) would have agreed with this criticism. He argued that a behavior was a function of the person and the environment [B = f(P, E)]. Studies involving human behavior should take the context or the environment into consideration. Despite their weaknesses, these research studies contribute greatly to our understanding of leadership as a process and as a behavior.

This literature review shows that most research studies on leadership style are cross-sectional in design and treat leadership as a binary construct, namely, production-oriented or employee-oriented (Katz et al., 1951), initiating structure or consideration (Fleishman, 1953), transactional or transformational (Avolio, Bass, & Jung, 1999; Bass, 1985; Burns, 1978). This over-simplification of human behavior in organizations provides practitioners with helpful insights but is largely insufficient as input to the decision making process in a global, complex, and open organizational system. Furthermore, translating complex human behavior into a construct of two factors is practically impossible. Many studies on leadership style and leadership effectiveness have found positive and significant relationships between leadership style and leader effectiveness. However, it is important to remember that statistical significance does not always translate into practical significance (Box, 1976). These two-factor models ignore many important factors of an organization environment, both internal (e.g., culture, training, and

goal differences among followers or subordinates) and external factors (e.g., market conditions, government regulations, and competitions).

However, like the French would say: "tout n'est pas perdu," that is, all is not lost. There is a new trend in the literature on leadership style. This trend is a mélange of task-orientation, relations-orientation, and open systems-orientation (Ekvall & Arvonen, 1991). The premise behind this literature is that to succeed or at least to survive in a global, complex, and competitive market, organizations must effectively and efficiently interact with their dynamic and fast-changing environment (Ekvall & Arvonen, 1991; Hitt, Ireland, & Hoskisson, 2016). This literature takes into account both internal factors (e.g., top management, middle-management, the operating core, organizational performance, and interpersonal relations) and external factors (e.g., general conditions of the economy, competitors, government regulations, environmental issues, and concerns of the wider society). Taking so many factors into consideration makes the literature on leadership style difficult to model mathematically. However, it produces more organic and more action-oriented research studies (Yin, 2014). This tendency toward qualitative research on leadership style and sustainable innovation is illustrated by the work of Avery and Bergsteiner (2011), Bossink (2007), and Crews (2010). Figure K1 in Appendix K accurately depicts the evolution of the literature on leadership style. Table B1 in Appendix B provides a detailed account of the data collection methods and research designs used in these research studies. Tables D1 and D2 in Appendix D show the scheme utilized to assess the quality of the literature.

Methodology

This study utilized systematic review as a research method to conceptualize a collective body of evidence (Briner, Denyer, & Rousseau, 2009; Denyer & Tranfield, 2009) on the relationship between leadership style and sustainable innovation adoption. This is an appropriate research method when there is a growing body of literature on a topic with unclear and contradictory conclusions and when a more conclusive

perspective is desired to solve a management problem or to answer an important review question (Petticrew & Roberts, 2006). A systematic review is the process of analyzing "all studies relevant to a particular question in an explicit, transparent fashion in order to provide the best available answer" (Rousseau, 2012, p. 7). The following sections explain the steps of the systematic review process.

Scope and Definition

One of the most important steps in the systematic review process is defining the boundaries of the review (Tranfield, Denyer, & Smart, 2003). Boundary delineation is particularly important in management research due to the lack of consensus in management research terminologies and methodologies (Rousseau, 2005; Rousseau, Manning, & Denyer, 2008). For example, sustainability is a vague term and the dictionary definition may lead to confusion in the context of this research. This terminology issue adds an element of complexity in the literature search process. For the purpose of this research study, the term sustainability is defined as the integration of economic viability, environmental protection, and social responsibility into project and operational management processes of an organization (Elkington, 1998; Hopkins et al., 2009; World Commission on Environment and Development, 1987). Damanpour (1991) defined innovation as the "adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization" (p. 556). However, Higgins (1996) argued that innovation is a process and defined innovation as the "creation of new products or services or enhancements to existing products or services, or the creation of organizational processes which have a significant impact on a person, group, organization, industry or society" (p. 370). Based on these definitions, sustainable innovation may be defined as the implementation of a new or significantly enhanced product, service, or process that integrates the triple bottom line; that is, people, planet, and the firm's long-term profitability. This systematic review focuses on sustainable innovation in private for-profit firms. A firm is any business organization involved in the production of goods and/or services by using a vari-

ety of processes, resources, tools, and techniques. A firm is constrained by resource availability and environmental factors and is guided by its objectives or goals. This review examines the role of leadership style in sustainable innovation adoption in private for-profit firms, regardless of geographic location, size, and revenue. The term leadership was used to describe the process of influencing people so that they strive willingly toward a desired goal or objective (Bass & Bass, 2008); and leadership style was defined to mean "the manner by which leaders express specific behaviors" (House & Aditya, 1997, p. 23).

The Search Process

This generic search process described in this section is not industry specific and therefore may be applied to any systematic review across industry sectors. The first step in the process was to define the scope of the research. Once the boundaries of the review were clarified and key terms were defined, the reviewer used the "building blocks" bibliographic search approach to develop search strings or query formulations for electronic databases (Goodman, Gary, & Wood, 2014). The review question served as the basis for identifying the keywords that retrieved primary studies and research reports from electronic databases. The current literature also guided this step of the process (Booth, Papaioannou, & Sutton, 2016). Keywords and key phrases identified and used in search strings included: leadership, leader behavior, sustainable innovation, sustainable product development, sustainable innovation adoption, and sustainable innovation success. These keywords, phrases and their synonyms formed the strings that were used in the following electronic databases: ABI/INFORM Complete, Academic Search Complete, Business Source Complete, Emerald Insight, ProQuest Dissertations, and ScienceDirect. Boolean operators (e.g., AND & OR) enabled the fine-tuning of search strings. Truncation was used to ensure that alternative spelling and synonyms for major terms relating to the review question were included in the search results. The English language filter option was not used in the search process to avoid language bias. The Journal of Business Ethics and the Journal of Cleaner Production were hand-searched for relevant publications. Table A1 in Appendix A con-

tains a list of all databases and journals used in this research. The search string that retrieved most of the primary studies included in the systematic review is shown in Table 1.

The search string shown in Table 1 was modified according to the preferred coding language of each database.

Table 1
Search string for "Leadership Style" and "Sustainable Innovation Adoption"

(Leadership OR "leader* style*" OR "leader* behavi*" OR "leader attitude*") AND ("sustainab* innovation" OR "sustainab* product development" OR "sustainab* project" OR "sustainab* initiative" OR "sustainab* design" OR "sustainab* practice" OR "sustainab* R&D" OR "sustainab* research and development" OR "sustainab* change")

For example, ABI/INFORM Complete did not recognize the language when words from the first part of the string were truncated. While "Sustaina* Innovation" worked in EBSCOhost, it did not returned any results in ABI/INFORM Complete; therefore, full words and their synonyms were used in ABI/INFORM as shown in Table 1. The search string at the bottom of Table 1 was developed and used in 7 databases to retrieve the articles used in this study. The PRISMA diagram (Moher et al., 2009) located in Appendix C explains the process used to arrive at the final studies included in the review (see Table B1 in Appendix B for a complete list of the primary research studies). However, Figure 1 depicts a clearer picture of the search process described below.

Step 1: Define the scope of the research. As explained above, defining the scope of the research is a key step of the review process. It allows the reviewer to understand the boundaries of the research project. Defining the scope of the research as applied in this case is different from a scoping review (see the Centre for Reviews and Dissemination, 2009; Gough et al., 2012).

Step 2: Identify keywords and key phrases. As also explained above, the research question and the current literature served as input for identifying the facets of the search strings.

Step 3: Develop search strings. Keywords and key phrases identified in step 2 are combined with Boolean operators and truncated, in some cases, to form the search strings.

Step 4: Identify and search electronic databases and journals. This step identified primary studies through appropriate electronic databases and search of relevant management journals and professional associations' websites. This search was carried out using the search string shown in Table 1.

Step 5: Review results, refine search strings and re-search databases as needed. This step involved the screening of titles and abstracts of primary studies identified in phase 1 for relevance. This phase was automated to reduce the number of results or hits produced by the search string in phase 1. Automation was possible by searching the titles and abstracts of search results electronically using key terms from the search string or the review question. Emerald Insight (Emerald Fulltext and Management Reviews) which produced the highest number of hits (19, 102), has a search within search results function, which allows the reviewer to electronically search the results of a given query for relevance based on the keywords identified at the beginning of the search process.

Step 6: Document results and perform quality assessment. Primary studies that were relevant to the research question were recorded in a spreadsheet for full text analysis and quality appraisal using a pre-set list of quality assessment criteria for inclusion.

As can be seen, phases are iterative and are part of the search process as shown in Figure 1.

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┌─────────────────────────────────────────────┐
│          Research Question(s)                │
│                                              │
│     Management Problem or Opportunity        │
└─────────────────────────────────────────────┘
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Define the scope of the research	Identify and search electronic databases & journals	Review results, refine search strings and research databases

Identify keywords	Develop search strings	Document results and perform quality assessment

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┌─────────────────────────────────────────────┐
│          Feedback and corrective action      │
└─────────────────────────────────────────────┘
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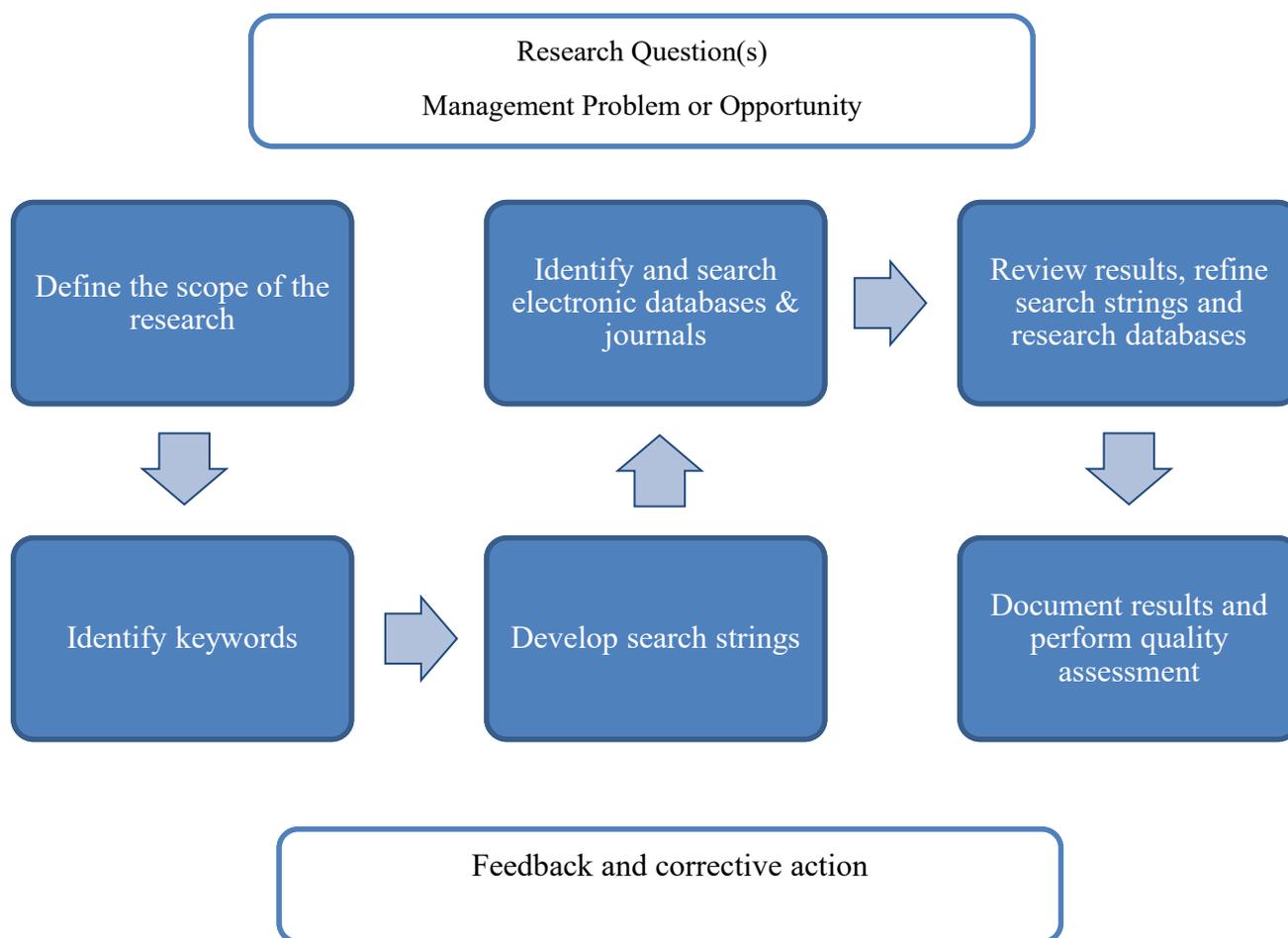
Figure 1. A high level, six-step process for identifying and selecting research studies in systematic reviews. Steps are shown here in sequence, but in practice, they may be iterative.

Quality Assessment of Included Studies

Quality assessment in research synthesis has been a common practice in the field of medicine for the last three decades (Gough, Oliver, & Thomas, 2012). As a consequence, many tools have been developed for appraising the quality of primary studies which serve as inputs for systematic reviews (Denyer & Tranfield, 2009). Such tools include the HoE (hierarchy of evidence) framework (Canadian Task Force on the Periodic Health Examination, 1979); the TA-PUPAS (transparency, accuracy, purposivity, utility, propriety, accessibility, specificity) framework (Pawson, Boaz, Grayson, Long, & Barnes, 2003); and the WoE (weight of evidence) framework (Gough, 2007). However, Petticrew and Roberts (2006) pointed out that most of these tools, developed in the medical field for assessing the effectiveness of interventions, are difficult to apply in the social sciences (p. 57). A major constraint in that regard is the lack of consensus in management research (Barends, ten Have, Huisman, 2012) and practice (Tranfield, Denyer, & Smart, 2009). Similarly, Gough (2007) argued that reviewers must decide whether their quality assessment will be generic or specific to the review question. The point is that the nature of the review question, the context of the study, and the level of heterogeneity of available evidence play a significant role in selecting a quality assessment tool (Gough et al., 2012).

This review takes a fit for purpose approach (Boaz & Ashby, 2003) to assessing the quality of evidence and integrates both qualitative and quantitative primary studies in the review process. This quality assessment approach recognizes the value of qualitative research in the management field and takes a broader perspective into consideration (Thomas & Harden, 2008). Primary research studies are appraised using a scheme developed by Pittaway, Robert-

son, Munir, Denyer, and Neely (2004). Studies are assessed on a scale of 0 to 3, 0 being absent and 3 being high. Not applicable (N/A) was used to indicate when a criterion could not be applied to the study being evaluated (see Appendix D). Criteria for quantitative studies include theory robustness, implication for practice, (methodology, data and supporting arguments), generalizability/transferability, and contribution to theory and/or practice. For assessing the quality of qualitative primary studies, the quality assessment scheme was adapted to replace the concept of generalizability with transferability. Generalizability or external validity is an epistemic concept associated with positivism. Positivists hold the belief that their research findings and/or conclusions can be inferred to a broader population; that is, the findings are valid in other contexts and may be applied to other people or groups of people. Although qualitative researchers sometimes believe that their findings are generalizable (Patton, 2014), many argue that generalization is not a major goal of qualitative research (Pyrczak, 2008; Trochim, Donnelly, & Arora, 2016). Evaluating qualitative research studies with the same criteria used for quantitative research may create

a systematic bias in the research synthesis (Gough, Oliver, & Thomas, 2012). Table 2 shows an example of the quality assessment process.

The full text of 20 primary research studies randomly selected from a sampling frame of 100 pre-screened primary studies was read and assessed for quality according to the pre-set criteria shown in Table 2. At this stage, 5 studies scored less than 1 on a scale of 0 to 3 and were excluded due to a lack of theoretical robustness and due to the fact that the methods used in the data collection process were unclear. To ensure the validity of the quality assessment process, all 15 primary studies were reviewed three times within a 5-day elapsed time interval. One way to evaluate the consistency of the reviewer in the quality assessment process is to perform an attribute agreement analysis (Landis & Koch, 1977). This analysis is possible because the reviewer assessed each individual primary data three times using the same instrument. As there is only one reviewer, no between appraiser analyses can be performed, but a within appraiser agreement can provide useful insights about the reviewer's consistency over time.

Table 2					
Quality Assessment of Primary Studies on a Scale of 0 to 3					
Primary Study	Bossink, B. G. (2007). Leadership for sustainable innovation. International Journal of Technology Management & Sustainable Development, 6(2), 135-149. Doi:10.1386/ijtm.6.2.135_1				
Method	Interview with and observation of one project manager on 4 contruction projects using four different leadership styles				
Design	Multiple case study				
Quality Assessment Criteria					
Element	Level				
	0 Absence	1 Low	2 Medium	3 High	Not applicable
1. Theory robustness					3
2. Implication for practice					3
3. Methodology, data and supporting arguments					3
4. Generalizability				2	
5. Summary of contribution to theory & Practice					3
Average quality score					2.8

Note: Each study was assessed based on the criteria shown in this table. The average score for each primary document can be found in Table 3. Studies that scored less than 1 on a scale of 0 to 3 were automatically excluded. Quality assessment instrument adapted from "Networking and Innovation: a Systematic Review of the Evidence" by L. Pittaway, M. Robertson, K. Munir, D. Denyer, & A. Neely, 2004, International Journal of Management Reviews, 5/6, p.168.Copyright 2004 by International Journal of Management Reviews.

Minitab Statistics version 17 was utilized to analyze the data. The # Matched and Percent Columns in Table 3 show that the reviewer appraised each study consistently over the 15-day period. The 95% confidence intervals provide a range of likely values containing the true percent agreement for the reviewer.

As shown in Table 3, an intra-reviewer reliability analysis using the Fleiss Kappa statistic (Fleiss, 1971) was performed to determine whether the reviewer was consistent over time in assessing the quality of the primary data. The intra rating reliability for the reviewer was found to be *Kappa* = 0.83 (p <.0.00), 95% CI [51.91, 95.67], indicating a perfect degree of absolute agreement among the three ratings (Landis & Koch, 1977). The Kendall's coefficient of concordance (Kendall & Smith, 1939) indicates a high degree of association among the three ratings made by the reviewer (w = 0.98, P = 0.00).

Table 3

Attribute Agreement Analysis of 15 Primary Data Sources

Agreement Assessment

Appraiser	# Inspected	# Matched	Percent	95% CI
SR Reviewer	15	12	80.00	(51.91, 95.67)

Matched: Appraiser agrees with him/herself across trials

Fleiss' Kappa Statistics

Appraiser	Response	Kappa	SE Kappa	Z	P(vs > 0)
SR Reviewer	1.80	1.00	0.15	6.71	0.00
	2.20	1.00	0.15	6.71	0.00
	2.40	0.88	0.15	5.90	0.00
	2.60	0.70	0.15	4.70	0.00
	2.80	0.45	0.15	3.03	0.00
	3.00	1.00	0.15	6.71	0.00
	Overall	0.83	0.07	11.15	0.00

Kendall's Coefficient of Concordance

Appraiser	Coef	Chi - Sq	DF	P
SR Reviewer	0.98	41.01	14.00	0.00

Note: Minitab 17 Output: The null hypothesis for the Fleiss' Kappa statistic states that there is no agreement among the reviewer's ratings (k = 0). Similarly, the null hypothesis for the Kendall's coefficient states that there is no association among the reviewer's ratings (w = 0). Legend: SR = Systematic Review.

Data Extraction and Analysis

Thematic data analysis was used to integrate the findings of the primary studies of various types (e.g., qualitative, quantitative, and mixed-method studies) by identifying and coding key themes that emerged during the analysis (Thomas & Harden, 2008). Thematic data analysis includes three overlapping stages: 1) line-by-line coding of the findings of primary studies; 2) organization of free-codes into related areas to construct descriptive themes; and 3) the generation of analytical themes (Thomas & Harden, 2008, p. 4). The thematic data analysis process is shown in Figure E1 in Appendix E.

Thematic data analysis is the most appropriate qualitative data analysis technique when the aim of the review is the configuration of the primary data into a cohesive whole (Gough, Oliver, & Thomas, 2012; Thomas & Harden, 2008), and when the reviewer is dealing with a small number of primary studies (Gough et al., 2012). These features accurately represent the condition of this study. The reviewer utilized analytic coding to translate the content of the primary studies into a framework that went beyond the bounds of each primary study (Rousseau, 2012). In this study, the reviewer took an inductive approach to data analysis (Charmaz, 2011; Denzin & Lincoln, 2011).

Primary studies were imported into the Atlas.ti 7.5 software package. This software program assisted the coding process and triangulation of data sources. Data triangulation and constant comparison of data sources are necessary steps in qualitative data analysis (Corbin & Strauss, 2016; Miles, Huberman, & Saldana, 2013; Saldana, 2016). Using multiple data sources to compare and contrast findings has the potential to increase qualitative research validity (Elliot, 2007; Johnson, 1997).

Synthesis of the Evidence

The process utilized to conduct this systematic review is in compliance with basic principles for systematic reviews as defined by Tranfield, Denyer, and Smart (2003), Petticrew and Roberts (2006), and Briner, Denyer, and Rousseau (2009). Although no formal review protocol was developed (Center for Review and Dissemination, 2009), the review addresses an important management question, and it constitutes the third phase of a three-phase research project.
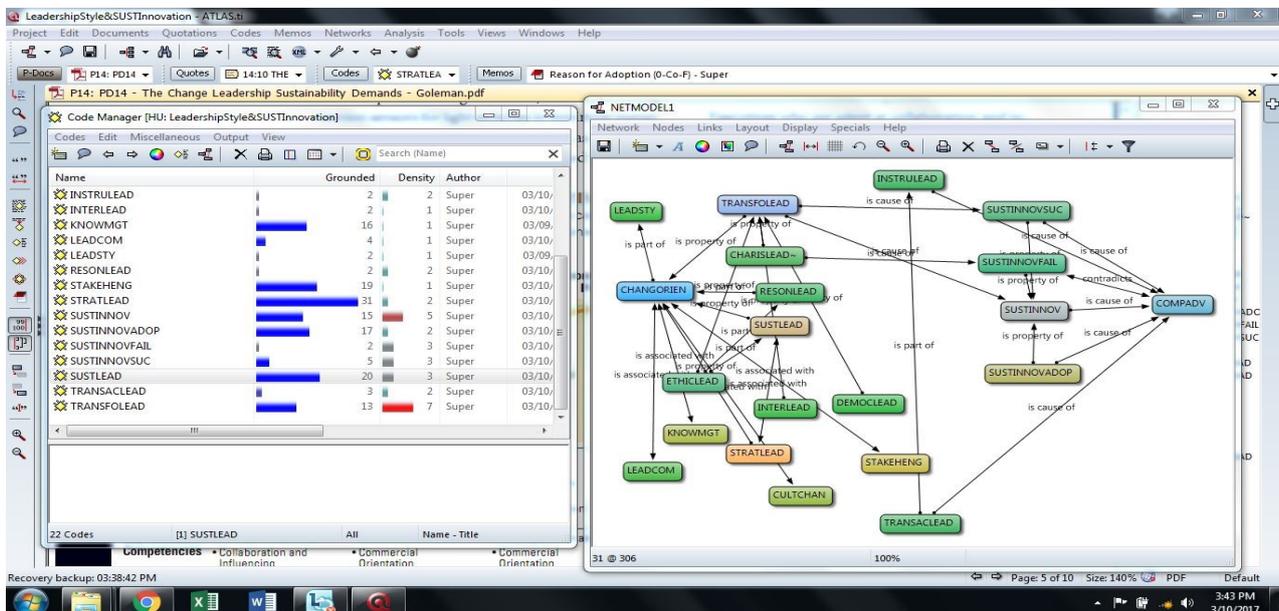

Figure 2. Screenshot of a partial concept map of the theoretical relationship between leadership style and sustainable innovation adoption. Output generated from Atlas.ti version 7.5; the period covered in the study was 2000-2016. This partial map shows that strategic, sustainable, transformational, and transactional leadership are the most common leader behaviors that enable sustainable innovation adoption. However, knowledge

management, leadership commitment, organizational culture, and stakeholder engagement were found to be necessary conditions for sustainable innovation adoption and success.

This review explored the relationship between leadership style and sustainable innovation adoption in organizational context. As suggested by Gough, Oliver, and Thomas (2012), the data analysis process started by categorizing important variables and characteristics of the data, and then the reviewer quickly switched from categorization and description of the data to analytic coding as shown in Figure 2 (see Thomas & Harden, 2008). Thirty-two researchers in 10 countries conducted the primary stud-

ies. Data were collected over a 16-year period in at least 100 countries, including Australia, Canada, Germany, Spain, the United Kingdom and the United States. A detailed list of countries in which data were collected can be found in Appendix F.

The results of this review show that sustainable innovation has been adopted at a global level, with research studies and practices across continents and across industry sectors.

Table 4
Origin of studies by country

Country	# of Study	Percent
Australia	1	7%
China	1	7%
Germany	1	7%
India	1	7%
Nordic Countries	1	7%
Spain	1	7%
The Netherlands	2	13%
Thailand	1	7%
United Kingdom	2	13%
United States	5	33%

Table 4 is a sample of data extracted from Table F1 (see Appendix F). Among other countries, primary studies were performed in Australia (1), China (1), Germany (1), India (1), the Nordic countries (1), United Kingdom (2), and United States (5). The evidence indicates that the United States (33%) and Europe (40%) are at the forefront of the sustainable innovation movement, at least in terms of the extent to which it is being studied and analyzed.

Table 5 shows the list of industry sectors covered in the primary studies. The percent column indicates the percentage of the total studies that covered a particular industry sector.

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It is important to note that industry coverage overlapped. For example, Weidner (2012) analyzed energy & utilities, transportation, and construction. One may have expected that the healthcare and social assistance industry sector would have been more involved in sustainable innovation. However, the evidence reveals that this is not the case. Only 1 study (7%) covered sustainable innovation in the healthcare industry. Further investigation is needed to understand whether this lack of research is a significant gap between research and practice in this industry. Another explanation might be that these research studies are not readily available

Table 5

List of industry sector covered in the primary studies

Industry	# of Study	Percent
Agriculture, Forestry, Fishing and Hunting	2	13%
Accommodation and Food Services	1	7%
Construction	4	27%
Finance and Insurance	3	20%
Health Care and Social Assistance	1	7%
Information Technology and Communication	2	13%
Manufacturing(automotive & pharmaceutical)	5	33%
Mining, Quarrying, and Oil and Gas Extraction	1	7%
Professional, Scientific, and Technical Services	1	7%
Real Estate and Rental and Leasing	1	7%
Retail Trade	2	13%
Utilities & EPG	1	7%
Transportation and Warehousing	2	13%
Whole Sale Trade	1	7%

Manufacturing (33% of the studies) and construction (27%) lead the way in sustainable innovation adoption, followed by followed by finance and insurance. Agriculture, forestry, fishing and hunting, information technology and communication, and retail trade were equally represented at 13%; and all other industries at 7%. One may speculate that the involvement of the manufacturing and construction industries in sustainable innovation is due to the potential opportunity to reduce waste, which in turns provides the opportunity to save on costs and increase profit in the long-term.

Leadership Style and Sustainable Innovation Adoption

The evidence shows that sustainable leadership (Avery & Bergsteiner, 2011; Bossink, 2007; Crews, 2010; Larson, 2000; Metcalf & Ben, 2013), strategic leadership(Bossink, 2007; Crews, 2010; Gauthier & Wooldridge, 2012; Metcalf & Ben, 2013; Opoku et al., 2015 ;), transformational leadership(Crews, 2010; Jóhannsdóttir et al., 2012; Metcalf & Benn, 2013; Larson,2000), and transactional leadership (Larson, 2000; Przychodzen et al., 2016; Goleman & Lueneburger, 2010) are the most common leadership styles associated with sustainable innovation adoption.
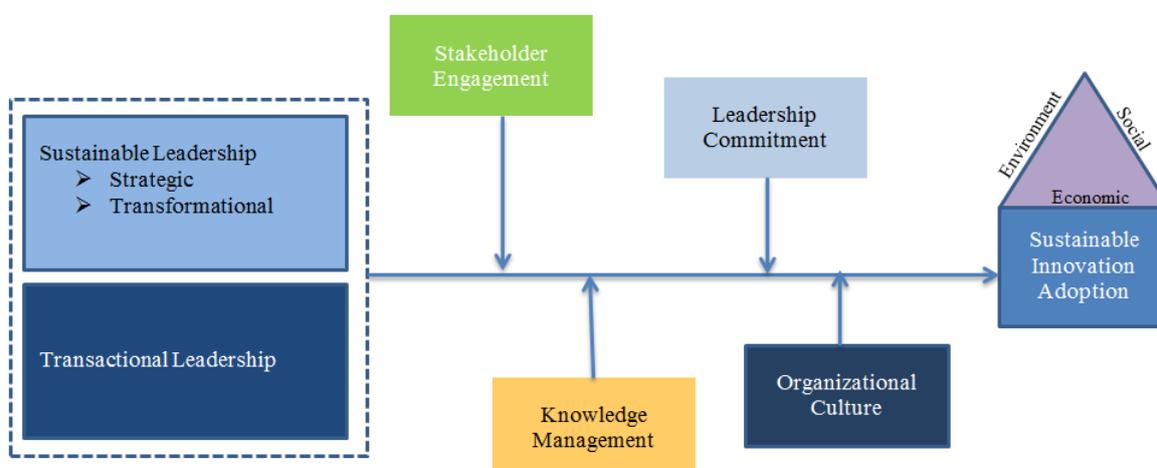
Figure 3. A theoretical framework of the relationship between leadership style and sustainable innovation adoption.

Figure 3 indicates that there is a relationship between leadership style and sustainable innovation adoption. However, there are many other variables that moderate this relationship. These variables include stakeholder engagement (in 67% of the studies), leadership commitment (27%), knowledge management (40%), and organizational culture (60%). Table G1 in Appendix G provides a list of codes, their descriptions, and definitions. Another key finding of this research is that strategic leadership and transformational leadership contain all the elements of the construct of sustainable leadership, which include charisma, inspiration, intellectual simulation, employee-consideration, promotion of a shared vision, and strategic-orientation (see Bass & Bass, 2008; Hitt, Ireland, & Hoskisson, 2016).

Study Limitations

The limitations of this study are inherent to all systematic reviews. The review is based on a set of primary research studies which served as data for integrating and configuring a collective body of evidence on the relationship between leadership style and sustainable innovation. As one may imagine, the quality of these primary studies cannot be fully ascertained as not all data involved in the primary studies were made available by the primary researchers. This limitation stems from the fact that publishers provide only so much space to researchers in terms of what they can and cannot make available to consumers of research. A second limitation was that the study was conducted under time and scope constraints, which may have influenced the quantity of the data included in the review. In other words, the number of primary studies and research reports included may not have been exhaustive. However, this study may serve as a starting point for an understanding of the body of evidence on the factors that affect sustainable innovation adoption in organizations.

Implications for Practitioners

Organizational leaders must understand that sustainable innovation is a holistic approach to translating new ideas into enhanced or new products, services or processes by integrating a focus on environmental protection, concern for people, and an organization's long-term prosperity. Sustainable innovation is a bet on the future, not a short term fix or a PR exercise. It requires leaders to focus on creativity and shareholders' long-term interests. It requires a clear and strategic direction with an organizational culture that fosters ethical behavior as a duty to shareholders and participative leadership as a means for integrating the voice of stakeholders into organizational processes to create customer value. Successfully adopting sustainable innovation also requires that workers at all levels of the organizations strive to create and maintain a learning environment in which lessons learned are systematically collected, stored, and shared with everyone who might need them. Product developers, portfolio, program, and project managers must understand the environment in which they are operating. They must seek unwavering top management commitment at the outset of each project in order to secure the visibility and the support they need to achieve their project objectives.

Implications for Future Research

This systematic review is an exploration of the relationship between leadership style and sustainable innovation adoption. The study found that there are certain styles of leadership that enable sustainable innovation adoption, namely, strategic leadership, sustainable leadership, transformational and transactional leadership. In addition, the review was limited to the exploration of factors internal to a firm that could influence sustainable innovation adoption. As a result, the review does not examine such things as the effects of market dynamics on sustainable innovation adoption success. Future research studies might want to look into a set of potential external factors that shape a firms' openness to adopting and implementing sustainable innovation practices. Examples include understanding what drives consumer choice in terms of sustainable product or service adoption (understanding that consumer preferences will shape organizational choices). An unequivocal understanding of these drivers is important as most producers of goods and services understand that supply does not create its own demand. An-

other important gap is an understanding of the role of government incentives and government regulations. The research study by Gauthier and Wooldridge (2012) found no significant effect between government regulations and sustainable innovation adoption. How about government incentives? Can government incentives on both sides, that is, supply and demand, drive sustainable innovation adoption and success? This question warrants investigation.

Conclusions

This systematic review explored the relationship between leadership style and sustainable innovation adoption. The study found that there are primarily four leadership styles that foster sustainable innovation adoption, namely, strategic, sustainable, transformational, and transactional leadership styles. However, there are conditions that must be met to assure the perennity of this adoption. Identified moderators include stakeholder engagement, leadership commitment, knowledge management, and organizational culture. Contrary to popular belief, no significant relationship was found between government regulations and sustainable innovation adoption. The study suggests that only leaders with a long-term perspective on firm prosperity will adopt sustainable innovation, as success requires a long-term vision and commitment from the organization. Practitioners are advised to develop a profound understanding of the environment in which they operate as this understanding may enable the success of their sustainable projects. Researchers are invited to investigate the effects of market dynamics on sustainable innovation adoption. One question that might be in the agenda for future is the following: does supply of sustainable products or services create its own demand or does the existence or perception of consumer demand create firm openness? Researchers may want to identify and measure the factors and the components that drive sustainable innovation adoption from both the supply and the demand sides of the market.

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Appendix A

Table A1

List of databases and journals.

#	Author	Database	Journal
1	Avery & Bergsteiner (2011)	Emerald Insight	Strategy & Leadership
2	Bossink (2007)	Business Source Complete	International Journal of Technology Management & Sustainable Development
3	Crews (2010)	Business Source Complete	SAM Advanced Management Journal
4	Gauthier & Wooldridge (2012)	Business Source Complete	Business Strategy & The Environment
5	Gmelin & Seuring (2014)	ScienceDirect	Journal of Cleaner Production (Hand searched)
6	Goleman& Lueneburger (2010)	ABI/INFORM Complete	MIT Sloan Management Review
7	Jóhannsdóttir (2015)	ABI/INFORM Complete	Journal of Organizational Change Management
8	Lacy, Haines, & Hayward (2012)	ABI/INFORM Complete	Journal of Management Development
9	Larson (2000)	Business Source Complete	Business Strategy & The Environment
10	Lenka & Tiwari (2016)	Emerald Insight	International Journal of Productivity & Performance Management
11	Metcalf & Benn (2012)	Health Business Elite	Journal of Business Ethics (Hand searched)
12	Opoku et al. (2015)	ABI/INFORM Complete	Built Environment Project and Asset Management
13	Przychodzen et al. (2016)	ScienceDirect	Journal of Cleaner Production (Hand searched)
14	Trifilova et al. (2013)	ABI/INFORM Complete	Corporate Governance
15	Weidner (2012)	ProQuest Dissertations	Doctoral dissertation

Appendix B

Table B1

Data collection methods and research designs

#	Author	Method of Data Collection	Research Design
1	Avery & Berg-steiner (2011)	Semi-structured interview and Observation – sample includes 6 senior managers, 2 board members and 100 mid-level managers	Single case study design
2	Bossink (2007)	Interview and observation n = 4 project construction project managers	Multiple/comparative case study design
3	Crews (2010)	Bibliographic search and grounded theory – sample size not documented (n=unknown)	Secondary research
4	Gauthier & Wooldridge (2012)	Analysis of documents n = 448 companies selected from S&P 500 database	Cross-sectional survey
5	Gmelin & Seuring (2014)	Analysis of documents n=unknown	Literature review on determinants of sustainable new product development
6	Goleman& Lueneburger (2010)	Executive interview over a 5-year period (n>= 25,000)	Cross-sectional survey
7	Jóhannsdóttir et al. (2015)	In-depth interview Observation and analysis of documents. n= 16 insurance agencies n= 74 executives	Multiple/comparative case study
8	Lacy, Haines, & Hayward (2012)	In-depth interviews (n=100) and web survey (n=766).	Cross-sectional design & Multiple case study
9	Larson (2000)	In-depth interview over 4 years n = 1 company n= 1 entrepreneur	Single case study
10	Lenka & Tiwari (2016)	Analysis of documents from 1994 to 2015 Sample size = unknown	Literature review on resonant leadership and sustainable innovation
11	Metcalf & Benn	Analysis of documents	Literature review on sustainability

|			
	(2012)	Sample size = unknown	adoption and success
12	Opoku et al. (2015)	Semi-structured interview (n=15) Questionnaire (n=126/200)	Multiple/comparative case study & Cross-sectional design with the UK construction industry
13	Przychodzen et al. (2016)	Analysis of documents & observation	Multiple/comparative case study
14	Trifilova et al. (2013)	Semi-structured interview and analysis of documents	Multiple/comparative case study design
15	Weidner (2012)	Web questionnaire survey (n=168/272)	Cross-sectional design

Appendix C
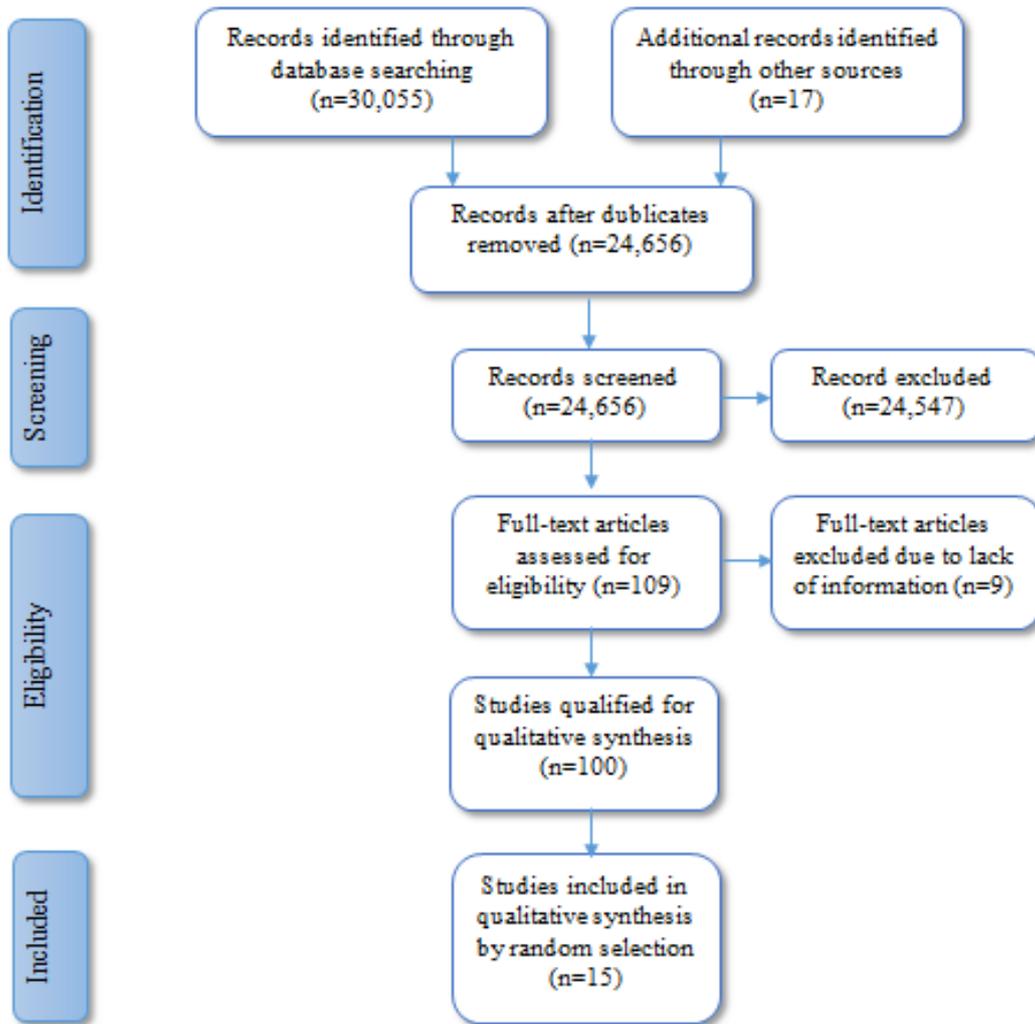
Figure C1. PRISMA diagram for the search process on leadership style and sustainable innovation adoption.

Appendix D

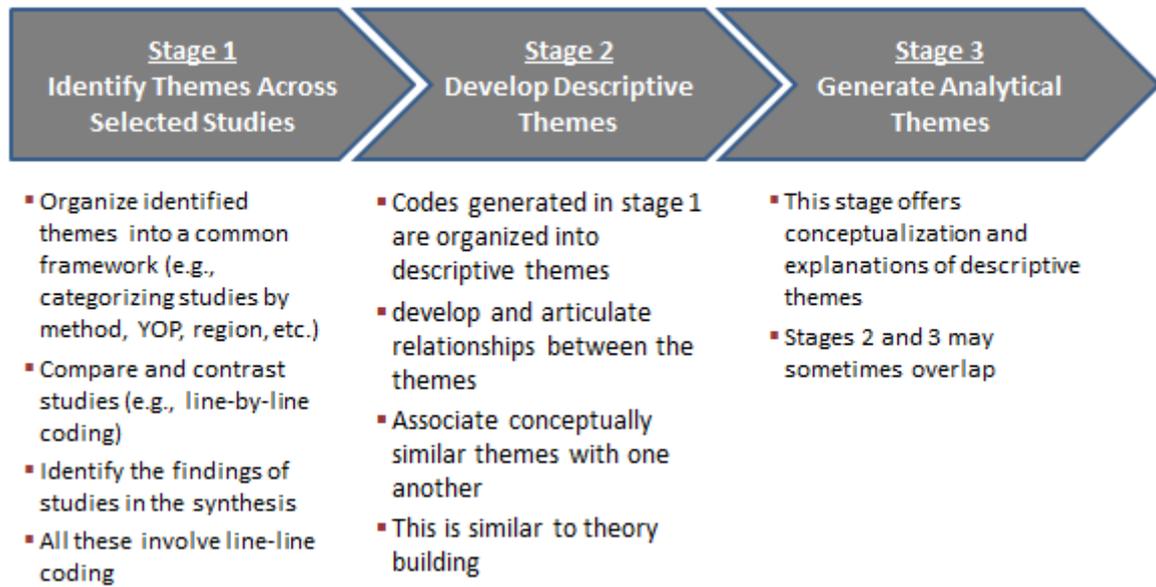| Table D1: Quality Criteria for Quantitative Studies					
Quality assessment criteria					
Element	Level				
	0 Absence	1 Low	2 Medium	3 High	Not applicable
1. Theory robustness	The article does not provide enough information to assess this criterion	Poor awareness of existing literature and debates. Under-or over-referenced. Low validity of theory.	Basic understanding of the issue around the topic being discussed. The theory weakly is related to data.	Deep and broad knowledge of relevant literature and theory relevant for addressing the research. Good relation to theory-data.	This element is not applicable to the document or study.
2. Implication for practice	The article does not provide enough information to assess this criterion	Very difficult to implement the concepts and ideas presented. Not relevant for practitioners or professionals.	There is a potential for implementing the proposed ideas, with minor revisions or adjustments.	Significant benefit may be obtained if the ideas being discussed are put into practice.	This element is not applicable to the document or study.
3. Methodology, data and supporting arguments	The article does not provide enough information to assess this criterion	Data inaccuracy and not related to theory. Flawed research design.	Data are related to the arguments, though there are some gaps. Research design may be improved.	Data strongly supports arguments. Besides, the research design is robust: sampling, data gathering, data analysis is rigorous.	This element is not applicable to the document or study.
4. Generalizability	The article does not provide enough information to assess this criterion	Only the population studied	Generalizable to organizations of similar characteriscs	High level of generalizability.	This element is not applicable to the document or study.
5. Summary of contribution to theory & Practice	The article does not provide enough information to assess this criterion	Does not make any important contribution. It is not clear the advances it makes.	Although using others' ideas, builds upon the existing theory.	Further develops existing knowledge, expanding the way the issue was explained so far.	This element is not applicable to the document or study.

Note: Quality Assessment Tool. Adapted from "Networking and Innovation: A Systematic Review of the Evidence" by L. Pittaway, M. Robertson, K. Munir, D. Denyer, & A. Neely, 2004, *International Journal of Management Reviews*, 5/6, p.168.Copyright 2004 by International Journal of Management Reviews.

Table D2: Quality Criteria for Quantitative Studies

Quality assessment criteria					
Element	Level				
	0 Absence	1 Low	2 Medium	3 High	Not applicable
1. Theory robustness	The article does not provide enough information to assess this criterion	Poor awareness of existing literature and debates. Under-or over-referenced. Low validity of theory.	Basic understanding of the issue around the topic being discussed. The theory weakly is related to data.	Deep and broad knowledge of relevant literature and theory relevant for addressing the research. Good relation to theory-data.	This element is not applicable to the document or study.
2. Implication for practice	The article does not provide enough information to assess this criterion	Very difficult to implement the concepts and ideas presented. Not relevant for practitioners or professionals.	There is a potential for implementing the proposed ideas, with minor revisions or adjustments.	Significant benefit may be obtained if the ideas being discussed are put into practice.	This element is not applicable to the document or study.
3. Methodology, data and supporting arguments	The article does not provide enough information to assess this criterion	Data inaccuracy and not related to theory. Flawed research design.	Data are related to the arguments, though there are some gaps. Research design may be improved.	Data strongly supports arguments. Besides, the research design is robust: sampling, data gathering, data analysis is rigorous.	This element is not applicable to the document or study.
4. Transferability	The article does not provide enough information to assess this criterion	Only the population studied	Transferable to organizations of similar characteriscs	High level of transferability.	This element is not applicable to the document or study.
5. Summary of contribution to theory & Practice	The article does not provide enough information to assess this criterion	Does not make any important contribution. It is not clear the advances it makes.	Although using others' ideas, builds upon the existing theory.	Further develops existing knowledge, expanding the way the issue was explained so far.	This element is not applicable to the document or study.

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Appendix E

Stage 1 Identify Themes Across Selected Studies	Stage 2 Develop Descriptive Themes	Stage 3 Generate Analytical Themes
• Organize identified themes into a common framework (e.g., categorizing studies by method, YOP, region, etc.) • Compare and contrast studies (e.g., line-by-line coding) • Identify the findings of studies in the synthesis • All these involve line-line coding	• Codes generated in stage 1 are organized into descriptive themes • develop and articulate relationships between the themes • Associate conceptually similar themes with one another • This is similar to theory building	• This stage offers conceptualization and explanations of descriptive themes • Stages 2 and 3 may sometimes overlap

Figure E1: Stages of thematic data analysis. Created from "An Introduction to Systematic Reviews" by D. Gough, S. Oliver, & J. Thomas, 2012, Thousand Oaks, CA: SAGE Publications

Appendix F

Table F1
Author count, industry count, country of study, and data collection site

#	Author	Author Count	Industry	Country of the Study	Data Collection Site
1	Avery & Berg-steiner (2011)	2	Manufacturing (Cement)	Australia Thailand	Thailand
2	Bossink (2007)	1	Construction	The Nether-lands	The Nether-lands
3	Crews (2010)	1	Diverse	United States	United States
4	Gauthier & Wooldridge (2012)	2	Construction	United States	United States
5	Gmelin & Seuring (2014)	2	Diverse	Germany	Germany
6	Goleman& Lueneburger (2010)	2	Diverse	United States	United States
7	Jóhannsdóttir (2015)	3	Finance & Insurance	Iceland	Iceland Denmark Finland Norway Sweden
8	Lacy, Haines, & Hayward (2012)	3	Diverse (manufacturing & Service)	United King-dom	100 countries
9	Larson (2000)	1	Manufacturing	United States	United States
10	Lenka & Ti-wari (2016)	2	Diverse	India	India
11	Metcalf & Benn (2012)	2	Diverse	Australia1	Australia
12	Opoku et al. (2015)	3	Construction	United King-dom	United King-dom
13	Przychodzen et al. (2016)	3	Finance & Insurance Retail & Manufacturing (automobile) Agriculture Transportation	Spain & The Netherlands3	Canada United States United King-dom Germany The Nether-lands
14	Trifilova et al. (2013)	4	Information Technology and Communication8, Manufacturing1	China	China
15	Weidner (2012)	1	Agriculture, Forestry, Fishing and Hunting Accommodation and Food Services Construction	United States	United States

Finance and Insurance
Health Care and Social
Assistance
Information Technology
and Communication8
Manufacturing(automotive
& pharmaceutical)
Mining, Quarrying, and
Oil and Gas Extraction
Professional11, Scientific,
and Technical Services
Real Estate and Rental and
Leasing
Retail Trade
Utilities & EPG
Transportation and Ware-
housing
Whole Sale Trade

Total	32	15	10	>=100

Appendix G

Code	Description	Definition
AUTOCLEAD	Autocratic Leadership	The extent to which the leader dictates all decisions to his/her followers (Lewin, Lippitt & White, 1939)
CONSIDBEHAV	Consideration Behavior	The extent to which a supervisor is considerate of the feelings of those s/he supervises (Fleishman, 1953).
SUSTINNOV	Sustainable Innovation	The translation of new idea into enhanced or new goods, services, or processes that integrate the triple bottom line; that is, people, planet, and the firm's long-term profitability.
SUSTINNOVSUC	Sustainable Innovation Success	The achievement of sustainable innovation goals.
SUSTINNOVFAIL	Sustainable Innovation Failure	The inability to achieve a pre-defined sustainable innovation goal.
SUSTINNOVADOP	Sustainable Innovation Adoption	The integration of sustainability practices (people, planet and the firm long-term prosperity) into the organization innovation processes.
INNITSTRUCT	Initiating Structure	The extent to which the supervisor facilitates or defines group interactions toward goal attainment (Fleishman, 1953).
SUSTLEAD	Sustainable leadership	The process by which leaders are engaged in long-term perspective in making decisions; systemic innovation aimed at increasing customer value; developing a skilled, loyal and highly engaged workforce; and offering quality products, services and solutions that integrate people, planet and profit (Avery & Bergsteiner, 2011; Bossink, 2007)
DIRECTLEAD	Directive Leadership	The process by which leaders attain desired ends by telling subordinates what to do and how to do it (Bass et al., 1975).
NEGOTLEAD	Negotiative Leadership	The process by which leaders employ political means and bargaining to gain desired ends.
CONSULTLEAD	Consultative Leadership	The processes by which leaders

discuss matters with their subordinates before they themselves decide what to do to achieve their ends.

PARTILEAD	Participative Leadership	The extent to which leaders share a consensual decision-making process with their subordinates to achieve mutually agreed upon ends.
DELEGLEAD	Delegative Leadership	The extent to which leaders attain desired ends by leaving their subordinates free to make their own decisions.
STRATLEAD	Strategic Leadership	The processes by which leaders anticipate, envision, maintain flexibility, and empower others to create strategic change as necessary (Hitt, Ireland, & Hoskisson, 2016).
TRANSACLEAD	Transactional Leadership	The process by which leaders are engaged in contingent exchanges with their followers (Bass, 1985, 1990)
TRANSFOLEAD	Transformational Leadership	The process whereby a person engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower (Bass, 1985, 1990).
LAISSEFAIR	Laissez-faire leadership	Followers make their own decisions (Lewin et al., 1939). Frequent absence and lack of involvement during critical junctures (Eagly et al., 2003).
VISIONLEAD	Visionary Leadership	Visionary leadership (aka inspirational leadership) shares the same dimensions as transformational leadership (e.g., relationship and change-oriented behaviors) (see Bass, 1985, 1990).
ENTREPLEAD	Entrepreneurial Leadership	The extent to which leaders show the ability to take risks, innovate, focus on task, assume personal responsibility, and possess an economic orientation (Lippit, 1987).
DEMOCLEAD	Democratic Leadership	Followers have a definite input into decision making and the leader includes his/her followers' views in the decision (Lewin, Lippitt & White, 1939)
RESONLEAD	Resonant leadership	The process by which leaders in-

		spire through demonstrating passion, commitment and deep concern for people and the organisational vision (Boyatzis & McKee, 2006).
ETHICLEAD	Ethical Leadership	The process by which leaders use their authority to help followers deal with the conflicting values that emerge in rapidly changing work environments and social cultures. Leaders and followers help each other in their personal struggles regarding conflicting values. Ethics is a dimension of transformational leadership (Burns, 1978).
LEADSTY	Leadership Style	The process by which leaders express specific behaviours (House & Aditya, 1997, p. 23).
KNOWMGT	Knowledge Management	The process of creating, codifying, storing, and sharing of knowledge within an organization.
CHARISLEAD	Charismatic Leadership	Leaders energize and enable followers through the creation of a picture of the future, or of a desired future state with which people can identify and which can generate excitement (Nadler & Tushman, 1990).
AUTHELEAD	Authentic Leadership	The process by which leaders develop self-awareness, internalized moral perspective, balanced processing, and relational transparency to motivate followers (Northouse, 2015).
INSTRULEAD	Instrumental Leadership	The process by which leaders direct their efforts towards task accomplishment (Yukl, 2012).
STAKEHENG	Stakeholder Engagement	The process by which organizational leaders engage all affected parties in the decision making process.
LEADCOMM	Leadership Commitment	Leadership commitment is the psychological disposition and willingness of senior leaders to allocate resources to a goal, value, or organizational process.

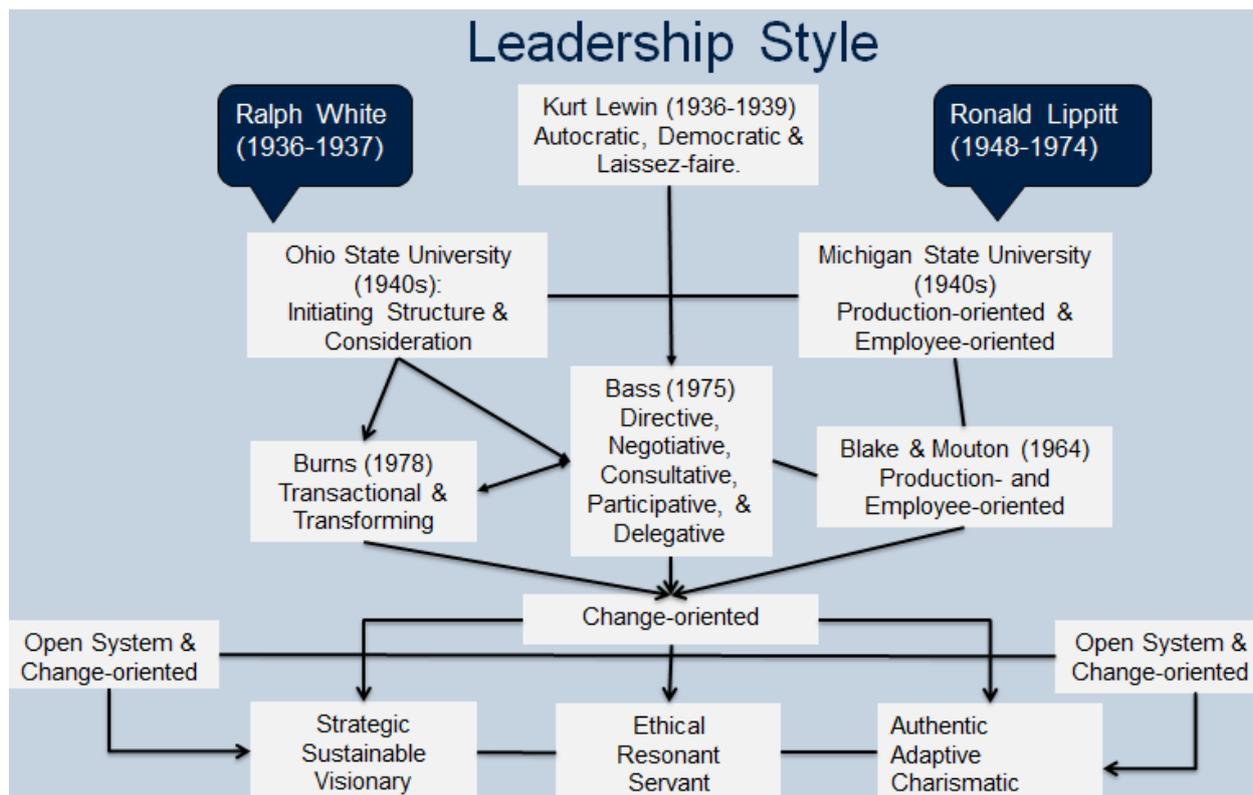| **CULTCHANG** | Culture Change | The process by which organizational leaders develop and maintain processes and espouse values that facilitate the achievement of their objectives (both operational and strategic). |

Appendix H

Figure H1. Leadership styles and leadership behavior theories. This diagram shows Kurt Lewin's influence on the leadership style school of thoughts.