Who are Boundary Spanning Leaders?

Holly Butler
University of Massachusetts Lowell

ABSTRACT

The extant management literature suggests that boundary spanning leadership, on both an internal and external level, is central to organizational growth and success. To date, however, boundary spanning leadership has received limited attention; a problem that is compounded by the absence of an adequate measurement scale. Drawing upon boundary spanning and social embeddedness theories, I develop a formalized conceptualization and operationalization of the boundary spanning leadership construct. In addition, I suggest a framework to measure the proposed construct using a survey study. I find that boundary spanning leaders encompass four overarching characteristics: *growth, understanding, sustainability*, and *personal investment.* How these characteristics align with the conceptualization of boundary spanning leadership is also discussed.

INTRODUCTION

Organizations are faced with obstacles, including rapid change, shifting markets, and globalization – all of which require quick adaptation (Clemson, 2012). Challenges with stereotypes, problems with resources, and difficulty with operational culture can also arise (Clemson, 2012). Today's global, multi-stakeholder organizations continue to struggle to increase collaboration efforts, decrease organizational silos, and eliminate turf wars to increase productivity, efficiency, and innovation (Ernst & Yip, 2009). To stimulate success, historical, organizational, and perceptual barriers must be conquered (Clemson, 2012). To circumvent these difficulties and transform borders into innovative frontiers, organizations and their leaders must span boundaries (Ernst and Yip, 2009).

Boundary spanning involves building relationships with internal and external stakeholders (Mull & Jordan, 2014), leveraging expertise to solve problems (Sandmann, Jordan, Mull & Valentine, 2014), processing information, and promoting external representation (Aldrich & Herker, 1977). As a tie between an organization and its exchange partners, boundary spanners build both internal and external partnerships through knowledge sharing (Scott, 1992). Internal exchanges include interdepartmental efforts and working across groups, whereas external exchanges involve working with vendors, partners, and suppliers (Scott, 1992). A crucial element in an organization's ability to span boundaries is the extent to which its leaders can build trustworthy relationships between team members and stakeholders, which promotes active knowledge sharing (Ratcheva, 2009).

In today's interconnected, cross-disciplinary, global society, boundary spanning is increasingly crucial to an organization's growth and sustainability (Sandmann, Jordan, Mull, & Valentine, 2014; Mull & Jordan, 2014). Boundary spanners are individuals who network, serve as

conduits of information exchange both within and outside an organization, and connect their organizations with new, external sources of information (Mull & Jordan, 2014; Tushman, 1977). Boundary spanners engage with others to expand effective relational and interpersonal competencies. This is motivated by a need to understand the people and organizations outside their own circles (Williams, 2002).

Boundary spanning leadership is defined as "the capability to establish direction, alignment, and commitment across boundaries in service of a higher vision or goal" (Ernst & Chrobat-Mason, 2010: 2). These individuals operate with a high-level of trust and are more likely to advance in leadership positions (Fleming & Waguespack, 2007). The extant management literature focuses on a broad range of boundary spanning behaviors. However, there is little emphasis on boundary spanning as a leadership concept. Furthermore, there is an underrepresentation of individual boundary spanning leadership characteristics.

Leaders are most likely to be individuals that can bring silos together (Fleming & Waguespack, 2007). In the management literature, there are various definitions of leadership (Stogdill, 1974). Bass (1990) defines leaders as agents of change. One important, yet unexplored, area of study is the elucidation of the idiosyncratic qualities and abilities of individual boundary spanning leaders. According to Aldrich and Herker (1977), organizations need boundary spanning leaders to ensure that interactions with internal and external groups are performed efficiently. Currently, the literature lacks a theoretical framework and scale to situate boundary spanning leadership within an established theory. This oversight is surprising given the importance of boundary spanning for the growth and success of an organization (Schotter, 2017).

I use a Delphi technique to empirically develop a measurement scale for boundary spanning leadership. The Delphi method is a widely used and accepted technique for gathering data among

individuals considered to be subject matter experts (SME) in the field of interest (Chan, 2001; Preble, 1983). The developed scale in my study determines the qualities and abilities of a boundary spanning leader. The practical implications for this scale are to provide organizations with a means to not only identify their current boundary spanner leaders, but also develop and recruit additional ones.

I draw upon new insights from social embeddedness theory (Granovetter, 1973) to develop this model. Social embeddedness theory recognizes that ongoing networks of relationships between people builds trust and discourages wrongdoing. People make their choices based on previous communications and continue to work with those they trust. In social networks, the existence and development of trust can both deter and promote wrongdoing, which shows that social networks alone are not a deterrent (Granovetter, 1985). Social embeddedness refers to the extent to which individuals are engaged in stable, repeated, and complex relationships (Podolny & Baron, 1997). Consistent with social embeddedness theory (Aldrich & Herker, 1977), boundary spanning leaders maintain relationships and interact both within and outside their social networks to build trust, perform tasks, and achieve goals efficiently (Ernst & Yip, 2009).

This study makes several contributions to the literature. First, it theoretically establishes the boundary spanning leadership construct. Second, it contributes to boundary spanning and social embeddedness theories by further extending the scholarly understanding of its importance through scale development. Additionally, following best practices (e.g., Newman, 2016; Schwab, 1980), it offers a methodological contribution by introducing a novel scale to gauge the qualities and abilities of individual boundary spanning leaders. I find that boundary spanning leaders encompass four overarching characteristics: growth, understanding, sustainability, and personal investment.

The outline of the paper is as follows: First, a literature review is provided on how boundary spanning leadership is important in management literature. Then, a theoretical explanation is presented for boundary spanning leadership. Next, methods are presented for both the pilot and main study. Then, data and results are displayed, with a focus on the main study. I conclude with a discussion of both theoretical and practical implications.

BOUNDARY SPANNING LITERATURE REVIEW

Boundary Spanning and Boundary Spanners

Boundary spanning research in the management literature has focused on conceptual frameworks and activities (Schotter et al., 2017; Ratcheva, 2009). The key takeaway is that only a few leaders with a unique skill set will emerge as boundary spanners within an organization (Schotter et al., 2017). Additionally, the literature conveys a message that boundary spanners are required in each organization to span and bridge embeddedness. This is done by processing information and building relationships and trust within and outside an organization (Schotter et al., 2017). This demonstrates the importance of boundary spanning leaders and investigating their individual characteristics.

Boundary spanners are intermediaries who think and perform differently by taking knowledge from one area and connecting and applying it in another (Mull & Jordan, 2014; Tushman & Scanlan, 1981). They build connections with partners inside and outside an organization, engage stakeholders, negotiate power dynamics, manage exchanges, and communicate expectations (Fariar, 2010). In order to grow and become sustainable, organizations require boundary spanners to collaborate with internal and external environments for resources and opportunities (Stock, 2006).

Boundary Spanning Leadership

Boundary spanning leadership is "the capability to establish direction, alignment, and commitment across boundaries in service of a higher vision or goal" (Ernst & Chrobat-Mason, 2010: 2), which is imperative for a successful organization (Schotter et al., 2017). Ernst and Chrobot-Mason (2010), defined six macro-level practices of boundary spanning leadership, namely, transforming, weaving, mobilizing, connecting, reflecting, and buffering, for solving problems, driving innovation, and transforming organizations. However, a focus on the micro-level is overlooked; an individual boundary spanning leader's qualities and abilities. Research in this area offers promise to contribute to an organization's ability to better benefit from its macro-level functions.

Literature Review Summary

Prior research demonstrates that boundary spanners are important to an organization (Williams, 2002). In fact, scholarly work related to boundary spanning acknowledges its relevance in management. Prior boundary spanning research focuses on the organization at a macro-level. However, there is a dearth of research on the micro-level in regards to the characteristics of a boundary spanning leader. Accordingly, this study extends boundary spanning research by developing a measurement scale with the specific qualities and abilities encompassed in boundary spanning leaders.

THEORETICAL DEVELOPMENT

The objective of this study is to develop, assess, and describe the characteristics that boundary spanning leaders exhibit, grounded in boundary spanning and social embeddedness theories. Social embeddedness theory suggests that individual actions are embedded in personal

relationships and that the role of personal relations, structures, and networks generates trust and diminishes wrongdoing (Granovetter, 1973). In this sense, social embeddedness theory argues that boundary spanners are individuals who engage in various activities on the boundary, or periphery, of an organization, and who perform two main roles: information processing and external representation (Aldrich & Herker, 1977). "Information from external sources comes into an organization through boundary roles, and boundary roles link organizational structures to environmental elements, whether by buffering, moderating, or influencing the environment" (Aldrich & Herker, 1977: 218). Through these roles, boundary spanners support the exchange of information with the external environment and manage organizational responses to environmental influences (Tushman & Scanlan, 1981).

Granovetter (1973) identifies four domains of embeddedness: surroundings premise, condition premise, mode of action, and consequence. Surroundings premise is the existence of a group and the effective ties among the group members. Situation premise is the resolve and unwavering relations among group members. Mode of action is the group functioning through its positioning within an organization. Consequence is the change in strategy and behaviors of the group members. Boundary spanners participate and prosper in each of these four domains because they have the ability to span boundaries (Granovetter, 1973). Building relationships is imperative for embeddedness and that's where boundary spanning leadership plays an essential role. Effective organizational leadership occurs when leaders collaborate across boundaries to achieve outcomes that are above and beyond what could be achieved on their own (Ernst & Chrobot-Mason, 2010; Ernst & Yip, 2009).

Uzzi (1996) and Rowley, Behrens, and Krackhardt (2000) agree that embeddedness organized on the foundation of solid relationships plays an important part in the establishment of

a code of conduct, mutual awareness, cooperation, and institutional arrangements. Embeddedness affects an organization's access to internal and external information in both quantity and quality. Boundary spanners embrace embeddedness and avoid and overcome obstacles by accessing both internal and external resources and knowledge. As a boundary spanner communicates with members of different groups, they convey the expectations that each group has about the interaction, which aids in building trust and new relationships (Friedman & Podolny, 1992). Huang et al., (2016), draws on social embeddedness theory to propose that the strong connections boundary spanners establish may benefit exchange parties in their interorganizational relationships.

Granovetter (1973) applied embeddedness to marketplace societies. Doing so demonstrated that, even in those situations, exchanges (e.g., knowledge, economic, etc.) were influenced by social relationships, networks, and ties. In some instances, the relationships between sellers and buyers had an equal or higher position than the involved economic transaction (Granovetter, 1973). Exchanges take place between individuals who are involved in connecting and relating to others, such as boundary spanners (Plattner, 1989).

Polanyi, Arensberg, and Pearson (1957) argued that rather than being embedded, organizations need to be understood as part of a larger social structure to enable knowledge and resource sharing, as well as boundary spanning. More generally, the concept of embeddedness and boundary spanning theory helps describe and explain how organizations interact, complement, and conflict with one another. Boundary spanners involved in making business decisions and performing operations are more likely to be affected by their connections with others (Huang et al., 2016). The actions they choose can be altered by the social relationships within which they function and are embedded. The key principle is that individuals perform their actions by taking

the choices of others into account, which means their social connections are critical to their actions (Granovetter, 1985). By extending the social embeddedness logic, the extant literature argues that exchange transactions and relationships are embedded in the interpersonal ties of boundary spanners (Huang et al., 2016).

Based on the foundation of boundary spanning and social embeddedness theories, both consider causal links between interpersonal relationships, boundary spanning actions, and relationship quality (Huang et al., 2016). In my study, I give a boundary spanning lens to social embeddedness theory. I develop a scale with a focus on the qualities and abilities boundary spanning leaders encompass to execute these actions, such as, spanning their embeddedness and building relationships within and across social structures (Granovetter, 1973).

METHODS

I conducted a systematic review of boundary spanning leadership to explore potential conceptualizations, variables, or dimensions. I performed an electronic journal database (Web of Science) search within the Financial Times top 50 journals and beyond. The search identified 38 academic articles. Based on this review, I conducted a pilot study to establish the groundwork for the boundary spanning leadership measure. Then, I conducted the main study to construct the scale.

I thoroughly reviewed the 38 articles to determine any conceptualizations of boundary spanning leadership. Throughout this systematic process, I discovered no scales on individual boundary spanning leader qualities and abilities. Through this systematic procedure, I found that Ernst and Chrobot-Mason (2010) had identified six macro-level practices of boundary spanning leadership: transforming, weaving, mobilizing, connecting, reflecting, and buffering for solving problems, driving innovation, and transforming organizations. However, I did not find dimensions

or scales that focused on the micro-level, such as the individual abilities and qualities of boundary spanning leaders.

Item Generation

Boundary spanning leadership is, "the capability to establish direction, alignment, and commitment across boundaries in service of a higher vision or goal" (Ernst & Chrobat-Mason, 2010: 2). When creating this scale, I followed the guidelines summarized by Hinkin (1995) and implemented in practice by numerous researchers (Cardon et al., 2013; Carr et al., 2011). I used deductive and inductive approaches for variable and dimension generation to assess the qualities and abilities boundary spanning leaders exhibit (Hinkin, 1995).

Deductive scale development is a common approach used to develop scales (Hinkin, 1995). Drawing upon the theoretical literature, I developed a mixed-method study to draw empirical support for the boundary spanning leadership construct. I used this approach to generate overarching dimensions, as discussed in the data and results.

I used an inductive approach for variable generation and implemented a multi-round Delphi technique (Dalkey & Helmer, 1963) to develop a core list of boundary spanning leadership variables. The Delphi technique is an accepted method for gathering data among subject matter experts (SME) in the field of interest (Chan, 2001; Preble, 1983). In addition, it is well-suited for consensus-building by using a series of surveys delivered through multiple iterations among SME panelists (Hsu & Sanford, 2007).

One benefit of this technique is the ability to generate and gather input through online interactions (Wilson, Averis, & Walsh, 2003). In addition, the Delphi process is anonymous, so the influence of dominant individuals is reduced (Dalkey, 1972). Furthermore, the issue of

anonymity is facilitated by geographic distribution of the subjects, as well as the use of electronic communication to solicit and exchange information (i.e., e-mail) (Hsu & Sanford, 2007).

Throughout the Delphi literature, the definition of Delphi subjects has remained obscure (Kaplan, 1971). Individuals are considered eligible to participate if they have related experiences concerning the study, are capable of contributing useful input, and are willing to revise their inputs for the purpose of reaching a consensus (Pill, 1971; Oh, 1974). Ludwig (1994: 52), states that, "solicitation of nominations of well-known and respected individuals from the members within the target groups of experts is recommended."

Interactions between SME's occur after the initial survey is deployed. In subsequent rounds, each SME has the opportunity to see and respond to the ideas of the other panelists. The group size within a Delphi study does not depend on statistical power, however, it depends on the group arriving at a consensus. Accordingly, the literature recommends 10-18 SMEs in a Delphi study (Okoli, 2004). Consequently, this study involves three distinct samples, with five SMEs each, for a total of fifteen panelists. "Through the operation of multiple iterations, subjects are expected to become more problem-solving oriented, to offer their opinions more insightfully, and to minimize the effects of noise" (Hsu & Sanford, 2007: 2).

Following the Delphi study selection guidelines and considering the boundary spanning leadership definition, fifteen panelists were randomly selected. To assess content validity, experts were used in Panel 1 and 2. Panel 1 consisted of five boundary spanning leaders while Panel 2 was comprised of five boundary spanning leadership educators. To assess face validity, Panel 3 consisted of five non-experts.

Panel 1 consisted of five individuals, each with varying gender, age, education levels, and experience in four industries. I provided them with the boundary spanning leadership definition, to ensure they understood the construct of study. Research has consistently shown that for Delphi questions requiring expert feedback, the individual responses are inferior to the consensus of the groups decision-making processes (Okoli, 2004). Therefore, Panel 1 was asked to define 20 boundary spanning leadership variables they believed were the most important attributes to the construct. Panel 1 inductively generated one-hundred variables. I collated these variables, deleted duplicates, and arranged them into alphabetical order.

Panel 2 consisted of five individuals, each with varying gender, age, and education levels. They worked as practitioners, were self-selected boundary spanning leaders, and had prior work experience in several industries. I provided them with the boundary spanning leadership definition to ensure they understood the construct of study.

Panel 1 and 2 were asked to rank the one-hundred boundary spanning leadership variables on a 5-point Likert scale, using Microsoft® Excel, where 1 - Not Important, 2 - Somewhat Important, 3 - Neutral, 4 – Important, and 5 - Very Important. I provided further instructions to the panelists: (*i)* if they thought two or more variables had a similar meaning, they were asked to put them in the same cell and to separate them by commas (e.g., clear communication, communication, communicates well with others, etc.), *(ii)* they were asked to list no more than thirty variables under each Likert category, which was done to require extensive thinking and *(iii)* the thirty variables included standalone variables, not multiple variables in the same cell. I collated the very important variables, deleted duplicates, and formatted the list into alphabetical order. The final list consisted of fifty-three very important boundary spanning leadership variables. Then, Panel 3 was brought in. This panel consisted of five individuals, each with varying gender, age, and education

levels, and who were considered non-experts in the field of interest. I provided Panel 3 with the boundary spanning leadership definition and the fifty-three variables.

Panel 3 was asked to choose the most important variables from the list. After seven exchanges, a consensus of forty-one variables emerged. A total of twelve variables were removed by Panel 3 because they were viewed as not specific to the boundary spanning leadership construct. Following best practices (Cyphert & Gant, 1971; Brooks, 1979; Ludwig, 1994, 1997; Custer, Scarcella, & Stewart, 1999), three iterations are sufficient to collect the needed information and to reach a consensus in a Delphi study.

Based on the forty-one defined variables, Panel 1, 2, and 3 reviewed, responded, refined, and determined the list. From this process, five exchanges were made before thirty-three variables were generated through a consensus. Eight variables were deleted because they were not specific to boundary spanning leadership. I formulated these variables into ability and quality statements for the pilot study survey.

Pilot Study

Thoroughly reviewing and piloting items are important steps in the numerous iterations involved in scale development (Spector, 1992). I conducted a pilot study at a public research university in the northeast USA to fine-tune the variables. Following accepted convention, undergraduates were used for the pilot study (Ciuchta et al., 2018; Kronrod & Bart, 2018). Ninety-one undergraduate students participated and had an average of four-years' work experience.

This sample size was used because pilot studies should encompass at least 10% of the final study's sample size (Lackey & Wingate, 1998). In the main study, I use a sample size of 400 participants, which makes this sample sufficient. I provided these participants with direct instructions through Qualtrics. The survey instrument literature shows that a 7-point Likert scale

is ideal when administering level of agreement surveys (Vagias, 2006). Therefore, each variable in the survey was followed by a Likert scale. Appendix A displays the survey instructions and Likert scale used in the pilot and main study.

Following these instructions, participants were presented with (*i*) the survey containing the thirty-three boundary spanning leadership variables developed during the Delphi method, (*ii*) five demographic questions, and (*iii*) an engagement check. In addition, five items were randomly selected from the transformational Multifactor Leadership Questionnaire (MLQ) (Avolio et al., 2004) and were randomly placed among the boundary spanning leadership variables. These five MLQ variables were noted as having negative connotations: "sets goals for the group that tend to be unclear," "avoids discussing his/her deep inner values with others," "has difficulty seeing the 'bigger picture'," "shows little enthusiasm toward my abilities," and "makes some team members feel unimportant." These were included to preliminarily determine if the proposed boundary spanning leadership variables were distinctive.

Main Study

Based on the data and results from the pilot study, I refined the survey and implemented it in the main study. The main study collected data from 400 participants through Amazon's Mechanical Turk (MTurk). MTurk is an online survey tool that is considered valid for experimental studies (Berinsky, Huber, & Lenz, 2012), as well as being used to obtain high-quality data (Buhrmester, 2011). I administered this survey to Human Intelligence Task (HIT) workers currently residing in the United States. No additional worker specifications were used due to the demographic information I requested in the survey.

DATA AND RESULTS

Pilot Study

The goal of the pilot study was to refine and reduce the survey to develop a parsimonious solution to help interpret the overall scale and underlying dimensions in the main study. I did this with Exploratory Factor Analysis (EFA), which is used to identify underlying relationships between variables in scale development (Hinkin, 1995). Following scale development protocol (Hinkin, 1998), the pilot study evaluated thirty-three boundary spanning leadership variables and five MLQ variables via a Qualtrics survey.

There's a consensus in the literature that factors are retained when eigenvalues are above 1, that items are retained when magnitude loadings are above 0.4 (Hinkin, 1995), and that a Cronbach's alpha above 0.7 (Nunnally, 1978) indicates internal consistency (Klein, Astrachan, & Smyrnios, 2005). Results of the initial exploratory factor analysis using oblique analysis, yielded six factors. I retained items if *(i)* they loaded 0.40 or more on a factor and *(ii)* did not load more than 0.40 on two factors. A total of twenty-eight boundary spanning leadership variables were retained. Strong evidence was found for the deletion of Factor 6, which loaded all five MLQ variables.

I found that four boundary spanning leadership variables needed to be re-evaluated by further analyzing their loadings. I conducted inter-variable correlations and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Williams, Onsman, & Brown, 2010). Unique variables have a 0.002 or less unit difference between factor loadings, otherwise, they are considered cross loadings (LaNasa, Cabrera, & Trangsrud, 2009), meaning they are not unique. The four variables were not considered unique because of cross loadings, therefore were removed. In total, five boundary spanning leadership variables were deleted in the pilot study. I used this

revised parsimonious scale of twenty-eight boundary spanning leadership variables as the foundation for the main study.

Main Study

The five randomly selected MLQ items used in the pilot study had negative connotations, which may be the reason they loaded to the same factor. Reverse-coded variables may result in an artificial response factor consisting of all negatively worded variables (Hinkin, 1995). Therefore, prior to deploying the main study, I revised the survey to include five additional randomly selected transformational MLQ variables (Avolio & Bass, 2004). I took this step to minimize systematic error, as well as compare the results to the previously selected, negatively worded, MLQ variables. This enables a more accurate determination of whether boundary spanning leadership may be a distinctive form of leadership.

The related EFA literature recommends a sample size of 150, or a sample of 10 for each variable used in the administered survey (Hinkin, 1995). I collected 400 responses via MTurk for the twenty-eight boundary spanning leadership and ten MLQ variables, as well as one engagement check. However, thirty-four respondents failed the engagement check so were removed from the dataset. Therefore, the main study consisted of 366 unique respondents.

First, I performed a factor test to determine the Bartlett's test of sphericity and the KMO measure of sampling adequacy. The Bartlett test was significant (p-value < 0.05), which means sufficient intercorrelations exist to conduct the EFA (Williams, Onsman, & Brown, 2010). For the KMO measure of sampling adequacy, the value was 0.86, which is considered significant because the value should be greater than 0.50. This indicates that the data is suitable for the EFA and that it will not hinder the analysis due to multicollinearity (Williams, Onsman, & Brown, 2010).

When the EFA was conducted using principle component factor analysis, five factors were retained with eigenvalues greater than 1. Factor 1 accounted for 46% of the variance in the variables. Additionally, the scree plot displayed and supported the retention of these five factors. Following a similar procedure to the pilot study, oblique analysis was used and variables with magnitude loadings over 0.4 were retained within each factor (Yaremko et al., 1986), for a total of twenty-three out of the twenty-eight boundary spanning leadership variables and seven out of the ten MLQ variables. I carefully examined each variable within each factor. Table 1 displays these results.

Insert Table 1 about here

Following pilot study procedures, I found that five boundary spanning leadership variables loaded below 0.4, two MLQ variables did not load and one cross-loaded. After further examination and analysis, these eight variables were removed. Again, strong evidence was found for the deletion of Factor 5, where the remaining four reverse-scored MLQ variables loaded. The remaining three MLQ variables loaded to Factor 2. After further examination, I removed these variables because they were not specific to the boundary spanning leadership construct.

Next, I conducted Cronbach's alpha on the twenty-three remaining boundary spanning leadership variables. This measure is used to assess the reliability, or internal consistency, of a set of scale variables. For internal consistency, the extant literature shows that reliability should be above 0.80 (Hinkin, 1995). The coefficient alpha for this study was significant at 0.90.

Finally, I examined the group of variables that loaded to the four remaining factors. For each factor, loadings should be above 0.7 (Hinkin, 1995). All factors were considered significant:

Factor 1, α = 0.94; Factor 2, α = 0.86; Factor 3, α = 0.86; and Factor 4, α = 0.72; and, therefore, were retained. Table 2 presents the main study results and 23-item scale.

Insert Table 2 about here

I defined this conceptual model and its underlying dimensions using both inductive and deductive approaches. Transforming, buffering, mobilizing, and weaving were pulled deductively from the literature on a macro-level (Aldrich & Herker, 1977; Tushman & Scanlan, 1981; Ernst & Chrobot-Mason, 2010). Each of these macro-topics connected to enable growth, build understanding, create sustainability, and personal investment, which were defined inductively on a micro-level. As shown in Table 2, each indicator loads on the appropriate factor, which provides initial support for convergent and discriminant validity.

DISCUSSION

In this study, I highlighted the importance of the boundary spanning leadership construct. Additionally, I developed a scale to measure the qualities and abilities of an individual boundary spanning leader. According to the knowledge obtained from current literature, boundary spanning leadership has not been studied on a micro-level. My study is the first to develop a formalized conceptualization and operationalization of boundary spanning leadership. Over a series of two studies, I followed best practices in scale development (Hinkin, 1995) to establish the initial validity of the proposed 23-item boundary spanning leadership scale.

Overall, my study contributes to research in both social embeddedness (Granovetter, 1973) and boundary spanning theories (Aldrich & Herker, 1977). Although social embeddedness is established in the literature, its applications in the boundary spanning context have been limiting. The lack of research using this perspective is disconcerting given the boundary spanning process

in which social embeddedness is embraced and connected. In my study, boundary spanning leadership is emphasized as a bridge between these two types of exchange; boundary spanning and social embeddedness. That is, a relationship between a boundary spanning leader and their networks. This involves exchange and interaction where the leader partners with their social ties to pursue goals and connect opportunities within and across boundaries.

Social embeddedness theory indicates that the role of personal relationships, structures, and networks generates trust and decreases wrongdoing (Granovetter, 1973). In establishing this initial boundary spanning leadership scale, it was found that these qualities and abilities may be associated with one's social embeddedness. This would indicate that those who utilize their social embeddedness, and span beyond, may be considered boundary spanning leaders; rather than those who remain restrained and embedded. This furthers the social embeddedness theory because the boundary spanning leadership scale may help measure this phenomenon.

Notably, my findings suggest that boundary spanning leadership abilities and qualities may be distinct from MLQ due to the differentiated factor loadings. Consequently, boundary spanning leadership may capture an existence of leadership that transformational MLQ may not. This may help further management literature by indicating that there may be an additional type of leadership occurring, allowing for the linking of internal networks with external sources of information for success (Aldrich & Herker, 1977). Importantly, I determined the abilities and qualities of boundary spanning leaders, by having developed a measurement scale used to examine the extent of each. New measurement scales in the literature have been shown to broaden, enrich, and unify research fields.

Conducting this study contributed to the literature and provided a foundation for scholars to better understand these individual leaders. The hope is that this study stimulates future research

to examine the boundary spanning theory and help inform the development of effective leaders. Once validated, this method can be used to measure the qualities and abilities of boundary spanning individuals, thus, having practical implications.

Limitations and Suggestions for Future Research

Like all studies, this one has limitations. First, the scale was developed, not validated. Future researchers may want to validate the scale through confirmatory factor analysis and hypothesis testing. With additional research, these findings may indicate that boundary spanning leadership is a distinct form of leadership.

The role played by boundary spanners is also associated with innovation and entrepreneurship because of a greater access to external partnering, critical resources, and information (Dodgson 1994; Ahuja, 2000). The extant literature implies that entrepreneurship and boundary spanning may be connected, but research on this is scarce. Therefore, boundary spanning leadership may exist at the intersection of boundary spanning, leadership, and entrepreneurship. With further analysis, this scale could determine the level of one's boundary spanning leadership capabilities and how entrepreneurship may be connected.

CONCLUSION

Boundary spanning leadership has not been adequately studied on a micro-level. This study examines the specific characteristics of individuals who span boundaries through the development of the boundary spanning leadership measurement scale. This study represents an initial step into the measurement of boundary spanning leadership. Additionally, it provides a foundation for scholars to further develop and validate the construct and scale.

This study contributes to the extant literature and provides a foundation for scholars to better understand these individual leaders. The hope is that this study stimulates future researchers

to examine the boundary spanning theory and help inform the development of effective leaders. Once validated, this leadership method can be used to measure the qualities and abilities of boundary spanning leaders and, thus, has practical implications.

REFERENCES

Ahuja, G. 2000. Collaboration networks, structural holes, and innovation: a longitudinal study. *Administrative Science Quarterly*, 45: 425–55.

Aldrich, H., & Herker, D. 1977. Boundary spanning roles and organization structure. *Academy of Management Review,* 2: 217-230.

Allen, T. 1977. Managing the flow of technology. *MIT Press*.

Avolio, B. J., Gardner,W. L.,Walumbwa, F. O., Luthans, F., & May, D. R. 2004. Unlocking the mask: A look at the process by which authentic leaders impact follower attitudes and behaviors. *Leadership Quarterly*, 15: 801-823.

Bass, B.M. 1990. Theory, research, and managerial applications. *New York: The Free Press,* 3.

Berinsky, A., Huber, G., & Lenz, G. 2012. Evaluating online labor markets for experimental research: Amazon.com's mechanical turk. *Political Analysis*, 20: 351-368.

Blau. P. 1964. Exchange and power in social life. New Brunswick, NJ: *Wiley.*

Brooks, K. W. 1979. Delphi technique: Expanding applications. *North Central Association Quarterly*, 54(3): 377-385.

Buhrmester, M., Kwang, T., & Gosling, S. D. 2011. Amazon's mechanical turk: A new source of inexpensive, yet high-quality, data. *Perspectives on Psychological Science*, 6(1): 3-5.

Cardon, M. S., Gregoire, D. A., Stevens, C. E., & Patel, P. C. 2013. Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing*, 28(3): 373–396.

Carr, J. C., Cole, M. S., Ring, J. K., & Blettner, D. P. 2011. A measure of variations in internal social capital among family firms. *Entrepreneurship Theory and Practice*, 35(6): 1207–1227.

Chan, D. 2001. Method effects of positive affectivity, negative affectivity, and impression management in self-reports of work attitudes. *Human Performance*, 14: 77–96.

Challis, L., S. Fuller, M. Henwood et al., 1988. Joint approaches to social policy. Cambridge: *Cambridge University Press.*

Clemson, T. 2012. Discovering frontiers of excellence using boundary spanning leadership. *American Society of Military Comptrollers.*

Custer, R. L., Scarcella, J. A., & Stewart, B. R. 1999. The modified Delphi technique: A rotational modification. *Journal of Vocational and Technical Education,* 15(2): 1-10.

Cyphert, F. R., & Gant, W. L. 1971. The Delphi technique: A case study. *Phi Delta Kappan*, 52: 272-273.

Dalkey, N. C. 1972. The Delphi method: An experimental study of group opinion.

Dalkey, D. L. Rourke, R. Lewis, & D. Snyder 2007. Studies in the quality of life: Delphi and decision-making. Lexington, MA: *Lexington Books*. 13-54.

Dalkey, N. C., & Helmer, O. 1963. An experimental application of the Delphi method to the use of experts. *Management Science*, 9(3): 458-467.

Dodgson, M. 1994. Technological collaboration and innovation: *The handbook of industrial innovation.*

Ernst, C., Chrobot-Mason D. 2010. Boundary spanning leadership: Six practices for solving problems, driving innovation, and transforming organizations. *McGraw Hill Professional.*

Ernst, C., & Yip, J. 2009. Boundary spanning leadership: Tactics to bridge social identity groups in organizations.

Fariar, M. 2010. Social science resources for restoration outreach programs. Ecological Restoration, *JSTOR,* 28(2): 150–153.

Fleming, L., & Waguespack, D. M. 2007. Brokerage, boundary spanning, and leadership in open innovation communities. *Organization science*, 18(2): 165-180.

Friedman, R. A., & Podolny, J. 1992. Differentiation of boundary spanning roles: Labor negotiations and implications for role conflict. *Administrative Science Quarterly*, 37: 28-47.

Granovetter, M. S. 1973. The strength of weak ties. *American Journal of Sociology*, 78: 1360–1380.

Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91: 481-93

Hinkin, T. R. 1995. A review of scale development practices in the study of organizations. *Journal of Management*, 21(5): 967–988.

Hinkin, T. R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1): 104–121.

Huang, Y., Luo, Y., Liu, Y., & Yang, Q. 2016. An investigation of interpersonal ties in interorganizational exchanges in emerging markets: A boundary-spanning perspective. *Journal of Management*, 42(6): 1557-1587.

Hsu, C. C., & Sandford, B. A. 2007. The Delphi technique: making sense of consensus. *Practical Assessment, Research & Evaluation*, 12(10): 1-8.

Kaplan, L. M. 1971. The use of the Delphi method in organizational communication: A case study. The Ohio State University, Columbus.

Klein, Sabine B., Joseph H. Astrachan, and Kosmas X. Smyrnios 2005. The F-PEC scale of family influence: Construction, validation, and further implication for theory. *Entrepreneurship Theory and Practice,* 29(3): 321-339.

Kronrod, A., Barty. 2018. Taking a leaf out of a review: The asymmetrical link between linguistic similarity and attitude certainty for writers and readers of product reviews.

Lackey, N.R., & Wingate, A.L. 1998. The pilot study: One key to research success. Advanced design in nursing research. Thousand Oaks, CA: Sage. 2.

LaNasa, S. M., Cabrera, A. F., & Trangsrud, H. 2009. The construct validity of student engagement: A confirmatory factor analysis approach. *Research in Higher Education*, 50(4): 315-332.

Leadbeater, C. and S. Goss. 1998. *Civic Entrepreneurship,* London: Demos.

Ludwig, B. G. 1994. Internationalizing Extension: An exploration of the characteristics evident in a state university Extension system that achieves internationalization. The Ohio State University, Columbus.

Ludwig, B. 1997. Predicting the future: Have you considered using the Delphi methodology? *Journal of Extension,* 35(5): 1-4.

Mull, C. D., & Jordan, J. W. 2014. Boundary spanning. Reclaiming children and youth, 23(3): 56.

Newman, D. A., Harrison, D. A., Carpenter, N. C., & Rariden, S. M. 2016. Construct mixology: Forming new management constructs by combining old ones. *The Academy of Management Annals*, 10(1), 943–995.

Nunnally, Jum C. 1978. Psychometric Methods. New York: *McGraw Hill.*

Oh, K. H. 1974. Forecasting through hierarchical Delphi. The Ohio State University, Columbus.

Pill, J. 1971. The Delphi method: Substance, context, a critique and an annotated bibliography. *Socio-Economic Planning Science,* 5: 57-71.

Plattner, Stuart 1989. *Economic Anthropology*, Stanford, CA: Stanford University Press. 11–15.

Polanyi K., Arensberg C., and Pearson H. 1957. Trade and market in the early empires. *New York: Free Press.*

Podolny, J. M., & Baron, J. N. 1997. Resources and relation- ships: Social networks and mobility in the workplace. *American Sociological Review*, 62: 6.

Preble, J. F. 1983. Public sector use of the Delphi technique. *Technological Forecasting and Social Change,* 23: 75–88.

Ratcheva, V. 2009. Integrating diverse knowledge through boundary spanning processes: The case of multidisciplinary project teams. *International Journal of Project management*, 27(3): 206-215.

Rowley, T., Behrens, D., & Krackhardt, D. 2000. Redundant governance structures: An analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal,* 21: 369–386.

Sandmann, L.R., Jordan, J.W., Mull, C. D. & Valentine, T. 2014. Measuring boundary spanning behaviors in community engagement. *Journal of Higher Education Outreach and Engagement,* 18(1): 83–104.

Schwab, D. P. 1980. Construct validity in organizational behavior. *Research in Organizational Behavior*, 2: 3–43.

Schotter, A. P., Mudambi, R., Doz, Y. L., & Gaur, A. 2017. Boundary spanning in global organizations. *Journal of Management Studies*, 54(4): 403-421.

Scott, W. R. 1992. Organizations: Rational, natural, and open systems. *Prentice Hall,* 2: 196.

Spector, P. E. 1992. Summated rating scale construction: An introduction. Thousand Oaks, CA: *Sage.*

Stock, R. M. 2006. Interorganizational teams as boundary spanners between supplier and customer companies. *Journal of the Academy of Marketing Science*, 34: 588-599.

Stogdill, R. M. 1948. Personal factors associated with leadership: A survey of the Literature. *Journal of Psychology,* 25: 35–71.

Tushman, M. L., and Scanlan, T. J. 1981. Boundary spanning individuals: Their role in information transfer and their antecedents. *Academy of Management Journal,* 24(2): 289-305.

Tushman, M. 1977. Special boundary roles in the innovation process. *Administrative Science Quarterly,* 22: 587-605.

Weerts, D. J., and Sandmann, L. R. 2010. Community engagement and boundary-spanning roles at research universities. *Journal of Higher Education,* 81(6): 632–727.

Williams, B., Onsman, A., and Brown, T. 2010. Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8(3).

Williams, P. 2002. The competent boundary-spanner. *Public Administration*, 80(1): 103–124.

Wilson, A., A. Averis, and K. Walsh 2003. The influences on and experience of becoming nurse entrepreneurs: A Delphi study. *International Journal of Nursing Practices,* 9: 236–245.

Okoli, C., and Pawlowski, S. D. 2004. The Delphi method as a research tool: An example, design considerations and applications. *Information & Management*, 42(1): 15-29.

Uzzi, B. 1996. The sources and consequences of embeddedness for economic performance of organizations: The network effect. *American Sociological Review,* 61: 674–698.

Vagias, Wade M. 2006. Likert-type scale response anchors. *Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management.* Clemson University.

Yaremko, R. M., Harari, H., Harrison, R. C., & Lynn, E. 1986. Handbook of research and quantitative methods in psychology: For students and professionals. Hillsdale, NJ: *Lawrence Erlbaum Associates.*

Yip, J., Ernst, C., & Campbell, M. 2009. Boundary spanning leadership: Mission critical perspectives from the executive suite. *Center for Creative Leadership*, 4.

APPENDIX A

Pilot and Main Study Survey Instructions

Boundary spanning leadership is defined as **"the capability to establish direction, alignment, and commitment across boundaries in service of a higher vision or goal."**

- Please reflect on this definition.

- Given this type of leader, think about the various abilities and behaviors this leader would need to encompass.

- Keeping this type of leader in mind, please complete the survey by indicating your degree of agreement for each of the following variables.

    - 1 - Strongly Disagree, 2 - Disagree, 3 -Somewhat Agree, 4 - Neutral, 5 - Somewhat Agree, 6 - Agree, 7 - Strongly Agree.

TABLE 1

Main Study Results

Items/Variables	Factor Loading	Eigenvalues (Factor retained if greater than 1)	Magnitude loadings (item retained if greater than 0.4)	Cronbach's alpha (factor retained if greater than 0.7)
Ability to collaborate and work with others	1	17.58	0.63	0.94
Ability to communicate clearly			0.83	
Ability to engage others in achieving the vision			0.55	
Ability to follow through with tasks and projects			0.58	
Ability to see a greater vision			0.55	
Ability to set a vision			0.55	
Is innovative			0.62	
Is productive and gets things done			0.82	
Is reliable			0.81	
Is willing to go the extra mile			0.69	
Ability to help others keep an open mind when solving problems	2	2.73	0.54	0.86
Ability to listen to others viewpoints			0.6	
Ability to support others			0.52	
Ability to treat everyone with equality			0.89	
Ability to make each team member feel necessary (MLQ)			0.6	

Is equally committed to each group member (MLQ)			0.69	
Values diversity			0.94	
Understands that each individual has their own needs (MLQ)			0.73	
Ability to develop others			0.63	
Ability to empower a group with confidence			0.79	
Ability to empower others			0.82	
Ability to establish common ground	3	1.73	0.69	0.87
Ability to express confidence in other's performance			0.72	
Ability to politely challenge others (subordinates, peers & superiors)			0.51	
Ability to identify mutual interests	4	1.2	0.72	0.72
Ability to network			0.76	
Has difficulty discussing his/her deep inner values with others (MLQ)			0.86	
Has difficulty seeing the "bigger picture" (MLQ)	5	1.06	0.87	Loaded to same factor so were removed .
Has little enthusiasm towards other's abilities (MLQ)			0.84	
Is able to make people feel unimportant (MLQ)			0.81	

Sets goals for the group that tend to be unclear (MLQ)	1 and 3	1.06	0.5	MLQ cross loaded so was removed
Ability to align core values	N/A	N/A	N/A	N/A
Ability to motivate others				
Ability to set attainable goals				
Ability to think of solutions using many different methods (MLQ)				
Is honest				
Is a "natural" at being confident (MLQ)				
Values cross functional teamwork				
KMO > 0.5, 0.86				

TABLE 2

23-item Scale

	Factor 1	Factor 2	Factor 3	Factor 4
Transforming/Enable Growth				
Ability to communicate clearly	0.83			
Is productive and get things done	0.82			
Is reliable	0.81			
Is willing to go the extra mile	0.69			
Ability to collaborate and work with others	0.63			
Is innovative	0.62			
Ability to follow through with tasks and projects	0.58			
Ability to engage others in achieving the vision	0.55			
Ability to see a greater vision	0.55			
Ability to set a vision	0.55			
Buffering/Build Understanding				
Values diversity		0.94		
Ability to treat everyone with equality		0.89		
Ability to listen to others viewpoints		0.60		
Ability to help others keep an open mind when solving problems		0.54		
Ability to support others		0.52		
Mobilizing/Create Sustainability				
Ability to empower others			0.82	
Ability to empower a group with confidence			0.79	
Ability to express confidence in other's performance			0.72	
Ability to develop others			0.63	
Ability to politely challenge others (subordinates peers and superiors)			0.51	
Weaving/Personal Investment				
Ability to network				0.76
Ability to identify mutual interests				0.72
Ability to establish common ground				0.69