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TOWARD A COMPREHENSIVE THEORY OF SHAREHOLDER LETTERS: THEORETICAL FRAMEWORK, TAXONOMY DEVELOPMENT, AND PROPOSITIONS

Jerry Allison, University of Mount Olive

ABSTRACT

Using text mining software, this study takes as sample of 252 shareholder letters and develops a three-class “natural language” taxonomy. Then this study couples this taxonomy with the topic of organizational impression management to develop a sequence of propositions. The uniqueness of this study is demonstrated in two ways. First, this is one of the first studies to use text mining software to create a taxonomy from the actual language used rather than from predefined classes. Second, this is the first to create a taxonomy of shareholder letters and the development of this taxonomy may be a step toward establishing a more comprehensive theory of strategic communication.

INTRODUCTION

Strategic communication is the utilization of a medium of communication that focuses upon the goal of an organizational initiator and ignores the reception by the target (Dulek & Campbell, 2015; Thomas & Stephens, 2015; Hallahan, Holtzhausen, van Ruler, Vercic, & Sriramesh, 2007). This description alters the traditional view of communication from a multiple party interaction to a one-way transmission, potentially with the purpose of organizational impression management (Mohamed, Gardner, & Paollillo, 1999). As a result, any correspondence from the organization to the public could be classified as strategic communication (Henderson, Cheney, & Weaver, 2015).

Letters to shareholders, generally a portion of a firm's annual report, are a part of strategic communication. Research has shown these letters to communicate to stakeholders information such as organizational strategy (Karagozoglu & Fuller, 2011; Landrum, 2008; Pegels & Baik, 2000), organizational imagery (Abrahamson & Park, 1994; Craig & Amernic, 2005; Patelli & Pedrini, 2014), and even personal imagery (Clapham & Schwenk, 1991; Courtright & Smuddle, 2009; Brennan & Conroy, 2013). In short shareholder letters are a vehicle for organizational management to convey a diverse and complex set of messages to the stakeholders.

The contribution of this paper is threefold. First, this paper presents a literature review, part of which develops a theoretical framework through which researchers can view shareholder letters. Second, this paper discovers a taxonomy for shareholder letters that allows the classification and testing of letters in research. This taxonomy is derived using the currently unique process of text analytics using natural language rather than predetermined groups. Finally, this paper designs some propositions linking shareholder letters and organizational impression management.

LITERATURE REVIEW

Definition And Meaning

Hallahan, et al. (2007) formally define strategic communication “as the purposeful use of communication by an organization to fulfill its mission” (p. 3). Equally important are the specific characteristics mentioned. First, this type of communication is purposeful, designed for a specific goal. Second, at the center of strategic communication is delivering a specific message to an identified target. Hallahan, et al. (2007) go further by presenting an organization as a potential influencer of societal issues.

Dulek and Campbell (2015) offer similar characteristics. These authors note that strategic communication shifts the focus of communication from the receiver of the message and from the context to the communicator and to the goal of the communication. In addition Dulek and Campbell (2015) state this one-way communication can incorporate ambiguity into the message for the purpose of leading the receiver to a desired conclusion.

Thomas and Stephens (2015) do not define strategic communication themselves but rather refer to four articles that define the term or offer refinements of the definition. These definitions and refinements include communication that promotes firm positioning, fulfilling the firm’s mission, connecting a firm and its constituents, and strategically interacting with those outside the firm. However, these authors stop short at recommending a definition so as to not restrict research in the field.

Given this information, this paper offers a definition. The definition of strategic communication is unidirectional communication of an intentional message for a strategic purpose to those outside the firm. This definition keeps the important elements mentioned previously such as one-way communication, strategic maneuvering, purposefulness, and a target outside the firm. However, this definition also is broad enough to allow research to focus upon areas within the construct.

Shareholder Letter Research

Research into shareholder letters is quite extensive and has been occurring for more than two decades. This section examines the various types of research for which the letters have been used. Much of the research focuses on the obvious – the use of this form of strategic communication to maintain the image of the organization or to maintain the image of management. Some research has focused upon the mental models that management has revealed through this mode of communication. Other research has shown that letters often reveal strategic information about the firm due to the language in which the letter was written. Each of these will be addressed.

One use of letters to shareholders is to positively influence the public image of the organization – a form of organizational impression management (Mohamed, et al., 1999). Early research showed that organizations may hide negative information from stakeholders while accentuating positive information (Abrahamson & Park, 1994; Brown, 1997). Specifically, letters have shown success in firm privatization (Craig & Amernic, 2005), to influence financial analysts’ recommendations (Fanelli, Masangyi, & Tosi, 2009), and to deflect oil firm investor attention to OPEC and away from domestic oil difficulties (Prasad & Raza, 2002). Research has shown this deflection of attention to be salient in other industries where negative occurrences are

attributed to environmental factors (Tessarolo, Pagliarussi, & Mattos da Luz, 2010). Much of the organizational impression management may depend heavily upon phraseology (Craig & Brennan, 2012; Geppert & Lawrence, 2008).

Organizational impression management through letters to shareholders may be a passive method for promoting personal impression management. Research has shown that letters can be mechanisms for conveying management vanity and narcissism (Brennan & Conroy, 2013; Craig & Amernic, 2011). On a positive note, research has also shown management can enhance reputation by communicating and explaining core values (Courtright & Smuddle, 2009) and can support fidelity in management where there are large unexpected financial results (Yuthas, Rogers, & Dillard, 2002). As with organizational impression management, management uses personal impression management to take credit for good results while attributing bad results to environmental factors (Clapham & Schwenk, 1991).

Shareholder letters also can reveal management mental models. Barr, Stimpert, and Huff (1992) tied flexible management cognitive patterns found in letters to survivability while Cho and Hambrick (2006) found the same flexibility adaptation to environmental shifts such as deregulation. These positive mental models also have been found in letters with regard to emerging technology (Eggers & Kaplan, 2009). However, negative cognitions have also been discovered in the submissions to shareholders. Such negative mental models include management myopia (Ridge, Kern, & White, 2014), avoidance of information technology (Peslak, 2005), and dysfunctional models about reality (O'Connor, 2013).

Finally, shareholder letters can provide clues to organization strategy. The letters sometimes reveal the strategic cognitions of management (Karagozoglu & Fuller, 2011; Pegels, 2005). In a more focused study, Landrum (2008) found that strategic intent may be sometimes found in letters. This study was a longitudinal case study of Nike and Reebok that not only showed the presence of future strategy but also the style of writing reveals management sensemaking.

Theoretical Framework

Courtright and Smuddle (2009) maintain shareholder letters are probably the most read part of the annual report. While most publically traded companies have many shareholders, there are many other stakeholders that would be interested in the strategic communications of management. As such, the shareholder letters become an important vehicle for stakeholders to understand the climate of the organization. For example, management has used letters for stakeholder sensemaking (Landrum, 2008), for revealing strategic thinking (Pegels & Baik, 2000; Landrum, 2008), and for providing information about the future (Smith & Taffler, 2000).

However, management can shape the language and information presented. The review of the literature of shareholder letters reveals several extraneous factors used by management can mold a shareholder letter. The first of these is organizational impression management. Connolly-Ahern and Broadway (2007) define impression management as intentional actions designed for shaping information about a focal point. Thus, for organizational impression management, management would be shaping information about the organization. Several studies (Tessarolo, Pagliarussi, & Mattos da Luz, 2010; Geppert & Lawrence, 2008; Craig & Brennan, 2012) have demonstrated that management can intentionally choose language and design of information to create a desired organizational image. Abrahamson and Park (1994) showed that

management can hide negative information so that investors will see a firm in a more positive light and continue to invest.

A second extraneous factor management may use in crafting a shareholder letter is personal impression management. Using the Connolly-Ahern and Broadway (2007) definition, the individuals in management intentionally shape language and information for the purpose of creating their own positive image. Part of the rationale in management using shareholder letters for personal impression management comes from what Gupta, Dutta, and Chen (2014) illustrated – there is a link between management capability and overall organizational performance. Unsurprisingly then, Clapham and Schwenk (1991) demonstrated that management can use shareholder letters to take personal credit for good outcomes and blame the environment for bad outcomes. Craig and Amernic (2011) showed outright narcissism in some letters. In cases of large earnings surprises, management has used shareholder letters to communicate their own veracity and trustworthiness (Yuthas, Rogers, & Dillard, 2002).

A third extraneous factor for molding a shareholder letter is management's faulty mental model of the organization. In some cases management does not visualize the environment correctly nor does management evaluate the firm correctly. Ridge, Kern, and White (2014) demonstrated that at certain times management can experience a temporal and spatial myopia that affects the content of the shareholder letters. Letters have also been distorted in the banking industry due to dysfunctional organizational mental models (O'Connor, 2013). Management attention upon facets of the industry can also limit the comprehensiveness of the letters (Eggers & Kaplan, 2009; Cho & Hambrick, 2006).

A final extraneous factor for crafting the content of the shareholder letter is to elicit a desired behavior from a reader of the information. Previously mentioned was Abrahamson and Park (1994) where the letter was shaped to get investors to continue to invest. Other letters studies show management has used a diversionary situation to deflect stakeholder attention from another situation (Prasad & Raza, 2002) and has used language to massage analysts' earnings forecasts of the firm (Fanelli & Misangyi, 2009).

In summary a basic shareholder letter is designed to share organizational climate information. However, there are extraneous factors that may influence the language and appearance of the letter. Extraneous factors may also directly influence the actual climate information presented. Evidence of this is present in such notable scandals such as that created by the management at Enron. Figure 1 is a model that represents these relationships.

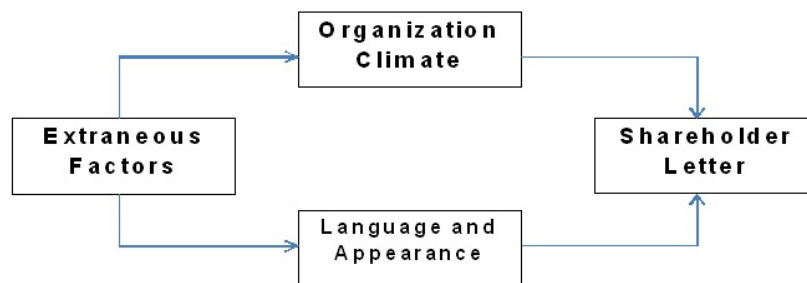


Figure 1: A model of the factors involved in creating shareholder letters.

One of the great difficulties in testing such a model is because the data, the actual shareholder letters, is unstructured text rather than numeric data. Consequently, there are no readily noticeable relationships between the shareholder letters. One thing that would greatly help in testing is a taxonomy of shareholder letters which would then allow research to find relationships between the classes of letters and other variables.

The studies mentioned previously that point to organizational impression management (OIM) -- Tessarolo, Pagliarussi, and Mattos da Luz (2010); Geppert and Lawrence (2008); and Craig and Brennan (2012) -- do not overtly identify OIM, much less identify what types of shareholder letters work with certain types of OIM. A taxonomy of shareholder letters would allow the testing of the relationships between shareholder letter types and impression management tactics, such as those given by Tedeschi and Norman (1985) and Cialdini (1989).

Similarly, the studies that point to personal impression management (PIM) -- Clapham and Schwenk (1991); Craig and Amernic (2011); and Yuthas, Rogers, and Dillard (2002) -- also do not indicate a relationship between types of shareholder letters and PIM types. Thus, a taxonomy of shareholder letters would help determine types of shareholder letters that utilize certain tactics of impression management under given conditions.

Finally, looking at the larger perspective of a taxonomy of shareholder letters within strategic communication, the taxonomy would aid in the general understanding and instruction regarding shareholder letters as a component of strategic communication. This taxonomy combined with others in strategic communication would allow relationships to be examined between types of one form of strategic communication and another.

Taxonomy Research

Definitions for the term taxonomy are many. Nevertheless, these definitions have a unifying concept of reducing a complex group of items to a simplified classification system using relevant attributes of the items being classified (Andersen, 2010; Autry, Zacharia, & Lamb, 2008; Duarte & Sarkar, 2011; Rich, 1992). Although the practice of creating taxonomies began in the life sciences (Duarte & Sarkar, 2011), other disciplines have utilized the technique. Organizational management theorists have used taxonomies to reduce complexity for the purposes of instruction (Autry, et al, 2008), to provide a basis for developing comprehensive theory (Bunn, 1993; Rich, 1992), and to serve in construct measurement (Marks, Mathieu, & Zaccaro, 2001).

Marketing research has utilized taxonomies for market segmentation (Lessig & Tollefson, 1971), formats for advertising (Lamb, Pride, & Pletcher, 1978), strategies for marketing (Hawes & Crittenden, 1984; El-Ansary, 2006), advertising for television (Laskey, Day, & Crask, 1989), and customer methods for making buying decisions (Bunn, 1993). Other management areas have developed taxonomies. Some of the management topics include turnover of employees (Bluedorn, 1978; Dalton, Tudor, & Krackhardt, 1982), strategic groups (McGee & Howard, 1986), organizational justice (Greenberg, 1987), team processes (Marks, et al, 2001), organizational knowledge (Chua, 2002; Dinur, 2011; Huang, Luther, & Tayles, 2007; Ramirez & Nembhard, 2004), logistics (Kuo-Chung & Li-Fang, 2004), and global firms (Knight & Cavusgil, 2005). Most recently, studies have been done to classify organizational ethics statements (Allison, 2015a) and to classify organizational ethics statements (Allison, 2015b). The latter two studies employed the use of natural language to develop the taxonomies in the same fashion as this study.

METHOD

Choice Analytical Method

Taxonomy research is not new and, therefore, there is a traditional process for discovery. Duarte and Sarkar (2011) state the general process is generate a classification system based on object similarity, empirically analyze the system, and then place the objects into their respective classes. Historically, this process has been operationalized by a three step process. First, the researcher uses theory to create the system's classes. Second, quantitative techniques are employed to determine if the objects cluster along the theoretical classes. Finally, the researcher creates rules by which objects are then placed into the classes. A major concern in this process is the classification system is created prior to data analysis and, as such, the system may not have usefulness (Duarte & Sarkar, 2011). In this case the creation of the classes may be a result of error or bias on the part of the researcher. Thus, the results generated from the process may not represent reality and in some cases may not even agree with theory (Kuo-Chung & Li-Fang, 2004).

Instead of creating a classification scheme using theory, a more natural way is to create the scheme by using the characteristics of the items being classified (McGee & Howard, 1986). A researcher might obtain better results in creating a taxonomy by inductively basing the classification upon patterns found in the data derived from item characteristics (Autry et al., 2008). The inference from these statements is that a taxonomy should be discovered in such a way as to minimize the possibility and the appearance of bias and error on the part of the researcher. One method available to accomplish a "better" taxonomy when the classification is focused upon written documents is text analytics. This is a relatively new analysis tool that "helps analysts extract meanings, patterns, and structure hidden in unstructured textual data" (Chakraborty, Pagolu, & Garla, 2013, p. 1). By using this tool, one can discover what can be called a natural language taxonomy.

Text analytics has been applied practically for decision making regarding drug patents (Yang, Klose, Lippy, Barcelon-Yang, & Zhang, 2014), for discovering satisfaction levels of hotel guests (Xiang, Schwartz, Gerdes, & Uysal, 2015), and for decision making in developing products (Markham, Kowolenko, & Michaelis, 2015). Research has used text analytics to analyze manager orientations (Helmerson & Mattsson, 2013), to categorize student course drops (Michalski, 2014), and to identify workplace issues for nurses (Bell, Campbell, & Goldberg, 2015). In studies similar to the one presented in this paper, text analytics has allow a taxonomy to be created for organizational ethics statements (Allison, 2015a) and for organizational values statements (Allison, 2015b). Finally, Alshameri, Greene, and Srivastava (2012) classified mission statements and vision statements using text mining.

Sample

The sample started with letters from the thirty companies in the Dow Jones Industrial Average. To augment this sample, a web crawler was used to search and find as many letters to shareholders as possible. A web crawler has two functions: to follow Internet links and save the text from the pages found (Chakraborty, et al, 2013). In order to make this happen, the web crawler needed a seed page with which to start. This seed page was created by taking the result

of an Internet search engine using the search parameters “letters to shareholders”, saving those results to a local computer, editing out of the page irrelevant information such as advertising and irrelevant links, and then reposting the page to the author’s website. The web crawler was given the parameter of going three layers deep meaning the crawler would search the seed page (layer one), follow the links found on the seed page (layer two), and then follow the links found in layer two (layer three). This allowed the crawler not to only search the web pages listed on the seed page but to also find on subsequent pages links to other pages that might have letters to shareholders. At each step the web page found was downloaded to the author’s local computer. Using a web crawler in this manner created the potential for a large number of items in the sample.

The web crawler produced over 5800 pages. Most of these pages did not have anything regarding shareholder letters but rather contained information irrelevant to this study. These irrelevant pages were removed from the sample leaving 222 pages containing pertinent information. These remaining pages were then examined and edited to remove all extraneous information from them. Many letters to shareholders are embedded inside company annual reports containing much more information than just the letters. When the shareholder letters from the Dow Industrial companies were combined with the 222 shareholder letters from the web crawler, the sample had a final total of 252 shareholder letters.

SAS Enterprise Miner was used to create two sequential models. The first model, called an unsupervised model, took the text documents and formed classes based upon natural characteristics of the data as well as parameters selected in the software. The second model that followed, called a supervised model, used the classification found from the first model as a guide for creating classification rules. This data set was split into a training set, for the purpose of creating the aforementioned rules, and a validation set, for the purpose of testing the rules. The rules were then used to predict the class for each item in the training set and the validation set. The parameters of the program were then altered one at a time to find a nontrivial classification system and rules with the lowest misclassification rate for both sets.

Results

The results of the previous analysis provide a three-group classification system. Each node variation in the text analysis was changed to obtain a nontrivial classification system and to obtain the lowest misclassification rate. For example, the Text Filter node has three choices for how the term frequencies are weighted – logarithmic, binary, and none. Each of these was selected to find the lowest misclassification rate. By changing every parameter in this way, the lowest misclassification rate of 14.4% of the model training data and 19.2% of the validation data was obtained to create the best model achievable with this sample. Also computed for each set was the mean squared error. For the training set the mean squared error was 0.027 and for the validation set the mean squared error was 0.022.

The largest of the classes is a grouping of 177 documents or 70% of the sample. The analytics software provides key words for each grouping and for this class, the top five key words are “build”, “business”, “company”, “continue”, and “financial”. A careful review of how these terms are used in the documents reveal documents concerned primarily with the organization. For example, some of the text snippets that include “build” are given below.

“...we continue to build a world-class company.” (Comcast)

“...to manage and build the company into a leading...” (Tempur Sealy)

“...our ability to *build* strategic partnerships in areas...” (Nike)

“...*build* leadership brands and businesses...” (Proctor & Gamble)

A similar review of the other key words reveals a similar focus upon the organization. This classification of shareholder letters will be called *Organicentrics*.

The next largest grouping consists of 65 documents, or 26% of the sample. The top five key words in order for this grouping are “matter”, “common”, “statement”, “stock”, and “review”. A reading of the passages where these terms are used revealed a sense of financial and regulatory issues. For example, some of the text snippets containing the first key word “matter” are given below.

“...and SEC-related regulatory *matters* described...” (NanoViricides)

“...professional experience in *matters* related to investments...” (SCOR)

“...resolution of this *matter* enabled our insurers to process...” (First Union)

A similar review of the other key words reveals a focus upon issues needing attention. This group of shareholder letters will be known as the *Issuecentrics*.

The last group, consisting of 10 documents or 4% of the sample, had as its top five key words “analyze”, “assumption”, “alternative”, “analysis”, and “agency”. Other than all starting with the same letter, these terms are used to refer to the acquisition and analysis of data. Some of the text snippets containing the first key word “analyze” are below.

“...Chase, we analyze our performance against...” (JP Morgan)

“...company runs, analyzes, and grow its business...” (Cisco)

“...dedicated to the analysis of customer behavior...” (Teleperformance)

“...and predictive network analysis across fixed and mobile networks...” (EXFO)

A similar review of the other key words reveals a focus upon analyzing data and constructs. This final group will be known as the *Datacentrics*.

DISCUSSION

Analysis

This study is unique and fills a gap in the field of strategic communication. First, even though there has been much study on shareholder letters, this study is the first to examine these letters in a holistic fashion. Previous studies have either examined the intended usage of the letter or have examined the intricacies of language used in the letters. This study examines the entire document in terms of the language used. Second, this study creates a taxonomy of shareholder letters that has not been done before. For this taxonomy, three groups were discovered: the *Organicentrics*, the *Issuecentrics*, and the *Datacentrics*. Finally, this study used text analysis, a qualitative analysis tool that has seen little use in research thus far.

This study discovered three classes for shareholder letters. The *Organicentrics* are letters to shareholders explaining the state of affairs of the organization with the focus being solely upon the organization. The *Issuecentrics* are letters that portray issues of concern to shareholders. Finally, the last category, the *Datacentrics*, are letters that focus upon the portrayal of data and its analysis.

The findings in this study agree with existing theory. First, the findings here show that there are similarities in groups of letters as was also shown in Abrahamson and Hambrick (1997) and Barr, Stimpert, and Huff (1992). The *Issuecentrics* group is supported by theory showing

that management uses letters to explain current outcomes (Clapham & Schwenk, 1991; Fiol, 1995; Geppert & Lawrence, 2008).

Limitations

Any study has limitations and this one is no exception. One primary concern is the size of the sample. Although a sample of 245 shareholder letters is sizeable, multiple letters come from the same firms but from different time periods. Thus, there are not 245 organizations represented by the sample which may have an impact on the results. While the duplication of organizational presence was not significant, the issue is worth mentioning.

Another limitation is the sample was not created randomly. A search engine determined the initial links based on the formulas for relevance. The web crawler then went to each of these links and found other shareholders letters related to the initial link. Because of the lack of randomness, it is possible that entire taxonomic segments may have been missed and there are, in fact, more types of letters than what was derived in this analysis.

PROPOSITIONS

This section takes a brief look at impression management and its expansion to the organizational level. Also, there are three propositions developed regarding the types of organizational impression management tactics used with each of the classes of the taxonomy created previously.

Organizational Impression Management

Goffman (1959) originally introduced the concept that individuals and teams actively engage in tactics to control their image held by other individuals. He likened this management of image to a theatrical performance where the actor, trying to create a desired image, prepares before the presentation, implements the presentation, and then attempts to modify any misrepresentations. Impression management (IM) to Goffman (1959) was a strategic decision to create and maintain an image. Goffman's (1959) concept was further extended when Jones and Pittman (1982) developed a taxonomy for IM tactics.

Because Goffman (1959) had already provided the groundwork for team IM, it was only a matter of time before the construct was extended to organizations. Through the work of Elsbach and Sutton (1992), Elsbach (1994), and Elsbach, Sutton, and Principe (1998), organizational impression management (OIM) was developed. The first two studies provided evidence that organizations desire legitimacy, the image of conforming to a certain set of standards. The third study, and arguably the most significant, identified specific OIM tactics hospitals use to avoid certain circumstances and minimize others. These three studies fully instituted OIM as a viable construct.

The next major step in developing OIM was the study by Mohamed, Gardner, and Paolillo (1999). They combined Cialdini (1989) and Tedeschi and Norman (1985) to characterize OIM tactics along two dimensions: direct versus indirect and assertive versus defensive. This created a 2x2 taxonomy of OIM. Providing even more utility with the study, Mohamed, et al. (1999) analyzed the taxonomy of Jones and Pittman (1982) and incorporated the

older taxonomy into the newer 2x2 taxonomy. In doing this Mohamed, et al. (1999) established multiple ways of examining OIM.

Proposition Development

OIM has been linked to strategic communication, notably letters to shareholders, where firms use the communication to enhance its own image or the image of a group inside the firm (Mohamed, et al., 1999; Bansal & Clelland, 2004). Using Goffman's (1959) analogy, firms are actors portraying an image to stakeholders through the use of these letters. This implies extensive work to design the letters and, after presentation, resolve any misinterpretations there might be.

Tedeschi and Norman (1985) defined two general categories for IM: assertive and defensive. Assertive tactics "are used in situations [*sic*] that actors view as opportunities to boost their image" (Mohamed, et al., 1999). Once such situation is the one being presented in this paper – the publishing of the shareholder letter. Studies have shown companies have used shareholder letters for image enhancement (Craig & Brennan, 2012; Geppert & Lawrence, 2008; Tassarolo & Pagliarussi, 2010). Defensive tactics are used responding to situations that may have a negative impact on the desired image (Mohamed, et al., 1999). Clapham and Schwenk (1991) showed that management in regulated utilities may defensively blame the environment for poor financial results.

From the taxonomy previously stated, letters to shareholders in the Organocentric group focus upon the company itself as opposed to outside event and issues like the Issuecentric group and to data presentation like the Datacentric group. Companies that concentrate on themselves in a presentation such as this will present the most positive image possible. Clapham and Schwenk (1991) not only showed firms can react defensively by blaming the environment when there are bad outcomes, but also showed other firms will take credit for good outcomes. Thus, a firm can focus upon itself and be assertive to create a positive image from the good that is available.

Proposition 1: A shareholder letter of the Organocentric group is more likely to utilize assertive OIM tactics than defensive OIM tactics.

Cialdini (1989) originally categorized IM tactics into direct and indirect. Direct tactics involved the actor communicating an image of self to an audience without any associations. Indirect tactics, however, can occur when an actor communicates either a positive image about some entity or event and then associates with that entity or event in the hopes of attaining a positive image from the association. For example, an organization could extol the virtues of a societal cause and then state the organization's association with that cause. Thus, an audience that might value such a cause could assign an altruistic image to the organization making the association. This can also happen on the negative side. A firm could demonize some entity or event and then dissociate itself from the entity or event. The objective in this case is to obtain a positive image boost by dissociating from a negative object.

Referring to the taxonomy previous given, Issuecentric shareholder letters are primarily focused upon entities or events that have become relevant in the period since the previous shareholder letter. For a shareholder letter to contain information about an entity or event, there must be a significant positive or negative connected to the entity or event, otherwise the mention of it would be wasting space. The mention of an entity or event then would be for the purpose of

association or dissociation, depending upon the valence of the entity or event. For example, shareholder letters in the U.S. oil industry have been shown to vilify OPEC for industry problems in order to divert attention away from the domestic oil problems (Prasad & Raza, 2002). Thus, by painting OPEC as bad and the U.S. firms as being dissociated from OPEC, the image created was the U.S. firms are “better” than OPEC.

Proposition 2: Shareholder letters that are members of the Issuecentric class are more likely to exhibit indirect OIM tactics than direct OIM tactics.

Tyler, Connaughton, Desrayaud, and Fedesco (2012) discuss two types of OIM tactics: remedial and anticipatory. Remedial tactics are used after stakeholders know about an event. If the event is a negative one where a firm could be associated, remedial tactics are used to mitigate the damage to the firm’s image from being associated with the event. In the case of a positive event, remedial tactics are used to associate the firm with the event so as to gain a more positive image. Anticipatory tactics are those used before an event is known to stakeholders. If the event is bad, a firm may use these tactics to prepare the public for negative information. Elsbach, et al (1998) studied hospitals that used anticipatory tactics to avoid customer negative reactions to billing. Finally, if an event is good, an organization could use anticipatory tactics to provide an even larger public relations boost after the fact is known.

Returning to the taxonomy developed above, shareholder letters of the Datacentric type have the characteristic of the presentation and analysis of data. Shareholder letters of this type may refer to financial data, for example. Nevertheless, the publishing of this data at the same time as the vehicle for the OIM implies the firm does not have time to prepare the audience for the implications of the data. As a result, the Datacentric shareholder letters will use fewer anticipatory OIM tactics in favor of remedial tactics when OIM is used.

Proposition 3: Shareholder letters that are members of the Datacentric class will exhibit more remedial OIM tactics than anticipatory OIM tactics.

DIRECTIONS FOR FUTURE RESEARCH

Even though shareholder letters have been studied extensively, the taxonomy discovered in this study can aid in future research. Primarily, this is a step toward the development of a more comprehensive theory for strategic communication. Vision statements and ethics statements have already been examined (Allison, 2015a; Allison, 2015b) and this work adds to the study of elements of strategic communication. However, there are more elements that need to be examined.

The taxonomy provided in this paper opens up the possibility to testing a contingency approach to using shareholder letter types. From an OIM perspective, this contingency approach is supported by Greening and Gray (1994) who developed a contingency model for organizational social performance. Furthermore, Abrahamson and Amir (1996) used content analysis to show that the wording of shareholder letters is related to the performance of the organization. It then makes just as likely that a firm uses an Organocentric letter type when performance has a certain characteristic, uses an Issuecentric letter type when performance has another characteristic, and uses a Datacentric letter type when performance has a third different characteristic. Similarly, Abrahamson and Hambrick (1997) stated that management focus in shareholder letters is similar within the same industry while Osborne, Stubbart, and Ramaprasad

(2001) showed similar shareholder letters within strategic groups. Thus, it is possible that some industries or subgroups of industries might be more apt to utilize one type of shareholder letter while other industries might utilize another type. However, one factor such as firm performance or industry may not be enough to establish a contingency approach. Anwar (2015) demonstrated that during the banking crisis of 2008, banks did not converge upon similar language in the shareholder letters, but O'Connor (2013) did show they had similar dysfunctional thinking.

Proposition One stated that shareholder letters of the Organicentric type are more likely to exhibit assertive OIM tactics than defensive OIM tactics. Brown (1997), Craig and Amernic (2011), and Brennan and Conroy (2013) all discuss CEO narcissism found in shareholder letters. One method of displaying narcissism would be to take credit for good situations – an assertive OIM tactic. This statement is echoed in Clapham and Schwenk (1991). Thus, it is possible that self-serving management might be linked to the Organicentric type. If this is the case, then other management styles might have an association with a particular shareholder letter.

SUMMARY

The purpose of this paper has been to develop a theoretical framework, to discover a taxonomy for shareholder letters, and to design propositions linking letters to organizational impression management. The taxonomy was derived using the currently unique process of text analytics rather than from predetermined groups.

This paper is unique in both subject matter and methodology. Past research into shareholder letters has examined either the intent of the letters or the language of the letters. This study takes a more holistic approach and examines the letters individually and collectively as documents made up of language components. The result is a taxonomy of shareholder letters undiscovered until now. This paper also employs the relatively new qualitative technique of text analysis that has made few appearances in research. In addition this paper extends the taxonomy provided by introducing propositions that relate the letters and organizational impression management.

The shareholder letter taxonomy consisting of the Organicentrics, the Issuecentrics, and the Datacentrics, can now aid in teaching the construct as well as aid in simplifying future studies. This study, coupled with earlier studies of taxonomies of ethics statements (Allison, 2015a) and of vision statements (Allison, 2015b), is another step toward developing a more comprehensive theory of strategic communication.

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RESOURCE-BASED THEORY AND STEM WORKFORCE DYNAMICS: STRATEGIC IMPLICATIONS FOR BUSINESSES AND REGIONS

Murat Arik, Middle Tennessee State University
Patrick Geho, Middle Tennessee State University

ABSTRACT

This study assesses STEM (Science, Technology, Engineering, and Mathematics) workforce dynamics within the context of the resource-based view. As STEM skills may be considered a region's or a business's core competency, there has been ongoing debate about whether the U.S. has shortages in STEM fields. Using several databases (Bureau of Labor Statistics, Kauffman Foundation Survey, American Community Survey, and MTSU STEM Survey), this study seeks answers to the following questions: Is the STEM shortage a myth? What impact may a STEM skill shortage have on businesses and regions? How is STEM training related to entrepreneurial activities? The study findings suggest the lack of the right STEM skill set may have important business and regional implications.

INTRODUCTION

STEM Workforce Dynamics

What is the STEM workforce? A review of several studies shows there is no consensus on what the STEM workforce should include.¹ A recent study suggests the studies use different frameworks to analyze the STEM workforce (Arik, 2016). In terms of the meaning of the STEM workforce, two general definitions emerge: (1) individuals in a STEM occupation, or (2) individuals holding a STEM degree.

Although a hybrid approach combining both definitions may provide a better understanding of the STEM workforce, the former is easily quantifiable for research purposes. Which occupations then should be considered STEM occupations? The following options are widely used by individual researchers and agencies: STEM occupations, STEM-related occupations, and (sometimes) social science occupations.

In this study, we use an occupational definition of the STEM workforce. Consistent with the definition of the U.S. Census Bureau, the occupation-based approach includes both STEM and STEM-related occupations, including several social science occupations. Why is the STEM and STEM-related workforce important to an economy? Since the early 1990s, fast-paced economic transformations within the United States and across the globe have dramatically reduced industry and product life cycles. This in turn has created tremendous challenges and opportunities. For example, Tennessee lost its traditional manufacturing base throughout the 1990s and 2000s. Only during the past decade has the state started rebuilding its manufacturing base, not in traditional

¹ See multiple reports and crosswalks developed by the National Science Foundation (www.nsf.gov), U.S. Census Bureau (www.census.gov), and Bureau of Labor Statistics (www.bls.gov).

sectors such as textiles and furniture but in the advanced manufacturing and automotive sectors. In this transformed manufacturing space, the STEM workforce plays a critical role as a driver of innovation and competitiveness (Arik, 2016).

In Tennessee, for example, the main sectors driving the economy are advanced manufacturing, automotive, professional and business services, health care, transportation, and logistics. To compete globally, these sectors require well-trained STEM and STEM-related workforce.

What are some characteristics of STEM occupations? One important aspect of the STEM workforce is that individuals in these occupations are highly educated. For example, the percent of bachelor's degree holders in STEM occupations is twice as high as the percent of bachelor's degree holders in all other occupations in Tennessee. These ratios have two implications for any economy. First, wages and salaries are closely related to educational attainment levels; the higher the educational attainment level of the workforce, the higher the purchasing power of individuals in the economy. Second, a highly educated workforce is a major source of innovation and entrepreneurial activity (Arik, 2016).

However, in terms of STEM workforce characteristics, two issues require further elaboration. First, not all workers in STEM occupations have a bachelor's degree or above; many technical occupations that play a critical role in highly competitive industries require only specific training after high school. Second, not all individuals in STEM occupations have STEM degrees. For example, a STEM survey conducted by the Business and Economic Research Center (BERC) at Middle Tennessee State University indicates that about 65 percent of STEM workers in Tennessee have STEM degrees. The remaining 35 percent have degrees in other fields or no degree beyond high school. This means either companies are facing difficulty hiring employees with the right credentials, or STEM degree holders are not seeking opportunities in their areas of expertise (Arik, 2016).²

The STEM Debate

Recently there has been a call for better STEM (science, technology, engineering, and mathematics) education in the United States. This comes after seeing declining U.S. international test scores in math and science as well as a shortage of skilled STEM workers in the economy. However, there has been ongoing debate over the extent of emphasis on education in STEM versus the humanities as well as the meaning of STEM education.

Education in the United States is controlled by the states, meaning states differ in STEM education. In the past several years, many states have decided to give more incentives and scholarships to college students in STEM majors. Often companies must hire underqualified employees, such as those with two-year degrees or high school diplomas, to fill positions that would normally go to those with a bachelor's or master's degree (Berman, 2016). These vacancies have led companies to petition the government to allow for more H1-B visas (Rothwell and Ruiz, 2013), which go to foreign workers in STEM or highly specialized careers and allow them to work for businesses in the United States. According to businesses and some industry insiders, many businesses cannot fill job vacancies for STEM occupations, and there are not enough H1-B visas to go around. Due to this (and contrary to what some believe), H1-B visa workers are getting paid more than U.S. native-born workers with a bachelor's degree, even with the same occupation and similar experience, which suggests that foreign workers have more in-demand skills. Many of the

² This part of the analysis is heavily based on a white paper issued by one of the study authors in 2016 (Arik, 2016).

H1-B visa occupations, however, could be filled by U.S. natives with some training at relatively little cost (Rothwell and Ruiz, 2013).

The competition for qualified workers has led many companies to consider providing signing bonuses for graduating college students looking for jobs in STEM fields, especially in engineering and computer science (Otani, 2014). In order to encourage students to go into STEM occupations, President Obama has created a program called the Educate to Innovate initiative. Several different outlets have launched programs and media designed to inspire students' STEM curiosity. Unfortunately, the initiative has been slow to produce any change in test scores or level of interest in STEM degrees (Chang, 2014).

However, this shift to providing more funding and resources for STEM education has led some to argue that states and colleges should not forget about the humanities and liberal arts. Fareed Zakaria, in his article "Why America's Obsession with STEM Education Is Dangerous," calls for a holistic approach to education, arguing the focus should not be entirely on STEM. He also writes that the understanding of culture and politics is integral to the human condition (Zakaria, 2015). This article sparked a rebuttal by Chad Orzel in *Forbes*, in which he argued that curiosity about how the world works is also inherent in the human condition and that the sciences attempt to answer those questions (Orzel, 2015). For example, A few states have discouraged students from studying the humanities by decreasing state funding for those majors (Cohen, 2016). This is designed to increase the number of students going into STEM careers, as qualified STEM employees are in high demand, and many companies across the country are seeking more employees to fill these positions.

Another debated aspect of STEM education is that it needs to be redefined to include art due to the creative components of engineering and technology. Several engineering programs in universities throughout the country are beginning to incorporate art classes into their curriculum, such as basic drawing and graphic design (Fountain, 2014). This has led to an initiative to change STEM to STEAM: science, technology, engineering, art, and mathematics.

Opponents to the emphasis of STEM education have contended some careers that are more STEM-based actually require a diverse educational background in order to create better work environments and different outlooks. The *Economist* cites a story about anthropologists working on Wall Street who can see the overall picture and thus put finance in a cultural context (M.S., 2011). Another example from *Forbes* cites the many great thinkers and business people who have taken interest both the humanities and STEM: Leonardo da Vinci, Steve Jobs, and Admiral Grace Hopper.

In addition to these arguments, some studies have found there is a surplus of native STEM workers. However, they are not necessarily in the selected fields an industry is seeking or have left the STEM field for careers in other areas, such as finance or business (Anft, 2013). Once graduates find jobs, they often face difficulties in getting promotions or raises. In a statement before Congress in 2016, Hal Salzman, a professor at Rutgers University, provided evidence that only half of STEM graduates enter the STEM workforce and that there is a glut of scientists at the Ph.D. level due to the lack of research funding. He argues that despite the call for more H1-B visas, there is a substantial number of layoffs in the STEM industry, ranging from 696,000 in 2001 to 37,000 in 2011 (The Impact of High-Skilled Immigration on U.S. Workers, 2016).

Despite the debate, most agree the United States is underperforming in STEM and agree there should be an amplification of STEM education in schools. Businesses are struggling to find employees with the proper qualifications for STEM careers, and those positions go unfilled or go to underqualified people. While the debate over whether there is a shortage in the STEM fields

and the extent to which STEM education should be incentivized over other fields of study has continued, one thing is clear: the labor market in certain STEM fields is extremely tight, suggesting skilled workforce shortages in those fields. Table 1 compares the current unemployment rate in the United States with the unemployment rates in some of the fastest-growing STEM occupations.

Table 1: Characteristics of the Fastest Growing Occupations in the U.S.: Tight Labor Market for STEM Occupations							
2014 National Employment Matrix title and code U.S. Unemployment Rate: 4.9 % (June 2016)	Change, 2014-24		Median annual wage, 2015	2014 Unemployment Rate	Significant Source of Training		
	Number	Percent			Some College	Bachelors Degree	Graduate Degree
Total, all occupations	00-0000	9,788.9	6.5	\$36,200			
Nurse practitioners	29-1171	44.7	35.2	\$98,190	1.30%		93%
Physical therapists	29-1123	71.8	34.0	\$84,020	1.20%	8%	76%
Statisticians	15-2041	10.1	33.8	\$80,110	4.00%	28%	68%
Physician assistants	29-1071	28.7	30.4	\$98,180	0.20%	30%	65%
Operations research analysts	15-2031	27.6	30.2	\$78,630	3.80%	30%	67%
Web developers	15-1134	39.5	26.6	\$64,970	3.40%	33%	43%
Occupational therapists	29-1122	30.4	26.5	\$80,150	1.10%	19%	76%
Diagnostic medical sonographers	29-2032	16.0	26.4	\$68,970	1.90%	66%	17%
Emergency medical technicians and paramedics	29-2041	58.5	24.2	\$31,980	3.00%	85%	

Source: (1) Data are from the Occupational Employment Statistics program, U.S. Bureau of Labor Statistics.

(2) Wall Street Journal: <http://247wallst.com/investing/2015/01/16/unemployment-by-occupation-2014/>

(3) O*Net Online (ononline.org)

In order to understand the effect of a STEM shortage on the economy, this study will consider STEM as a core competency. Core competency can be defined as “the ability to build, integrate and reconfigure internal and external competencies to address rapidly changing environments” (Hsu, Tan, Jayaram, and Laosirihongthong, 2014). STEM is an important resource that can benefit the economy through business and entrepreneurship. Specifically, we aim to answer three questions:

- (1) Is the STEM shortage a myth?
- (2) What impact may a STEM skill shortage have on businesses and regions?
- (3) How is STEM training related to entrepreneurial activities?

To answer these questions, this paper draws on a widely used strategic management theory, the resource-based view (RBV).

THEORETICAL FRAMEWORK

Resource-Based View

Made popular by Wernerfelt (1984) and Prahalad and Hamel (1990), the resource-based view argues resources are what make an organization competitive in the marketplace. If these resources are sustainable, they can become the core competencies of organizations. Core competencies of successful firms are described as rare, hard to imitate, and valuable to others (Wernerfelt, 1984; Prahalad & Hamel, 1990). According to this theoretical perspective, to maintain the competitive advantage, firms must utilize resources and capabilities that are valuable (Ray, Barney, & Muhanna, 2004).

How does this perspective treat human capital? Although a significant emphasis has been placed on the role of tangible assets such as technology within the framework of this perspective, human resources have also been treated as a significant source of competitive advantage and

should be assessed strategically (Wofford, 2002; Evans & Novicevic, 2010). This study treats the STEM workforce as a core competency. Especially in an advanced manufacturing and innovation-driven economy, a sustainable STEM workforce pipeline may create a sustainable competitive advantage for companies and regions.

Myth of the STEM Shortage: Skill Gap

When treating the STEM workforce as a valuable source of competitive advantage, a skill shortage in this area may increase a firm's cost of doing business. Often companies must hire underqualified employees, such as those with two-year degrees or high school diplomas, to fill positions that would normally go to those with a bachelor's or master's degree (Berman, 2016). These vacancies have led companies to petition the government to allow for more H1-B visas (Rothwell and Ruiz, 2013). These visas go to foreign workers in STEM or highly specialized careers and allow them to work for businesses here. Many of these businesses cannot fill job vacancies for STEM occupations, and there are not enough H1-B visas to go around. Due to this, H1-B visa workers are getting paid more than U.S. native-born workers with a bachelor's degree, even with the same occupation and similar experience, which suggests foreign workers have more in-demand skills. Many of the H1-B visa occupations could be filled by U.S. natives with some training at relatively little cost (Rothwell and Ruiz, 2013). This study addresses the STEM shortage issue by highlighting two aspects of STEM workforce dynamics, the skill gap in the existing STEM workforce and actual shortages in critical STEM occupations.

STEM in Businesses and Regions

Where do our regions or businesses rank compared with our peers? The impact of STEM shortages and skill gaps affect not only the competitiveness of firms but also the growth potential of a region. From a resource-based perspective, communities with rare STEM skill sets can provide organizations with capabilities that will also make the whole region competitive. From a regional perspective, a company looking to establish a business location will carefully review the availability of STEM workforce in different areas before selecting one. If firms choose a location based on the availability of STEM skill sets, we expect areas with more highly skilled and more knowledgeable people to be attractive business destinations. This location decision will ultimately benefit both businesses and communities (Henderson, 2002). However, we also expect to see regions with high STEM skill shortages losing businesses to other regions. When facing a challenge regarding STEM skill sets, a likely course of action for businesses is to relocate to regions with an available STEM workforce.

STEM and Entrepreneurial Activities

With the shortage of STEM workforce, there is difficulty in the development of new engineering and technology firms. Part of the issue is the high demand for new technology and knowledge production in the U.S. economy (ASHE Higher Education Report, 2009). Additionally, many college graduates in STEM majors do not go into entrepreneurship but into already established firms or research positions. According to a Kauffman Foundation report, the number of new and young high-tech firms in the United States fell sharply after the recession and in 2012 was still lower than pre-recession levels. As these firms make up a large proportion of net new

jobs overall, the loss of these new firms is significant to the economy (Haltiwanger, Hathaway, and Miranda, 2014).

In terms of the relationship between STEM education and entrepreneurship across countries, generally education beyond a bachelor's degree does not seem to be positively linked to entrepreneurship (Dickson, Solomon, and Weaver, 2008). However, the type of STEM degree makes a difference; for example, those in bioengineering are most likely to enter entrepreneurship at 12 percent, while those in mathematics and statistics are least likely, with only 3 percent becoming entrepreneurs (Blume-Kohout, 2014). A U.S. Small Business Administration study reached a similar conclusion, highlighting the fact that high-tech startup founders rarely hold doctorates in computer science and that those in engineering fields are more likely to engage in entrepreneurship, although they still represent a small percentage.

Despite the low interest of STEM graduates in entrepreneurial activities, there is a correlation between bachelor's degrees in general and entrepreneurship. Students who graduate with a bachelor's degree are more likely to enter into entrepreneurship (Jiménez, Palmero-Cámara, González-Santos, González-Bernal, and Jiménez-Equizábal, 2015). In addition, many universities are working to provide interdisciplinary degrees for STEM majors in order to give them business and entrepreneurship training for future careers (Ford, O'Neal, and Sullivan, 2010).

This study treats the STEM skill set as a valuable resource that can be a competitive advantage for businesses and regions. In the absence of these skill sets, businesses may find themselves operating at higher costs due and losing a competitive advantage in the long run or relocating to other areas, and regions may have fewer innovative and high-tech entrepreneurial activities than regions with strong skill sets.

Using national and Tennessee data from several surveys, we carefully address each of the major debates highlighted above.

RESEARCH METHOD

Methods and Sample

In 2015, the Business and Economic Research Center (BERC) surveyed Tennessee businesses to analyze STEM workforce dynamics. BERC received 210 completed surveys representing a wide range of community stakeholders. The lengthy survey included questions in the areas of company demographics, STEM supply, STEM demand, STEM pipeline, STEM workforce characteristics, business perceptions about STEM dynamics, and STEM occupational characteristics.

Table 2: BERC STEM Survey		
Who are the respondents?		
Segment	Responses	Percent
Businesses (including schools)	137	65.24%
Economic Development Officials	25	11.90%
Mayors	17	8.10%
Schools (K-12 + Colleges)	31	14.76%
Total	210	100.00%

Myth of Shortages

In addition to asking community stakeholders directly about current workforce shortages in STEM occupations, BERC gathered supplemental information to highlight critical skill gaps across major STEM occupations. Many of these analyses use the Census Bureau's American Community Survey data. The BERC survey asked businesses to report critical occupations in which they have extreme difficulty filling jobs.

Challenges to Businesses and Regions

Survey respondents were asked specifically about the type of challenges they face with regard to the STEM workforce. One specific area we tried to assess was the likely response of businesses to mounting STEM workforce challenges. Some of these questions include:

- (1) What happens if you cannot fill STEM-related positions?
- (2) What is your business willing to do to fill unoccupied STEM positions?

Entrepreneurial Activity and STEM

To analyze the relationship between STEM education and entrepreneurial activity, we used two sources of survey data, the American Community Survey (2009–2014) and the Kauffman Foundation entrepreneurship activity survey (2014). We used microdata to test the relationship between entrepreneurial activity and education (STEM) using several control variables.

Models

To test the relationship between STEM education and entrepreneurial activities, we used the following logistic regression analysis specified as

$$ENTR_i = \alpha_1 + \beta_1 IMM + \beta_2 AGE + \beta_3 INCOME + \beta_4 EDUC + \beta_5 SCI + \varepsilon \quad (1)$$

Where $ENTR_i$ = Entrepreneurship indicators that take one of the two values [1=entrepreneur; and 0=not entrepreneur]. “*i*” subscript refers to different versions of the model. We used three different versions using both Kauffman Foundation and Census Bureau Surveys:

(1) recoded “incorporated self-employed”; (2) recoded “unincorporated self-employed;” and (3) recoded “total self-employed.”

IMM = Immigrant control variable [1= immigrant; and 0= native]

AGE = Age of respondent [in natural log]

INCOME = Income of respondent [in natural log]

EDUC = Educational attainment level of respondent (in years) [in natural log]

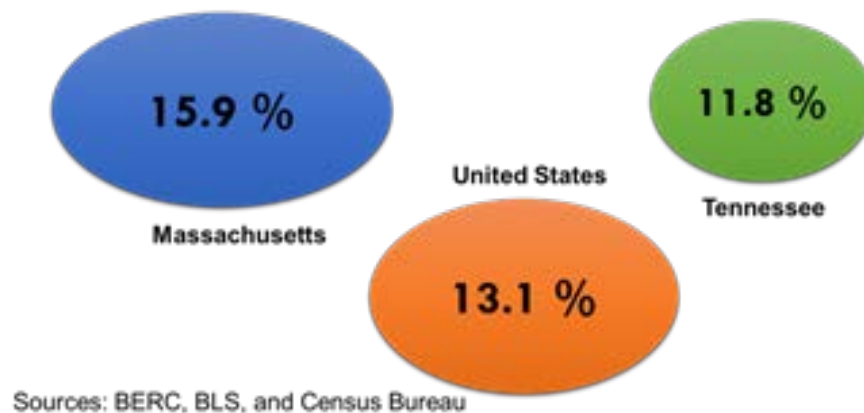
SCI = STEM indicator [1=STEM-related degree field; and 0= all other fields]

This study used the logistic regression analysis because the dependent variable (entrepreneurship) included two discrete values.

RESULTS

Is the STEM shortage a myth or reality? We look at this question from two perspectives: (1) the existing skill gap in STEM fields, and (2) hard-to-fill STEM occupations. An analysis of American Community Survey data suggests Tennessee is behind the U.S. average in the percent of STEM workers in all occupations. According to Figure 1, 11.8 percent of Tennessee workers are in a STEM or STEM-related occupation, far below the U.S. average.

Figure 1



In addition, a skill-gap analysis shows that in certain occupations STEM skill gaps are above 33 percentage points. Table 3 suggests a major challenge for Tennessee businesses. Many STEM occupations are filled by individuals who do not have the skill set those occupations require. For example, in the United States, nearly 69 percent of marine engineers and naval architects have an educational attainment level of bachelor's and above, while in Tennessee only 34 percent of job holders in this occupation have similar qualifications, suggesting a skill gap of nearly 35 percentage points. In the long run, if unaddressed, this STEM skill deficit may affect the sustainable competitive advantage of Tennessee's businesses and economy.

Table 3: STEM Skill Gaps

SOC	Occupations	U.S. Bachelor's & Above	TN Bachelor's and Above	Skill GAP (Percentage Point)
172121	Marine engineers and naval architects	68.69%	34.18%	34.51%
151143	Computer network architects	55.41%	22.11%	33.31%
1930XX	Miscellaneous social scientists and related workers	88.64%	57.64%	31.00%
194031	Chemical technicians	39.53%	17.49%	22.04%
1721XX	Engineers, all other	78.57%	56.75%	21.83%
15113X	Software developers, applications and systems software	84.01%	70.19%	13.82%
1910XX	Life scientists, all other	98.52%	85.72%	12.80%
292050	Health practitioner support technologists and technicians	19.17%	6.56%	12.60%
172110	Industrial engineers, including health and safety	72.90%	60.67%	12.23%
172070	Electrical and electronics engineers	77.82%	65.65%	12.18%
191020	Biological scientists	95.88%	84.14%	11.74%
292071	Medical records and health information technicians	17.55%	6.46%	11.10%

We also asked businesses whether they are having any difficulty in filling STEM and STEM-related positions. Table 4 highlights responses from the survey. Participating community stakeholders ranked occupations from 1 to 10 in order of difficulty in filling jobs. A rank of one means an occupation is extremely easy to fill, and a rank of 10 means an occupation is extremely difficult to fill. BERC aggregated results into a master list that provides an average ranking of the difficulty of filling each occupation (Arik, 2016). This part of the analysis shows that although there may be an oversupply of STEM graduates in certain fields, Tennessee businesses have been experiencing difficulty in finding individuals with the right skill set to remain competitive in a vibrant, high-tech economy.

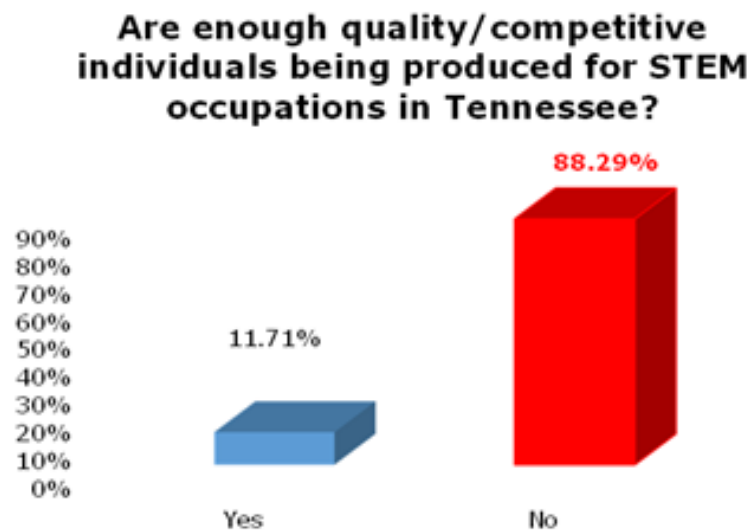
Table 4: STEM Occupations by Difficulty of Filling Jobs

STEM Occupations Ranked by Difficulty of Filling		
Occupational Code	Occupational Title	Difficulty of Filling (1=Extremely Easy) (10=Extremely Difficult)
11-3021	Computer and information systems managers	6
15-0000	Computer and mathematical occupations	6
17-3020	Engineering technicians, except drafters	6
19-0000	Life, physical, and social science occupations	6
15-113X	Software developers, applications, and systems software	6
11-9041	Architectural and engineering managers	7
17-0000	Architecture and engineering occupations	7
17-2041	Chemical engineers	7
17-3010	Drafters	7
11-0000	Management, business, and financial occupations	7
19-2030	Chemists and materials scientists	8
17-2051	Civil engineers	8
15-1131	Computer programmers	8
17-2070	Electrical and electronics engineers	8
17-2141	Mechanical engineers	8
15-1134	Web developers	8
19-1010	Agricultural and food scientists	9
15-1143	Computer network architects	9
17-2081	Environmental engineers	9
17-2110	Industrial engineers, including health and safety	9
11-9121	Natural sciences managers	9
15-2090	Miscellaneous mathematical science occupations	10

What impact may a STEM skill shortage have on businesses and regions? When businesses lack a valuable resource, their competitiveness will be impacted. Similarly, a region's competitiveness depends on its ability to create and sustain valuable resources. A STEM skill set is an example of such a valuable resource that may have important implications for the competitiveness of both businesses and regional economies. Strategic human resource management at both business and regional levels is necessary to ensure a healthy STEM workforce pipeline. Unless the STEM workforce pipeline is addressed, short-term solutions may not create a core competency for businesses and regions.

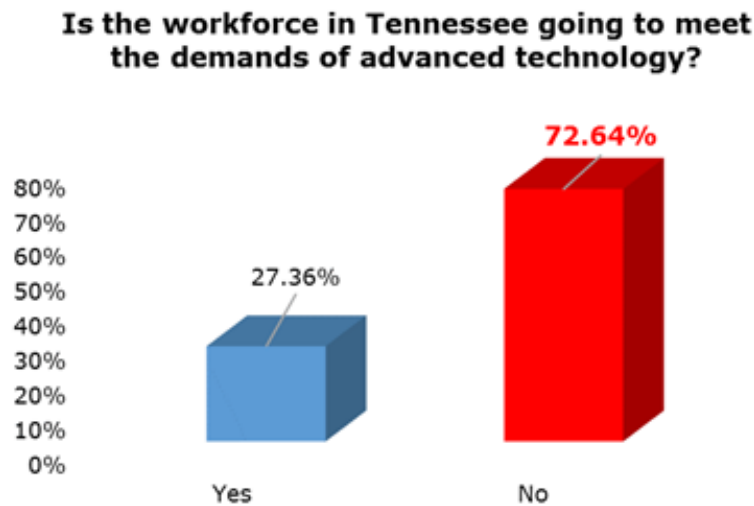
The BERC STEM survey in Tennessee suggests several business and regional challenges. Many STEM occupations have large supply and demand gaps. Many businesses participating in the survey indicated the STEM workforce demand will grow faster than that of other occupations. What happens if they can find employees with the right skill set? Let's review some of the findings: Are enough quality/competitive individuals produced for STEM occupations in Tennessee? An overwhelming majority of community stakeholders (nearly 90 percent) indicated the Tennessee education system does not produce enough quality/competitive individuals. Only 12 percent suggested otherwise (Arik, 2016).

Figure 2



Does Tennessee have the necessary infrastructure to produce a skilled workforce to meet the technology challenge? This question is at the heart of efforts in Tennessee to promote the advanced manufacturing and healthcare information technology sectors. Three out of four community stakeholders think the Tennessee workforce is not ready to meet advanced technology demands (Arik, 2016).

Figure 3



With regard to technology's impact on their businesses, many stakeholders emphasized the efficiency gained through technological advances. As illustrated in Figure 4, technological advancement seems to be a valuable resource for businesses in creating a sustainable competitive advantage. What happens if they do not have the necessary skilled human resources to take advantage of these technological developments?

Figure 4: Impact of Advancement of Technology on Business

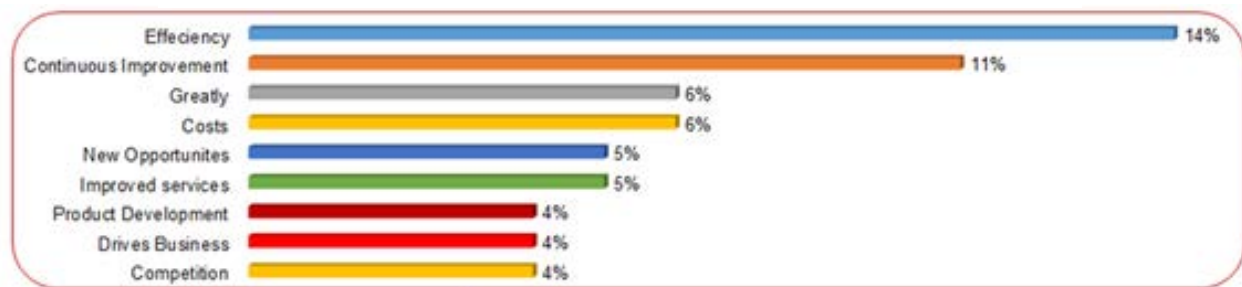
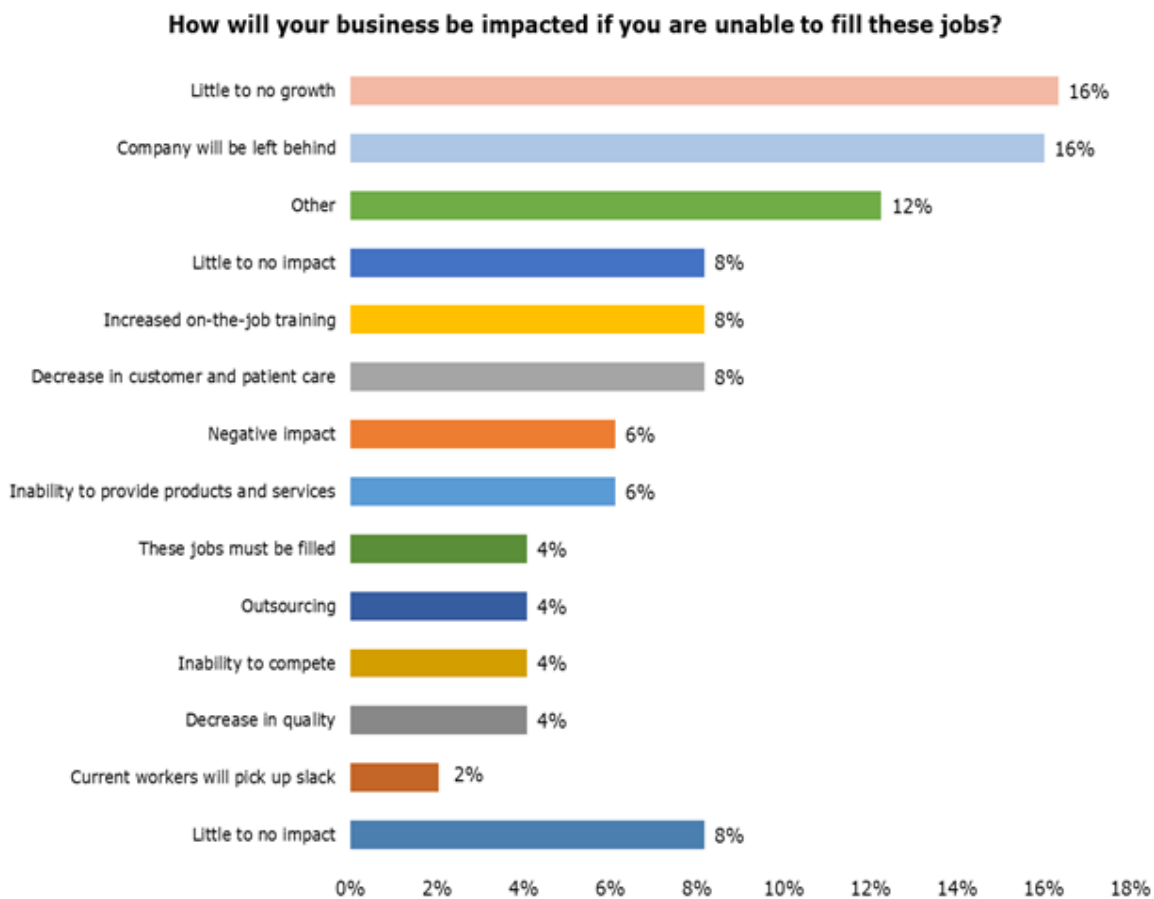


Figure 5 highlights business responses to the question of what happens if they cannot fill needed STEM positions. The top answers, "little to no growth" and "company will be left behind," represent 32 percent of responses. An additional 28 percent of responses also suggest impairment in the sustainable competitive advantage of businesses and regions, including "decrease in customer and patient care," "negative impact," "inability to provide product and services," "inability to compete," and "decrease in quality."

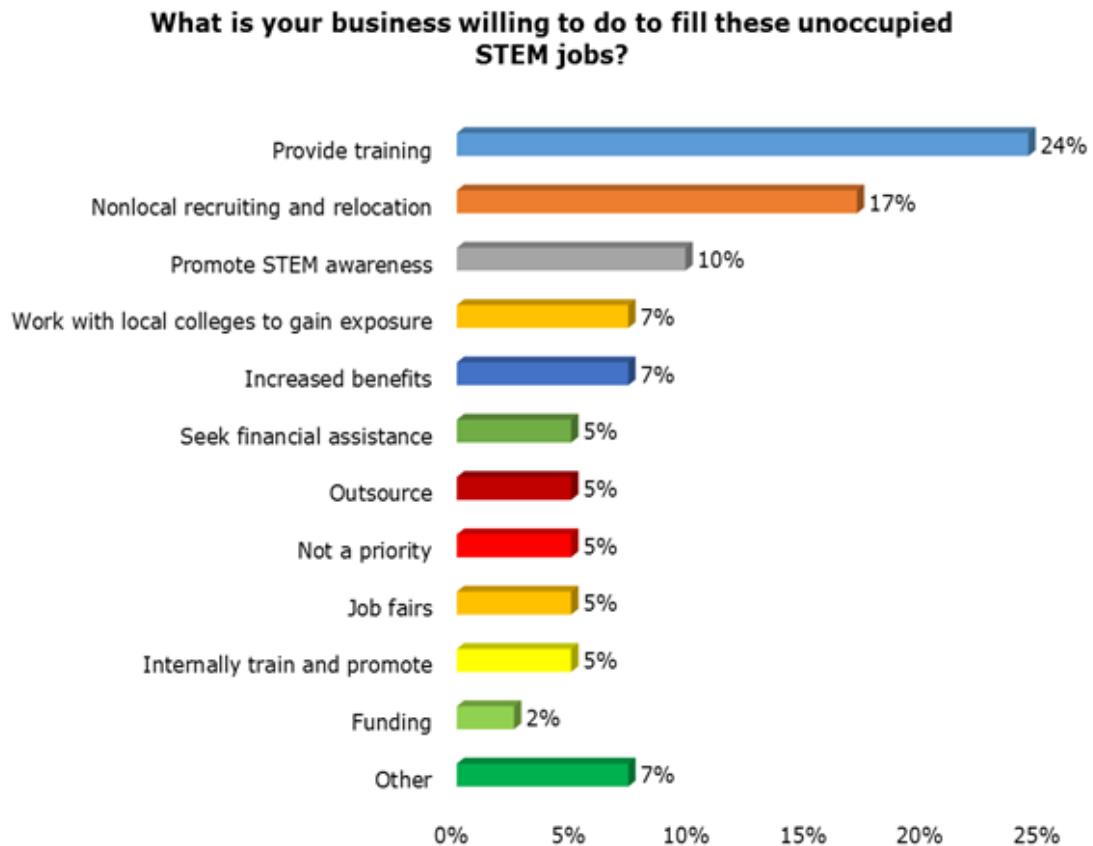
Figure 5: Impact of Unfilled STEM positions



Finally, to demonstrate varying human resource strategies in the STEM area, we asked what the company will do to fill unoccupied STEM positions. Figure 6 suggests significant long-term impact on the region when the STEM workforce supply issue is not addressed. Nearly one in every four businesses suggests a nonlocal solution to STEM workforce challenges in the form of either “outsourcing” or “nonlocal recruiting and relocation.” A little over 45 percent of businesses indicated they either internally train their workforce or work with local stakeholders to address the STEM pipeline.

This analysis of the survey data suggests a STEM workforce shortage may create challenges to sustainable regional competitive advantage through human resource strategies that favor out-of-region recruiting, relocation, and outsourcing. Although 46 percent of businesses favor a local solution, the employment losses due to STEM skill shortages are large enough to create problems for regional growth and economic prosperity.

Figure 6: What will you do to fill unoccupied STEM positions?



How is STEM training related to entrepreneurial activity? To answer this question, we ran several logistic regression analyses using two different datasets, the American Community Survey (5-year average) and the Kauffman Foundation Entrepreneurial Activity Survey. The purpose of this analysis is to show that STEM training as a core competency has important implications for businesses and regions. A shortage in this area is likely to create long-run sustainability challenges in economic and business competitiveness.

Results with American Community Survey Data

Table 5 presents a Pearson correlation matrix of the independent variables used in the logistic regression analysis. In identifying the control variables, we conducted a literature review, which suggests characteristics of people engaging in entrepreneurial activities include formal education, age, immigrant status, income, and science education.³ According to Table 5, the correlations between pairs of indicators are significant; however none of the correlation coefficients is large enough ($>|.85|$) to exclude from the analysis. We used three logistic regression analyses to compare different definitions of entrepreneurial activities: Model 1 defines entrepreneurial activities as “incorporated self-employed business.” This definition includes a formalized establishment operating as a business unit. Model 2 defines entrepreneurial activities as “unincorporated self-employed business.” Model 3 includes both incorporated and

³ List of entrepreneurial activities is taken from OECD website (OECD.org).

unincorporated activities. The reason for using these three models is to demonstrate that science education matters in establishing a structured entity to conduct business.

Table 5: Pearson Correlations						
Dependent Variable(s): Entrepreneurship (incorporated, unincorporated, and total)						
		AGE	INCOME	IMM	SCI	EDUC
AGE	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	16,913,329				
INCOME	Pearson Correlation	.083**	1			
	Sig. (2-tailed)	0.000				
	N	15,141,575	15,141,575			
IMM	Pearson Correlation	-.050**	-.050**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	16,913,329	15,141,575	16,913,329		
SCI	Pearson Correlation	-.014**	.218**	.073**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	16,913,329	15,141,575	16,913,329	16,913,329	
EDUC	Pearson Correlation	-.033**	.313**	-.216**	.326**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	16,913,329	15,141,575	16,913,329	16,913,329	16,913,329

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

According to Table 6, the STEM variable controlled by other independent variables is likely to contribute to entrepreneurial activity in the United States. The stronger predictor of entrepreneurial activities seems to be the age of person. All indicators are statistically significant and have the expected sign in Model 1. This means that those individuals who incorporate their own business are likely to be older, have high family income, be highly educated, have an immigrant background, and have a STEM degree.

Table 6: Logistic Regression (STEM and Entrepreneurship)						
Model 1: Entrepreneurship: Incorporated [1,0]						
		B	S.E.	Wald	df	Sig.
Step 1 ^a	SCI	.072	.004	272.403	1	.000
	IMM	.368	.004	9398.200	1	0.000
	AGE	1.195	.006	39387.582	1	0.000
	INCOME	.403	.002	60124.327	1	0.000
	EDUC	.332	.006	2753.308	1	0.000
	Constant	-13.209	.032	175215.621	1	0.000
a. Variable(s) entered on step 1: SCI, IMM, AGE, INCOME, EDUC						
Model 2: Entrepreneurship: Unincorporated [1,0]						
		B	S.E.	Wald	df	Sig.
Step 1 ^a	SCI	-.182	.004	1916.155	1	0.000
	IMM	.358	.003	16397.915	1	0.000
	AGE	.977	.004	53891.718	1	0.000
	INCOME	-.248	.001	93526.605	1	0.000
	EDUC	.122	.003	1410.335	1	0.000
	Constant	-4.381	.020	48984.838	1	0.000
a. Variable(s) entered on step 1: SCI, IMM, AGE, INCOME, EDUC						
Model Summary: Model 1						
Step		-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square		
1		4156317.276 ^a	.010	.040		
a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.						
Model Summary: Model 2						
Step		-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square		
1		6628694.344 ^a	.010	.028		
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.						
SCI: STEM fields [1,0] IMM: Immigrant status [1,0] AGE: Age of the respondents INCOME: Total family income						
EDUC: Years in schooling						

The critical difference between Models 1 and 2 in Table 6 is that those individuals with STEM background are less likely to get involved in unincorporated self-employed entrepreneurial activities. Income is also negatively associated with the entrepreneurial activities in Model 2. This finding suggests that both education and STEM education matter in establishing formal businesses.

Results with Kauffman Foundation Survey

We followed a similar approach to estimate three models using the Kauffman Foundation Survey. Including education, age, immigration and income variables, we want to see whether there is a difference between incorporated self-employed business and unincorporated self-employed business in terms of the determinants of entrepreneurship. Table 7 suggests a significant difference between Models 1 and 2. The role of human capital is significantly higher in Model 1.

Model 1: Incorporated Self-Employed							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	EDUC	4.174	.007	405283.727	1	0.000	64.955
	AGE	1.564	.001	1386177.377	1	0.000	4.776
	IMM	.226	.001	58345.057	1	0.000	1.254
	INCOME	.144	.000	1161553.025	1	0.000	1.155
	Constant	-26.815	.024	1209537.050	1	0.000	.000
a. Variable(s) entered on step 1: EDUC, AGE, IMM, INCOME							
Model 2: Unincorporated Self-Employed							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	EDUC	-.517	.004	14580.850	1	0.000	.596
	AGE	1.032	.001	1328832.357	1	0.000	2.807
	IMM	.204	.001	86770.405	1	0.000	1.226
	INCOME	.005	.000	5104.687	1	0.000	1.005
	Constant	-5.076	.016	100594.877	1	0.000	.006
a. Variable(s) entered on step 1: EDUC, AGE, IMM, INCOME							
Model 3: Both Incorporated and Unincorporated Self-Employed							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	EDUC	1.152	.004	100037.044	1	0.000	3.165
	AGE	1.255	.001	2780269.166	1	0.000	3.507
	IMM	.239	.001	177297.600	1	0.000	1.269
	INCOME	.047	.000	522981.005	1	0.000	1.048
	Constant	-12.106	.014	793491.897	1	0.000	.000
a. Variable(s) entered on step 1: EDUC, AGE, IMM, INCOME							

Model Summary: Model 1			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	71241645.594 ^a	.016	.073
a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.			

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	115815740.559 ^a	.005	.016
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.			

Model Summary: Model 3			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	158698539.710 ^a	.014	.035
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.			

What do these results mean? These results suggest that human capital in general and STEM skill in particular is an important asset for businesses and regions. STEM skills not only create a sustainable competitive advantage for businesses and regions but also become instrumental in

creating new incorporated businesses with an aim to grow opportunities for the region. In this sense, STEM skill may be treated as a core competency for businesses and regions.

DISCUSSION

This study analyzed STEM workforce dynamics from the resource-based view. The findings suggest several theoretical and practical implications. From the theoretical perspective, STEM workforce skill should be treated as one of the core competencies of businesses and regions in creating sustainable competitive advantage. Although the literature on strategic human resource management considers human resources among strategic considerations, there are still gaps in the literature in shedding light on the persistent mismatches occurring in the STEM marketplace.

As this study demonstrates, STEM shortages manifest as outright shortages in high-technology areas, relative skill gap in existing occupations, and mismatch between market demand and educational supply. Refocusing our theoretical lenses to treat this issue as a core competency may help us to solve the skill shortage using internal capabilities and dynamics rather than resorting to short-term tactics.

From entrepreneurial activity to increased purchasing power in a region, the STEM workforce issue also deserves a regional view. For example, in Tennessee alone, closing the STEM skill gap may create an additional economic impact of nearly \$4.5 billion. With the addition of entrepreneurial implications, the impact becomes significantly larger.

Many entrepreneurial activities that are incorporated and in certain growth sectors are associated with higher educational attainment levels and science education. In order to increase regional economic dynamism, business challenges associated with STEM workforce issues should definitely be addressed. For example, Table 8 compares the characteristics of entrepreneurs by industry. About 43.3 percent of entrepreneurs in manufacturing, professional business services, and health and education services have a degree beyond college, compared to only 25 percent in other industries.

Table 8: Educational Attainment of Entrepreneurs			
In Manufacturing, Professional and Business Services, and Health and Education Sectors		In All Other Sectors	
Educational Attainment Level	Percent	Percent	Educational Attainment Level
Less than high school	13.0	15.3	Less than high school
High school	23.2	29.4	High school
Some college (academic and vocational)	20.5	30.1	Some college (academic and vocational)
College	24.8	19.0	College
Graduate	18.5	6.2	Graduate

Source: BERC and Kauffman Foundation Survey

Table 9 presents a different perspective: educational attainment levels of entrepreneurs by industry. It is not surprising to see that entrepreneurs in manufacturing, information, professional and business services, financial services, and educational and health services have a high degree of educational attainment. In many cases, the degrees of these entrepreneurs are closely related to STEM or STEM-related fields. Table 9 suggests that to create a sustainable competitive business environment, STEM focus is a necessary building block.

Table 9: Entrepreneurial Activities and Educational Attainment

	Less than high school	High school	Some college (academic and vocational)	College	Graduate
Agriculture, forestry, fishing, hunting	1.65%	26.07%	48.75%	23.53%	0.00%
Construction	36.21%	31.77%	28.57%	2.06%	1.39%
Manufacturing	0.00%	26.86%	49.08%	10.66%	13.39%
Wholesale & retail trade	8.14%	29.38%	29.69%	28.66%	4.13%
Transportation and utilities	5.21%	58.16%	18.55%	11.40%	6.68%
Information	0.00%	0.00%	21.88%	58.91%	19.21%
Financial activities	0.00%	30.13%	24.26%	32.68%	12.93%
Professional and business services	12.68%	22.91%	14.01%	30.50%	19.90%
Educational and health services	16.14%	23.00%	24.35%	19.06%	17.45%
Leisure and hospitality	5.03%	19.11%	37.17%	24.04%	14.64%
Other services	16.97%	25.50%	36.35%	20.65%	0.53%

Source: BERC and Kauffman Foundation Survey

Limitations and Future Research

This study primarily addresses business challenges associated with STEM workforce shortages. We discussed many aspects of these shortages and explored their implications within the context of Tennessee and national survey data. Our review of the findings suggests further research is needed to better understand the reasons behind persistent mismatches in STEM workforce areas across the nation.

A particular question to explore would be why businesses are consistently pushing for human resource strategies that involve outsourcing STEM skill sets. The second line of inquiry would be to focus on the dynamics behind mismatches in the market: who is not getting the information, and why individuals are not taking advantage of opportunities to eliminate shortages in the market?

A final line of inquiry regarding STEM shortages would be to explore the issue within the interdisciplinary educational framework and connect subject matter with the innovation ecosystem.

CONCLUSION

The debate about STEM workforce shortages is not over. This study suggests the STEM shortage is not a myth but a reality—resulting from significant mismatches in the marketplace. While some STEM fields have been overproducing/oversupplying for years, many other fields have been experiencing chronic shortages.

Given the importance of the STEM skill set for the economy, it is time to treat the STEM skill set as a core competency of firms and regions. This is critically important because the gap in skill and shortage in this area results in significant economic losses, as suggested by this research.

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INTERNET SECURITY AND PRIVACY THREATS, AS PERCEIVED BY AMERICAN AND INTERNATIONAL BUSINESS STUDENTS

James Frost, Idaho State University
Alan Hamlin, Southern Utah University

ABSTRACT

The authors collected responses from American and International business students concerning their attitudes towards internet security and privacy. The students answered questions about password usage, their knowledge of online scams, their conduct while participating in e-Commerce, social media issues, cell phone security, and their awareness and/or training about personal identifiable information. The responses indicate a lack of basic understanding about internet security, and steps to acquire a background or knowledge base in these key areas to protect themselves from external threats. This was especially evident with their use of social media.

We compared the responses to multiple questions about security issues for American and non-American (international) students. Usually, both groups had similar response in their understanding of critical issues, except in a few areas. We believe, based on the data, that security and privacy awareness and training are not being emphasized enough for business students (and probably all students) in academia.

Keywords: MSR model, privacy, security, passwords, social media, personally identifiable information (PII), training, education, awareness, network centric.

INTRODUCTION

Over the past several years, the authors have collected information from business students attending both domestic and foreign colleges and universities about their respective attitudes about the dangers to personal privacy and security from various technologies. This paper provides an analysis of a survey given to 259 students in 34 nations about their perceptions of risk to their personal security and information from internet predators, hackers, and other technology-driven sources, and what they are personally doing (or not doing) to minimize or eliminate such risks. Comparisons of the responses from domestic and foreign students illustrate the relative differences of the groups regarding perceptions of the significance of the problem, and what tools each are using (including such things as the use of special characters in passwords, the length and variation of passwords, the likelihood of opening an attachment to an email from an unknown source, etc.). It is hoped that, with the results of this paper, faculty and administrators who are involved in teaching and advising such students will be provided helpful information regarding cultural differences which might affect how their students can be trained and protected from risks, particularly online risks, to which they are exposed daily from their use of high-tech products.

This paper is organized into four parts. The first describes why the problem of internet security is important, examining the extent of the problem and describing approaches to control it.

The second is a review of the literature. The third is an analysis of our primary research and the tool used to conduct it. The last section provides concluding remarks based on the research, and assesses the implications for further study in the field.

WHY THIS PROBLEM IS IMPORTANT

While the root cause of personal information risk is the subject of much debate, anecdotal evidence suggests multiple factors, including the lack of rigorous law enforcement; lack of consistent ethics training across cultures; peer pressure for increased monetary gain, and changing societal norms about what specifically constitutes unethical behavior. There is evidence that hacking itself is only a minor threat, and that negligent insiders, outsourced data, malicious insiders and social engineering are actually the most serious threats to our personal information security. Even still, the amount of data loss to hacking is staggering. From Edward Snowden hacking government records to recent hostile actions involving political parties and even religious groups, the problem of keeping records safe seems to grow each year. There have been many recent examples of predators from countries like China and Russia successfully accessing private consumer data from major domestic and foreign companies, including JP Morgan Chase Bank, Target and many other firms, accessing the private records of millions of Americans (Riley & Robertson, 2014). Home Depot was recently attacked by cyber-terrorists, who accessed as many as 40 million payment cards (Reuters, 2014). A hacker collective from Germany broke into the servers of 300 banks, corporations and governments for 12 years, stealing sensitive and confidential personal data without being caught (Sky News, 2014).

In their zeal to gain access to private records, even health care service companies are being attacked. Two years ago, the Utah Department of Health server was breached, allegedly by Eastern European predators, and 780,000 individuals were impacted (McNeil, 2014). In June, 2014 the Montana Health Department confirmed a server breach impacting up to 1.3 million individuals (ibid). In July 2014 the State of Vermont confirmed that a server used in the state's health insurance exchange was attacked by Romanians over 15 times (ibid). In March 2014 Chinese hackers broke into the computer networks of the US government and gained access to personal information on US government employees who had applied for top-secret security clearances (Schmidt, Sanger & Perlroth, 2014).

No matter the source of the threat, the risk in total to the safety and security of personal information is substantial, especially to young students who may not be aware of the significance of the problem. Many do not realize that these predators hijack usernames and passwords; steal money from bank and credit card accounts; ruin credit; request new credit cards; make purchases, add themselves or an alias as an authorized user to the victim's credit; obtain cash advances, use and abuse the victim's Social Security number; and sell information to others (Webroot, 2014). Predators use various methods to access personal data, including footprinting, scanning, enumeration, penetration, advance and cover tracks, etc. (Encyclopedia.com, 2002).

This paper will illustrate student perceptions of this very current and significant issue, and what they can and should do to minimize the threat to their personal information and security.

REVIEW OF THE LITERATURE

It was noted that “most social media platforms are used by college students not only for social interactions or entertainment purposes, but also for information seeking in the academic context (Kim, Sin, & He, 2013).” Social media use expanded with the reduction of monthly cost for smartphones and their expanded use with the marketing of unlimited minutes, texting and internet access. This also provided access to social media by users throughout the world. This has expanded to photo sharing through services like Flickr. Researchers found that users were somewhat unconcerned for the potential exposure via photo sharing and posting (Ahern, Eckles, Good, King, Naaman & Nair, 2007). However they also acknowledge that tremendous risks are also involved with posting of pictures.

Multiple ages of students are using social media. Rivero (2013) reported that 75% of seventh through twelfth graders have at least one social media profile. It is safe to assume that most college students use social media in one form or another. Many of the studies focus on the educational potential of social media (Educational Information Technology, 2011) and the cultural issues of social media in education (Ahn, 2011). Our study did not dwell on the impact of social media in education; instead we investigated the attitudes of students when using social media and their personal information. When considering virtual worlds and social media; researchers identified the importance of the security triad of confidentiality, integrity and availability (Gogolin, Gogolin & Kam, 2014). While there is some data that is appropriate to keep completely confidential, it is critical to maintain the integrity of all data. In the end, it is up to each individual to determine the level of availability of data to other individuals (for example, their close friends, friends of their friends, or the general public).

Social engineering refers to the “selection of techniques that exploit human weaknesses and manipulate people into breaking normal security procedures” and engineering as a preferred method to bypass computer and physical security over technical controls (Bakhshi, Papadaki & Furnell, 2008).” Many of the techniques used by social engineers can be diminished by awareness and training efforts of the corporation. In two studies, social engineering is even effective on individuals participating in cyber competitions who think they cannot be affected by such actions (Kvedar, Nettis & Fulton, 2010). These researchers found strong success by using a well planned and executed event. Social engineering requires information gathering to be successful and social media sites are packed with personally identifiable information (PII). If social engineering works on individuals that are trained to avoid seductive requests, it is understandable that novices would fall to the influences of well-prepared social engineers.

In one experiment, one fourth of the staff fell to the lure of social engineering attacks (Bakhshi, Papadaki & Furnell, 2008). As it is natural to wish to assist and when provided with authentic appearing credentials, it is understandable why social engineering of social media attacks are successful. To deal with the vulnerabilities posed by social media it is prudent to provide training, education and awareness. The importance of awareness, training and education is emphasized in several articles including McCallister, Grance & Scarfone, (2010) and McCumber, (2004).

ANALYSIS OF PRIMARY RESEARCH

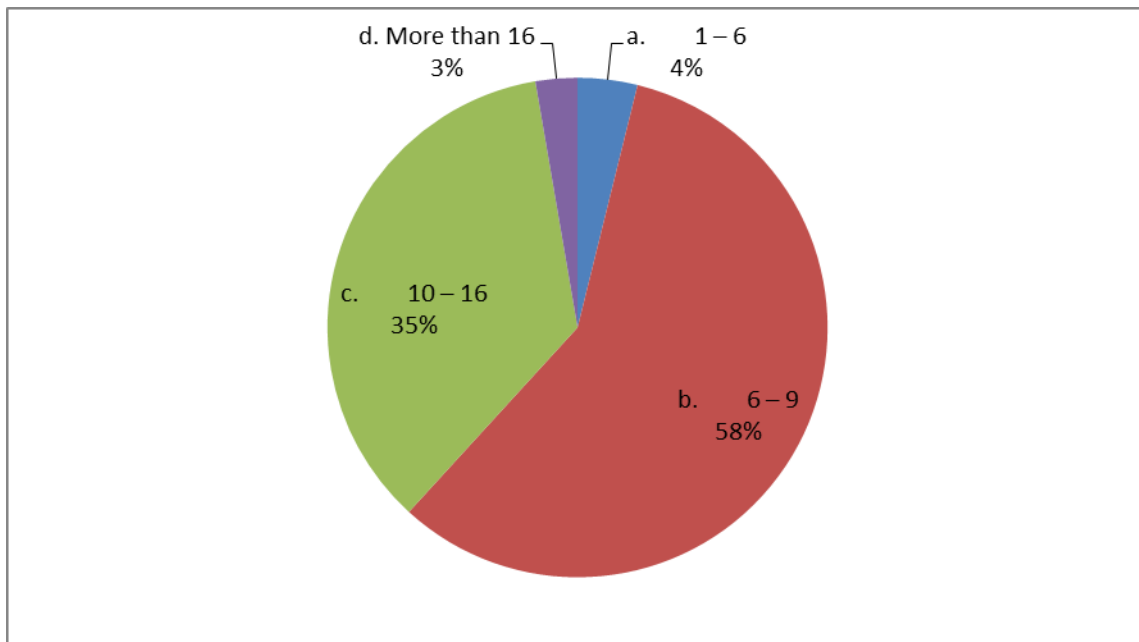
Data Analysis

Data was collected from multiple international business classes over the past two years. Two hundred fifty nine students participated in a multi-question survey to identify their personal actions towards different issues involving information assurance and privacy. These students were international undergraduate students from across the world, who enrolled in a business class taught by an American at various universities in Europe. The survey was conducted in hard copy with the students circling their selected choices and writing responses to the open question that dealt with their personal attitude/view of information assurance issues. We chose to use hard copies as some of the students did not have access to computers to enter responses on-line and the motivation to complete the survey would have been reduced if not done during class time. The surveys were entered into an Excel worksheet and reviewed for accuracy. This involved hand checking each entry for accuracy combined with a computer analysis for error checking. We did not collect gender information since identifying the gender, when combined with other variables, can reduce the response rate. The statistics package JMP Pro 12 was also used.

Table 1 Number of American vs. International Students	
American	122
International	136

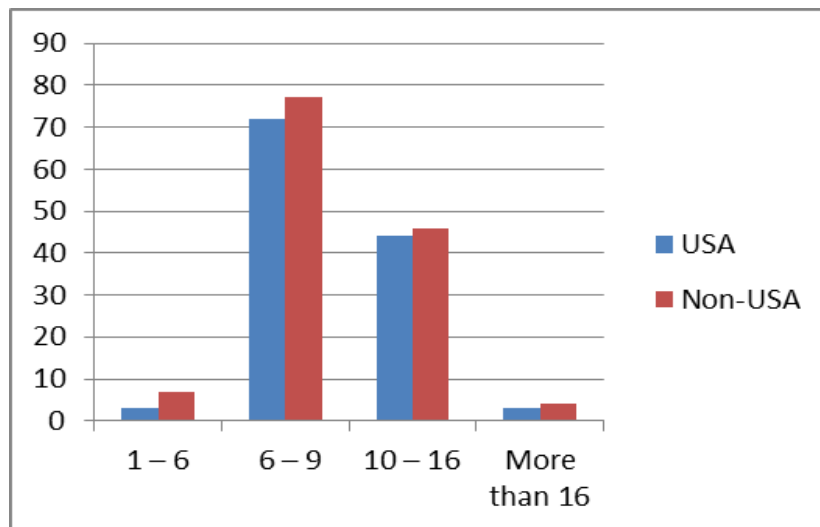
The students' majors were quite varied, especially beyond the "traditional" business categories. Approximately half of all the students (135) were "traditional" business majors of management, marketing, accounting, and CIS while the rest showed a variety of interests.

When asked about the student's preferences for password length for computer accounts ("Usually my passwords are at least _____ characters in length"), the students responded as shown in Figure 1 below:

Figure 1: Length of Password

Password length is a positive information assurance activity as length is a critical aspect in maintaining computer security. The majority of the students are using passwords that are six characters or longer. Over one-third are using passwords of ten or more characters. Only four percent of the students report using passwords that are less than six characters. The password lengths may be affected by minimum requirements for “n” characters of the security system. When comparing international students, there did not seem to be a vast difference in the groupings of password lengths. The bar chart of figure 2 displays a continuum of values without any groupings of observations in any area for either group.

However, even though password length contributes to the information assurance posture of an individual, it is more important to be able to remember the password. The inclusion of cryptic characters to confuse the hacker that is attempting to “crack” your password is not a major advantage to the student. Many professionals still portray that a password is “stronger” with the inclusion of special character, number and uppercase letters. However, special characters are just another character that is difficult for the human to remember which numbers and/or special characters are substituted for the alphabet. It is important for users to remember that the computer is a tireless worker and can crack any password, given enough time. Therefore, it is important to maintain usability with length over cryptic numbers and/or symbols using difficult to remember special characters.

Figure 2: American v. International Password Lengths

As an example, suppose we use a passphrase like: horsepucky with some substitutions and symbols. It could become “#or3e9ucky14.” It would only ONE DAY for a brute force attack to crack this password (https://passfault.appspot.com/password_strength.html#menu).

Using a password that a user can remember, “baseballworldseriesyogiberra” we see the subsequent time to crack – 2,374,525,075 centuries.

Many sources and sites verify the benefits of having longer passwords, and the time it takes for hackers to crack them. Some of these also show the expansion of time required to crack a longer password. Table 2 gives information from another password cracking site that shows similar times to crack (Gibson Research: <https://www.grc.com/haystack.htm>).

Table 2 Time Required to Crack a Specific Password	
Type of attack	Time involved
Online Attack Scenario: (Assuming one thousand guesses per second)	3.76 billion centuries
Offline Fast Attack Scenario: (Assuming one hundred billion guesses per second)	37.58 centuries
Massive Cracking Array Scenario: (Assuming one hundred trillion guesses per second)	3.76 years

The authors support a philosophy that it is a superior technique to use a password that is long, yet retrievable and easier to memorize, instead of a difficult and shorter password. Often computer

users believe that a hacker will poke at the website with a hacking tool until they succeed in discovering your password. This is not the case. The hacker will download the password file after compromising the site and then run the tool on the file at his location so safeguards to prevent multiple attempts are not present. Password length is critically important for information assurance.

When queried as to the inclusion of special characters in my password(s) like *, &, ~; only 30% of the students responded yes (Figure 2). We feel safe in assuming that the exclusion is for simplicity in typing in a password. That observed, nearly one third are including special and obscure characters, probably because they believe that these unique characters will make the password more secure from hackers.

When we look at a breakout between the American students and international students, there does not appear to be a dramatic difference in the use of special characters (Figure 3).

Figure 3: Percentage of students using "special" characters

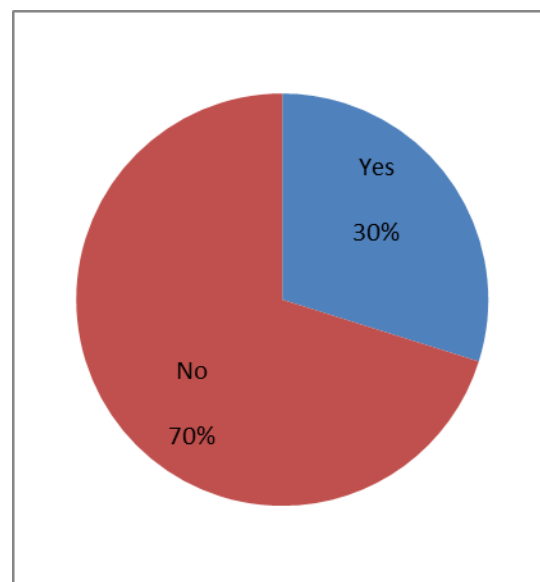
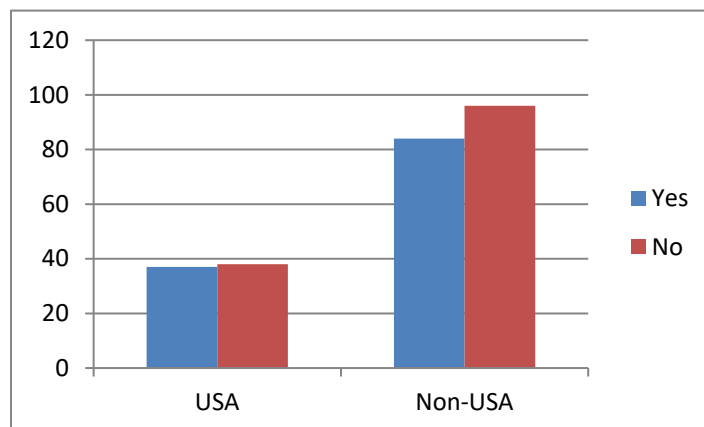


Figure 4 shows the same data however it is divided into American versus international students. There does not appear to be a dramatic difference between these two groups for the use of special characters.

Figure 4: Use of special characters

Do the students have multiple passwords or just one password for all their on-line accounts? Table 3 shows (sorted by percentage of total descending):

# of Passwords	Percent of total
3	32.56%
4	19.38%
2	13.95%
5	10.47%
6	4.65%
1	2.71%
10	2.71%
7	1.55%
8	1.16%
12	0.78%
0	0.78%
9	0.78%
13	0.39%
15	0.39%
30	0.39%

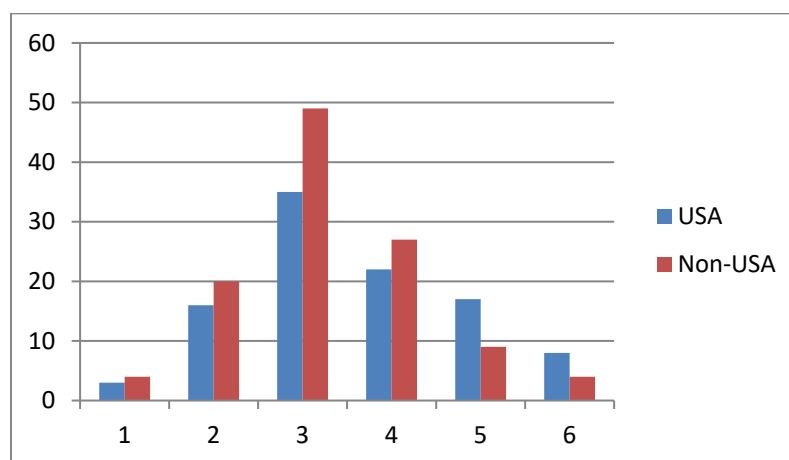
Seventy one percent of the students responding to the survey have four or less passwords for their accounts that are online. Nearly one-third had three passwords for their online accounts and the less than six percent have ten or more passwords for their online accounts. This is a potential security issue because if one of their passwords is compromised, then the hacker would have access to other accounts. This is a target of phishing attacks and “requirements” to establish

a login for something “free.” The hacker is hoping that the user has a limited number of passwords and the subject will use one of them to establish an account on their system. Then they can social engineer other sites to access your online resources. A superior posture for the student is to have independent, long passwords for each web site and do not reuse your passwords.

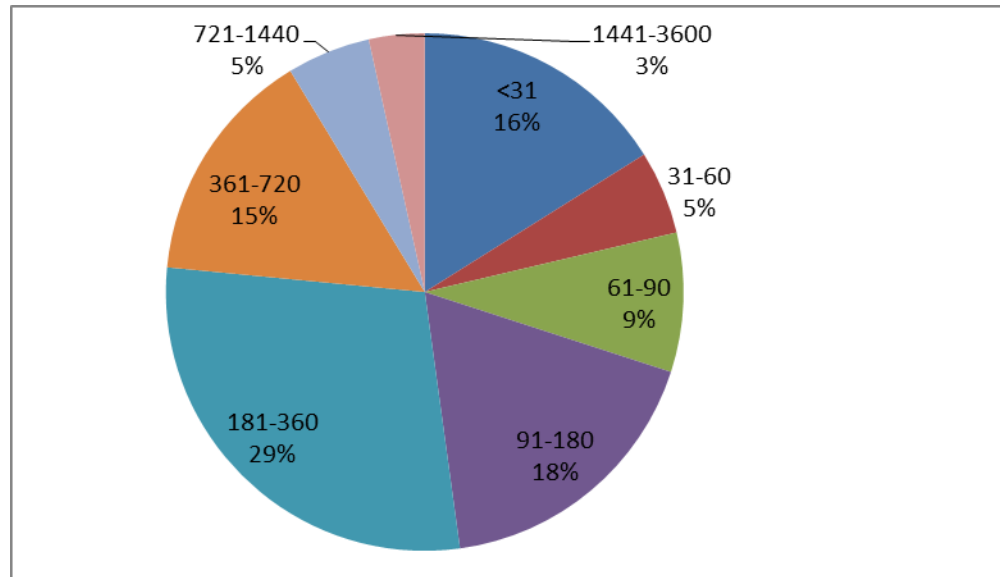
Keeping track of more than ten passwords can be troublesome; however there are strong and reliable password management systems that are available at low or no cost. These systems keep your passwords under a single password that can be very long and the system can be on your local machine or it can reside in the cloud. Most of the password management systems also offer a mobile version for smartphones as well. It is important to avoid having one/few passwords for critical accounts as if one account is compromised; the user does not want all of their online accounts vulnerable.

There does not seem to be a difference between the two groups of this study as shown in Figure 5. Each bar represents the number of passwords the students uses (passwords 1 – 6) and represents 85% of the students.

Figure 5: Use of multiple passwords



A follow-up question involved the issue of how often the student changes their password. As expected, the students reported that they do not change their passwords very often. Figure 6 shows that 23% of the students wait to change their password on an annual basis or longer (up to every three years). Another 29% change their passwords every six months to one year. The students report that they change their passwords no sooner than six months to as much as three years.

Figure 6: Time elapsed before student changes their password (in days)

It is important for computer users to change passwords more often than annually as hackers often do not immediately use a compromised password. They may wait and see if the user has changed their password as time passes. They will also create a supervisor account for themselves to use later.

Figure 7 shows a noticeable difference with two responses. More international students respond that they never change their password (zero) or wait to change their password annually (360). We do not have an explanation for this response rate, however the international students seem more reluctant to change their passwords.

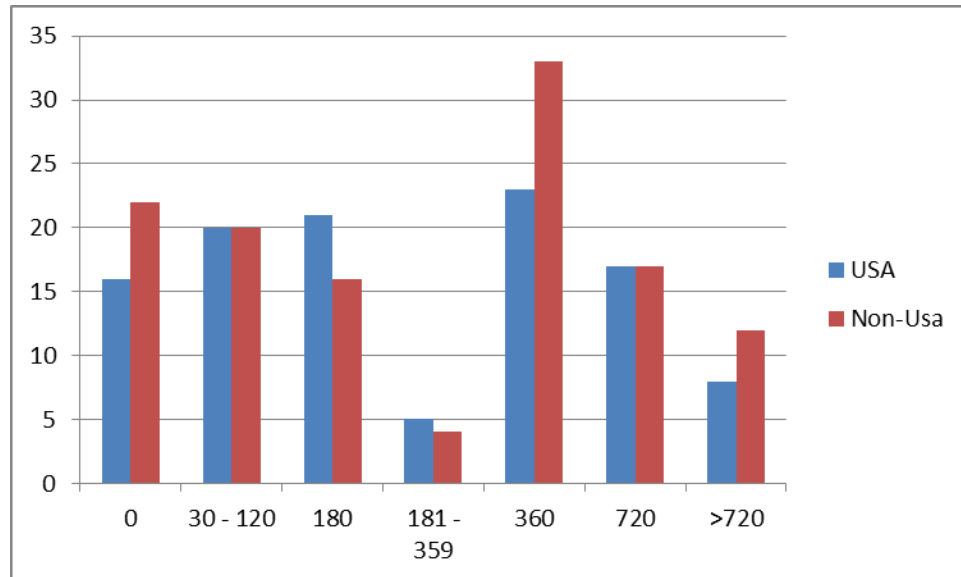
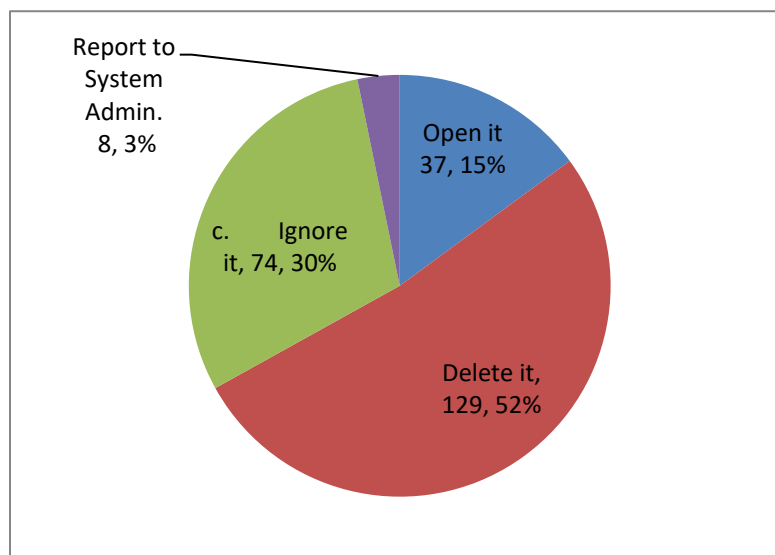
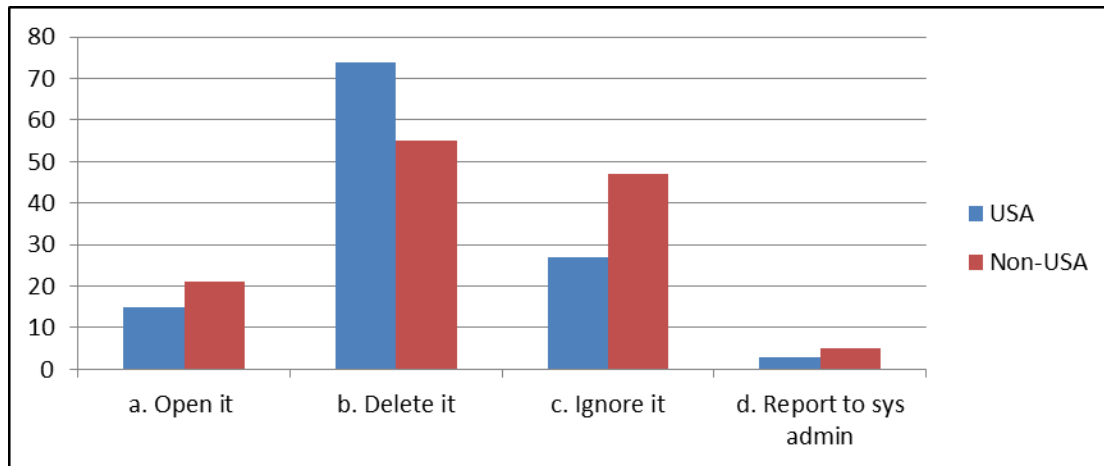
Figure 7: Days until password is changed

Figure 8 shows the student responses to a query on what to do if an email has an attachment. Half of the students indicate that they would delete it; however, a disturbing number of the students say they would open an attached executable file. Usually it is advisable to leave any attached executable alone and not open it as this would possibly launch malware that would compromise their system.

Figure 8: Action for an executable file attached to an email

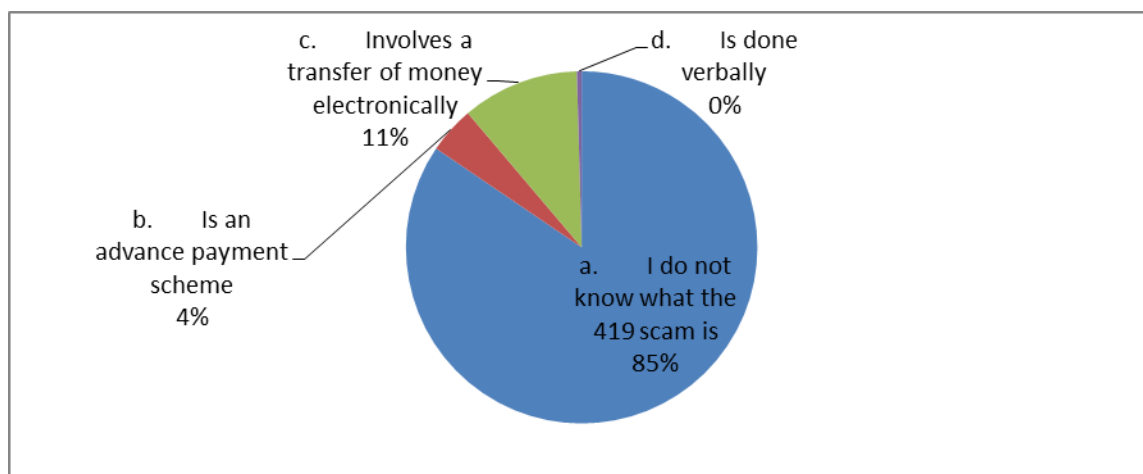
When comparing the American students to the international contingent, there are a couple of differences when dealing with an attached executable (Figure 9). Comparatively, more American students would delete it while more international students would ignore it. However, not many of either cohort would report it to a network supervisor.

Figure 8: Comparison of responses on an attached executable file



The next survey question dealt with the student's knowledge of a specific, yet famous scam, the Nigerian 419 (Advanced Payment) scheme. Figure 10 queries their knowledge of this scam. Eighty five percent of both American and international students did not know what this program was and how it could affect them. This advanced payment scheme (known by the 419 criminal code in Nigeria) is a powerful "get rich quick scheme" that has taken cash from many internet and non-internet users. Internet users and individuals should be aware of the dangers of this and other criminal vehicles that are just too good to be true.

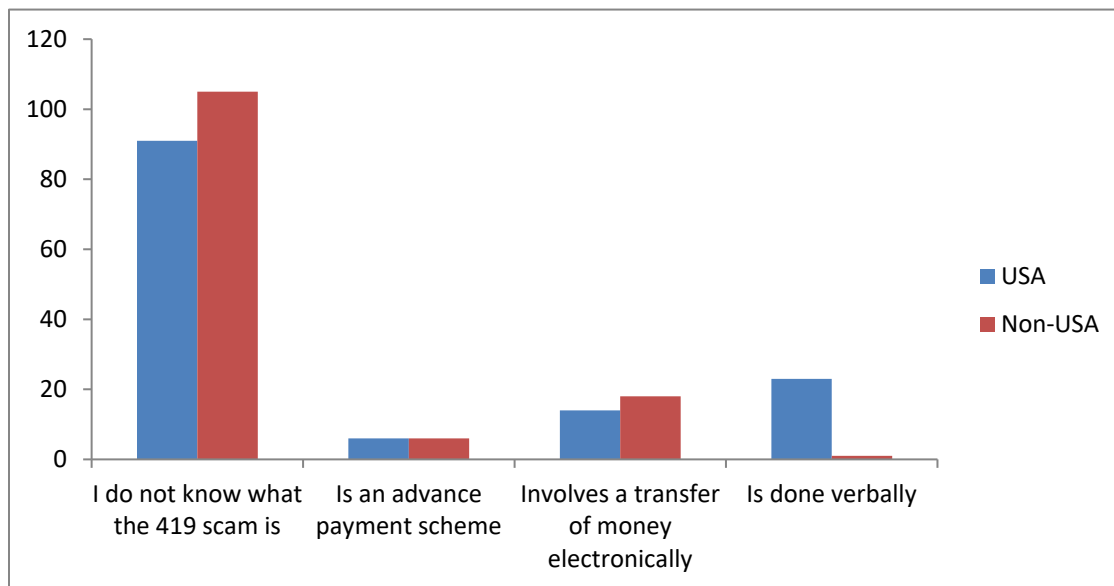
Figure 9: Student knowledge of Nigerian 419 scheme



As a society we are becoming net-centric in our activities. We stream movies via Netflix, purchase commercial goods via Amazon.com and we roam through the flea market of eBay with little concern for our personal security. We conduct online banking and monitor the stock market via online connections. As students participate in online activities, which of their actions could expand vulnerabilities?

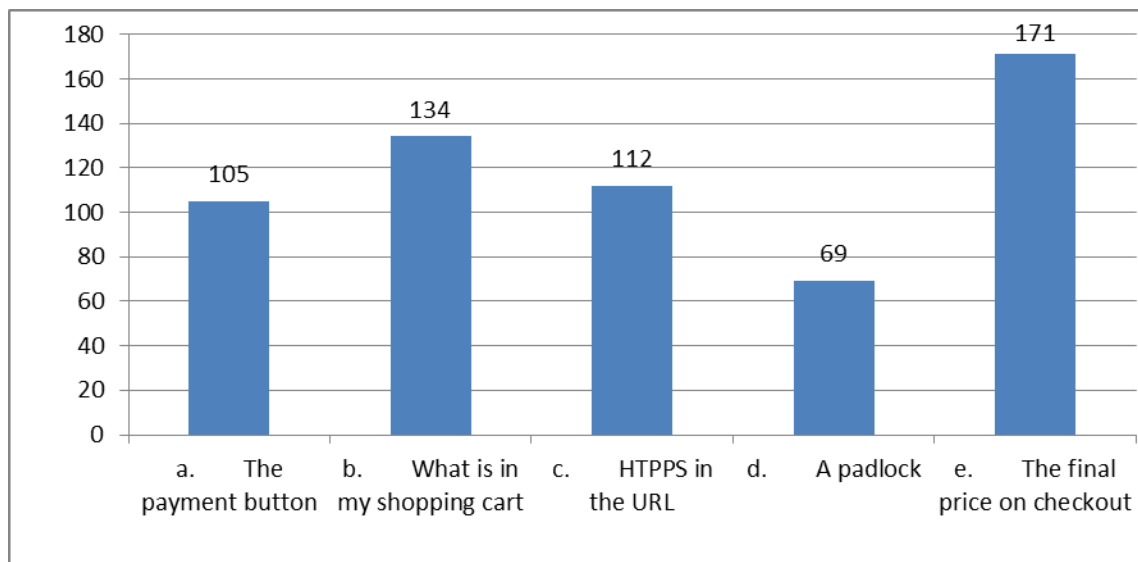
There is not much difference between the American students and international students as shown in Figure 11. An exception is on the question of the Nigerian scheme being done verbally. The American students supported this concept, possibly guessing.

Figure 10: Nigerian Scam

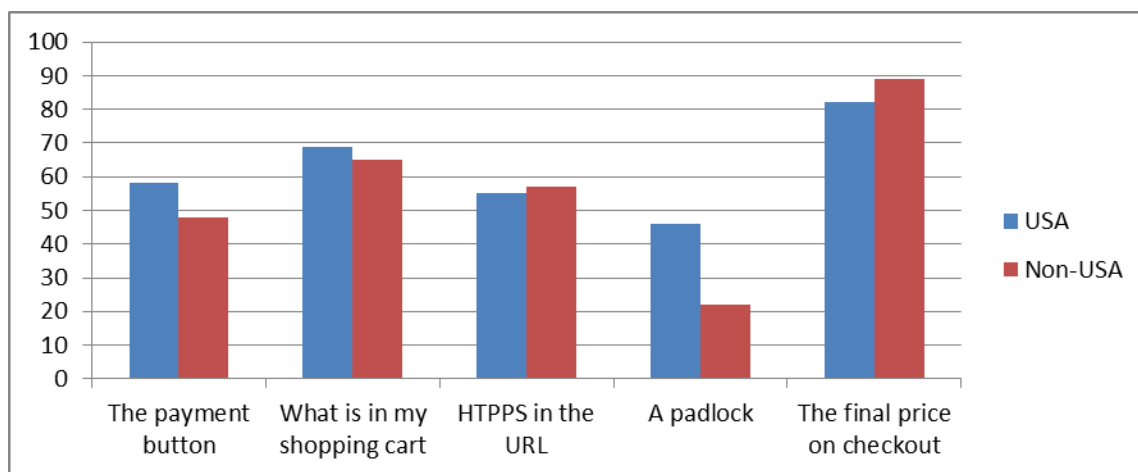


Although one third of the students are “very to extremely concerned” about their social media web site, only 25% felt it was “likely to extremely likely” that their site would be hacked.

Figure 12 shows that nearly one fourth of the students check on what is in their shopping cart when they purchase an item online. The international students are more concerned about the final price and where the payment button is, rather than if the transaction is secure as indicated by a padlock or https in the url.

Figure 11: Things monitored when participating in e-Commerce

When comparing American students to the international students (Figure 13), the most dramatic difference is that fewer international students look for a padlock. Perhaps this is a unique word in their understanding of the English language.

Figure 12: American v. International things monitored in e-Commerce

This is a security concern as half of the students are looking at the price and what is in the shopping cart, not if they are at a secure site. It is imperative to raise the awareness of students when they are involved in e-Commerce. The students were allowed multiple selections on this question. The international students primarily selected the final price on checkout. This is interesting as we rarely find it in error in the price as a computer is calculating the price based on

the buyer's choices. The second most selected item is what is in their shopping cart. The choice of finding the payment and checking for a HTTPS in the URL could be a security issue.

The students' privacy concern at a social media site is interesting. Here is a visible difference between the American students and the international set. The international students are very concerned about the security of their social media web site while the USA students indicate less concern as shown in figure 14.

Figure 13: Social media site security

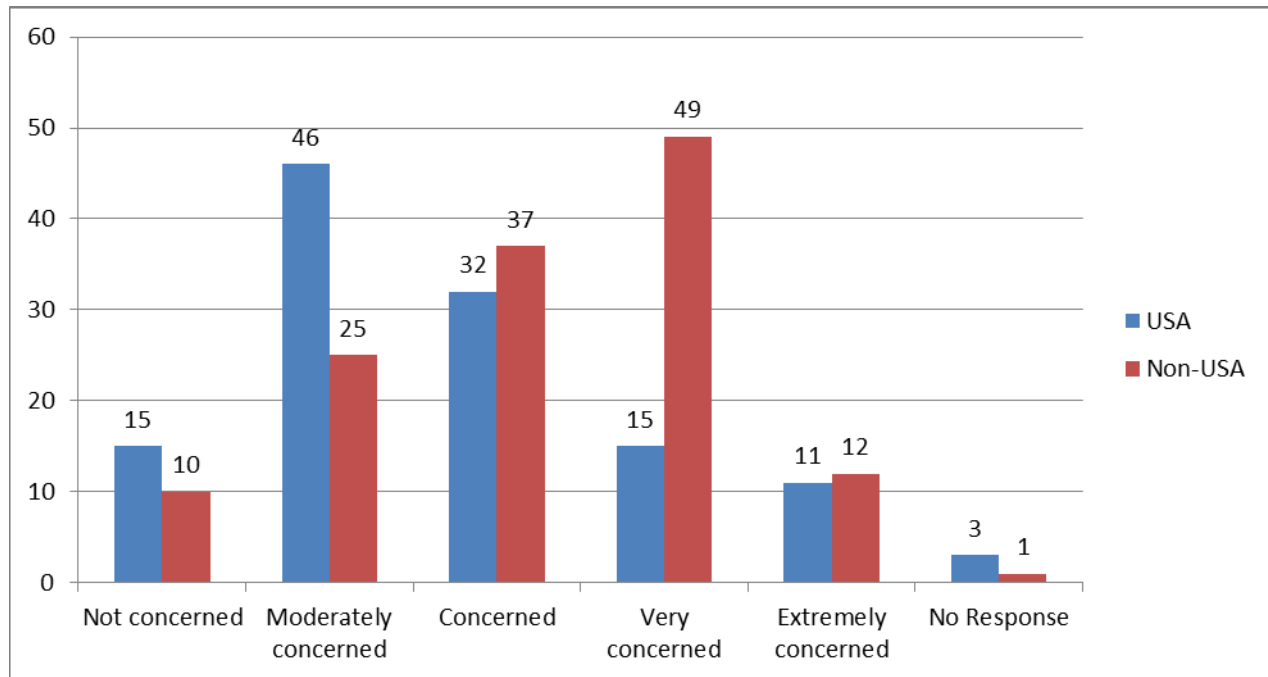
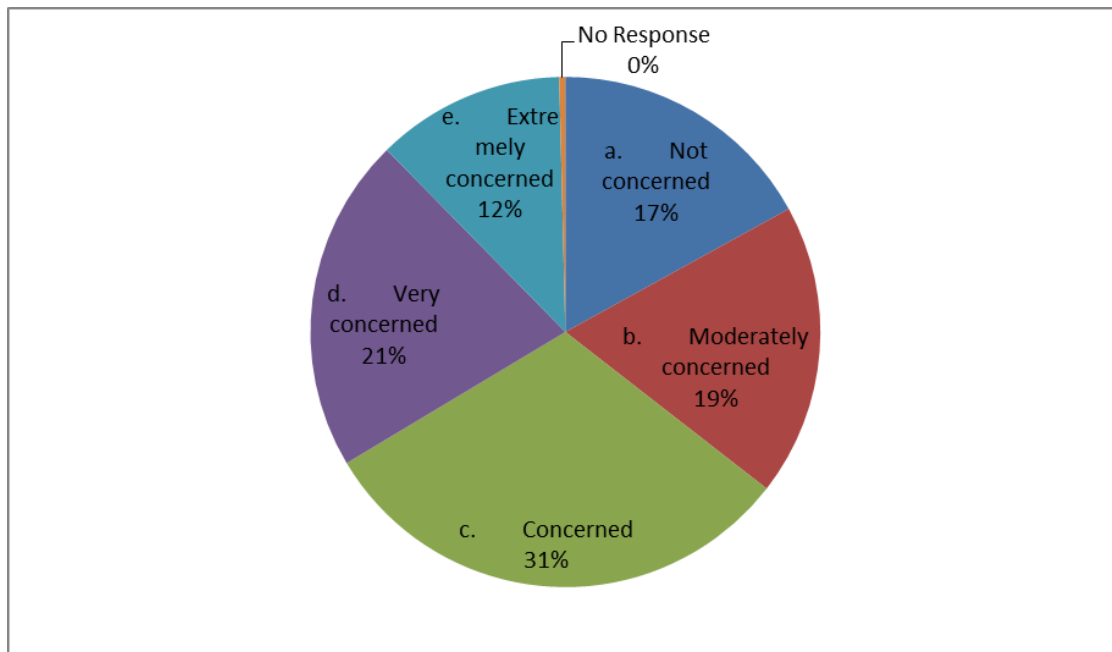


Figure 15 looks further at the student's concern for privacy when using Google. This is a security problem as government agencies are challenged when using facial recognition; however it is not un-Constitutional for a non-government agency to perform facial recognition. A corporation with the resources of Google may have more influence than many governmental agencies. If the populace does not raise a concern about this type of illegal search of a person, it will probably continue unabated.

Figure 14: Students selecting concerns the issue of facial recognition at Google

Again, the international students show more concern for their privacy at social media sites. Figure 16 shows the American students less concerned over facial recognition at these sites.

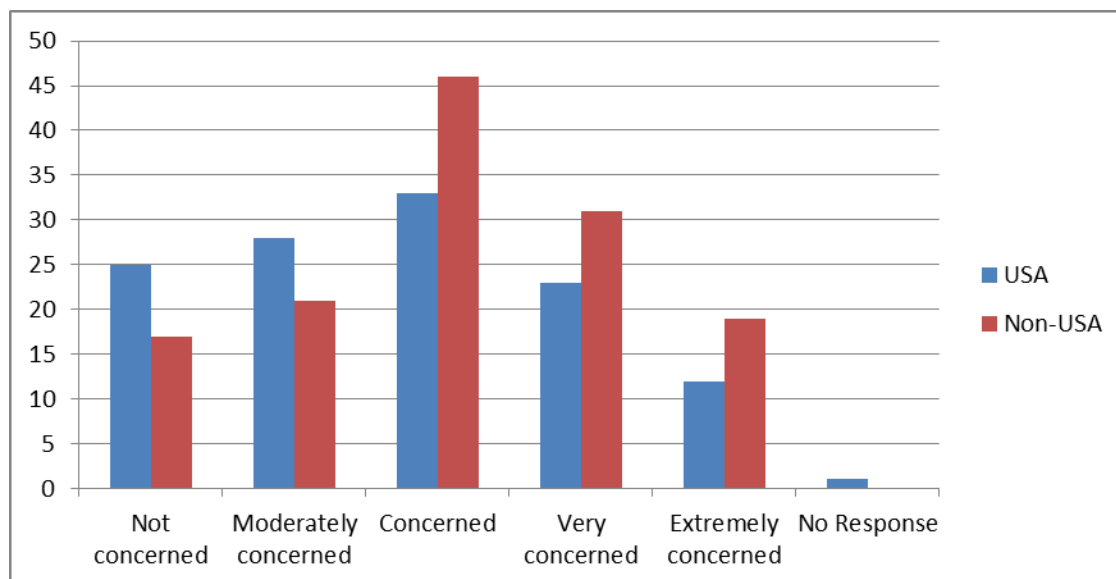
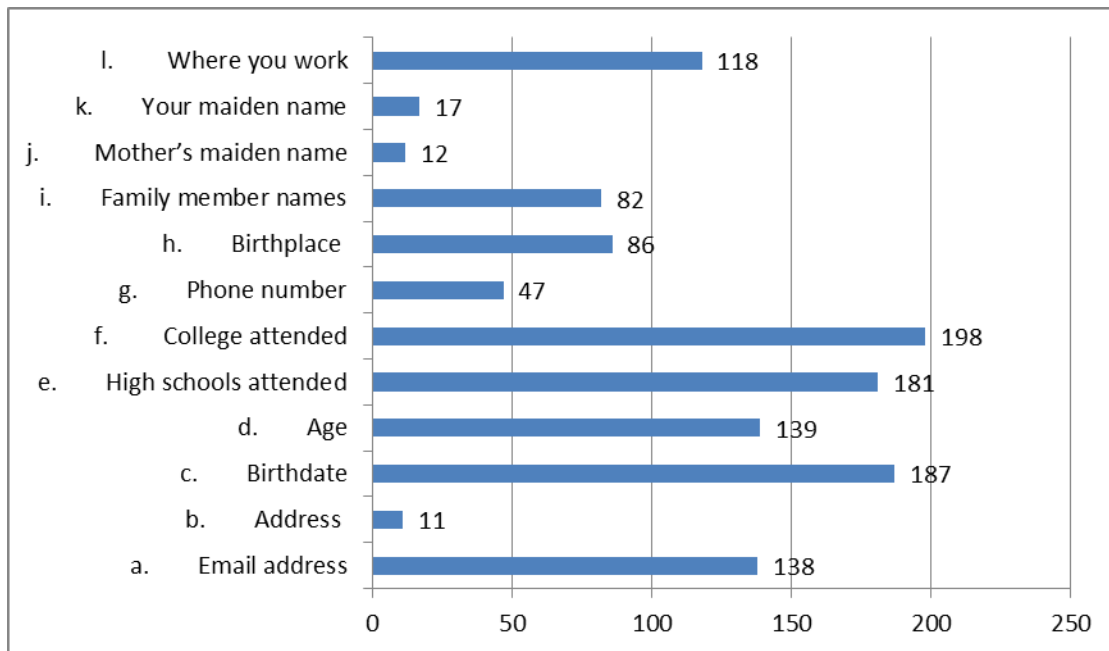
Figure 15: - Use of facial recognition at social media site

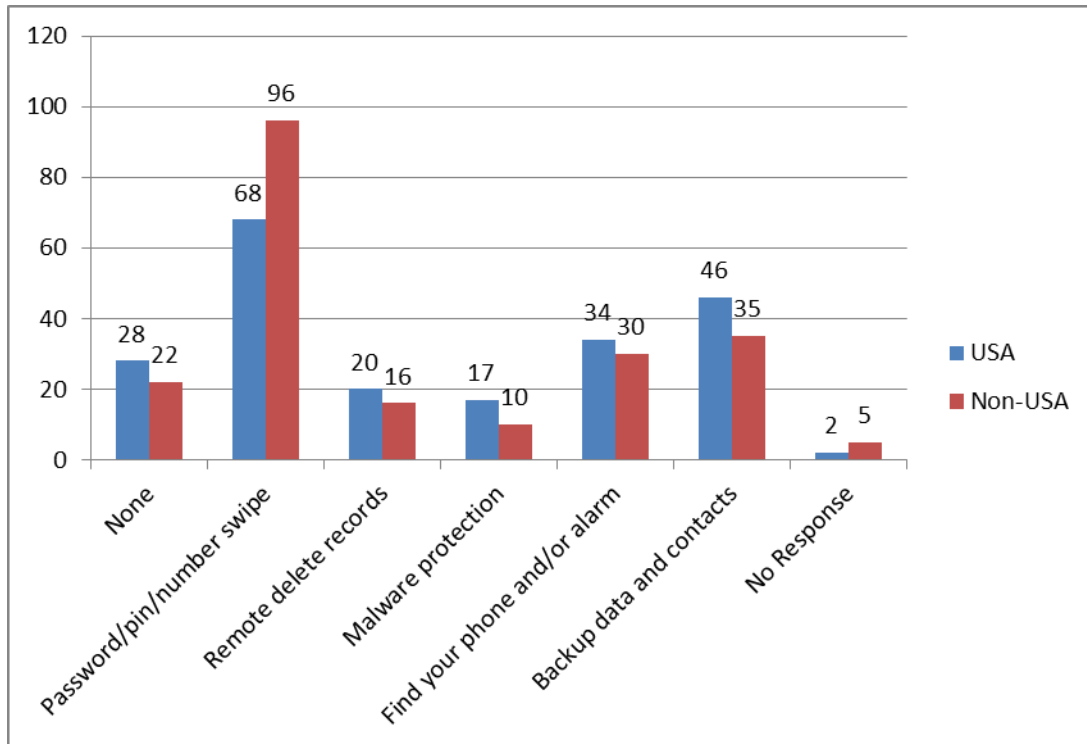
Figure 17 shows what personally identifiable information (PII) students are including in their social media sites. Students appear to be including a large amount of personal information about themselves on their social media sites.

Figure 16: Social media web site information

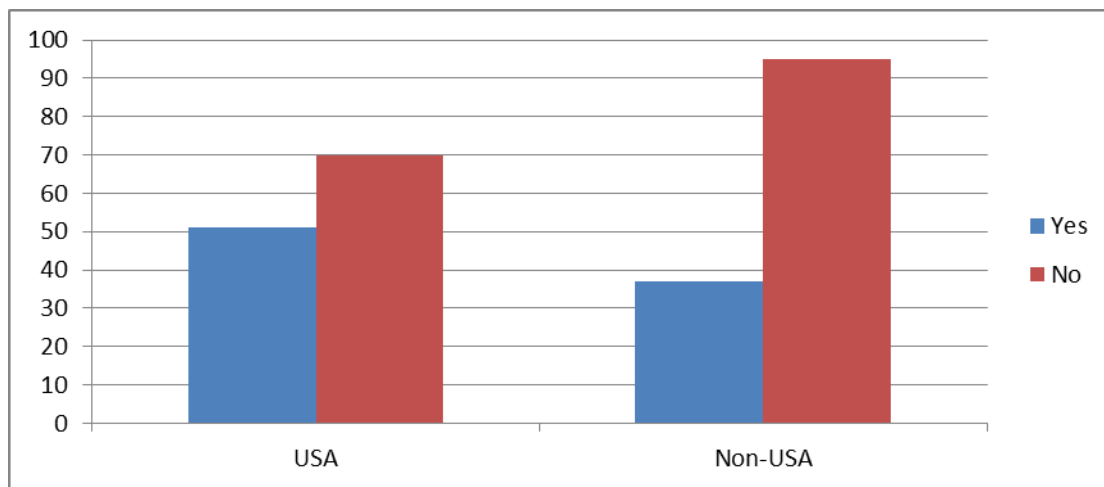


The inclusion of birthdate and birthplace as well as family member names should be avoided. In addition, the inclusion of their maiden name and mother's maiden name on a web site must be avoided. Individuals enjoy creating a history for others to pursue; however, this is a gold mine for social engineers, thieves and hackers. It is time to raise the awareness of our students on this issue. When looking at a comparison of American and international students, comparatively more international students included their e-mail address, birthdate and birthplace. More American students included family member names at their social media site.

When questioned about security measures, 164 reported that they do use a password/pin/security swipe to limit access to their device (Figure 18). This is comforting; however only 25 have malware protection. Also, it appears that more international students adopt password/pin/swipe protection than their American counterparts. The students have a powerful, network-centric device in their hand and many are conducting mobile commerce and banking regularly. They need a stronger defense to protect this access node. It is interesting that 79% of these students report they have malware protection on their personal computer, yet far fewer have the corollary for their cell phone.

Figure 17: Cell phone security

These responses are not surprising as only 35% have had training on internet privacy issues and/or protection for your personal information. The comparison of American and international students (Figure 19) shows the international students trailing in this exposure issue. This is a rapidly developing field and the students are involved daily and are actively exposing their PII to all individuals and corporations. The basics of computer security should be included in several classes and more network-centric security classes should be offered.

Figure 18: PII Training

CONCLUSIONS AND RECOMMENDATIONS

We consider it imperative that any individual that participates in activities on the internet enhance their knowledge (through training, education and awareness) of the risks and countermeasures to protect their identities and assets. This needs to be an international issue for awareness and training, especially for students who are young and vulnerable. We are taught in kindergarten to not trust a stranger; however, we practice a different set of standards for the internet. Some may feel insulated from the effects of thieves and hackers because they are conducting the transaction in a virtual world. It is time for all to realize that the risks are large and we continually add new vulnerabilities with each of our most recent virtual interfaces and tools.

There is a need to embrace strong (i.e. long) passwords that are not necessarily cryptic as it is important that humans can remember them. Individuals using social media should use caution to not put any data on the web that could be embarrassing or used to assume their personality. It is also important to always be diligent in protecting our PII.

Students are generally deeply involved in social media, and often do not realize the risks to their PII and assets. They need to adopt countermeasures such as the McCumber cube (McCumber, 2004) and also consider expanding protection as in the Maconachy/Schou/Ragsdale (MSR) model (Maconachy, Schou, Ragsdale & Welch, 2001). They must use more enhanced security technologies including long passwords; locking devices when not in active use; checking for encrypted transmissions (https); and use of anti-virus software. Also, they should expand their education and training by study and classes in information assurance. The use of a password manager will assist in providing a vault for numerous and/or complex passwords.

The authors plan to mature this survey with specific changes to focus on the changing environment. We would like more follow-up questions on data included at social media sites and their information assurance awareness. Information assurance is a personal issue and requires diligence from the individual. This attitude must be encouraged and supported at multiple levels to provide a positive experience in our network-centric world.

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SELF-HANDICAPPING IN LEADERSHIP: A CALL FOR RESEARCH

Jordan Mitchell, University of Houston Clear Lake

Phillip Decker, University of Houston Clear Lake

ABSTRACT

Self-Handicapping is the process by which individuals attempt to externalize a potential failure by means of an excuse (claimed), reduced effort, or creating obstacles (behavioral). This concept has been studied in the psychology and education literatures but remains relatively absent from the business or leadership literatures. The present paper posits that individuals and businesses would be well served by increased attention and research on self-handicapping in business and leadership. We outline a taxonomy that includes antecedents, internal and external factors, personality characteristics, and the process as well as the positive and negative outcomes of self-handicapping. We also provide several research questions to begin the conversation about self-handicapping leadership.

Keywords: self-handicapping; leadership; self-sabotage; goal orientation

INTRODUCTION

Manz (2015) suggests that leaders recognizing and learning from setbacks and short-term failures is a critical element of self-leadership. Doing this pays off in the form of learning, personal growth, skill development, courage, persistence, and a host of other desirable outcomes. He suggests optimal self-leadership is unlikely without confronting personal failures in a way that provides preparation for greater success. Habitually explaining away short-term failures by making excuses and covering one's tracks to create an illusion of continual success may stunt meaningful self-leadership development. Furthermore, Adkins (2015) says that most leaders know what is required to be effective, but Gallup research shows that only one in ten consistently practice those behaviors.

Manz (2015) defines higher-level self-leadership as leadership practices that reflect personal authenticity, responsibility, and expanded capacity. He suggests that business researchers have only just begun exploration of the vast potential of self-leadership. He believes there are many new self-leadership insights and strategies left to be discovered. This article is intended to explore one of those avenues and open up new areas of research for those interested in business and the work place.

Employees witness leader self-sabotaging behavior on a daily bases from their leaders – not confronting wayward employees, inconsistency, poor hiring methods, being a control freak, and not accepting accountability for their own actions. We posit that this results in apathy, lack of motivation, and a lack of employee engagement. The effects of employee engagement and well-being have been demonstrated to be significant when predicting turnover, customer satisfaction, productivity, and profitability (Harter, Schmidt, & Keyes, 2003). It follows that when employee engagement and well-being are diminished by leadership (whether intentional or not), turnover, customer satisfaction, productivity, and profitability suffer. There are obvious

causes for diminished employee engagement, but an often-overlooked cause is impression management by their leaders.

Impression management causes poor leadership because leaders practicing it are uncertain and rely on “face-saving” strategies rather than innovative solutions (Hoffman, 2007). Leaders let the excuses that are used to manage how others view them lead to reduced effort and learning (Higgins & Berglas, 1990; Snyder, 1990). Because the excuses work in the short term (Higgins & Berglas, 1990), leaders are reinforced for using them, and use them time and time again – while neglecting addressing the issue causing uncertainty and growing from it. This reduced effort ultimately leads to poor leadership behaviors that causes negative employee outcomes (Jones & Berglas, 1978). This slippery slope is called self-handicapping.

Self-Handicapping

Self-handicapping is the process where “people withdraw effort, create obstacles to success, or make excuses so they can maintain a public or self-image of competence” (Decker & Mitchell, 2016). Self-handicapping is an extension of attribution theory into leadership (See Harvey, et. al., 2014). By self-handicapping, an individual produces an a priori explanation for a potential failure. Self-handicapping can also enhance attributes of the individual because of subsequent increased personal credit for success when success was not expected (Luginbuhl & Palmer, 1991; Ryska, 2002). Self-handicapping is a strategy with two variants: claimed – using excuses to explain potential failure, and behavioral – reducing effort or creating obstacles as an explanation (Leary & Shepperd, 1986). Both claimed and behavioral self-handicapping can be internal or external to the self-handicapper (“tiredness” is internal while “lack of support” is external). Examples of claimed self-handicapping in business include: claiming anxiety, lack of time, task difficulty, lack of authority, and lack of resources. Behavioral self-handicapping business examples include: setting unrealistic goals, avoiding accountability, and reducing effort – such as avoiding needed employee confrontations. Self-handicapping influences impressions of others by two processes: (1) lowering expectations (before the task) (Burns, 2005), and (2) changing attributions about the individual (after the task) (Luginbuhl & Palmer, 1991; Park & Brown, 2014). Post-performance, it may also discount and externalize the blame ordinarily associated with failure (Crant & Bateman, 1993). People tend to self-handicap more when others are watching (Snyder, 1990). While self-handicapping has been examined in the psychology, exercise science, and education literatures, it remains relatively unresearched in the business literature (Crant & Bateman, 1993; Ishida, 2012; McElroy & Crant, 2008; Siegel & Brockner, 2005, and Flanagan, 2015). Additionally, Chadwick, I. C. & Raver, J. L. (2015) discuss goal orientation in organizational learning.

Self-Handicapping in Business Research

The aim of this paper is to start a business and leadership self-handicapping research discussion. Self-handicapping can create situations of poor team building, crucial conversations, performance management, and coaching. Self-handicapping is almost always hidden, subtle, and hard to nail down—often denied by the individual and undiscussable by the crowd (Noonan, 2007). Business leaders may also be uncomfortable dealing with or discussing human issues (Decker & Mitchell, 2016). Consequently, leaders often avoid the very things that are likely their

core problems in not achieving their mission – solving “people problems.” But ignoring self-handicapping will not make it magically go away.

There is virtually no research about self-handicapping in business. Simply put, there is no conversation about self-handicapping in business education or research—especially about overcoming it. When this conversation is started, researchers may begin to see “leadership” in a different light and find new avenues for research and education of business students. This research may help managers reverse their impression management self-handicapping behaviors, find more time to master their job, remove the obstacles they place on the workers and themselves, and see significant improvement in their area of responsibility.

To facilitate any meaningful change, a common language is needed (Crossan, Lane, & White, 1999) and there is currently no vocabulary for talking about self-handicapping in business. Research in self-handicapping by managers and leaders can change that. Traditionally, self-handicapping has often been viewed by executives as trait-based (Tubek, 1993) or a personality defect which is too difficult to address head-on. Moreover, it is noteworthy how many leaders see it in others, while being blind to their own impression management and self-handicapping (Decker & Mitchell, 2016).

Consequences of Self-Handicapping

There are both positive (short-term) and negative (long-term) consequences of self-handicapping. In the short term, self-handicapping can discount blame (Crant & Bateman, 1993), reduce negative attributions (Luginbuhl & Palmer, 1991; Martin, Marsh, Williamson, & Debus, 2003), support better performance in low self-esteem individuals (Ryska, 2002), reduce impacts to self-esteem (McCrea & Hirt, 2001), and cause less punitive sanctions for failure (Rhodewalt, Morf, Hazlett, & Fairfield, 1991). These are all relatively positive outcomes and can reinforce further use of self-handicapping.

A meta-analysis on academic self-handicapping and achievement from Schwinger et al (2014) suggests that self-handicapping is maladaptive for academic performance. They also posit a “vicious cycle” of low performance and self-handicapping that students enter into after singular handicapping situations. This is echoed by Zuckerman et al (1998), who reported that impaired performance negatively effects self-perceptions of ability, which reinforces self-protection through self-handicapping.

The negative effects of self-handicapping (which are mostly long-term) have been documented in several studies. These include: poor attributions from others (Jones & Berglas, 1978) , lack of socialization (Snyder, Smith, Augelli, & Ingram, 1985), poor performance (Zuckerman et al., 1998) , poor health (Leary, Tchividjian, & Kraxberger, 1994) , low satisfaction (Eroneni, Nurmit, & Salmela-Arot, 1998) , cheating (Anderman, Griesinger, & Westerfield, 1998) , and continued self-handicapping (Rhodewalt & Davison Jr., 1986).

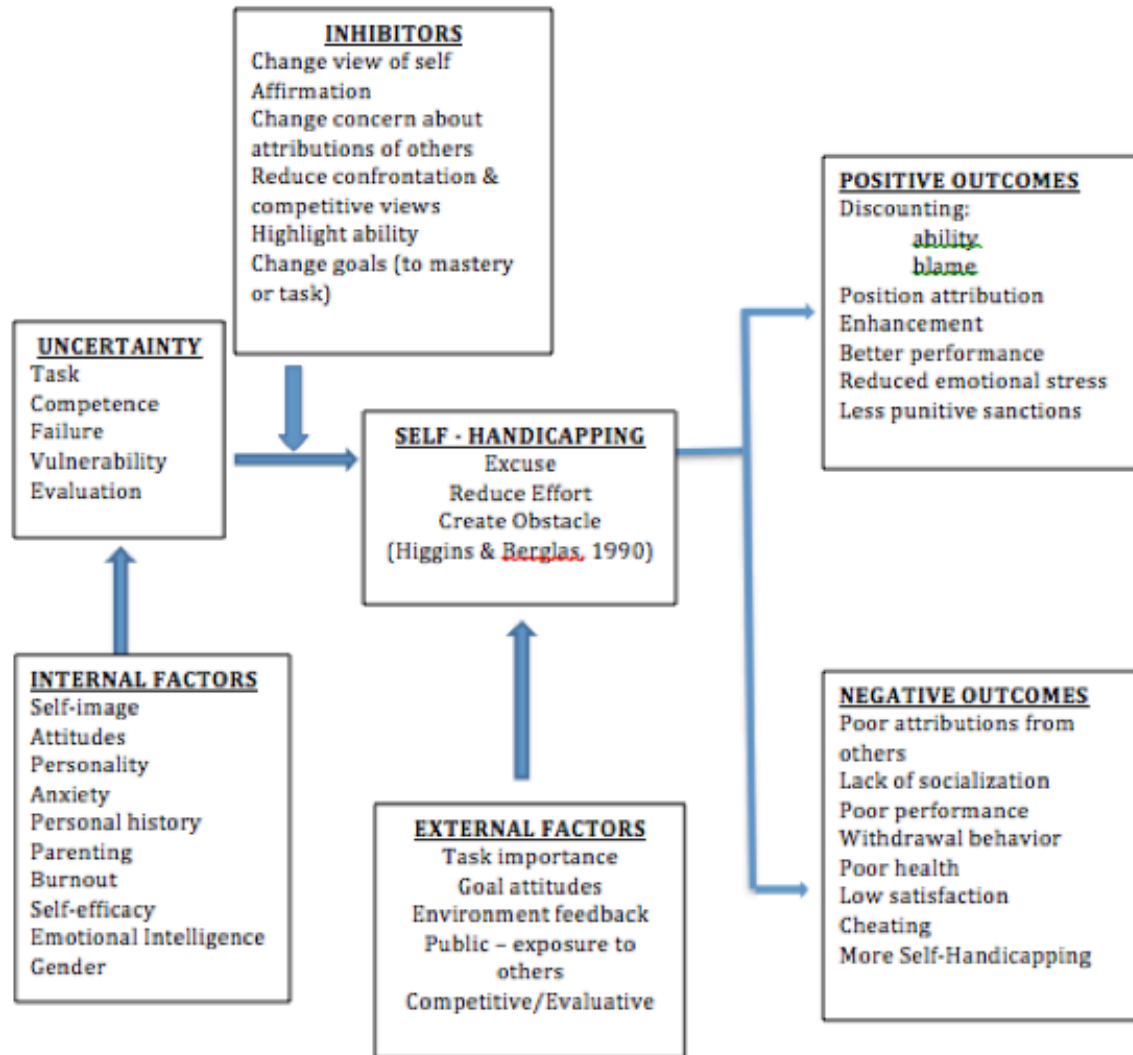
A leader who self-handicaps may also reinforce a workforce to self-handicap - such as a team not confronting peers or bosses (Decker & Mitchell, 2016). Business research and education in self-handicapping may help leaders understand and overcome claimed handicaps and then take the high road to eliminating the behavioral handicaps he/she and the workforce may be using.

Self-handicapping may also contribute to organizational change initiative failure (Decker & Mitchell, 2016). Employees overvalue their old habits and what they currently gain from them—status and a comfort zone—while leadership overvalues the new strategy and potential

long-term results without helping the employees navigate the road to the new. Research in self-handicapping may lead to breakthroughs in the areas of engagement, organizational culture change, and others. There is a focus on “overcoming resistance to change” in business but those very words are self-handicapping. They imply that the leader must do something to employees, but that can create an obstacle—more resistance. A leader who says, “What rewards can I offer employees to make the change willingly?” and “How can I help my employees retain their status in this change?” (WHAT and HOW Questions) possibly removes those obstacles and allows the employees to want to move toward the change. Future research should focus on developing solutions to overcome this type of self-handicapping in the workplace and a particular emphasis should be placed on how to instill a culture of learning and growing – mastery oriented leaders and employees (Chadwick & Raver, 2015).

A Self-Handicapping Taxonomy

Figure 1 – A Taxonomy of Factors Affecting and Effectuated by Self-Handicapping



Much is known about the antecedents and consequences of self-handicapping in academics and sports. Less is known about the process and inhibitors of self-handicapping. Extensive research (see Figure 1) promotes variants of self-worth being an antecedent of self-handicapping. Self-consciousness and self-worth (Midgley & Urdan, 1995; Thompson & Dinnel, 2007), ambiguity, anxiety, and fear of failure (Burns, 2005; De Castella, Byrne, & Covington, 2013; Handelsman & And Others, 1985; Thompson & Hepburn, 2003), burnout (Akin, 2012), and self-efficacy (Arazzini Stewart & De George-Walker, 2014; Ferguson & Dorman, 2002) are all internal factors that have been positively associated with self-handicapping. Attitude and personal history also pay a part (Garcia, T, 1996; Leonardelli, Lakin,

& Arkin, 2007). In essence, those with high self-esteem and low self-esteem do not self-handicap because they are not uncertain. High self-esteem fosters confidence in success while low self-esteem fosters confidence in failure. Only those with uncertainty self-handicap.

There is evidence that types of parenting and family attributes are also associated with self-handicapping (Ross, Canada, & Rausch, 2002). Authoritarian parenting (Shields, 2008), lack of parental involvement (Hwang, 2013; Want & Kleitman, 2006), lack of family traditions and rituals (Hardy & Hill-Chapman, 2013), and low family emotional intelligence (Yang & Mao, 2009) all were positively associated with self-handicapping.

Finally, basic personality traits have been shown to be associated with self-handicapping; these include being narcissistic (Bassak-Nejad, 2009; Rhodewalt, Tragakis, & Finnerty, 2006), not feeling a purpose in life (Kinon & Murray, 2007), conscientiousness, extraversion, agreeableness, and neuroticism (Bobo, Whitaker, & Strunk, 2013), pessimism (Mitsunami, 2011), and depression (Levey, 1985).

Goal orientation has been shown to be an important determinate of self-handicapping. *Mastery goal orientation* focuses on learning and developing one's competencies, while leaders with *performance orientation* consider their performance relative to others (Ames, 1992; Dweck, 1986; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010; Nicholls, 1984). Performance orientation can be subdivided into *performance approach* (demonstrate superiority in relation to others) and *performance-avoidance* (avoiding looking less able than others -- avoiding mistakes) (A. J. Elliot & McGregor, 2001; Hulleman et al., 2010; Middleton & Midgley, 1997). Schwinger and Stiensmeier-Pelster (2011) found that leaders with a mastery orientation avoid self-handicapping because they view failure as an opportunity for personal growth and as a modifiable and controllable outcome. We believe business researchers may therefore find that humility may be a predictor of lower self-handicapping.

Research concerning gender differences in self-handicapping research has shown mixed results. While there are many studies that show a gender difference in self-handicapping (Kimble & Hirt, 2005; Kuczka & Treasure, 2005), there are as many showing no gender differences (Cui, Liu, Zhang, & Zheng, 2007; Hirt, McCrea, & Kimble, 2000). There are several studies that try to explain the differences: women are more punitive in their evaluations of others that use self-handicaps (Hirt & McCrea, 2009), women place more importance on effort than men (S. M. McCrea, Hirt, Hendrix, Milner, & Steele, 2008), and gender differences may be caused by differences in independence (Eddings, 2003). In a recent meta-analysis, Schwinger et al (2014) found that gender was not a significant moderator of self-handicapping, but they posited that it is plausible that women are somewhat "smarter" about the degree in which they self-handicap – they do not reduce effort more than necessary. More research is needed in this area.

Excuses, Reduced Effort, Obstacles – A Vicious Cycle

Zuckerman et al. (1998) suggested that uncertain people are prone to experience a vicious cycle. They start with reacting to threats to their self-esteem by self-handicapping. However, self-handicapping leads to lower performance, which subsequently decreases one's self-esteem and therefore increases the probability to self-handicap again. Taken together, the empirical evidence suggests that lower self-esteem individuals cope significantly worse with self-threatening events – and thus self-handicap more frequently – compared to higher self-esteem individuals (see VanDellen, Campbell, Hoyle, & Bradfield, (2011), for a recent meta-analysis).

After studying self-handicapping across several sciences, we have concluded that self-handicapping could be a slippery slope to poor leadership (Decker & Mitchell, 2016). Excuses used for impression management are the start of a vicious cycle leading to reduced effort to increase competence. Impression management is used rather than facing the possibility of or occurrence of failures and then learning from them. This may lead to self-defeating behavior (Thau, Aquino, & Poortvliet, 2007) that seriously hinders attempts to positively influence employees and customers. We believe a leader who continually self-handicaps does not typically improve the impressions of his boss, peers, or employees over time, make himself happier, increase his/her competence, engage his/her employees, or move a team forward to the mission of the organization. Business research in self-handicapping can prove these propositions.

Self-handicapping excuses can quickly become habitual due to reinforcement (Kimble & Hirt, 2005). By doing this, impressions are shifted away from the individual and on to an external agent. This keeps peers and bosses from blaming the self-handicapper, and reduces any sanctions for failure they may impose. If the self-handicapper performs well after claiming a self-handicap, attributions may be enhanced (Tice, 1991). The self-handicapping “vicious cycle” as described in Schwinger et al and Zuckerman et al (1998) can be expanded into business and leadership. Moreover, that continued use of self-handicapping will lead to self-sabotage and poor leadership. This progression is seen below in Figure 2.

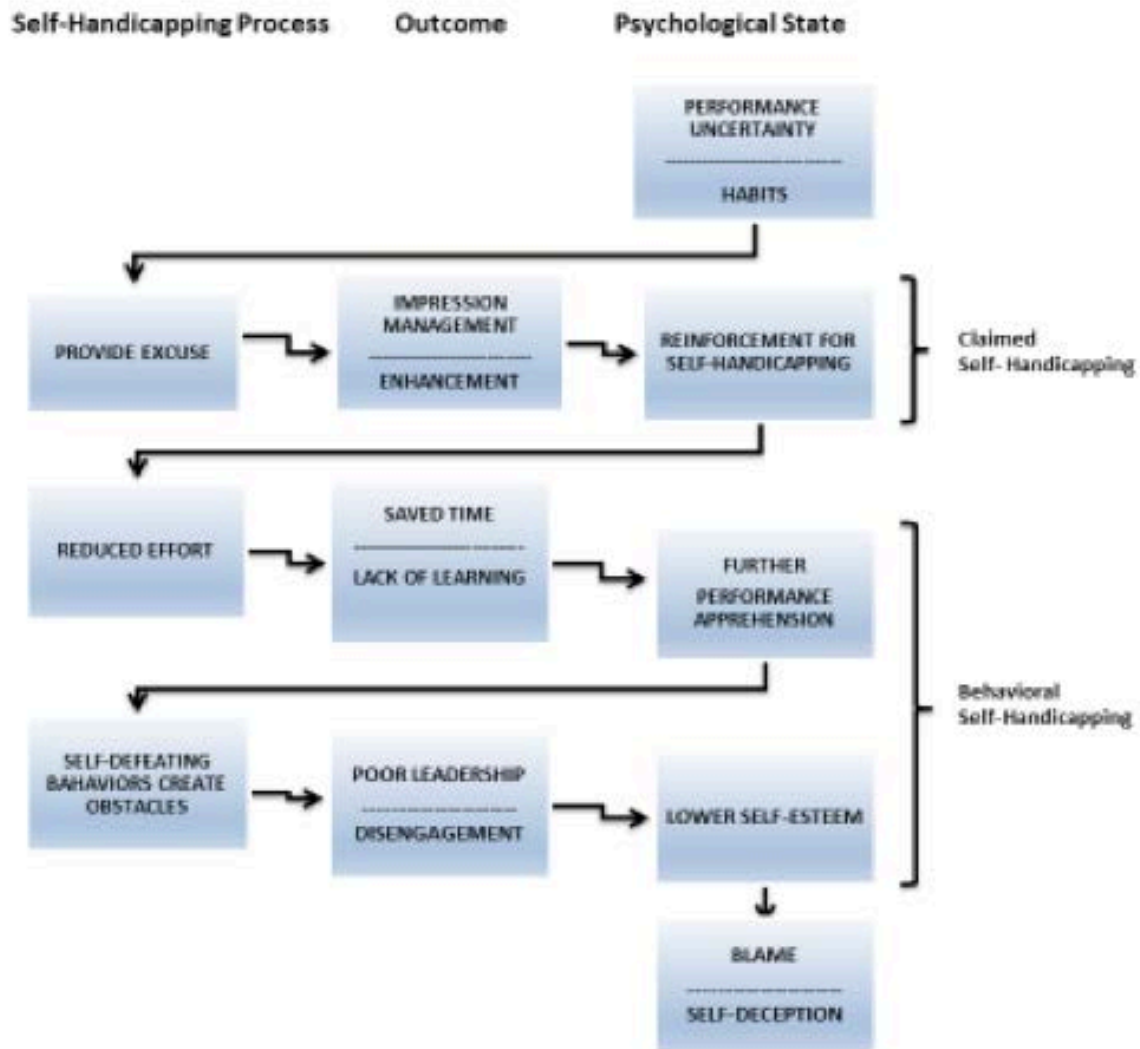
Figure 2. Excuse-Reduced Effort-Obstacle (ERO) Spiral



The reason leaders can get stuck in this vicious cycle is due to three possibilities: 1) it is difficult to admit one's self-defeating behavior, 2) it is a habit that is reinforced, or 3) the individual has suppressed knowledge of their behavior and is in denial.

This hypothesized process of self-handicapping in business situations is expanded below. As shown in Figure 3, uncertainty in competitive, evaluative situations leads to habitual use of

excuses as a self-handicapping strategy. These excuses prevent peers and bosses thinking failure is due to incompetence, lessens blame for failure, or enhances their attributions if one succeeds. This is reinforcing, so a leader will use the strategy again. And, then reduce effort—spending less time in preparation or getting the necessary education for future attempts. He or she doesn't gain further competence. Furthermore, concentrating on performance goals (goals of avoiding error or meeting a standard) because of the demands of an organizational performance management system further enhance this problem). Continued, this will cause obstacles either because employees, peers, or bosses get tired of the self-handicapping or more likely the leader's skills erode due to lack of learning and growth. We posit that reduced effort causes poor leadership behavior; poor leadership causes unmotivated, disengaged, poorly trained and equipped, and non-accountable employees. This further increases the leader's performance apprehension and may lead to a situation where a leader blames all of his/her problems on others (e.g., employees) -- at minimum, it starts the cycle over again. Further research in business settings is needed to verify this hypothesized process.

Figure 3– A Proposed Self-Handicapping Process

When self-handicapping has been used for years without intervention, a leader may begin to deny what he is doing and its consequences. When in such self-deception, leaders consistently blame others for their problems (The Arbinger Institute, 2010). When a leader places blame on employees, the employees may blame back and the cycle builds and continues.

Prevention of Self-Handicapping

There are several points of intervention with the self-handicapping process: the leader, the situation, his/her excuses, his/her behavior, and dealing with any self-deception (Decker & Mitchell, 2016). Changing how individuals think about themselves and how individuals react to others' impressions of them helps reduce self-handicapping (Siegel & Brockner, 2005). When a

leader is taught to recognize uncertainty, know that it can trigger self-handicapping, and defer his/her reactions to it, he/she may have the power to overcome self-handicapping (Decker & Mitchell, 2016).

Self-handicapping can become a habit and habits are caused by triggers, not motivation (Neal, Wood, Labrecque, & Lally, 2012). No one in business wants to look incompetent – so they can unconsciously self-handicap with impression management to avoid possible embarrassment. When we are uncertain, self-handicapping can begin with a simple excuse designed to protect our self-esteem and self-worth (Harris & Snyder, 1986; Thompson & Hepburn, 2003). We believe that when those in business organizations try to recognize and acknowledge their self-handicapping, they must first analyze these triggers: expediency, avoidance, apprehension, and self-deception. We also believe that self-handicapping can be avoided or overcome by simple strategies to address the trigger that is causing it: expediency (practice deliberate action), avoidance (build self-efficacy), apprehension (build self-efficacy and face the fear), and self-deception (listening to others and being sensitive to nonverbal communication) (Decker & Mitchell, 2016). These hypotheses have not been tested in business settings.

Another method to prevent more advanced self-handicapping is to focus on attitude. Increasing self-esteem (Martin et al., 2003), addressing prevention-focused orientations (Leonardelli, Lakin, & Arkin, 2007), entity views of intelligence (Rhodewalt, 1994), and fear of failure (Elliot & Church, 2003) have been associated with lower self-handicapping. However, these interventions may not be realistic in business practice due to leaders being uncomfortable with managing human issues or executives unwilling to fund efforts at raising managerial self-esteem. Other self-handicapping preventative interventions reported to be effective include: cognitive behavioral therapy (Kearns, Forbes, & Gardiner, 2007), positive self-talk (S. McCreary M. & Flamm, 2012), decreasing hyper-competitive environments (Šimek & Grum, 2010), autonomy support (Shih, 2013), and group cohesion (Carron, Prapavessis, & Grove, 1994). All may be difficult to implement in business settings.

Goal orientation has been shown to be related to self-handicapping (Akin, 2014). Schwinger and Stiensmeier-Pelster (2011) have shown that students with a mastery orientation avoid self-handicapping because they view failure as an opportunity for personal growth and as a modifiable and controllable outcome. It is our proposition that when performance management tools place emphasis on performance goals, employees worry about meeting standards, outperforming one another, or not looking incompetent – all triggers for uncertainty and the resultant self-handicapping. Conversely, by emphasizing mastery goals in performance management, employees may have an invitation to focus on learning from failure, growing, and owning their own competence. By conveying an activity's meaning in terms of adding value for the customer, the process would shift focus away from the department or “pleasing the boss” to the employee mastering his/her contribution to the customer. Mastery-oriented employees should also, over time, acquire accountability for their own competence. Consequently, we believe performance management systems can be redefined in terms of improvement and learning, rather than not making mistakes and being “better than someone else.” This has not been examined in business and may have major implications for business systems.

Current Self-Handicapping Business Literature

Business literature regarding self-handicapping is limited. Siegel and Brockner (2005) examined external and internal self-handicaps presented in the annual letters of CEOs to shareholders. When CEO performance was negative, external handicaps negatively affected the valuation of the firm, while not affecting CEO compensation. This illustrates how claiming external handicaps can deflect blame away from the CEO. Crant and Bateman (1993) in a study of 120 accountants showed that external self-handicaps diminished blame for failure but did not affect assignment of credit for success. McElroy and Crant (2008) showed that repeated use of handicapping created considerable risk for the handicapper, in the form of perceived credibility. Ishida (2012) showed mathematically that the standard tradeoff between risk and incentives may break down when leaders are uncertain about their self-esteem and when they use self-handicapping. Lastly, Flanagan (2015) examined the impact of stereotype threat on self-assessment of management skills of female business students.

Clearly, compared to the very large amount of research on students and student athletes (see the authors for a complete bibliography of over 375 studies), there has been little focus on the effects of self-handicapping on workers, managers, or organizations. We believe this phenomenon should be studied by business researchers. We also think that understanding self-handicapping will have impact on how we educate our future business students. Creating a mastery goal orientation in the business classroom may significantly change how we build future leaders.

A Call for More Research

Because of the detrimental long-term effects of self-handicapping, a greater focus on self-handicapping is warranted in the business and leadership literatures. Due to the lack of business and leadership literature of self-handicapping, we believe that there are several opportunities for contributions. While we believe that self-handicapping can start with an excuse that leads to reduced effort and obstacles, this has not been substantiated in the management/leadership literature. Listed below are propositions that we believe will guide future self-handicapping research in business and leadership:

- 1) Self-handicapping is an impression management technique designed to change peers' attributions (provide a reason for failure or enhancement with success) and lessen blame for failure which is frequently used in business settings;
- 2) Managers use excuses and reduced effort to self-handicap;
- 3) Self-handicapping will reduce learning, studying, or preparing which over time will reduce leadership competence and effectiveness;
- 4) Self-handicapping is increased in environments that emphasize performance goals—to win, show competence, or not make mistakes;
- 5) Self-handicapping is reinforced for several reasons - it relieves some of the stress of evaluation that causes leaders to concentrate on the task and creates positive attributions;
- 6) Self-handicapping causes negative consequences - it can result in poor attributions from others with long-term use, and excuses can lead to self-defeating behaviors which can cause serious employee obstacles;
- 7) Continued self-handicapping by a manager leads to reduced effort, less engagement, and self-handicapping among employees;

- 8) Self-handicapping negatively impacts customers;
- 9) The focus in self-handicapping is on protecting the self, not on adding value to customers and solving their problems.
- 10) Leader self-handicapping can be reduced by increasing leaders' judgments of their own self-worth, reducing leaders' attention and reliance on peers' opinions of them, and moving leaders from performance goal orientation to mastery goal orientation.
- 11) Business systems such as performance management can be redesigned to reduce performance orientation and increase mastery orientation.
- 12) Business students who are exposed to the self-handicapping process and how to avoid/overcome it will be better leaders.
- 13) Business classrooms focused on mastery orientation rather than performance orientation will increase the number of leaders produced.

Self-handicapping may be a major drag on the mission of many organizations and business schools (Decker & Mitchell, 2016) and deserves intense study. Additionally, business students are taught in a performance goal environment and learn to self-handicap in business school or earlier. To reduce self-handicapping in management and leadership, we must reduce the self-handicapping done in business school and show our students how detrimental it may be to their future careers.

Specifically, future research is needed to answer:

- 1) ***How much self-handicapping occurs in business:*** The majority of the self-handicapping research in psychology and education deals with antecedents in induced settings and there have been few studies examining self-handicapping prevalence in any population.
- 2) ***Based on the nine categories of self-handicapping suggested by Decker & Mitchell (Decker & Mitchell, 2016), how does self-handicapping manifest in the workplace:*** Are their differences in the triggers that cause self-handicapping across different categories? If so, what are some sample interventions targeting the specific triggers?
- 3) ***Are there differences in prevalence rates between claimed and behavioral self-handicapping in business:*** Do business people and leaders have a tendency to use one, or is it a progression from claimed to behavioral handicapping?
- 4) ***Are there industry-specific outcomes of self-handicapping (positive and negative):*** Are certain industries more likely to tolerate self-handicapping?
- 5) ***Why would a manager choose self-handicapping over other impression management techniques:*** Does self-handicapping offer benefits that other impression management strategies do not offer?
- 6) ***What causes self-handicapping in business – person, situational, and organizational-level variables:*** What influences self-handicapping at different levels? Is there a hierarchical effect?
- 7) ***Is the ERO spiral valid – excuses to reduced effort to obstacles:*** Using time-series, is the progression valid or can a person skip to behavioral self-handicapping and skip claimed?
- 8) ***Are there gender or race differences in business:*** Based on prevalence, preferred self-handicapping strategy, or likelihood of overcoming it?
- 9) ***What reduces self-handicapping in the work environment (personally, situational, organizational or cultural variables):*** What can individuals, teams, and organizations do to limit self-handicapping?

10) ***Do mastery goals reduce self-handicapping in the work environment:*** and if so, how can individuals, teams, and organizations promote mastery-orientation? How can business educators promote mastery orientation?

11) ***How can mastery goal orientation be increased or taught to manager, employee, and business student populations?*** If mastery goals decrease self-handicapping and increase adding value for customers, how can they become the norm on business?

12) ***How can organizations incentivize mastery goal orientation, as opposed to performance-orientation:*** What are the structural and procedural elements in an organization that incentives mastery goal orientation?

13) ***What are the implications of self-handicapping in performance management and talent development?*** We believe case studies, time-series, or cross-sectional studies examining self-handicapping and business outcomes can examine these.

CONCLUSION

Self-handicapping has been studied since 1978 in the areas of psychology and later in education. Recently, self-handicapping has seen a very modest introduction in business and leadership. This paper extends the work of Manz (2015) and emphasizes the importance of understanding self-handicapping as a means to confronting failures and mistakes in order to learn and grow from them (mastery goal orientation) rather than hiding from them. In the present paper, we have outlined the self-handicapping literature in terms of antecedents -- internal and external, process, inhibitors, positive and negative outcomes, as well as presented potential methods to overcome it. Several research questions have been presented that may guide future research in business and leadership. Self-handicapping is prevalent in business education and removing it and moving more to mastery goal orientation in our classrooms and workplaces will be extremely beneficial to our students and future managers. This new line of research in business has the potential to help many recognize their own self-handicapping behavior, admit to the impact it has, and adjust to learn better methods of operating to help attain exceptional leadership. It could change how researchers and practitioners look at leadership.

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WHAT DO FIRMS VALUE? THE ROLE OF INDUSTRY COMPOSITION IN FIRM LOCATION DECISIONS

Andrew Perumal, University of Massachusetts Boston

ABSTRACT

The desire to understand household location decisions has dominated the use of revealed preference models, whereby hedonic price modeling has allowed researchers to identify the implicit prices that households pay for desirable amenities such as good weather and good schools. This research contributes to the limited work on identifying the implicit valuation that firms place on these same amenities as well as other local characteristics of the business environment. Specifically, firm's implicit payment for urban agglomeration amenities is assessed, and it is found that firms place a high value on industry diversity, but consider both competition and industry specialization to be disamenities. The findings presented here also show that firms and households have very similar preferences for amenities that have previously been shown to be important to households.

INTRODUCTION

Over 86% of the US population currently lives in metropolitan areas. Since 2000, the US experienced a surge in urban population growth of 23.4%, far outpacing population growth at the national level (US Census Bureau, 2012). And, in the year to July 2015, population in four Texas metropolitan areas grew by 400,000 people (US Census Bureau, 2016). This aggregation of population, and strong growth, in cities reflects their importance as vital centers of economic activity. This concentration of economic activity engenders productivity spillovers thereby further enhancing the economic importance of cities. The specific factors that enhance these agglomeration economies have been extensively evaluated to determine their relative importance (Combes & Gobillon, 2015; Glaeser & Gottlieb, 2009; Melo, Graham, & Noland, 2009). These studies have explored the nature of the productivity spillovers (Rosenthal & Strange, 2004), whether labor market characteristics are driving the benefits (Wheeler, 2006), as well as whether the benefits accrue from the specific composition of the industry or firms within the city (Glaeser, Kallal, Scheinkman, & Shleifer, 1992; Henderson, 1997; Henderson, Kuncoro, & Turner, 1995; Perumal, 2017). In conjunction with that work, there has been significant interest in understanding what particular amenities (or, disamenities) are favored (disliked) by workers with regard to their choice of where to work and reside. Rosen (1979) and Roback (1982) were the first to examine the extent to which households had to be compensated for disamenities of living and working in cities, such as high crime and pollution. Their framework was based on the inter-relationship of wages, the cost of living in cities (with a focus on housing costs), and amenities, which posited that urban locations are best viewed as bundles of these three factors. That is, relative to the wage level in a city, and its cost of living, workers would have to sacrifice the consumption of some goods so as to consumer non-market amenities of certain locations, such as good weather or good schools. Therefore, by means of a hedonic price analysis it is possible to determine the respective implicit prices that are paid for these (dis)amenities. These implicit prices have been used to weight the respective amenities in cities, and allow for constructing a Quality of Life (QOL) index across

cities. Such indexes allow for ranking urban areas depending on the stock of the preferred amenities. This early work explored measures of climate and pollution, and some local government services as determinants of location decisions. Subsequent theoretical and empirical work incorporated measures of urbanization (Blomquist, Berger, & Hoehn, 1988) and the importance of taxation and government service provision (Gyourko & Tracy, 1991). Gyourko and Tracy (1991) also carefully outlined the importance of using a rich set of amenities, as well as good controls of worker and housing characteristics, to correctly capture the implicit prices of urban amenities. More recent work on this issue has identified the importance of including measures of looking beyond the use of housing costs as the only determinant of cost of living in a city, as well as adjusting income for federal taxes (Albouy, 2012), and federal tax incentives (Reynolds & Rohlin, 2014).

With regard to understanding the particular amenities that firms view as desirable, Gabriel and Rosenthal (2004) made a significant contribution to the literature through repurposing the calculation of a quality of life index so as to reflect the location decision of firms – referring to this index as a measure of the Quality of the Business Environment (QOBE). However, rather than exploring the specific amenities that attract firms to particular locations, Gabriel and Rosenthal (2004) focused instead on broadly capturing the total amenity value of particular locations and how firms differentially value such locations. This allowed them to construct a QOBE, and subsequently rank urban areas based on this index. While providing important insight into the differences in the choice of urban locations between households and firms, their empirical approach did not identify which specific amenities were differentially valued. This approach is mirrored in the paper by Chen and Rosenthal (2008), which again estimates the broad amenity value of a particular city, without examining the particular amenities that are differentially valued by households and firms.

The research presented here aims to address this issue by exploring a number of specific amenities that help explain the difference in location preferences between households and firms identified by Gabriel and Rosenthal (2004) and Chen and Rosenthal (2008). In addition to exploring the standard amenities – such as average weather conditions, the absence of pollution, and a number of local government fiscal variables – this research also uses measures of agglomeration economies that may help explain the location decisions of firms. The underlying hypothesis is that these determinants of the local agglomeration economies are important in firm location decisions. These agglomeration measures have been shown to be exemplary descriptors of the underlying process of knowledge spillovers and vibrant labor markets that may be the driving force of employment growth (Glaeser et al., 1992; Glaeser & Maré, 2001; Henderson, 1997; Henderson et al., 1995; Perumal, 2017; Wheeler, 2006). Furthermore, this paper uses data from the 2000 Census and thereby does update prior research, as most studies have used Census 1980 data (Blomquist et al., 1988; Gyourko & Tracy, 1991) or, most recently, the Current Population Survey in conjunction with the American Housing Survey up to 1995 (Gabriel & Rosenthal, 2004). Further, the choice of the data from the 2000 Census also allows for a direct comparison to the findings of the more recent analyses on the location decisions of households (Albouy, 2012).

This research finds that firms and households have fairly similar preferences for climate, pollution, and measures of local government fiscal policy. However, out of the measures of agglomeration, firms have a strong preference for industry diversity. It would therefore seem to be the case that, contrary to prior research (Gabriel & Rosenthal, 2004) firms and households are exploring mostly the same factors in making their location decisions. However, it is their

differential valuations of those amenities that may be driving the difference in location choices identified by Gabriel and Rosenthal (2004).

THEORETICAL FRAMEWORK

The following exposition of the theoretical framework draws on the work of Rosen (1979), Roback (1982), Blomquist et. al (1988), Gyourko and Tracy (1991), Gyourko et. al (1999), Gabriel and Rosenthal (2004), and Albouy (2012). A model is developed that identifies the price mechanism that compensates for interregional differences in amenities – broadly defined. The model begins with the foundational framework of the quality of life of households (Blomquist et al., 1988), includes government services (Gyourko & Tracy, 1991), and measures of agglomeration economies (Combes & Gobillon, 2015; Glaeser et al., 1992; Perumal, 2017) – all tied together under the purpose of examining the factors that contribute to the local business environment.

Wages, Rents, And Interregional Amenities

The framework used here is a compensating differential open city model in which identical mobile households and firms compete for scarce sites, with wages and rents adjusting so that, in equilibrium, the marginal household and firm are indifferent among urban areas each with different amenities. That is, households and firms maximize well-being and minimize costs, respectively, through their location decision, and are assumed to be freely mobile before location decisions are made. Households and firms remain at a particular urban area as long as they cannot improve their well-being by an appropriate move. Each urban area is composed of one of more counties each with a fixed amount of land and offers a different set of amenities that resident households and firms may enjoy. The amenities are assumed to be distributed uniformly within the urban area. Furthermore, these counties within urban areas are linked together by agglomeration effects which affect the production costs of firms, regardless of the county in which the firms are located.

Closely following Gyourko et. al (1999): A representative household is assumed to consume land-housing services, L_i , a composite commodity, C_i , a bundle of pure local amenities A_j (such as good weather), and government services, G_j , that are locally produced (such as public schools and public safety). The amenity and service bundle available in city j is considered to be exogenous by all potential households to that city, with the utility for representative household i living in city j given by:

$$U\{L_i, C_i; A_j, G_j\} \quad (1)$$

The household gains access to the amenities of the urban area through the purchase of land-housing services, where both the land-housing services and the consumption amenities are purchased from labor and non-labor income. The gross-of-tax cost of a unit of the consumption commodity is $(1 + s_j)$, where s_j is the combined state and local sales tax rate. The gross-of-tax rental rate for a unit of land-housing services is $(1 + t_j)r_j$, where t_j is the local property tax rate and r_j is the local land rental rate. The household's net-of-tax wage rate is given by $(1 - z_j)w_j$, where z_j is the combined state and local income tax rate and w_j is the local gross wage.

Assuming that each household inelastically supplies one unit of labor, the budget constraint for the household is given by:

$$(1 + s_j)C_i + (1 + t_j)r_jL_i \leq (1 - z_j)w_j + I_i \quad (2)$$

where I_j represents nonwage income. Labor transportation costs within an urban area are assumed to be negligible.

Conditional on the city location, and setting the price of the composite commodity at unity, the following indirect utility function arises from the household's maximization of (1) subject to (2):

$$V_{ij} = V\{(1 - z_j)w_j, (1 + t_j)r_j, (1 + s_j), I_i; A_j, G_j\} \quad (3)$$

Amenities enter the indirect utility function only through their impact on a household's utility; an increase in a city's amenities increases in utility in that city if A_j is a consumption amenity, and decreases utility if A_j is a disamenity in consumption. Services, however, enter the indirect utility function both through their impact on a household's utility and through their associated impact on the gross-and net-of-tax prices faced by the household.

Assuming costless mobility and full information about the amenity and fiscal attributes of each city, long-run equilibrium requires that the marginal household be indifferent as to his/her city location, with wages and land rentals adjusting so that household utility is equal across locations:

$$V^* = V_{ij} \quad \forall j \quad (4)$$

Having identified the factors contributing to a household's location decision, I now turn to setting up the same decision for firms. The central distinction from prior theoretical models in the literature (Blomquist et al., 1988; Gyourko & Tracy, 1991) is the inclusion of some measure of agglomeration economies in the profit function of firms, which in turn influences their location decision.

With regard to the firm's location decision, profits conditional on locating in city j , and separating total revenue and total cost, are given by:

$$\pi_{ij} = Y_i\{A_j, G_j, E_j\} - (1 + t_j)r_jL_i - w_jN_i - (1 + s_j)M_i \quad (5)$$

where Y_i is total revenue which is a function of the city's amenity, A_j ; fiscal attributes, G_j ; agglomeration economies, E_j , through their impact on the production function; N_i represents the firm's labor usage; and M_i is the firm's intermediate input usage—price is also assumed to be unity. Given a city location, the firm's maximization problem therefore yields the following indirect profit function:

$$\Pi_{ij} = \Pi_i\{w_j, (1 + t_j)r_j, (1 + s_j); A_j, G_j, E_j\} \quad (6)$$

Again assuming costless mobility and full information, the long-run equilibrium requires that the marginal firm is indifferent as to its city location. This requires that wages and land rentals adjust to impose the following arbitrage condition that firm profit is equal across locations:

$$\Pi^* = \Pi_{ij} \quad \forall j \quad (7)$$

The two arbitrage conditions (4) and (7), once solved, determine the long-run equilibrium wage and land rentals.

The reduced form wage equation is obtained by isolating the gross-of-tax land rental in (4) and (7), equating the two expressions, and solving for wages:

$$W_j = w_j \{ (1 + s_j), z_j, I_j, A_j, G_j, E_j; V^*, \Pi^* \} \quad (8)$$

The reduced form equation for the gross-of-tax land rental $(1 + t_j)r_j$, which we denote as R_j , is obtained in a similar fashion:

$$R_j = (1 + t_j)r_j = L \{ (1 + s_j), z_j, I_j, A_j, G_j, E_j; V^*, \Pi^* \} \quad (9)$$

Using the system of equations (8) and (9), Gyourko and Tracy (1991) derive a number of comparative statics which offer some theoretical insight into the expected signs on a number of the variables explored; I briefly outline their key findings here. As would be expected property tax differentials are fully capitalized into land prices – as long as it is not offset by added services or amenities. Cities with better amenity characteristics, *ceteris paribus*, will be rationed through higher land prices and an indeterminate shift in wages. The actual shift in wages will be determined by the impact of amenities on firm profits. That is, if the amenity does not directly affect firm revenues, $\Pi_A = 0$, then wages will fall to help ration scarce sites. In this case, the amenity is capitalized in both wages and rentals. On the other hand, if the amenity is productive, $\Pi_A > 0$, then land rentals increase by even more than in the first case, and the wage effect is indeterminate. Also, higher income (z) and sales (s) tax rates, holding service levels constant, lead to lower land rentals. Since the income tax rate does not affect the firm's indirect profit function, a higher rate also leads to higher gross wages.

Amenity Values Based On Wage And Rent Differentials

For the purpose of developing the amenity value estimator, consider two urban areas that differ in amenities by a small amount, ∂A . In equilibrium, utility opportunities across these urban areas are equal – therefore, we are able to analyze the effect of a change in amenities on utility as follows. Taking the total differential of equation (3) and rearranging, the implicit price of the amenities in city j can be found as:

$$P_{Hj} = L_j^* \frac{\partial r_j}{\partial A_j} - \frac{\partial w_j}{\partial A_j} \quad (10)$$

where L_j^* is the optimal amount of residential land purchased by the household, representing this by β^H and pre-multiplying both sides of equation (10) by A_j , we get:

$$P_{Hj} = \beta^H r_j^H - w_j \quad (11)$$

This provides the household's urban quality of life, where r^H is the quality-adjusted rent on residential land and P_H is the amount of real wage families are willing to give up to live in city j . P_H , therefore, is the calculation of the total implicit value that households place on the amenities in city j .

For firms, on the other hand, taking the total differential of equation (5) along an isoprofit curve, rearranging, and applying Shepard's lemma, we obtain:

$$-\frac{c_A}{c_W} = \frac{L_j^*}{N_j^*} \frac{\partial r_j}{\partial A_j} + \frac{\partial w_j}{\partial A_j} \quad (12)$$

where $\frac{c_A}{c_W}$ is the ratio of the impact on production costs from a unit change in A to that of a unit change in labor, or equivalently, the additional input cost a firm is willing to incur in exchange for a unit increase in A . Note that $\frac{L_j^*}{N_j^*}$ is the optimal amount of land per worker. Representing this value by β^F and premultiplying both sides of equation (12) by A_j we get

$$P_{Fj} = \beta^F r_j^F + w_j \quad (13)$$

where r^F is the quality-adjusted rent of commercial and industrial land. This expression describes the additional input costs firms are willing to incur to locate an additional worker in city j relative to the reference city. Alternatively, P_F is the total implicit value that firms place on the amenities in city j .

Common practice in the literature (Blomquist et al., 1988; Gyourko & Tracy, 1991) is to set β^H equal to 1, as the focus was only on deriving estimates for P_H . Gabriel and Rosenthal (2004) and Chen and Rosenthal (2008), however, set β^F equal to 1 and implicitly set β^H equal to 1, as well. Furthermore, housing values and rents implicitly include the average square foot per residential household, and per commercial establishment. This would not be of concern except that in their estimation Gabriel and Rosenthal (2004) use residential rents to proxy for commercial rent. Following their method would imply that we are also setting the price of a square foot of residential land equal to the price of a square foot of commercial land. While data limitations do restrict the extent to which such assumptions can be relieved, it is possible to partially adjust for the differences in square foot valuations between firms and households. To do so, the following analysis weights the commercial rent by the ratio of the average residential household square footage and the average commercial square footage per workers. That is, β^H in equation (11) is set equal to 1, but β^F from equation (13) is replaced with β^F/β^H . The resulting equations for determining the respective full implicit prices for households and firms are now given by:

$$P_{Hj} = r_j^H - w_j \quad (14)$$

and

$$P_{Fj} = \frac{\beta^F}{\beta^H} r_j^F + w_j \quad (15)$$

ESTIMATION

Estimates of the city amenity valuations (implicit prices) are obtained as follows. The wage and building rent for individual i and city j are specified as

$$\log w_{ij} = \alpha_{w0} + \alpha_{w1} \Psi_{ij} + \alpha_{wj} \Omega_j + \varepsilon_{wij} \quad (16)$$

and

$$\log r_{ij} = \alpha_{r0} + \alpha_{r1} \Theta_{ij} + \alpha_{rj} \Omega_j + \varepsilon_{rij} \quad (17)$$

where Ψ_{ij} controls for worker traits and Θ_{ij} controls for characteristics of the building, and Ω_j is a vector of city amenities (detailed in Section 4).

Wage regressors, Ψ_{ij} , include age and age squared of the worker, racial characteristics, and marital status. Education characteristics are also controlled for: high school degree, some college, 4-year degree, and more than a college degree, with less than a high school degree being the omitted category. Broad categories of occupations are also controlled for: management, professional and related occupations, service occupations, sales and office occupations, farming, fishing, and forestry occupations, construction, extraction and maintenance occupations, production, transportation and material moving occupations, and military-specific occupations (the omitted category). Gender is interacted with race, marital status, and education characteristics in the estimation of (16). Rent regressors, Θ_{ij} , include the number of units in the building, number of bedrooms, extent of plumbing, availability of a kitchen and telephone service, as well as age of the building, acreage of the property, and central city status. Whether the individual is a renter is interacted with all building characteristics.

DATA

Data for the wage and rent housing regressions used to measure amenity values were obtained from the 5-percent Public-Use Sample of the 2000 Census from USA-IPUMS (Ruggles, Genadek, Goeken, Grover, & Sobek, 2015) and other gathered data. The non-Census data were obtained from a number of sources and merged to the Census data by county or Metropolitan Statistical Area (MSA). The sample covers 3 million households in 377 counties in the year 2000. To be included in the sample, the individual had to be clearly identified as living in a county that was part of a MSA.

The wage sample includes all individuals aged 16 and had nonzero wage and salary earnings. Log monthly housing expenditure is the dependent variable in the housing equation, which for renters is gross rent, and includes household expenditure on utilities. For homeowners, reported house value is converted to monthly imputed rent using a 7.85 percent discount rate (Peiser & Smith, 1985), as used in Blomquist et. al (1988), Gyourko and Tracy (1991), and Gabriel and Rosenthal (2004). As data on commercial rents were unavailable, gross rents and the imputed

gross rent of residential properties were used in estimating the P_H and P_F (Gabriel & Rosenthal, 2004). The dependent variable in the wage equation is the log of monthly wage.

The rent-hedonic regression includes 2000 Census measures of structural characteristics and central city status. The wage hedonic regression uses Census-based variables controlling for personal characteristics, occupational group, and central city status. The remaining variables common to both the housing- and wage-hedonic regressions come from data merged with the 2000 Census. Four variables measure climatic conditions extracted from Comparative Climatic Data from the National Climatic Data Center. These are mean hours of sunlight for January, mean temperature for January, mean relative humidity for July and mean temperature for July. The percent of water area comprising the respective county geographic area was obtained from the Census Bureau. The dichotomous coastal variable, obtained from the Strategic Environmental Assessments Division of the National Oceanic and Atmospheric Administration, represents counties that have at least 15 percent of a county's total land area is located within the nation's coastal watershed or a portion of or an entire county accounts for at least 15 percent of a coastal cataloging unit. To capture air pollution we use two measures of suspended particulate matter – inhalable coarse particles (PM_{10}) and fine particles ($PM_{2.5}$) – obtained from the Environmental Protection Agency. Two other amenities without explicit market prices are the crime rate and education services. The crime rate, obtained from the U.S. FBI Uniform Crime Reports for the United States, is the number of crimes per 100,000 persons – the crimes include murder, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft. Education services are proxied by pupil-teacher ratios obtained from the National Center for Education Statistics.

With regard to taxes, the analysis uses a number of measures from the Tax Foundation: local government property tax revenue per capita, state and local corporate income tax collections per capita, state and local general sales tax collections per capita, and state and local individual income tax collections per capita. Per capita measures were used instead of tax rates due to significant difficulties in obtaining comprehensive tax rate data at the county level.

To capture the impact of agglomeration economies and firms attraction to the resulting productivity spillovers, three measures of the composition of the industry mix were used: measures of the diversity and specialization of the industry base, and the average level of competition within that industry base at the county level (Combes & Gobillon, 2015; Glaeser et al., 1992; Perumal, 2017). *Specialization*, (18), measures the extent to which a particular industry in a particular city is more or less concentrated than that industry at the national level. *Diversity*, (19), measures the proportion of employment in that city that is not accounted for by a particular industry. *Competition*, (20), calculates the number of firms per worker in an industry in a city and compares it to the national average of firms per worker in that industry. These measures are computed using County Business Patterns data for the year 2000:

Specialization:

$$\varepsilon_i = \frac{\text{industry employment in city} / \text{total employment in city}}{\text{industry employment in U.S.} / \text{total employment in U.S.}} \quad (18)$$

Diversity:

$$\tau_i = \frac{(\text{total employment in city} - \text{industry employment in city})}{\text{total employment in city}} \quad (19)$$

Competition:

$$\alpha_i = \frac{\text{firms in city-industry/workers in city-industry}}{\text{firms in U.S.industry/workers in U.S.industry}} \quad (20)$$

Finally, estimates of β^H and β^F are required to calculate the full implicit prices of amenities for households and firms, respectively. These values are obtained from the U.S. Energy Information Administration: β^H is 2066 average total square feet per household, obtained from the 2001 Residential Energy Consumption Survey; and β^F 823 square feet per worker, obtained from the 1999 Commercial Buildings Energy Consumption Survey. Using these values yields $\beta^F/\beta^H = 0.3984$.

Table 1 provides descriptive statistics for the various amenities that are being used in the estimation. All data pertain to counties that are identified as part of a MSA in 2000. All the amenities have substantial variability in the data set, with fairly large standard deviations. For example, mean hours of sunlight in January is at 52 hours for a minimum – a little over two days of sunlight in an entire month – and with a maximum of 266 hours which works out to approximately 8.5 hours of sunlight a day throughout the month. The other climate, pollution and crime variables lend themselves to similar descriptions. Pupil-teacher ratios peak at 36, with a minimum just under 11. Out of the fiscal variables, only property taxes seem to be used in all the counties in this sample as there are some instances where the corporate income, individual income, and sales taxes collections are zero per capita. For the agglomeration measures, average competition at the metropolitan level is over twice the national average of firms per worker, the average specialization at the metropolitan area is just above industry concentration in employment at the national level, and the industry composition at the metropolitan level is very diverse and exhibits substantial variation across the sample.

RESULTS

Table 2 presents the results of the estimation of wage and rent hedonic equations ((16) and (17), respectively) in columns 1 and 2. Those estimates are used to calculate the implicit prices of amenities for households, equation (14), and firms, equation (15) for each amenity. While the coefficients do offer some insight into the respective impact of amenities on rental rates and labor earnings, of more interest is how these effects are combined in the location decisions of households and firms. The amenity coefficients are first adjusted to reflect mean annual household housing expenditure by multiplying the coefficients by 12, thereby converting monthly values to annual values. Similarly, for the wage equation, amenity coefficients are converted to annual household labor earning. These values now can be combined using equations (14) and (15) to create the respective full implicit price of each amenity. Due to the opposing effect of the impact of amenities on wages in the calculation of the respective full implicit prices, it would seem reasonable to have very different outcomes with regard to household versus firm preferences. However, the coefficients on the amenities in the wage equation are very small, thereby creating an outcome where there is very little difference between households and firms in terms of their respective preference for amenities. This would seem to indicate that the majority of the value of amenities in urban areas falls squarely on housing expenditure. Using the individual implicit prices, quality

of life (QOL) indexes and quality of business environment (QOBE) indexes are calculated for each metropolitan area in the sample; by means of multiplying the implicit price by the quantity of the

Table 1
DESCRIPTIVE STATISTICS

Amenity Variables	Mean	St. Dev.	Min	Max
<i>Climate</i>				
Mean hours sunlight January	161.444	43.377	52.000	266.000
Mean temperature January	39.394	12.518	5.900	66.800
Mean relative humidity July	59.219	14.468	14.000	80.000
Mean temperature July	75.574	5.897	58.500	93.700
Nat.log pct. water area	6.171	1.622	0.972	8.923
Coast	0.675	0.468	0.000	1.000
<i>Pollution</i>				
PM 10 conc. ug-m3	20.867	18.582	0.000	70.000
PM 2.5 conc. ug-m3	11.224	8.243	0.000	28.000
Crime rate (per 100,000 persons)	4287.820	1639.910	785.320	13654.170
Pupil/teacher ratio	17.555	2.919	10.900	36.000
<i>Fiscal</i>				
Corp. Income Tax Revenue Per Capita	212.328	156.240	0.000	714.000
General Sales Tax Revenue Per Capita	1050.060	308.896	0.000	2108.000
Individual Income Tax Revenue Per Capita	1092.930	708.537	0.000	2389.000
Property Tax Revenue Per Capita	1043.350	463.301	171.950	3733.920
<i>Agglomeration</i>				
Competition	2.43825	0.58156	1.42257	4.60535
Diversity	0.996099	0.0003898	0.99451	0.996528
Specialization	1.08383	0.23286	0.76021	2.35292

Table 2
AMENITY PARAMETER ESTIMATES, QUALITY OF LIFE
AND QUALITY OF BUSINESS ENVIRONMENT

Amenity Variables	Monthly Wage Eq.	Monthly Rent Eq.	QOL	QOBE
Mean hours sunlight January	0.00054319 (0.00000918)	0.00016269 (0.00001785)	0.64059	0.75777
Mean temperature January	0.00458 (0.00003990)	0.00121 (0.00007659)	1.408488	1.47534
Mean relative humidity July	-0.00047340 (0.00002369)	-0.00042672 (0.00004636)	0.026908	-0.4876
Mean temperature July	-0.01077 (0.00006765)	-0.00153 (0.00013130)	-8.16157	-5.5966
Nat.log pct. water area	0.00650 (0.00019407)	-0.00201 (0.00037708)	0.613577	0.012207
Coast	0.04523 (0.00074105)	0.01894 (0.00139)	0.141077	0.25546
PM 10 conc. ug-m3	-0.00012789 (0.00001972)	-0.00014280 (0.00003845)	0.007374	-0.03771
PM 2.5 conc. ug-m3	-0.00307 (0.00003655)	0.00018547 (0.00007143)	-0.32028	-0.09731
Crime rate	-0.00000494 (2.024827E-7)	-0.00000434 (3.952808E-7)	0.01424	-0.38128
Pupil/teacher ratio	0.00935 (0.00011841)	0.00740 (0.00023066)	0.094493	2.53414
Corp Income Tax Per Capita	-0.00029726 (0.00000383)	-0.00029991 (0.00000706)	0.127535	-0.97395
General Sales Tax Per Capita	0.00002452 (0.00000108)	0.00001558 (0.00000210)	0.07269	0.3532
Ind. Income Tax Per Capita	0.00003214 (8.239979E-7)	0.00005951 (0.00000159)	-0.4357	0.93433
Property Tax Rev. Per Capita	0.00012842 (8.631415E-7)	0.00013845 (0.00000167)	-0.40782	2.34939
Agglomeration: Competition	0.00159 (0.00054458)	-0.00617 (0.00106)	0.269858	-0.20315
Agglomeration: Diversity	-17.18685 (1.04410)	27.94918 (1.99336)	-606.137	318.9567
Agglomeration: Specialization	-0.11151 (0.00133)	-0.04621 (0.00256)	-0.8369	-1.49101
Number of observations	2,466,325	2,398,190		
Adj. R-Squared	0.2895	0.3761		
<i>All coefficients are significant at the 1% level.</i>				

amenity available in a particular metropolitan area. Columns 3 and 4 of Table 2 present the average of the indexes across the metropolitan areas for each amenity.

A positive QOL or QOBE for a particular amenity indicates that on average it is a marginal net amenity, while a negative QOL or QOBE indicates a marginal net disamenity. For the climate variables households (QOL) and firms (QOBE) exhibit similar preferences. Firms and households consider mean hours of sunlight, mean temperatures in January, whether the county is close to a coast, and the presence of a body of water to be amenities. For relative humidity in July firms view it as a disamenity, while households do not. For the measures of pollution, both households and firms have similarly negative preferences for fine suspended particulates, but diverge in regard to the coarse particulates. Firms and households also diverge in regard to the crime rate.

The pupil-teacher ratio, however, is the only variable to have an unexpected sign for both firms and households – that is, households and firms do not consider more pupils per teacher as a disamenity. Though this could reflect demand for schools outpacing supply – whereby pupil-teacher ratios are rising as a reflection of household's demand for certain schools, and firms placing value on being located in counties with good schools.

For the government fiscal attributes, both firms and households view sales tax revenue per capita as an amenity, but diverge on all the other measures. Firms view corporate income tax collections as a disamenity, but view income and property tax collections as amenities; households seem to take the opposite stance on these on average. While improved government services through marginally higher taxes may be viewed positively or not, there is definitely disagreement on the optimal sourcing of government revenue.

Finally, with regard to the agglomeration measures, households and firms only agree on specialization as a disamenity. Prior research has shown that industry specialization does hinder long term employment growth at the metropolitan level, possibly by diminishing knowledge/productivity spillovers thereby limiting firm potential, but also hindering labor market opportunities for workers. Interestingly, households view competition among the local industry as an amenity, possibly reflecting the greater availability of jobs with a particular industry. Though, households do view industry diversity as a disamenity. Firms on the other hand, view competition in an industry as a disamenity. However, industry diversity is strongly viewed as an amenity by firms. These findings mirror the findings of research that explores the importance of industry composition for fostering the most knowledge spillovers to spur economic growth at the metropolitan level.

CONCLUSION

The findings presented here confirm our understanding of household perception of amenities and disamenities in cities. The unique contribution, however, is the examination of these amenities within the scope of determining the quality of the local business environment. The results showed that firms and households share many of the same preferences for amenities, such as good weather and low pollution. Of particular value was the exploration of the importance of local industry composition. That is, whether it was characterized by a highly specialized industry mix, a highly diversified one, and whether it was characterized by competition. Households and firms both considered a highly specialized industry mix to be a disamenity. Firms, however, were found to highly value a diversified industry mix, but with little/no competition at the local level. And, households were found to value the opposite scenario of little/no diversity, but high competition. Therefore, differential stocks of these amenities in different locations may drive

differential location choices between firms and households. Given the findings of Gabriel and Rosenthal (2004) that households and firms prefer different cities, it is possible that their results were reflecting the differential stocks of amenities across locations rather than a complete reversal of preferences by firms and households; as well as the strongly divergent valuation of industry diversity by households and firms. Future work should aim to update the wide range of analyses that have explored the relative importance of amenities for households and firms, with a view to depicting the extent to which these revealed preferences have changed over time.

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ANIMALS IN THE WORKPLACE: EMPLOYER RIGHTS AND RESPONSIBILITIES

C.W. Von Bergen, Southeastern Oklahoma State University

Martin S. Bressler, Southeastern Oklahoma State University

ABSTRACT

While some firms welcome pets in the workplace, the vast majority of firms do not permit them; however, more often Americans are insisting that their animals go with them everywhere and this societal trend means that organizations with “no pets” policies can expect a growing number of petitions from employees seeking to bring their animals to work. One avenue workers have increasingly adopted, having witnessed its success in other areas (e.g., transportation, housing), is requesting firms to eliminate pet bans and relax animal policies at the workplace as a reasonable accommodation for their (primarily mental) impairments. As a result, businesses that unlawfully reject such appeals are finding themselves in court charged with disability discrimination. Organizations are confused about their obligation to waive “no pets” directives for disabled employees and to remedy this situation; therefore, this article addresses animals at work and provides guidance with respect to this increasingly contentious issue and to keep organizations “out of the legal dog house.”

Keywords: animals in the workplace, emotional support animals, mental disabilities, service animals, therapy animals, pets in the workplace

INTRODUCTION

Americans today vigorously assert their rights and one that seems to be gaining momentum in the workplace is employees’ insistence that businesses waive their “no pets” policies so that employees can bring their animals to work with them. KnowledgeWorkx (2012), for example, listed pets in the office as number 1 in their top ten workplace trends and today about 1.4 million owners take some 2.3 million dogs to work every day, according to an American Pet Products Association survey (Manning, 2012). In fact, dogs are allowed daily inside the offices of Google, Amazon, Zynga, and Ben & Jerry’s. Moreover, the web site, DogFriendly.com (n.d.), posts over 370 organizations that permit dogs at the workplace. And this is just dogs!

In recent years, employers have seen a sharp increase in the number of employees (this discussion also applies to job applicants) who use animals as accommodations for physical, mental, or emotional impairments (Nelson, n.d.). Many attribute this rise to changes happening in other areas that have dramatically expanded the scope of animals that can qualify as reasonable disability accommodations. For example, federal statutes including the Fair Housing Act (FHA, 1968), Section 504 of the Rehabilitation Act (1973), and the Air Carrier Access Act (ACAA, 1986) protect the rights of people with disabilities to keep emotional support animals (ESAs) in their homes when the landlord has a “no pets” policy and to travel on airlines with their emotional support animals. Also contributing to this trend is the recently amended California Fair

Employment and Housing Act (2012) that requires employers to allow “assistive animals” as a necessary reasonable accommodation which includes animals of any species that provide “‘emotional or other support’ to a person with a disability including, but not limited to, traumatic brain injuries or mental disabilities such as major depression” (§7293.6 (a) 1(D)).

Another factor that may lead to increased petitions for ESAs in the workplace involves the growing number of people claiming mental impairments. This is due, in part, to lowered thresholds for the diagnosis of numerous disorders whose behavior until a short time ago was not considered “disordered”; however, under the 5th edition of the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (2013; DSM-5) more persons are now labeled as ill. What was once considered psychologically healthy (or at least not unhealthy) is presently considered a mental illness. For example, people who are extremely shy and concerned about how others might evaluate them, and who thus avoid certain types of activities, might be diagnosed with “avoidant personality disorder.” These same characteristics were not historically considered disorders, and in some other cultures they are not thought to be so today. Some of the behaviors, beliefs, and feelings that were within the then-normal range of human experience until just a few years ago are now deemed to be pathological. Thus, the actual definition of mental illness has broadened, creating a bigger tent with more people under it (Rosenberg, 2013), and as mental disorders have increased there has been a concomitant rise in pets as therapy for mental conditions (Wang, 2013).

In this paper, the authors continue the discussion of Shain and Newport (2014) with regard to law and ethics. One problem that has developed is that both legal and lifestyle changes have generated considerable ambiguity and many employers have expressed confusion regarding animals in the workplace. In response to this uncertainty we examine several factors that have influenced the development of this “right” in greater detail and why firms should anticipate this demand to be affirmed more frequently in the future. We also provide clear legal definitions of emotional support animals and service animals, which are significantly different from pets. Further, we consider what businesses can do to address this situation when presented with an accommodation request for an animal at work from employees claiming a disability. We do this by first examining several trends leading to increased requests for animals in the workplace followed by a discussion of the confusing labels used to refer to animals within the work context. We then analyze key legislation related to animals and workplace accommodations and present a number of considerations organizations should review as they take up the increasingly important issue of animals in the workplace. Finally, the writers also hope to bring some clarity to this topic in order to ensure that management enacts effective and lawful policies and practices that focus on the legitimate needs of disabled Americans.

A WORKPLACE ANIMAL POLICY

An early consideration for organizations regarding animals at work is to develop a policy based upon current law and consistent with the culture of the company. Employers should develop formal guidelines and procedures for several reasons. First, if supervisors, managers, and human resource professionals have formal policies and procedures to refer to, they are more likely to handle accommodation requests properly and consistently. Second, a formal policy that is shared

with employees helps workers know what to expect if they request an accommodation and also helps them understand that other employees might be requesting and receiving accommodations. Finally, formal procedures help employers document their efforts to comply with the Americans with Disabilities (ADA; 1990)—the most comprehensive federal civil-rights statute protecting the rights of U.S. citizens with disabilities—and amendments provided in the ADA Amendments Act (ADAAA; 2008).

As indicated in Table 1 (Appendix), there are a number of considerations that might be addressed in policies dealing with animals at work. These are taken from a number of sources including the Job Accommodation Network (n.d.a), a service of the U.S. Department of Labor's Office of Disability Employment Policy. Additionally, there are specific definitions of service animals and ESAs in the law, and there are different definitions depending on where the animal is being taken. These are discussed below in greater detail.

LEGAL DEFINITIONS

Although some firms are at ease with employees bringing animals to work, a large number of organizations are still reluctant to permit such action and continue to enforce “no pet” policies. The ADA, however, requires employers to make a reasonable accommodation for disabled Americans who are otherwise qualified to work, unless doing so would cause undue or excessive expenses that might be incurred by an employer in providing such an accommodation.

Among other things, reasonable accommodation could entail permitting animals at the workplace (U.S. Equal Employment Opportunity Commission, EEOC, 2002). Thus, many workers today are asking firms to set aside their “no pet” policies as an accommodation for their physical or mental impairment and to allow them to bring their “companion animals,” “comfort animals,” “visitation animals,” “therapy animals,” “social/therapy animals,” “assistive animals,” “assistance animals,” “psychiatric service animals,” “pets,” “emotional support animals,” or “service animals,” to the office. This inconsistent vocabulary has led to an uncoordinated and muddled state of affairs for firms (Parenti, Foreman, Meade, & Wirth, 2013). For current purposes, however, businesses should be concerned with several key animal categories: pets, ESAs, and service animals. Pets represent one end of the animal accommodation spectrum and firms have no duty to accommodate them. At the other extreme are service animals, which employers should almost always allow as a reasonable accommodation. In between, however, is the amorphous category of ESAs. These three classes are discussed below.

Pets

The term pet (from the root of the French word “petit”) has long been the affectionate term for animals kept for pleasure, comfort, and friendship (Grier, 2006). Pets provide love and companionship to people (Archer, 1997). They are appreciated for the companionship they offer for its own sake. Often, the term “household pet” is used and includes birds, reptiles, small animals (e.g., ferrets), and fish, in addition to dogs and cats. For many people, life without a pet would be difficult. Human-pet relationships are among the most common and significant in contemporary

Western societies with unique bonds being formed between humans and the animals often becoming essential parts of people's lives (Wrye, 2009).

For centuries people have noted that animals can have a positive influence on human functioning and conventional wisdom has long supported the use of pets in promoting human wellbeing (Nimer & Lundahl, 2007). They can provide unconditional love and affection but also can provide significant psychological and physical health benefits (Sable, 1995). Recent studies have found that while many benefits of animal companionship apply to groups across the board, unique benefits were found for those individuals with mental or psychiatric disorders (The Delta Society, n.d.), and Lipton (2001) observed that animals provide a non-chemical therapy for many mentally disabled persons. Substantial research across the health sciences provides evidence of the human health benefits including physiological and psychological that can be derived from human-pet interactions (e.g., Barker, Rogers, Turner, Karpf, & Suthers-McCabe, 2003; Pet Partners, 2013). Other studies have confirmed that the presence of pets lowers blood pressure, raises survival chances after heart attacks, and facilitates social contact (Sable, 1995). Pets have been shown to be effective in reducing loneliness, anxiety, and depression (McConnell, Brown, Shoda, Stayton, & Martin, 2011) and animal assisted therapy is so successful that it is now widespread in a variety of settings including hospitals, nursing homes, and hospices (Koppel, 2011). Serpell (2006) has advocated for animals as "agents of socialization" (p. 3) and providers of "relaxation and social support" (p. 3).

Despite such benefits there are no laws or regulations that require that pets be permitted in the workplace and so employers are free to determine the appropriateness of such animals on their premises. However, some animal advocates feel that pet-friendly organizations might give a company an edge over competitors with regard to recruitment by making firms attractive to prospective employees who are pet owners. Additionally, some view animals at work as a strategic opportunity and believe this provides them a competitive advantage (Chaet, 2013).

ESAs

ESAs are not pets. An ESA is a companion animal that provides therapeutic benefit through non-judgmental positive regard, affection, and a focus in life to an individual with a mental or psychiatric disability (Wisch, 2013). Persons seeking an ESA must have a verifiable disability (the reason cannot just be a need for companionship). ESAs are not generally trained to perform specific tasks to assist persons with psychiatric disabilities, but they must provide a disability-related benefit to such individuals. Courts have ruled that (within a housing context) such animals can be viewed as a reasonable accommodation (Janush v. Charities Housing Development Corporation, 2000; Majors v. Housing Authority of the County of DeKalb, Georgia, 1981) and the Fair Housing Amendments Act (U.S. Department of Labor and Urban Development, 2008) indicated that "no pet" rules must be waived for animals assisting persons with disabilities. This Act states in part that "emotional support animals by their very nature, and without training, may relieve depression and anxiety, and/or help reduce stress-induced pain in persons with certain medical conditions affected by stress" (p. 63836).

Having the animals present may be helpful in managing or mitigating symptoms of various mental health conditions such as depression, anxiety, and post-traumatic stress disorder (PTSD).

ESAs are private pets for which a doctor or other health-care professional writes a letter explaining why the owner needs the animal and that the owner/handler has been diagnosed by a medical professional as having a verifiable (mental) disability that is not transitory and minor. The Bazelon Center for Mental Health Law (n.d.), a private organization founded to protect and advance the rights of persons with mental disabilities, provides an extensive list detailing the efficacy of ESAs.

Cats, birds, horses, and even potbellied pigs are being characterized as ESAs but they are not task trained and, in fact, little training at all is required so long as the animal is reasonably well behaved by pet standards. This means the animal is fully toilet trained and has no bad habits that would disturb others (e.g., frequent or lengthy episodes of barking). As indicated earlier, ESAs are allowed in housing and are permitted to fly with their handler on an airline under the ACAA. While the definitions above do not apply to employment situations these definitions provide insight for businesses if they are approached by workers asking for exceptions to “no pets” policies because their need for an ESA to assist them with their (primarily mental) disability.

Service Animals

The most common definition of a service animal is that it has been individually trained to perform a task (work) for a disabled person. As interpreted by the Department of Justice (DOJ), a service animal means “any guide dog, signal dog, or other animal individually trained to do work or perform tasks for the benefit of an individual with a disability, including, but not limited to, guiding individuals with impaired vision, alerting individuals with impaired hearing to intruders or sounds, providing minimal protection or rescue work, pulling a wheelchair, or fetching dropped items” (28 CFR 36.104). Service dogs (there is a special exception for miniature horses) come in all shapes, sizes, and breeds and need not be licensed, certified, or registered as a service animal, and are not required to wear a special tag, collar, harness, or vest identifying it as such.

Other species of animals, whether wild or domestic, trained or untrained, are not service animals for the purposes of above definition. The crime deterrent effects of an animal’s presence and the provision of emotional support, well-being, comfort, or companionship that household pets often provide do not constitute work for the purposes of this definition. Additionally, training an animal to kiss on command, jump in a lap, or be hugged are not tasks qualifying a dog as a service animal.

Service animals are not considered pets. The only requirement for a service animal is that the dog be individually trained to benefit the person with a disability and evidence establishing a link (nexus) between the disability and the function the animal provides (*Majors v. Housing Authority of the County of DeKalb Georgia*, 1981). Additionally, a service animal need not have been professionally trained (*Green v. Housing Authority of Clackamas County*, 1998), and in fact many service animals are trained by their handlers (*Bronk v. Ineichin*, 1995). Service dogs are trained to assist persons who have a disability and are also sometimes known by names associated with the tasks and assistance they provide their handlers (e.g., guide dogs for the blind, hearing dogs for the deaf). Service dogs are considered disability-mitigating medical equipment.

It should be noted that psychiatric service dogs are commonly confused with ESAs and firms should be aware that employees may confuse the two. Unlike ESAs, psychiatric service animals’ trained tasks often include such activities as counterbalance/bracing for a handler dizzy

from medication, waking the handler on the sound of an alarm when the handler is heavily medicated and sleeps through alarms, doing room searches or turning on lights for persons with PTSD, blocking persons in dissociative episodes from wandering into danger (i.e., traffic), leading a disoriented handler to a designated person or place, and so on.

This detailed definition of service animals by the DOJ, however, may not concern employers because the DOJ applies to only certain parts of the ADA (specifically Titles II and III) and there is no definition of service animals under Title I of the ADA which apply to employers, and Title II and III regulations do not apply to questions arising under Title I. This is important since frequently individuals and firms do not make proper distinctions between the various titles leading to confusion for employers and workers which is discussed next.

THE ADA OF 1990 AS AMENDED AND ANIMALS AT WORK

The key legislation regarding individuals with impairments is the landmark ADA that provides comprehensive civil rights protections to individuals with disabilities and is comprised of three Titles (sections). Title I of the ADA prohibits private employers and state or local governments as employers, employment agencies, and labor unions having 15 or more employees from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions, and privileges of employment and is the most relevant to a discussion of animals at work.

Title II of the ADA requires state and local governments to make their programs, services, and activities accessible to individuals with disabilities. Title III of the ADA requires businesses open to the public (e.g., hotels, theaters, restaurants, physician offices) to ensure that disabled individuals have equal access to all that the businesses have to offer. It covers both profit and non-profit organizations.

The use of animals in each of these titles is different and what applies to one title is not appropriate to another. Context matters! This has led to uncertainty and we have attempted to clarify these differences which are indicated in Table 2 (Appendix). In addition to the definitions of ESAs and service animals previously discussed, there are several other terms that may need further clarification including: 1) disability, 2) substantially limits 3) major life activities, 4) qualified person, 5) undue hardship, and 6) reasonable accommodation. These are discussed below.

Disability

The ADA provides protection to individuals who fall under its three-pronged definition: “(1) a person must have a physical or mental impairment that substantially limits one or more of the major life activities; or (2) a record of such impairment; or (3) be regarded as having such impairment” (28 C.F.R. § 36.104 (2008)). A person has to meet only one of the three prongs of the definition of disability to be eligible for protection. The regulations specify that an individual must be covered under the first or second prongs in order to qualify for reasonable accommodation. Employers do not need to provide accommodation to employees covered under the third prong only of the definition.

Since the passage of the ADA in 1990 U.S. Supreme Court decisions (e.g., *Toyota Motor Manufacturing, Kentucky, Inc. v. Williams*, 2002) whittled away at the definition of disability, narrowing the protections available to citizens and eroding Congressional intent of the law. Consequently in 2008, Congress enacted the Americans with Disabilities Act Amendments Act (ADAAA), and the Nation reaffirmed its commitment to protect against discrimination of the disabled and to truly opening the doors of opportunity to all people with impairments. In the ADAAA, the regulatory language states that the primary object of attention in cases brought under the ADA should be whether covered entities have complied with their obligations and whether discrimination has occurred, not whether the individual meets the definition of disability. The question of whether an individual meets the definition of disability under this part should not demand extensive analysis. For employers, this means they should no longer be spending much time analyzing whether employees meet the definition of disability but instead focusing on the accommodation, whether it is reasonable, whether it can be provided without an undue hardship, and whether there are other accommodations that can be considered (Job Accommodation Network, n.d.b).

After the ADA and ADAAA passed, however, the statutes as applied to physical disabilities received the most attention (Moss, Johnson, & Ullman, 1998) and significant progress in gaining access to public facilities was made as employers built ramps, constructed elevators, removed architectural barriers in existing facilities, painted new lines to, modified furniture and equipment, and so forth. Significantly less progress, though, has been made by those having mental, emotional, or psychiatric disorders often dubbed “invisible disabilities” since such maladies are often not readily apparent to others. But because of improvements in the promotion of mental health and the prevention of mental disorders; the protection and promotion of the rights and interests of persons with mental disorders and their families; the placement of mental health on government agendas; improvements in mental health services, treatment, and care; and changes in laws and government regulations significant progress has recently been made with respect to mental health (World Health Organization, 2003). Today, accommodations involving animals is the number one topic for people with mental disorders (Levy, 2014).

Major Life Activities

According to the ADAAA, the term “major” shall not be interpreted strictly to create a demanding standard for disability. Whether an activity is a “major life activity” is not determined by reference to whether it is of “central importance to daily life” as in earlier interpretations. Rather, in evaluating a major life activity, it is important to consider the condition, manner, and duration in which the individual performs the activity. Specifically, the ADAAA indicates:

- **Major life activities** involve caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, learning, reading, concentrating, thinking, communicating, and working.

- **Major bodily functions** comprise functions of the immune system, normal cell growth, digestive, bowel, bladder, neurological, brain, endocrine, respiratory, circulatory, and reproductive functions (U.S. Department of Labor, n.d.).

A mental impairment includes any mental or psychological disorder such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities, as well as psychological disorders or emotional or mental illnesses including depression, bipolar disorder, anxiety disorders (including PTSD), schizophrenia, personality disorders, and other similar conditions identified in the DSM-5 which significantly limits one or more major life activities. It is not necessary that the disability be an obvious one.

It is noteworthy that some conditions included in the DSM-5 are excluded under the ADA, including kleptomania pyromania, exhibitionism, voyeurism, transvestitism, substance abuse problems, and transsexualism. Moreover, some mental disability claims filed under the ADA have involved “fanciful conditions” not found in the DSM-5, including “chronic lateness syndrome,” “sexual impulse control disorder” and “authority figure stress reaction syndrome” (Rosenberg, 2013), and have not been classified as impairments requiring accommodation. Similarly, employees who claim to be “stressed” over marital problems, financial hardships, work environment demands, job duties, or harsh and unreasonable treatment from a supervisor would not be classified as disabled under the ADA (Snell & Bohlander, 2013). Likewise, traits like irritability, quick temper, and poor judgment are not, in themselves, mental impairments, although they may be linked to mental disorders. Finally, mild conditions, determined on a case-by-case basis, such as a common cold, seasonal or common flu, minor cuts, sprains, muscle aches, soreness, bruises, abrasions, non-migraine headaches, and minor and non-chronic gastrointestinal disorders, do not require employer accommodation.

Substantially Limits

The ADAAA provides that “substantially limits” must be construed broadly in favor of expansive coverage and is not meant to be a demanding standard. Whether a physical or mental impairment “substantially limits” one or more major life activities is determined in accordance with “rules of construction” (guidelines) delineated in the EEOC (n.d.) regulation. The overall intent is for it to be relatively easy to determine if impairment substantially limits an individual. The key points of these “rules of construction” include: 1) the standard of comparison is whether a disability substantially limits the ability of an individual to perform a major life activity as compared to most people in the general population; 2) the comparison should not require “extensive analysis;” 3) the determination should not take into account the ameliorative effects of mitigating measures or treatments (except for vision correction); 4) an impairment that is episodic or in remission is considered a disability if it substantially limits a major life activity when active; and 5) there are a number of conditions that will virtually always result in coverage, such as deafness, blindness, cancer, epilepsy, multiple sclerosis, mobility impairments, and major depressive disorders, among others.

The regulations note that when determining whether an individual is substantially limited in a major life activity, it may be useful to consider the difficulty, effort, or time required to perform

the activity; the pain experienced when performing the activity; the length of time the activity can be performed; and/or the way an impairment affects the operation of a major bodily function. Finally, it is important to note that the only time that employers need to consider substantial limitations is in accommodation cases.

Qualified Person

To determine who is a “qualified person” under Title I of the ADA, a reviewing court generally conducts a two-part inquiry: (1) whether the employee with an animal can perform the essential functions of the job in question, and (2) if not, whether reasonable accommodations made by the employer would enable the person to perform those functions (see *School Board of Nassau County v. Arline*, 1987).

A job function may be considered essential if the job exists to perform that function, the job duties can only be performed by a limited number of employees at the company, or the job is highly specialized. Evidence of whether a particular function is essential includes, but is not limited to: 1) the employer’s judgment as to which functions are essential, 2) accurate, current written job descriptions, 3) the amount of time spent on the job performing the function, 4) the legitimate business consequences of not requiring the employee to perform the function, and 5) whether the employer referenced that particular job function in prior performance reviews (hence, emphasizing the importance of the function). Consequently, employers must keep job descriptions up-to-date and ensure that performance reviews adequately focus on performance of the essential functions of the job.

Undue Hardship

Once an employee has given the proper notice to the employer, the firm must attempt to provide the individual a work environment where the person can bring their animal unless the request to bring the animal to work creates an “undue hardship” for the firm. Generalized conclusions will not suffice to support a claim of undue hardship. Instead, undue hardship must be based on an individualized assessment of current circumstances that show that a specific reasonable accommodation would cause significant difficulty or expense (29 C.F.R. pt. 1630 app. §1630.15(d) (1996); *Stone v. Mount Vernon*, 1997). A determination of undue hardship should be based on several factors, including: 1) the nature and cost of the accommodation needed; 2) the overall financial resources of the facility making the reasonable accommodation; the number of persons employed at this facility; the effect on expenses and resources of the facility; 3) the overall financial resources, size, number of employees, and type and location of facilities of the employer (if the facility involved in the reasonable accommodation is part of a larger entity); 4) the type of operation of the employer, including the structure and functions of the workforce, the geographic separateness, and the administrative or fiscal relationship of the facility involved in making the accommodation to the employer; and the impact of the accommodation on the operation of the facility (42 U.S.C. § 12111(10)(B) (1994); 29 C.F.R. § 1630.2(p)(2) (1997); EEOC, 2002).

Of course, what is considered a reasonable accommodation and what constitutes an undue hardship varies by employee, employer, position, and condition. Firms have cited the following

reasons for an undue hardship which will not likely be supported at court (HR Hero, 2014): 1) pets creating allergic reactions among co-workers which can cause interruptions to their ability to work effectively; 2) work is disrupted because of the need to take pets outside; 3) some employees have a genuine fear of dogs, cats, etc., which needs to be respected, 4) there are concerns of liability for an organization should an employee be bitten or injured by a pet brought to work and; 5) an animal cannot be permitted because it violates local/state health standards. Additionally, employee complaints alone will not likely constitute an undue hardship (Gray, 2012). The standard for an undue hardship is high. It should also be understood that employers may be faced with managing the accommodation needs of two employees which can complicate things (e.g., when one employee is allergic to another's animal). Finally, the burden of proof is on the employer, not the employee, to demonstrate undue hardship.

In summary, when an employee seeks to bring his or her assistance dog to work as a reasonable accommodation for a disability, the employer should recognize that the only basis for denial of this request is: 1) the employee is not a qualified person with a disability as defined by relevant laws; 2) the animal does not meet the definition of a service animal or ESA in the ADA or other relevant federal, state, or local law; 3) the presence of the animal would require the employer to bear too great of an expense in granting the accommodation; or, 4) the presence of the animal would interfere with the employer's ability to conduct business.

REASONABLE ACCOMMODATION

A Working Definition

Because the subject of reasonable accommodation is so critical to disability law and to employees asking a firm to waive their pet bans, and an important element of this paper, this topic is given a more comprehensive treatment in the following section.

Title I does not require employers to automatically allow employees (whether they work part-time or full-time, or are considered probationary) to bring their animals to work. Instead, allowing an animal into the office is a form of reasonable accommodation which has been defined as "... any change in the work environment or in the way things are customarily done that enables an individual with a disability to enjoy equal employment opportunities" (29 C.F.R. pt. 1630 app. § 1630.2(o) (1997)). Generally, the individual with a disability must inform the employer that an accommodation is needed.

According to the EEOC (2002), Title I of the ADA requires employers to provide reasonable accommodation to qualified employees with disabilities who are employees, unless to do so would cause undue hardship. There are three categories of reasonable accommodations: "(i) modifications or adjustments to a job application process that enable a qualified applicant with a disability to be considered for the position such qualified applicant desires; or (ii) modifications or adjustments to the work environment, or to the manner or circumstances under which the position held or desired is customarily performed, that enable a qualified individual with a disability to perform the essential functions of that position; or (iii) modifications or adjustments that enable a covered entity's employee with a disability to enjoy equal benefits and privileges of

employment as are enjoyed by its other similarly situated employees without disabilities (29 C.F.R. § 1630.2(o)(1)(i-iii) (1997)).

The ADA establishes a process in which the employer must assess a disabled individual's ability to perform the essential functions of the specific job held or desired. Where an individual's functional limitation impedes such job performance, an employer must take steps to reasonably accommodate, and thus help overcome the particular impediment, unless to do so would impose an undue hardship. No specific form of accommodation is guaranteed for all individuals with a particular disability. Rather, an accommodation must be tailored to match the needs of the disabled individual with the requirements of the job's essential functions. For example, it would be a reasonable accommodation for an employer to permit an individual who is blind to use a guide dog at work, even though the employer would not be required to provide a guide dog for the employee.

If the disability is not obvious and/or the reason the animal is needed is not clear, an employer may engage the worker in an interactive, informal process with the worker to establish the existence of a disability and how the animal helps the individual perform his or her job. The employer may ask the individual relevant questions that will enable it to make an informed decision about the request. This includes asking what type of reasonable accommodation is needed. The exact nature of the dialogue will vary.

Disability laws reject a "cookie-cutter" approach to accommodations in favor of an ad hoc analysis of what would be reasonable in each specific circumstance. Employers will likely find themselves in trouble if they deny accommodation requests offhand and should approach all accommodation requests with a "let's-try-to-make-it-work" attitude. Employers should make good-faith effort to determine whether and to what extent accommodation needs, including animal requests, may be feasible.

AN ACCOMMODATION PROCESS

The interactive process is not required under the ADA, but from a legal standpoint, going through the process is a way for employers to show that they are making a good faith effort to comply with various legal requirements (Figure 1, Appendix). And from a practical standpoint, it is a way to streamline the accommodation process and help insure that effective accommodations are provided. Astute readers will see this systematic method as incorporating many stages in what is often referred to as the rational decision making process. A brief discussion of each step is provided below.

Step 1: Identifying and Diagnosing Accommodation Requests

The interactive process starts with an accommodation request from an employee so it is important for employers to be able to recognize a request. An employee may request a reasonable accommodation at any time, orally or in writing and may use "plain English" and need not mention "ADA," "disability," or use the phrase "reasonable accommodation" when making a request. The request can be said to include any communication in which an individual asks or states that he or she needs an employer to provide or to change something because of a medical condition.

Additionally, a doctor's note outlining medical restrictions for an employee constitutes a request for accommodation.

Therefore, any time an employee indicates that he/she is having a problem and the difficulty is related to a medical condition, the employer should consider whether the employee is making a request for accommodation under the ADA. Consider the following two examples taken from the EEOC (2002): 1) An employee tells her supervisor, "I'm having trouble getting to work at my scheduled starting time because of medical treatments I'm undergoing," is, in reality, a request for a reasonable accommodation; and 2) An employee tells his supervisor that he would like a new chair because his present one is uncomfortable. Although this is a request for a change at work, his statement is insufficient to put the employer on notice that he is requesting a reasonable accommodation. He does not link his need for the chair with a medical condition.

If an employer is not sure whether an employee has requested an accommodation, the employer should err on the side of caution and ask the employee to clarify what is being requested and why. A supervisor, manager, or human resources representatives should ask an individual whether she is requesting a reasonable accommodation if the nature of the initial communication is unclear.

Once an accommodation request is identified, the employer should respond immediately since unnecessary delays in processing an accommodation request can violate the ADA. Employers should assign one person who is responsible for making sure an accommodation request is processed so the application is not lost in a firm's bureaucracy. Finally, employers should train all managers and supervisors to recognize accommodation requests and what to do with a request once it is received.

Step 2: Gathering Information

Once an accommodation request for an animal has been received, the employer should gather whatever information is necessary to process the request. If a requestor's disability and/or need for accommodation are not obvious or already known, the firm is entitled to ask for and receive medical information showing that the requestor has a covered disability that requires accommodation. A disability is obvious or already known when it is clearly visible or the individual previously provided medical information showing that the condition met the ADA definition. It is the responsibility of the employee to provide appropriate medical information requested by the business where the disability and/or need for accommodation are not obvious or already known. Sometimes, however, the employee's disability and need for accommodation are obvious and no additional information is needed. For example, if an employee who recently started using a wheelchair indicates that he needs a ramp to get into the workplace, the disability and need for accommodation are obvious. But firms should insist that for all employees with less obvious accommodations provide medical verification that the requested accommodation is in fact needed.

Generally, such documentation must be on the letterhead of a licensed mental health professional stating: 1) that the employee has a physical or mental condition that limits a major life activity or a medical condition, and a description of why the employee or applicant needs a reasonable accommodation to have an equal opportunity to perform the essential functions of his or her job, or to enjoy equal benefits and privileges of employment compared to non-disabled

employees; 2) that the individual providing the assessment of the person is under the licensed expert's care; and 3) the date and type of the mental health professional's license and the state or other jurisdiction in which it was issued.

Licensed medical/mental health professionals have a number of clinical titles to include Licensed Clinical Social Worker, Psychiatric Social Worker, Licensed Professional Counselor, Licensed Marriage and Family Therapists, Licensed Clinical Psychologist, Licensed Counseling Psychologist, Primary Care Physician, Psychiatrist, Psychiatric Nurse Practitioners, Physician's Assistant, etc. Other titles can be found at Mental Health America (n.d.) and the National Alliance on Mental Illness (2013). Most have either a master's degree or more advanced education and training. Employers should be careful in evaluating the credentials of such individuals and not quick to dismiss the legitimacy of the mental health provider. The belief that only assessments from psychiatrists are acceptable is incorrect. To complicate matters a bit, the amended California Fair Employment and Housing Act (2012) expanded the types of individuals considered "health care providers" to include acupuncturists, podiatrists, dentists, optometrists, chiropractors, and nurse midwives.

Additionally, employers should be aware that there are significant variations from state to state and among various federal jurisdictions with regard to legal or professional ethical guidelines that regulate or limit the ways in which or where assessments are performed, diagnoses are made, or treatment is prescribed. For example, the National Board for Certified Counselors (NBCC) has developed a comprehensive set of guidelines for the online delivery of mental health services (NBCC, 2012) and the American Counseling Association (ACA) recently incorporated an entire section devoted to regulating online service delivery in the new revision to its code of ethics (ACA, 2014). Additional restrictions relate to whether such practices are regulated in relation to delivery platform including face-to-face, written, or digitally transmitted communications are required by the Health Insurance Portability and Privacy Act (1996) regulations and the more recent clarifications provided by the Health Information Technology for Economic and Clinical Health rules to which federally defined "covered entities" must comply (Wheeler & Bertram, 2012).

However, in other cases the individual may know that he/she is having difficulty, but may be uncertain about the exact cause or possible solution. For example, if an employee with a non-visible disability indicates she is having trouble completing her work tasks because of her disability, the employer does not have enough information to provide effective accommodations. The employer needs to know what limitations are interfering with job performance and what specific work tasks are at issue.

The important thing for employers to remember is not to ask for too much information. Under the ADA, when an employee requests an accommodation and the disability and need for accommodation are not obvious, then the employer can request medical documentation to help determine whether the employee has a disability and needs the requested accommodation and information to help process the accommodation request. A good policy for employers is to only ask for what is absolutely necessary. Asking for all medical records will rarely be appropriate. For example, (in an educational context) in *United States v. University of Nebraska at Kearney* (2012), the court found that administrators discriminated against a student asking for an ESA by requiring detailed disability information that went beyond what was needed to review a request for

reasonable accommodation when they asked for: information regarding the student's treatment and prescribed medications, including a list of dosages and schedules for intake; the date of the student's last visit with the doctor and a schedule of regular visits; a list of any other doctors providing treatment; a clinical summary which indicates the substantial life activities impaired by the disability, the extent to which these limitations would impact the academic or living environment in a postsecondary setting, clear evidence that the student's symptoms are present in two or more settings; and an explanation of how the student's limitations affected the activities that are required in an academic environment.

If an employee provides insufficient documentation in response to the employer's initial request, the employer or other covered entity should explain why the documentation is insufficient and allow the employee an opportunity to provide supplemental information in a timely manner from the employee's health care provider. Thereafter, if there is still insufficient documentation, the employer may require an employee to go to an appropriate health care provider of the employer's choice. Additionally, it should be noted that costs related to providing medical documentation in support of the reasonable accommodation request are to be borne by the individual requesting the accommodation.

Step 3: Generating Alternative Solutions

Once the employer has thoroughly identified the employee's limitation it is ready to explore accommodation options. Here employers should be open to new ideas and new ways of doing things. This is the time to brainstorm and consider what might work. Again, the employee who requested the modification is a good place to start so employers should always invite the employee to suggest accommodations. Accommodations are about doing things differently to help overcome disability-related limitations, so keeping an open mind when exploring accommodation options is prudent.

If more accommodation ideas are needed, the employer can ask the employee's medical provider for ideas. In other cases they may be able to say whether ideas under consideration will help overcome the employee's limitations. And if still more ideas are needed, then the employer should consult with outside resources such as the Job Accommodation Network (n.d.a), vocational rehabilitation specialists, rehabilitation engineers, and disability-related organizations. When consulting with outside resources, employers must comply with the confidentiality rules of the ADA which require that a request for reasonable accommodation must be kept in files separate from the individual's personnel file. This includes the fact that an accommodation has been requested or approved and information about functional limitations.

Batiste (2011) of the Job Accommodation Network provides a listing of possible accommodation solutions that may exist regarding animals.

1. Permitting a service animal or ESA at work:

- Allow employees with a disability to bring their animals to work.
- Allow workers to take leave in order to participate in animal training.
- Provide employees with a private/enclosed workspace.

- Provide workers with office space near a door and/or out of high traffic areas.
- Establish an accessible path of travel that is barrier-free.
- Allow equal access to employee break rooms, lunchrooms, rest rooms, meeting rooms, and services provided/sponsored by the employer.

2. Caring for an animal in the workplace:

- Provide a designated area where employees can tend to animals' basic daily needs, e.g., eating or bodily functions.
- Allow breaks so employees can care for the animals' basic daily needs.
- Provide a designated area where the service animal can stay until the worker's shift ends if the employee only requires an animal to travel to and from work.
- Provide general disability awareness training on the use of animals at work.

3. Dealing with coworkers who are allergic to the service animal:

- Allow employees to work in different areas of the building.
- Establish different paths of travel for such workers.
- Provide one or each of the employees with private/enclosed workspace.
- Use a portable air purifier at each workstation.
- Allow flexible scheduling so the employees do not work at the same time.
- Allow one of the employees to work at home or to move to another location.
- Develop a plan between the employees so they are not using common areas—such as the break room and restroom—at the same time.
- Allow employees periodic rest breaks if needed, e.g., to take medication.
- Ask the employee who uses the service animal if (s)he is able to temporarily use other accommodations to replace the functions performed by the service animal for meetings attended by both employees.
- Arrange for alternatives to in-person communication, such as e-mail, telephone, teleconferencing, and videoconferencing.
- Ask employees who uses service animals if they would be willing to use dander care products on the animal regularly.
- Ask the employee who is allergic to the animal if (s)he wants to, and would benefit from, wearing an allergen/nuisance mask.
- Add HEPA filters to the existing ventilation system.
- Have the work area—including carpets, cubicle walls, and window treatments cleaned, dusted, and vacuumed regularly or more frequently.

4. Interacting with an animal:

- Address the person when approaching an individual with a disability who is accompanied by an animal—not the animal.
- Remember that animals are working or ESAs, and are not simply pets.
- Do not touch, pat, or feed treats to animals without the handler's permission.

On the other hand, an employer need not offer a temporary light duty position permanently as a reasonable accommodation. Nor are employers required to eliminate essential job functions as a reasonable adjustment or lower a quantity or quality standard that is an essential job function. Additionally, mere emotional distress that would result from a worker having to give up an animal because of a “no pets” policy will generally not require a firm to waive a “no pets” policy under federal law (Brewer, 2005). Instead, there must be a link between the animal and the disability. Furthermore, employers are not required to provide an indefinite leave of absence or create new positions as a reasonable modification; however, leaves of absence may be a reasonable, as long as the leave likely will permit the employee to return to work.

Step 4: Selecting an Alternative

After modifications have been explored and considering undue hardships it may incur, the employer must decide what change(s) to implement. The employer should also consider the preferences of the employee. However, the employer is responsible for selecting among effective options and can choose, for example, the lowest cost adjustment. Sometimes employers are not sure whether an accommodation will work and are afraid if they try it out they will be committed forever; however, employers are free to try different approaches and stop them if they do not work. One thing firms might want to do when testing possible changes is to make a written agreement with the employee that specifies that the accommodation is for a trial period only and thus no one should be surprised when the accommodation is revisited.

Step 5: Executing the Change

After selecting a modification, it is time to implement it. This step is critical to the success of the suggested alteration. If equipment is involved, then it needs to be properly installed and the employee needs to be trained in its proper use. If the adjustment involves a schedule change or policy modification, then certain managers or supervisors may need to be informed of the revision to effectively implement it. If the accommodation involves an outside service, someone needs to make sure the service is provided promptly and effectively. If the adaptation is a reassignment then employees may need time to familiarize themselves to the new job. It is also important for the firm to maintain confidentiality with regard to animals as an accommodation and only let managers and supervisors know that the change is a result of a disability.

Step 6: Evaluating the Modification

An important but often forgotten part of this process is monitoring adjustments after they have been implemented. In some cases, modifications stop being effective for various reasons including: the employee's limitations change, workplace equipment changes, job changes, workplace itself changes, or the adaptation over time becomes an undue hardship for the firm.

Because of such factors employers may need to periodically review the ongoing effectiveness of accommodations. If equipment is involved in the accommodation, someone may need to be assigned to perform maintenance or upgrades as needed. The most important way to monitor revisions is to encourage ongoing communication. Employees who are receiving

accommodations need to understand that they should let their employers know if there are difficulties or problems with the accommodation and who specifically to contact.

The following example illustrates this process: an employee with PTSD and anxiety worked in a call center. The worker requested to bring a dog as an ESA to the job site. Because the disability was not obvious, the employer asked the employee provide medical documentation to show that the dog was needed for this purpose. The employee provided a limited amount of medical information to the employer and the request was approved.

SUMMARY AND CONCLUSIONS

Taking animals to work is becoming a part of the American daily work experience and is increasingly seen by many as a right. Many pet owners claim that their animals enhance their lives and have grown so important that they are becoming subjects of contention for couples undergoing divorce and are included in prenuptial arrangements known as “pre-pups” (Saucier, 2014). For such reasons, more and more animals are showing up at work and this issue has become an emerging workplace trend that more organizations must address.

Yet even as dogs are said to be “man’s *[sic]* best friend” and members of the family (Coren, 2011) many U.S. firms do not welcome them. However, it is not only workers’ best friends (also perceived family members) that are banned but other friends as well since many organizations do not allow any animals on their premises. Things are changing in both U.S. business and across society (Gannon, 2011), however, and it is hoped that this paper will assist managers and human resource professionals effectively deal with this emerging topic.

Today, company staff are increasingly insisting that businesses permit animals to accompany them to work as a reasonable accommodation for their disability; however, the right of an individual with a disability to a service animal or ESA depends on the type of animal, the function that the animal performs for the impaired person, and the setting or context in which the right is asserted. Different state and/or federal laws may also apply to different situations. Particularly important today are modifications related to ESAs (Goddard & Simpson, 2014).

While “no pets” policies may still be enforced for household pets, animals identified as service animals, trained to perform specific tasks, or ESAs, whose mere presence mitigates an impairment, can be allowed as exceptions to such rules and organizations should conduct collaborative discussions with disabled workers to establish appropriate actions. In these situations it is important that employees requesting animals provide a letter from a mental health professional indicating that the worker has a disability and how an animal is essential to ameliorate their impairment.

Unfortunately, the growing importance of pets in America has led some workers to fraudulently claim that their pet is a service animal or, increasingly, an ESA. The proliferation of household pet owners who misrepresent their animals is seen as a threat to the validity of genuine service animals or ESAs. The damage that sham service animals and ESAs do to the reputation of other handlers is also very serious. These animals break the trust that the public has in such animals. This directly and immediately negatively affects other handlers because businesses are less likely to treat them with respect because they have had bad experiences with them in the past. This concerns experts in the assistive-animal community who fear that some people are taking

advantage of the designation and are putting disabled people in danger of causing others to question the legitimacy of their animals and may be causing employers to unwittingly violate the law.

Another factor that may contribute to a greater demand for animal accommodations involves the upsurge of Internet-related sites that exploit ADA loopholes by passing off pets as legitimate ESAs and service animals (Hobbs, 2012). A virtual industry has developed to assist individuals qualify their pets as service animals or ESAs—for a price. For instance, for \$249, customers visiting the Service Dogs America (n.d.) site can buy special dog vests and ID cards that label dogs as service animals. The company claims the package, along with a self-administered test, helps owners clearly identify their dog as a service animal and avoid awkward confrontations when entering public places. Similarly, the National Service Animal Registry (NSAR; 2006) web site advertises that for \$64.95 plus shipping and handling fees individuals will receive a lifetime registration, a NSAR online database listing, an official NSAR embossed certificate, two professional quality photo ID cards, and two photo ID card clips. Applicants can also purchase a vest with a round NSAR-certified patch professionally sewn to the vest for an additional \$50.95. All that is necessary is the completion of three quick steps in which the registrant certifies by checking a box that he or she meets various qualifications. The Dogtor (n.d.) likewise indicates on its web site that “... your loved one COULD qualify in as little as 30 minutes to be approved for an emotional support animal.” Some of these sites will arrange for a mental health professional to send the applicant a prescription letter, and a company called ESA Registration of America (n.d.) will certify a pet rat, hamster, or iguana as an ESA.

When business owners, employees, and the general public doubt the legitimacy of human-animal teams, a ripple effect is created. The act of misrepresenting a pet as a service dog or ESA is one of the primary factors responsible for the prevalence of challenges to legitimate requests for accommodations. Access challenges, especially those which are not resolved quickly and smoothly, can be the beginning of negative experiences for all parties concerned.

Despite what some commentators say is an epidemic of scams regarding animals in the workplace (e.g., Olson, 2013), it is important that organizations continue to make disabled workers feel welcome and to treat them with respect. Clearly, the actions of these impostors undermine this effort but firms should not allow them to detract the business from its commitment to a culture of nondiscrimination that values all people. The aim of most organizations is to promote a welcoming and inclusive workplace that ultimately supports success for all stakeholders including persons with disabilities. Accordingly, employers should communicate that they are dedicated to providing reasonable accommodations to its employees to ensure that individuals with disabilities enjoy equal access to all employment opportunities.

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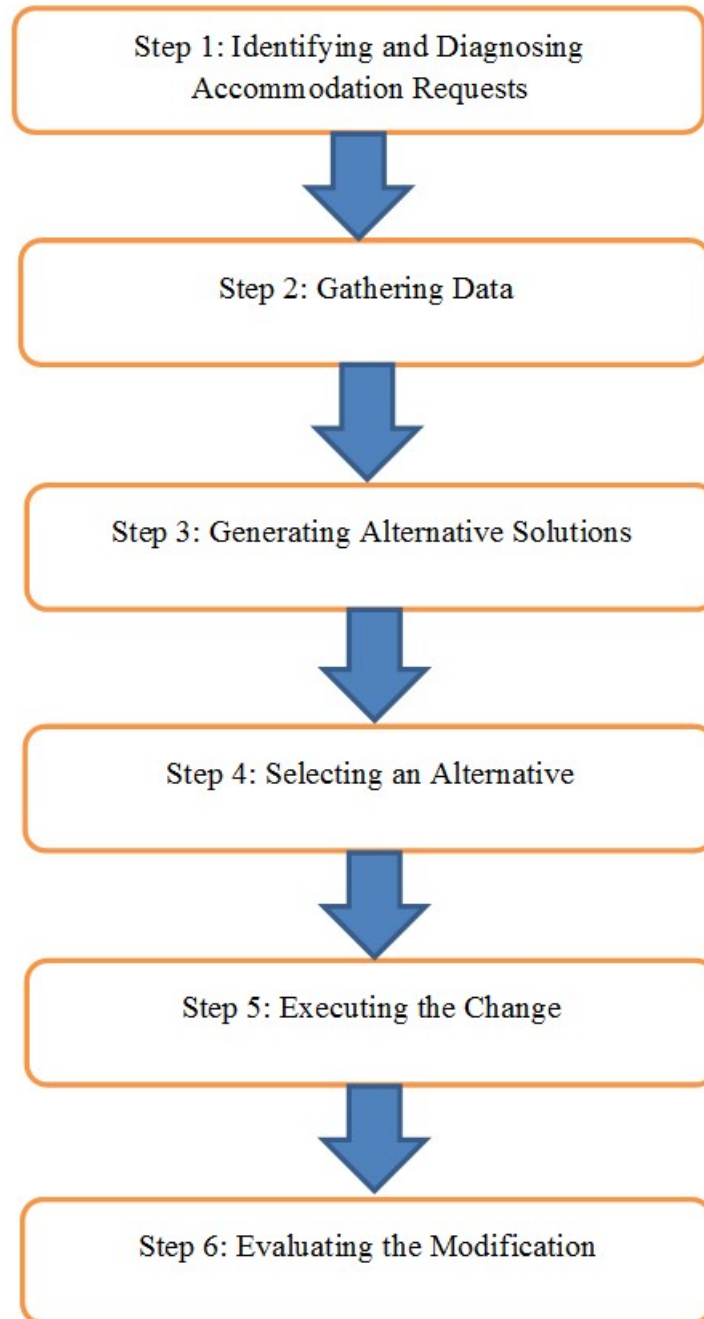
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APPENDIX

Table 1. Guideline Considerations for Animals in the Workplace.	
•	The policy should be as specific and actionable as possible, so there's no confusion over rules.
•	The time frame for processing a request (including providing accommodation, if approved) is as soon as possible but no later than __ (e.g., 30) business days from the date of the request.
•	Distribute the animal policy to all employees. Be open to adapting rules with feedback and the realities of the firm's environment. Use policy as a perk to attract job candidates.
•	Consider creating pet-free zones where employees can escape any animal brought by others.
•	Animals (e.g., dogs) must be leashed (standard 6 foot leash except in cases where the disability prevents this) or in a closed office or cubicle.
•	Animals must be accompanied by the employee owner at all times. They must not be allowed to wander unattended, inside or outside the building. If animals are left alone in employee work areas, they must be restrained by baby gates, crates, or other appropriate enclosures
•	Animals should be well-behaved (not aggressive towards people), clean, well groomed, and free of illness, disease, and offensive odors, and not exhibit any offensive or disruptive actions.
•	Consider a "Three accidents and you're out" rule. Some companies allow only three bathroom accidents per animal and then they must stay at home. However, the animal can come back once it has been successfully potty trained.
•	Review and investigate state and local regulations that may apply to animals but recognize that in the event of conflict federal laws will take precedence over state and local law. The Animal Legal & Historical Center (n.d.) provides information on state regulations.
•	If employer denies a request for accommodation, it will clearly state the specific reason(s) for the denial. This means that the firm cannot simply state that a requested accommodation is denied because of "undue hardship" or because it would be "ineffective" but should explain why the accommodation would result in undue hardship or why it would be ineffective.
•	Employees are responsible for cleaning up and sanitizing immediately after accidents and for supplying effective products. Feces and bags must be sealed and discarded outside the building in the dumpster. The company should have some type of garbage can located outdoors.
•	Non-exhaustive list of reasons why an accommodation may be revoked or rescinded and what happens when the animal or person does not conform to those rules.
•	Yearly recertification for the employee from a medical professional of the need for an animal.
•	A current (renew annually) veterinary record proving wellness, parasite control, and vaccine compliance must be provided. Animals must have state/local authorizations and registrations.
•	All animals must be treated humanely. A high standard of animal compassion is expected.
•	Animals must not be allowed to chew on or waste on any form of office equipment (i.e., electric wire, cords, carpet, etc.) and animal toys must not be unnecessarily obtrusive.
•	Having animals in the office can present liability issues. Have employees sign waivers to be responsible for any damage their animal causes. Employers might also want to consult with legal counsel to ensure liability issues are attended to before animals are permitted.

Table 2. Key Differences between Title I and Title II-III of ADA Regarding Service Animals (adapted from Lezon, 2014).	
Title I	Titles II and III
Governs service animals in the workplace. If an employer discriminates against a person for bringing a service animal to work, the law of Title I will form the basis of the worker's lawsuit.	Governs service animals in state and local government/public entities and places of public accommodation. This means that if a person is asked to leave a private business or state or local government building because of the presence of their service animal, they would sue the state or local entity under Title II or the business under Title III.
Administered by the Equal Employment Opportunity Commission (EEOC).	Administered by the Department of Justice (DOJ).
EEOC and Title I have not defined service animal. An animal for accommodation purposes could be something other than a dog.	DOJ has a detailed definition of service animal as a dog (with a minor exception for miniature horses) that has been trained to assist a person.
An ESA could be a reasonable accommodation for a person with a disability that substantially limits an individual's major life activities.	An ESA cannot be a reasonable accommodation for individuals with a mental or physical impairment.
According to the EEOC, Title I does not require employers to automatically allow employees to bring their service animals to work. Instead, allowing a service animal into the workplace is a form of reasonable accommodation.	Provides disabled persons an almost automatic right to enter a business or state government building with a service animal.
The employer has the right to ask for "reasonable" documentation from a health professional showing that the animal is required as a disability aid. In the case of a service animal, the appropriate documentation might be from whoever trained the service animal.	Places of public accommodations and state government entities cannot require a person with an animal to produce documentation that the animal is indeed a service animal.
Training may not be necessary for an animal accommodation such as with ESA.	The job the service animal has been trained to do must be related to the person's disability.
Title I has the additional requirement that the person be a "qualified person" in order to bring his or her service animal into the workplace.	Requires the disabled person only to be legally disabled as that term is defined by the ADA.
Employers may ask for medical documentation from a medical professional if the need for the service animal (any breed or size) is not apparent. Employers are <i>not restricted</i> to asking only the two questions permitted in Titles II and III.	In situations where it is not obvious that the dog (only dogs can be a service animal) is a service animal, a business may ask only two questions: 1) is the animal required because of a disability?, and 2) what work or task has the animal been trained to perform?
The documentation from (generally) a health care provider goes into a confidential medical file.	No documentation is required for a service animal and individual is taken at their word.
Both service and ESAs may be excluded from the workplace if they pose either an undue hardship or a direct threat in the workplace.	No provisions for undue hardship but service animals may be prohibited if they become a threat to others.

Figure 1. An Interactive Process Addressing Animals in the Workplace (adapted from Batiste, 2011).



MISSION STATEMENTS AND RESPONSIVENESS TO STAKEHOLDERS: AN EXPLORATORY STUDY OF SOCIAL VENTURES

Jeffrey Gauthier, SUNY Plattsburgh
Laurent Josien, SUNY Plattsburgh

ABSTRACT

This study roots itself in the stakeholder theory (Freeman, 1984) to further examine the relationship between mission statement content and actions regarding stakeholder groups with respect to social ventures. While this area of research has been previously studied (Bartkus and Glassman, 2008), no significant relationship had been found between content and actions concerning stakeholders for commercial firms. However, using social ventures as a mediator, our analysis now shows a significant relationship between content and actions for social ventures. Furthermore, we examined the relationship between the nature of the social venture's customers (consumers or businesses) and social performance, finding no significant relationship.

These findings contribute to the emerging scholarship on social entrepreneurship, the stakeholder salience framework of stakeholder theory, and to the literature investigating the antecedents of social performance.

INTRODUCTION

There has been an increasing interest among scholars and practitioners in social entrepreneurship, referring to the creation of social value by providing solutions to social problems (Dacin *et al.*, 2011). Although definitions of social entrepreneurship abound (Dacin *et al.*, 2010), a common underlying element of social entrepreneurship is the high degree of emphasis of social ventures on value creation relative to value capture (Mair and Marti, 2006; Santos, 2012). This distinct strategic focus distinguishes social ventures from commercial organizations.

The growing scholarly interest in social entrepreneurship is manifest in a growing volume of research in established publishing outlets (Moss *et al.*, 2011), as well as in the formation of new journals devoted to the topic, such as *Journal of Social Entrepreneurship* and *Social Enterprise Journal*. Within the practitioner realm, this heightened interest is exhibited by the proportion of individuals engaged in social ventures (Harding, 2004), the sponsorship of awards for practitioners from organizations such as the Skoll Foundation (Nicholls, 2010), and the creation of practitioner journals such as *Stanford Social Innovation Review*.

The distinct nature of and rising interest in social entrepreneurship suggests that it is a phenomenon worthy of scholarly attention. Even though a gap in the literature has been identified and there has been a call for greater theoretical development and quantitative research in this area (Short, Moss and Lumpkin, 2009). To date, much of the research in social entrepreneurship has focused on the "heroic" nature of social entrepreneurs (e.g., Bornstein, 2007) and on case studies of individual social ventures. In a recent review of social entrepreneurship articles, Short et al. (2009) found that 60% of empirical articles employed a

case study methodology, while quantitative methods were used in only 22% of empirical articles (with regression analysis utilized in just 3%). Scholars have argued that the progression of social entrepreneurship necessitates more generalizable research through robust empirical methods and larger sample sizes (Short *et al.*, 2009; Moss *et al.*, 2011).

A more in-depth understanding of social entrepreneurship, backed by such robust methods, may be provided by using a stakeholder theory lens to examine the mission statements of social ventures. Stakeholder theory emphasizes the necessity of considering the interests of all groups impacted by an organization, in addition to the interests of shareholders (Freeman, 1984). Furthermore, the stakeholder salience framework of stakeholder theory suggests that organizations are more responsive to stakeholder groups deemed more powerful, legitimate, and urgent (Mitchell *et al.*, 1997). Given their emphasis on social value creation for multiple stakeholders, social ventures represent a valid area of inquiry for stakeholder theory.

Prior research has used stakeholder theory to examine organizations' mission statements. For instance, mission statements are a fundamental reflection of an organization's identity (Hitt *et al.*, 2012; Thompson *et al.*, 2013) and shed light on organizations' relationship with stakeholder groups (Bartkus and Glassman, 2008). In particular, Bartkus and Glassman (2008) examined the relationship between mission statement content and actions regarding stakeholder groups among commercial firms. However, their finding showed no significant relationship between the two construct and concluded that references to specific stakeholder groups may be a result of institutional pressures. However, the distinct nature of social entrepreneurship, with its focus on a social need rather than on profit; suggests that different results may be found in a specific examination of social ventures as a subset of commercial firms.

Given this call for further research in our understanding of social ventures, our paper will seek to answer two primary research questions. First of all, we want to ascertain whether the mission statements of social ventures are, unlike in commercial organizations, consistent with actions regarding their stakeholders. Our secondary question is whether social ventures' proximity to end consumers might impact actions regarding their stakeholders. That is to say whether a difference exists for B2B social venture compared to B2C social ventures.

This research intend to add to the wealth of research in four different ways; First we aim to contribute to social entrepreneurship research by joining calls to provide a better understanding of how social ventures differ from commercial organizations (Moss *et al.*, 2011). Notably, among these calls has been suggestions that researchers examine the relationship between mission and strategy for social ventures (Austin *et al.*, 2006), consistent with the focus of this paper. Second, we want to contribute to social entrepreneurship research by completing the first quantitative study, to my knowledge, on the antecedents of social performance among a relatively large sample of social ventures, again responding to calls for greater quantitative rigor in social entrepreneurship (Short *et al.*, 2009). Third, we contribute to stakeholder theory by examining stakeholder management actions in a unique context – organizations that emphasize social value creation. And finally, we introduce a contingency into the literature that investigates the antecedents of social performance by testing the importance of proximity to end consumers and its influence on the social performance of social ventures.

In order to achieve the goals we set above, we will organize our paper by first grounding our reflection in the stakeholder theory. In this section we will review the stakeholder theory and previous research on mission statements, and develops theory regarding the relationship between mission statement content and actions concerning stakeholder groups among social ventures. This section will also address what role social ventures' proximity to end consumers might play

with respect to those actions. Then we will develop a section devoted to our methodology, followed by an analysis of our results, discussion of the implications of these results and offer suggestions for further research.

STAKEHOLDER THEORY AND COMPANY MISSION

Freeman's (1984) articulation of stakeholder theory suggested that the depth and breadth of changes in the business environment rendered existing management theories inadequate. He detailed significant environmental shifts among internal stakeholders such as shareholders and employees, and among external stakeholders such as the government and advocacy groups. In response, he urged managers to "take into account all of those groups and individuals that can affect, or are affected by, the accomplishment of the business enterprise" (Freeman, 1984, p. 25).

Subsequent development of stakeholder theory has noted both an instrumental and normative dimension (Laplume *et al.*, 2008). Instrumental stakeholder theory suggests that ethical behavior with regard to stakeholders can serve as a source of competitive advantage (Jones, 1995). The rationale for this assertion is that trust and cooperation in relationships between a firm and its stakeholders reduce the threat of opportunism. Furthermore, given the high costs of opportunism, firms that are able to reduce those costs through trusting and cooperative relations with stakeholders would be expected to hold an advantage over firms not able to do so (Jones, 1995). A number of empirical studies have found support for instrumental stakeholder theory (e.g., Berrone *et al.*, 2007; Hillman and Keim, 2001; Waddock and Graves, 1997).

Normative stakeholder theory, by contrast, is grounded in moral or philosophical arguments; the concern is how organizations should behave concerning stakeholders on the basis of those arguments (Donaldson and Preston, 1995). Donaldson and Preston (1995) suggest property rights as a normative foundation of stakeholder theory, while other suggested normative foundations include organizational justice (Hosmer and Kiewitz, 2005) and Aristotelian ethics (Wijnberg, 2000).

With that dichotomy of stakeholder theory framework in place, the research field developed the stakeholder salience framework that bridges the two theoretical approaches. The stakeholder salience posits that stakeholders with higher levels of power, legitimacy, and urgency will encounter greater responsiveness from organizations (Mitchell *et al.*, 1997). Powerful stakeholders hold resources that firms value, legitimate stakeholders are deemed credible by society, and urgent stakeholders voice concerns that are time-sensitive and critical (Mitchell *et al.*, 1997). Empirical tests of stakeholder salience have been generally supportive (e.g., Agle *et al.*, 1999; Eesley and Lenox, 2006; Parent and Deephouse, 2007).

Our second construct for our research is based on mission statements; broadly defined, mission statements provide direction and purpose to organizations (Ireland and Hitt, 1992). In the case of social ventures, mission statements have been found to reveal dual identities – both normative and utilitarian (Moss *et al.*, 2011). Mission statements reflect an organization's identity and convey the organization's values to stakeholders (Leuthesser and Kohli, 1997). Indeed, the inclusion of references to certain stakeholder groups in mission statements (Bartkus *et al.*, 2004) suggests that those stakeholders are salient to the organization. To the extent that mission statements may serve as a guide for the actions of the organization (Pearce and David, 1987), we would anticipate that references to certain stakeholders would be consistent with the organization's actions. For example, this logic would suggest that organizations referencing

community stakeholders in their missions would have stronger performance with respect to the community than organizations that do not reference community stakeholders.

In a study of commercial firms, however, Bartkus and Glassman (2008) found that this was not the case. The authors' content analysis of mission statements found no relation between references to stakeholders and performance regarding those stakeholders, using performance data from KLD Research & Analytics. Although there was a relationship between references to specific social issues (the natural environment and diversity) and performance on those issues, the lack of significance for stakeholders suggests that stakeholder references may arise from institutional pressures. In other words, mission statement may be used in an attempt to gain legitimacy (Suchman, 1995), or organizations may profess concern for stakeholders but decouple their stated concerns from actions (Meyer and Rowan, 1977).

Although these conclusions have been suggested in the context of commercial firms, an open question is whether similar relationships (or lack thereof) might hold for social ventures. Social ventures use market-based organizational forms to sustain social value creation (Miller *et al.*, 2012), and emphasize value creation over value capture (Santos, 2012). As such, social entrepreneurship is theoretically problematic (Miller *et al.*, 2012), and continued research is needed to reveal insights into the distinct nature of social entrepreneurship (Short *et al.*, 2009).

Stakeholder management is a fundamental source of potential differences between social ventures and commercial organizations. As Bartkus and Glassman (2008) suggest, commercial organizations may construct mission statements, in large part, as an exercise in securing legitimacy from salient stakeholders rather than in guiding actions. The inclusion of references to specific stakeholder groups in commercial organizations' mission statements may therefore be largely symbolic and decoupled from the organization's actions.

Social ventures, prioritizing social wealth creation over economic wealth creation (Mair and Marti, 2006), would be expected to view stakeholder management in different terms. Because they are not primarily driven by the desire to maximize financial returns for shareholders (Harding, 2004; Hartigan, 2006), social ventures may view value creation for certain stakeholder groups such as the community as their overarching goal. Given this mindset, references to stakeholders in mission statements would not be undertaken for purely symbolic means. Instead, the mission statement itself would be seen as a statement of purpose and as a tangible guide for future actions, consistent with views expressed in earlier research on mission statements (Ireland and Hitt, 1992; Pearce and David, 1987).

This view of mission statements, and of the inclusion of references to stakeholders therein, is a reflection of different views of stakeholder salience between social ventures and commercial organizations. For commercial organizations, shareholders arguably hold the greatest power, legitimacy, and urgency of any stakeholder group. But social ventures arise, in part, as a response to market failure, when commercial organizations fail to meet social needs (Austin *et al.*, 2006). As such, the salience of stakeholders whose needs the social venture seeks to fulfill becomes paramount.

Ultimately, this difference in the salience of stakeholder groups between commercial organizations and social ventures provides a means of understanding why we might expect mission statement content to be inconsistent with actions toward stakeholders for commercial organizations, but consistent for social ventures. In summary, non-shareholder stakeholders hold greater relative salience for social ventures, driving this consistency. Thus, we derive the following hypothesis:

- H1 Social ventures whose missions reference stakeholders are more likely to take actions that address the concerns of those stakeholders than social ventures whose missions lack such references.*

Our third research construct deals with consumer decision making and how firms can impact their decisions. Survey research indicates that an organization's societal impact is an important factor in consumer purchasing decisions (Nielsen, 2015). Performance with respect to community stakeholders and the natural environment would be expected to be both valued by and visible to consumers. High levels of charitable giving to and volunteering programs for causes that consumers recognize and care about provide a signal that an organization shares their values. Similarly, the avoidance of actions likely to have a negative economic or environmental impact on communities is another consumer expectation. The visibility of social performance (Penn Schoen Berland, 2010) suggests that organizations will be highly responsive to consumers' expectations.

Some organizations, however, are likely to be more responsive to consumer expectations than others. Consumers interact with products or services at the end of their value chain as final goods. As such, organizations selling final goods to consumers would be expected to be more responsive to consumers than firms selling intermediate goods to businesses. Given that they are dependent upon the financial support of consumers for survival, organizations selling to end consumers recognize that consumer stakeholders are highly salient. By extension, we would anticipate that such organizations will be responsive to consumer expectations regarding the community and natural environment. Indeed, Khanna and Anton (2002) found that commercial firms selling final goods were more likely to have more comprehensive environmental management systems than commercial firms selling intermediate goods.

Although proximity to consumers does appear to influence responsiveness for commercial firms, it is unclear whether this proximity might also influence responsiveness for social ventures. To the extent that social ventures, like commercial firms, seek a sustainable business model, we would expect social ventures selling final goods to consumers to be responsive to consumer expectations. And social ventures selling to consumers might feel a heightened need to meet consumer expectations with respect to the community and natural environment, relative to social ventures selling to businesses. This logic would suggest the following hypothesis:

- H2 Social ventures selling to consumers will exhibit stronger performance with respect to the community and natural environment than social ventures selling to businesses.*

METHODS

Our sample of social ventures was derived from B Lab's list of certified B Corps. Founded in 2006, B Lab is a nonprofit organization that certifies businesses that meet standards for social and environmental performance, transparency, and accountability. To do their certification, B Lab's developed an Impact Assessment rating which is designed to assess a business's social and environmental performance. In their latest Impact Assessment methodology, points are awarded on the basis of performance in four dimensions: governance, workers, community, and environment. A minimum of 80 out of 200 possible points is required

to earn the B Corp certification. B Lab's Impact Assessment is maintained and updated by an independent advisory councils composed of government, academic, investor, and sustainable enterprise stakeholders. As of January 2016, 1,550 organizations had achieved B Corp certification. A random sample of 120 U.S.-based B Corps was used in the analysis.

The dependent variable we used to test Hypothesis 1 was the Impact Assessment score for community. Consistent with Bartkus and Glassman (2008), we identified community as a stakeholder group but environment as a social concern; thus, environment was not used as a dependent variable for Hypothesis 1. In addition, with rare exceptions, the mission statements sampled did not reference employee stakeholders. Thus, the Impact Assessment score for workers could not be used as a dependent variable.

For Hypothesis 2, both community and environment were used as dependent variables. The community score seeks to capture impact on external community stakeholders, and reflects performance in criteria such as job creation and civic engagement. Also, the environment score, as it is designed, reflects both direct and indirect environmental impact.

The independent variable for Hypothesis 1 was mission statement content. A broad definition of mission statement was utilized, consistent with Leuthesser and Kohli (1997); following Bartkus and Glassman (2008), company descriptions and value statements including the elements of mission statements were also used. Missions were gathered from each venture's web site, and any explicit reference to community was coded as 1, while no reference to community received a value of 0. Sixty of the 120 ventures in the sample (50%) included a reference to community in their mission statements. For Hypothesis 2, the independent variable was consumer orientation; ventures selling at least some goods or services to consumers received a value of 1, while ventures selling exclusively to businesses received a 0. The determination of consumer orientation was made through a review of each venture's web site.

RESULTS

T-tests were used to test the hypotheses. For Hypothesis 1, ventures including references to community in their missions were compared to those not doing so. For Hypothesis 2, the comparison was made between ventures selling to consumers and those selling to businesses. Table 1 displays the number of organizations by industry against the following attributes: consumer orientation (number of organizations selling to consumers), reference to community in mission statement, and mean Impact Assessment scores for Community and Environment. Results of the t-tests are included in Table 2.

Table 1
Sample Characteristics by Industry

Industry	Total	# of Ventures Selling to Consumers	# of Ventures Referencing Community in Mission	Mean Impact Assessment - Community	Mean Impact Assessment - Environment
Books	3	3	2	52.7	18.7
Clothing & apparel	4	4	2	25.5	48.5
Consulting	21	0	7	47.0	22.5
Design services	4	4	1	42.3	13.0
Education	5	2	4	59.6	7.2
Energy	4	3	0	22.8	40.0
Financial services	12	7	6	52.8	7.1
Food	20	16	12	33.7	28.9
Health care	3	1	2	59.7	6
Web site	4	3	1	39.3	12.3
Other: industry count of 2 or less	40	24	21	43.6	25.1
Total	120	62	60	43.3	22.5

Table 2
Mission Statement Content, Consumer Orientation, and Social Performance

Variable	Impact Assessment	Mean difference	<i>t</i>	Significance
Mission content	Community	20.83	5.623*	0.000
Consumer orientation	Community	0.28	0.068	0.946
Consumer orientation	Environment	3.72	1.303	0.195

* $p < .01$

Hypothesis 1 argued that social ventures that referenced stakeholders in their mission statements would be more likely to address the concerns of those stakeholders than social ventures whose missions lack such references. Our quantitative analysis found support for this hypothesis, as social ventures referencing community stakeholders had significantly higher

Impact Assessment scores than social ventures not referencing community stakeholders ($p < .01$).

Hypothesis 2 suggested that social ventures that sell to end consumers would have stronger community and environmental performance than social ventures selling to businesses. This hypothesis was not supported, as there was no significant difference based on consumer orientation.

DISCUSSION

Despite growing interest in social entrepreneurship, much work remains to be done to shed light on the unique nature of social ventures. This paper sought to contribute to a greater understanding of social ventures by examining the mission statements of social ventures with a stakeholder theory lens. We argued that there would be a significant relationship between mission statement content and actions regarding stakeholder groups for social ventures, and further suggested that social ventures selling to consumers would show stronger community and environmental performance than social ventures selling to businesses.

The results of this paper's analysis demonstrated that mission statement content was, indeed, related to stakeholder actions for social ventures. This result stands in contrast to Bartkus and Glassman's (2008) finding of a non-significant relationship for commercial firms. Different views of stakeholder salience may underlie these results, as shareholders are arguably the most salient stakeholder group for commercial firms, and the inclusion of other stakeholder groups in their mission statements may be influenced by institutional pressures. By contrast, social ventures prioritize social value creation over economic value creation (Mair and Marti, 2006). For social ventures, mission statements appear to act as a guide for social value creation, and the salience of stakeholders whose needs the social venture hopes to address becomes dominant.

The paper's analysis also revealed that social ventures' consumer orientation did not influence community and environmental performance. Consumer orientation has been found to impact dimensions of environmental performance for commercial firms (Khanna and Anton, 2002), providing additional insights into how social ventures differ from commercial firms. Social ventures have a goal of creating social value, and the nature of the venture's customers as either consumers or businesses does not seem to alter the strength of the venture's social performance.

This study's findings suggest that there may be a fundamental difference in how commercial firms and social ventures approach questions of legitimacy. Inconsistency between mission statement content and actions toward stakeholders in commercial firms highlights the role of symbolic legitimacy and decoupling (Meyer and Rowan, 1977). Legitimacy is not, it should be noted, irrelevant for social ventures. Indeed, Dart (2004) suggests that moral legitimacy may help to explain the emergence of social entrepreneurship. It may be that social ventures are held to a higher moral standard by stakeholders, and that mission statement content alone would not be expected to secure stakeholder support. Under such conditions, the symbolic legitimacy and decoupling employed by many commercial firms would, if employed by social ventures, risk a loss of stakeholder support and threaten the venture's survival.

An interesting question for future research is whether the relationship between mission statement content and actions concerning stakeholders changes as social ventures mature. A venture whose mission involves poverty alleviation through economic development, for example, might face criticism for negative environmental impacts arising through this

development. Whether social ventures combat such criticisms through symbolic (mission statement content without corresponding actions) or substantive (positive environmental actions) activities remains an open question. If, as has been suggested, the triple bottom line of sustainability constitutes an appropriate measure of fitness for social ventures (Meyer and Gauthier, 2013), it may be that stakeholder management may be a more complex task for social ventures than for commercial firms.

Another area worthy of further exploration resides in the potential financial impact underlying with our research. As mentioned, we found that social ventures referencing community stakeholders had significantly higher Impact Assessment scores than social ventures not referencing community stakeholders, suggesting a potentially higher buy-in from these stakeholders. Hence, if stakeholders indeed buy-in more into the company purpose, does that translate into higher financial return? i.e. does firms with higher Impact Assessment score financially outperform firm with lower score?

As with any research, there are some limitations to our study that should be acknowledged. First, this study was exploratory in nature with a relative small sample size of $N=120$. Future research concerning mission statements and stakeholder salience for social ventures might consider more robust quantitative techniques such as regression analysis or structural equation modeling and a larger sample size. Second, the cross-sectional design of the study constitutes a limitation. Future studies might consider longitudinal designs that consider changes in social performance over time. Third, the Impact Assessment scores used in the analysis represent an initial attempt at quantifying social performance among social ventures. As the field of social entrepreneurship matures and measures of social performance are refined, future research may be able to generate more granular insights into the performance of social ventures. And fourth, the study's sample consisted only of U.S.-based social ventures.

CONCLUSION

This paper makes four contributions to the field. First, we contribute to social entrepreneurship scholarship by answering calls to offer a greater understanding of the differences between social ventures and commercial organizations (Moss *et al.*, 2011). Our analysis reveals differences rooted in stakeholder salience between social ventures and commercial firms, and suggests the different role that mission statements play between these two types of organizations. While missions may broadly be seen as statements of purpose, the extent to which mission statements guide organizational actions rather than act as a means to secure external legitimacy may differ between social ventures and commercial firms. Examination of the relationship between mission and strategy has been suggested as an area for future research in social entrepreneurship (Austin *et al.*, 2006), and this paper's exploratory study attempts to offer initial insights in this area.

Second, this paper offers an additional contribution to social entrepreneurship scholarship by answering calls for further empirical research in general, and for the use of larger sample sizes in particular (Short *et al.*, 2009). Although case study research has generated significant insights and will continue to do so, analyses of larger samples may offer greater generalizability.

Third, the paper contributes to stakeholder theory by exploring stakeholder management in the context of social value creation. Stakeholder salience (Mitchell *et al.*, 1997) has been an especially helpful framework within stakeholder theory, arguing that organizations are most responsive to stakeholders perceived as the most powerful, legitimate, and urgent. Although

stakeholder salience has been criticized as insufficiently comprehensive (Driscoll and Starik, 2004), it can continue to be refined and extended through application to social entrepreneurship.

A fourth contribution is to the literature that explores antecedents of social performance. While past research has found consumer orientation to be one such antecedent (Khanna and Anton, 2002), the results of this paper's analysis indicate that this relationship may apply only to commercial firms. This finding suggests a need for future research into the impacts of visibility on social performance for social ventures, to the degree that consumer orientation is one indication of an organization's visibility.

Finally, social entrepreneurship has attracted significant interest among both scholars and practitioners. As interest in social entrepreneurship grows and scholars conduct more robust empirical research, important insights into the distinct nature of social ventures will be identified. This study sought to offer insights into the missions and social performance of social ventures, using a stakeholder theory lens, and revealed a consistency between mission statement content and actions regarding stakeholders that had not been found in prior studies of commercial firms. In addition, this study found that an important aspect of visibility – consumer orientation – did not influence social performance, in contrast with previous research on commercial firms.

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USING A CUSTOMER VALUE-ADD (CVA) APPROACH TO DRIVE IMPACTFUL MARKETING PRACTICES IN A PART-TIME MBA PROGRAM

David M. Gilfoil, DeSales University
Susan Y. McGorry, DeSales University
Kimberly May Karpinski, DeSales University

ABSTRACT

Due to increasing competitive pressures and limited budgets, marketing programs in higher education need to be laser focused, addressing critical value-add requirements of targeted markets. A Customer Value-Add (CVA) survey methodology was utilized to understand what constitutes “value-add” for prospective, current, and alumni student customers of a large, part-time Northeast PA MBA program. Survey respondents were asked to provide an importance weighting for each MBA value-add attribute, rate the MBA program on each of the CVA attributes, and then provide a relative rating (on each of the attributes) of the MBA program with respect to its competitors. Results from 350 survey respondents suggest that part-time MBA programs should be practical and relevant, flexible, credible and trusted, provide affordable quality, and provide personal attention. Relatively little importance was placed on value attributes emphasizing being connected, focusing on ethics, or globalization. Absolute and relative (to competitor) ratings of the focus MBA program on all value-add elements were discussed and rationalized, while implications for MBA marketing and operational actions were considered. CVA methodological concerns and suggestions for future research were also posited.

INTRODUCTION

Increasing competitive pressures and limited advertising budgets have driven the need for university advertising campaigns to be laser-focused, addressing critical value-add requirements of targeted markets. So too must the structural and operational characteristics of a university program, as well as its products or services, hit the mark as good as, or better than, the competitor. This study was initiated because of ongoing discussions about what graduate students really value in a part-time MBA program. A Customer Value-Add (CVA) survey methodology was utilized to understand what constitutes “value-add” for prospective, current, and alumni student customers of a large, part-time Northeast PA MBA program. Survey respondents were asked to provide an importance weighting for various value-add attributes, to rate the MBA program on each of the CVA attributes, and then to provide a relative rating (on each of the attributes) of the MBA program with respect to its competitors. Understanding which CVA elements are important to students, and which ones the MBA program excels in, especially relative to its competitors, is important for maintaining market share, selectively driving the right program improvements, and growing the MBA business.

Survey results from 350 participants suggest that part-time MBA programs should be practical and relevant, flexible, credible and trusted, provide affordable quality, and provide personal attention. Relatively little importance was placed on value attributes emphasizing being connected, focusing on ethics, or globalization. Absolute and relative (to competitor) ratings of the MBA program, on all value-add elements, yielded some expected findings, while at the same time, offered some surprising results. Not all of the CVA attributes being touted by university administrators were rated as important by the student-customer base...and the MBA program, in focus for this study, didn't always fare well when evaluated against important attribute criteria or when compared to key competitors on those attribute criteria.

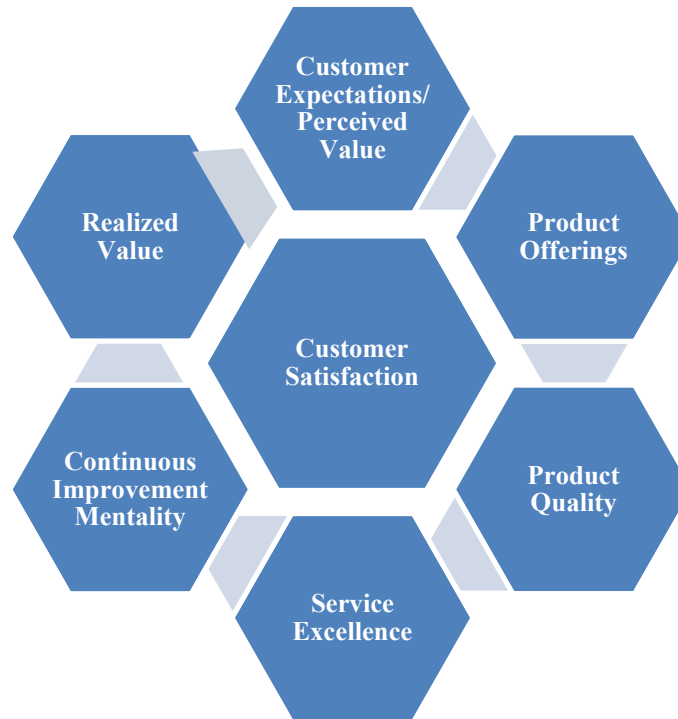
Practical implications for both the development and refinement of the MBA program's marketing collateral, as well as key logistics and operational elements of the program itself, were considered. CVA methodological issues and concerns, as well as suggestions for future research, were posited by the authors.

LITERATURE REVIEW

Customer Satisfaction

The idea of achieving customer satisfaction via the development or refinement of a company's product or service attributes to align with the needs, wants, and requirements of its targeted customers is a basic fundamental tenant of marketing (Kotler, 2012). Measurements of the resultant levels of customer satisfaction are also quite basic and have been developed and refined over the years (i.e. Churchill and Suprenant, 1982; Fornell et al., 1996; Szymanski and Henard, 2001; Raithel et al., 2012). Figure 1 depicts a composite Customer Satisfaction model showing key/typical drivers of satisfaction with product and/or service offerings.

Figure 1
Key Drivers of Customer Satisfaction



Customer Value-Add

Gale and Wood (1994), in their seminal work on managing customer value, introduced the concept of Customer Value-Add (CVA) to further advance an important notion about customer satisfaction. Their fundamental idea was that businesses add value, as perceived by their customers (or not), in the production and delivery of their goods or services. They also contended that certain CVA “attributes” (i.e. technology, quality, responsiveness, delivery) are important, and if companies are to be successful, they must figure out what those CVA attributes are, and which ones are more important than others to their target customers. Furthermore, they suggest that companies should reach out and survey past, current, and potential customers (even customers who do business with competitors if possible), and ask beyond the “Which CVA attributes are important?” question. Companies should also ask how they are *performing* against each of the importance-weighted CVA attributes, and most critically, ask how they are performing *relative to their key competitors* in each of those attribute areas. Other researchers have further expounded on the CVA concept and/or have reviewed how impactful the CVA methodology has been in a variety of business settings (Laitamaki and Kordupleski, 1997; Higgins, 1998; Kordupleski, 2003; Lindgreen and Wyndstra, 2005; Olaru et al., 2008). No research appears to have been done applying the CVA methodology to understanding the drivers of business education or MBA program quality.

Business Education Program Quality

A somewhat limited body of work has been done on the drivers or determinants of business education program quality using other methodological approaches (LeBlanc and Nguyen, 1997; Argenti, 2000; Richards-Wilson, 2002; DeShields et al., 2005; Gibson, 2010). LeBlanc and Nguyen (1997) were one of the first to systematically investigate the concept of service quality in undergraduate business education with data collected from 388 students. Adapting a measure of service quality (SERVQUAL) from the pioneering work of Parasuraman et al (1991), LeBlanc and Nguyen identified seven factors which influenced student evaluations of service quality. In descending order of importance these factors were: *reputation*, *administrative personnel*, *faculty*, *curriculum*, *responsiveness*, *physical evidence*, and *access to facilities*. LeBlanc and Nguyen (1997) describe the implications for managing business education program quality and for achieving business education excellence. The authors cited the need for additional research, but suggest that research efforts should be institution-specific and that results should be used to help drive behavioral changes that will improve each business program's quality as perceived by its student "customers". DeShields et al. (2005), in a similar study of business undergraduates, used a satisfaction model and a comprehensive set of independent variables (and self-reported experiential assessments) to understand drivers of student satisfaction. Results of their study indicated that three factor categories - *faculty* (understanding, accessible, professional, helpful, provide feedback), *advising staff* (accessible, reliable, helpful, responsive, understanding) and *classes* (real-world experience, course scheduling, project/case skills) - ultimately lead to higher student satisfaction and retention. The authors suggest that the changing nature of the higher education marketplace should encourage college administrators to apply and frequently validate customer-oriented principles that are used in the corporate sector. Gibson (2010) reviewed the major attributes that influence business students' satisfaction across a broad spectrum of studies – including the above mentioned works of LeBlanc and Nguyen (1997) and DeShields et al (2005). Gibson's analysis concluded that academic factors such as the *quality of teaching*, *skills and knowledge acquired*, as well as the *curriculum itself*, are the most significant determinants of overall satisfaction. A number of other non-academic factors - such as the student's *feeling of 'belonging'* and perceptions of the institution's *responsiveness and concern* - also contributed significantly to overall satisfaction.

MBA Program Quality

Several researchers have recently assessed the determinants of MBA program quality (Rapert et al., 2004; Shrestha, 2013; Icli and Anil, 2014; Osman and Ashraf, 2014; Sebastianelli et al., 2015). Rapert et al. (2004), for example, combined both quantitative and qualitative methodologies in evaluating how students select and evaluate an MBA program. Results indicate that students use a holistic approach to assess program quality, including factors inside of the classroom (i.e. more *specialized academic concentrations*) and outside of the classroom (i.e. *integration with the business community*). More recently, Shrestha (2013) surveyed 220 MBA students in Nepal and found that perceived quality is determined by a *credible and trustworthy reputation* which is influenced by graduate employability, practical curriculum and competent faculty. Similarly, Icli and Anil (2014) developed and validated HEDQUAL, a new measurement scale of service quality specifically designed for MBA programs in higher education. Using a 36 item survey, the authors engaged 317 MBA students and identified five factors as key dimensions

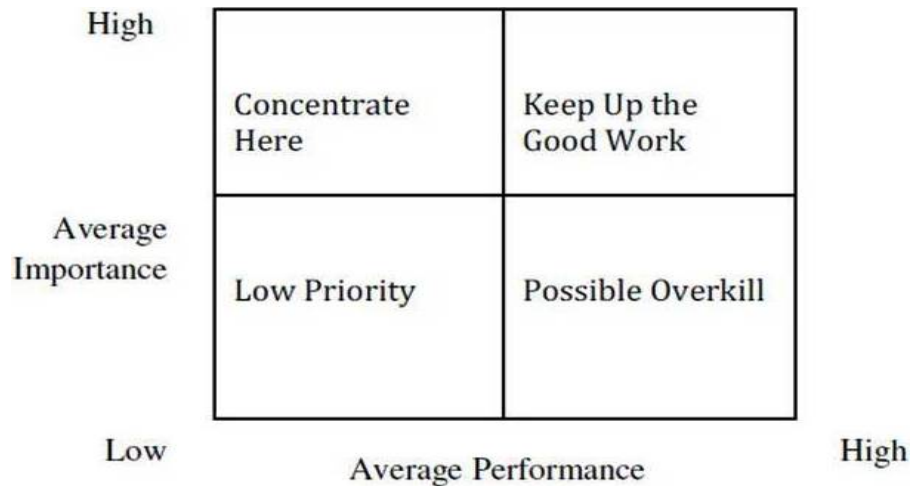
of service quality in a Turkish MBA program: *academic quality, administrative service quality, library services quality, quality of providing career opportunities, and support services quality*. Osman and Ashraf (2014) conducted a survey study of 344 Bangladesh MBA students and found that both aesthetic (*student quality, Ph.D. faculty, difficulty of admission*) and performance (*sufficient and effective knowledge, reputation on the job, effective communication and leadership*) factors were important determinants of student perceptions of overall program quality. Finally, Sebastianelli et al. (2015), using survey data from MBA students at a private university, employed structural equation models to explore these relationships empirically. The findings suggest that *course content* is the strongest predictor of all three outcomes (perceived learning, satisfaction, and quality); it is the only significant factor affecting perceived learning. They also found that *professor–student interaction* had a significant positive impact on satisfaction but not on perceptions of quality. Perceptions of quality were influenced significantly by *student–student interaction* and *mentoring support*.

While research on business education and MBA program quality suggest a variety of (mostly) survey mechanisms for understanding the relative determinants of student satisfaction or drivers of program quality, two things stand out from the literature review. First, the drivers of MBA program quality appear to be all over the map and, as LeBlanc and Nguyen (1997) and DeShields et al. (2005) articulated, appear to be program specific. Secondly, it is important to note that none of the methodologies attempt to measure student perceptions of business or MBA program performance relative to competitors. This methodological shortcoming can be addressed by the application of a CVA-related methodology in the present study.

Importance-Performance Analysis

Importance – performance analysis has been addressed in the literature by a number of studies (Wong et al., 2009; Slack, 1994; Ennew et al., 1993). Martilla and James (1977) created a mapping model to identify key attributes based upon importance and performance (see Figure 2). Some modifications have been made to the model since its development (Anderson and Mital, 2000; Matzler and Sauerwein, 2002), however, the basic premise of the model has remained: it is a tool to identify key performance drivers and provide recommendations for strategic direction. The two dimensional IPA model in Figure 2 is divided into four quadrants with performance on the x-axis and importance on the y-axis. As a result, four quadrants - Concentrate Here, Keep up the Good Work, Low Priority, and Possible Overkill - are created.

Figure 2
Importance-performance Analysis (IPA) Grid (from Martilla and James, 1977)



The quadrants can be used to generate strategic marketing direction for an organization. Quadrant I (High Importance/Low Performance) is labeled “Concentrate Here”. Attributes that fall into this quadrant represent key areas that need to be improved with top priority. Quadrant II (High Importance/High Performance) is labeled “Keep Up the Good Work”. All attributes that fall into this quadrant are the core key drivers upon which the organization performs very well. Quadrant III (Low Importance/Low Performance) is labeled “Low Priority” because any of the attributes that fall into this quadrant are of least importance to customers and not organizational strengths. Quadrant IV (Low Importance/High Performance) is labeled as “Possible Overkill”. It denotes attributes that may be overemphasized by the organization. As customers do not find these attributes to be of particular importance, organizations should audit these features and consider reallocating resources to more effectively manage attributes that reside in Quadrant I. Note that the “cross-hair” intersection in the IPA grid is identified using the *mean* level of importance and the *mean* level of performance from a list of product/service attributes.

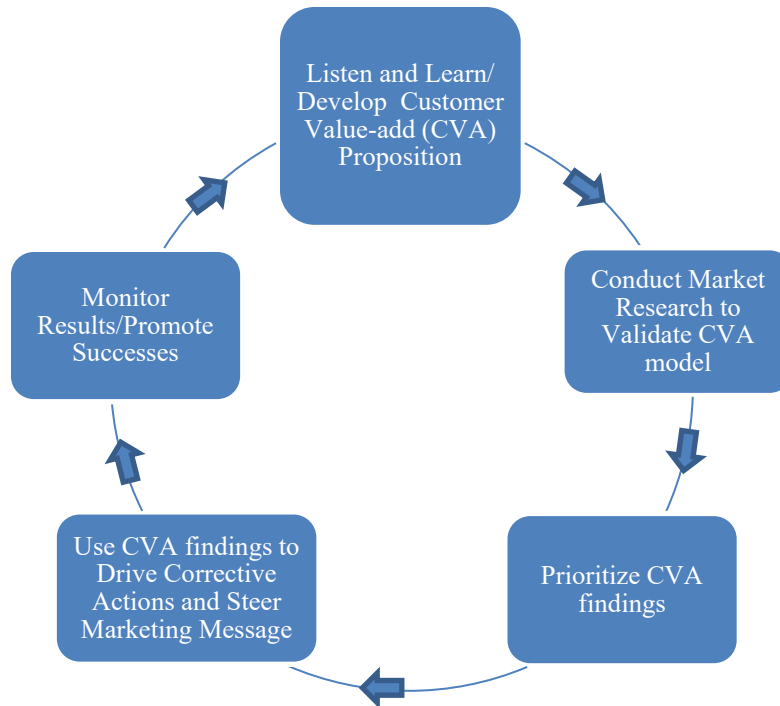
In sum, the IPA evaluation tool provides a means to evaluate product or service benefits and provide guidance to formulate a strategy to allocate resources accurately in order to maximize return on investment (ROI). The IPA model is used to evaluate the level of importance that customers attribute to each of the benefits and also to examine how customers perceive organizational performance in the delivery of those product/service benefits.

Purpose of Present Study

The purpose of the present study was to develop and launch a CVA survey tool to identify the key attributes of a part-time MBA program that students use to determine how much the program adds value to their current life situation. The study is designed specifically to answer the question, “What are the prioritized decision-making criteria used to select a part-time MBA program?” The authors would also like to know how the incumbent MBA program rates against this prioritized set of customer value-add attributes and how they are perceived, relative to the

competition, on each value parameter. Figure 3 depicts, from a practical perspective, how this data will be used to drive improvements in the subject MBA program.

Figure 3
Process Flow – Using CVA Attributes to Drive MBA Program Improvements



METHODOLOGY

Participants

Participants in this study are current, former and prospective students in a quarterly private, part-time MBA program with eight campus locations. The institution is a private Catholic university approximately two hours west of New York City. The total number of students in the MBA program is approximately 850. The program can be completed in a traditional face-to-face format, online or in a hybrid format. The mean age of the MBA students is 37 with 45% male and 55% female gender distribution. Participation in this study was voluntary. Contact lists were generated from internal records and surveys were delivered via email. Students were invited to enter into a drawing for an iPad Mini as incentive.

Research Objectives

The purpose of the current study was to explore the following research objectives:

1. Determine “customer value” drivers for the DeSales MBA (DSU MBA) program
2. Establish benchmarks on customer value
3. Identify likely marketing actions to capitalize on DSU MBA perceived Customer Value-Add.

4. Develop corrective programmatic actions to improve CVA going forward.

No specific hypotheses are suggested, as the research is essentially exploratory in nature and designed to provide direction for more descriptive research in the future. Survey research methodology is employed in this study, with frequencies to summarize data and nonparametric (chi-square statistic) tests to determine relationships between variables. The authors further explore relationships among variables with multiple regression analysis. SPSS was used for all statistical analysis.

Questionnaire

The questionnaire was developed after initial brainstorming with MBA program staff, informal discussion with faculty, anecdotal feedback from MBA alumni, as well as current literature review on customer value analysis and customer service surveys in business education. The resulting questionnaire was comprised of two sections. The first section contained a series of Likert scaled questions relevant to students' perceptions of MBA program characteristics. Specific dimensions include:

Practical and relevant: it is practitioner focused, applied, includes knowledgeable faculty and in-demand concentrations.

Flexible: tuition deferral, multiple program entry points, campuses, varied delivery formats, GMAT waiver option.

Comprehensive: number of courses, concentrations, degrees, certificates

Affordable: quality education, competitively priced.

Unique: for its focus on **ethics** in business, character and Christian humanism.

Global: variety of global course offerings, study tour opportunities.

Credible and trusted: ACBSP and MHSCE accredited, state and regional brand recognition, high student satisfaction.

Personal: attentive advisors, small class size, responsive.

Connected: quality network of corporate and educational partners.

Digital: state of the art classrooms, online programs, training available.

Respondents were asked to agree or disagree with whether or not they perceived the program to fit the aforementioned characteristics. The dimensions are rated on a scale of 1-5, 1 representing "strongly disagree" and 5 representing "strongly agree." A mid-point on the scale (3) included "neither agree nor disagree."

The second section contained a series of similar questions focusing on students' perceptions of similar dimensions of MBA program value as they pertain to *competitors'* offerings. The survey also included a set of demographic questions largely aimed at location, age, and gender. All items in both sections were structured and closed-ended except for one open ended question in the second section that asked respondents to consider other factors that were important to them in an MBA program. An item analysis indicated scale reliability with an alpha coefficient of .82.

Procedure

Surveys were distributed online to 528 current, prospective, and alumni students. Three hundred and fifty surveys were completed for a response rate of 66%. Of the 350 surveys returned, all were valid and included for analyses in this study.

Limitations

There are several limitations to be noted in this study. The first is the fact that the sample was largely limited to DSU MBA students and alumni, therefore results may not be generalizable to all MBA programs. As more institutions begin to experiment with CVA, there will be more opportunities to conduct studies with larger samples. Second, the alumni responding may provide ratings on program features and dimensions that have changed significantly since they had been enrolled. There were no study controls in place to measure such changing factors as MBA leadership, new course offerings, new program partnerships, partnership discount rates, and so on.

RESULTS

The CVA survey distributed to respondents is included in the appendix. Respondents surveyed included current students as well as alumni and some prospective students. Consistent with program demographics, 49% of respondents fall in the 21-35 age group, while another 46% fall in to the 36-55 age group. Sixty-three percent of respondents are married and 29% are single. Forty-four percent of respondents have household income of \$100,000 or greater. Fifty-eight percent of respondents are female and 42% male. As this is a part-time MBA program, 95% of study participants are employed full-time. Finally, 72% of the respondents are current students, 22% are alumni, and 6% are prospective students.

Table 1 includes a listing of item means for each MBA program (CVA) attribute. Importance weights (as ranked by respondents), absolute ratings of DSU MBA performance, and relative ratings vs competitor MBA programs are depicted and prioritized by importance rankings.

Table 1 MEAN IMPORTANCE WEIGHTS, ABSOLUTE AND RELATIVE RATINGS BY CVA ATTRIBUTE			
	Importance Weight Mean (Rank)	DSU MBA Rating Mean (Rank)	DSU MBA vs Competitor Mean Customer Value Index* (Rank)
CVA ATTRIBUTE			
Practical and Relevant	16.52 (1)	4.40 (3)	+.57 (6)
Flexible	15.57 (2)	4.69 (1)	+1.17 (1)
Credible and Trusted	11.51 (3)	4.28 (4)	+.44 (8)
Affordable	11.37 (4)	4.04 (7)	+.65 (4)
Personal	9.99 (5)	4.49 (2)	+1.00 (2)
Comprehensive	9.98 (6)	4.28 (4)	+.51 (7)
Digital	7.87 (7)	4.24 (6)	+.62 (5)
Connected	6.68 (8)	3.93 (9)	+.29 (9)
Unique Focus on Ethics	6.02 (9)	3.94 (8)	+.78 (3)
Global	4.49 (10)	3.82 (10)	+.26 (10)

* + score indicates that DSU MBA is more competitive relative to MBA competitor

As can be seen in Table 1, respondents rated the focus MBA program as quite *flexible*, *personal*, *practical/relevant*, *comprehensive*, as well as *credible/trusted* with mean rating scores of 4.69, 4.49, 4.40, 4.28 and 4.28 respectively. Of these five dimensions, respondents indicate that the dimensions of *practical/relevant* and *flexible* are most important to them in terms of what

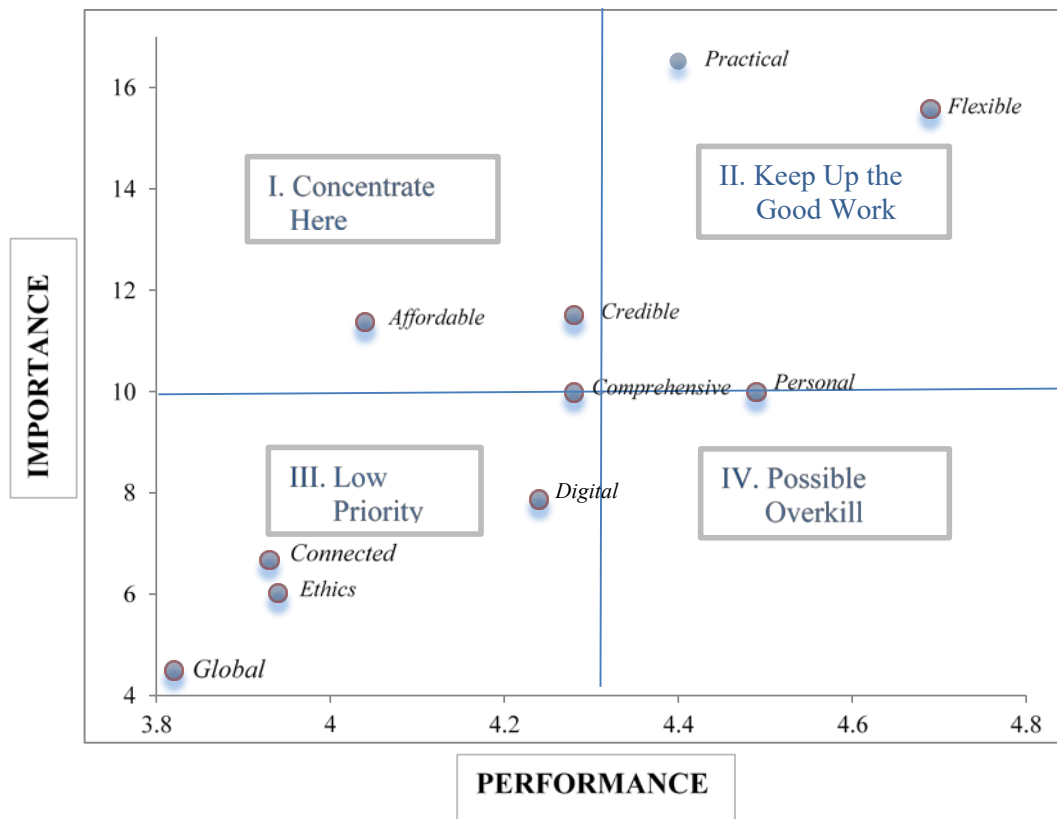
they value; with weighted importance mean scores of 16.52 and 15.57 respectively. *Credible/trusted*, *personal*, and *comprehensive* attributes are also valued as important, with weighted mean importance scores of 11.51, 9.99, and 9.98 respectively. It is interesting to note that the focus MBA program scored highest (in absolute ratings) on 5 of the top 6 most important program attributes.

The dimensions with the lowest performance scores include *affordable*, *ethics*, *connected*, and *global*. Ratings are 4.04, 3.94, 3.93 and 3.82 respectively. The MBA program is not particularly strong on any of these attributes as these scores indicate. Coincidentally, with the exception of the *affordable* attribute, respondents' mean importance scores indicate that these attributes are least important to them.

To correlate respondent ratings with overall customer value, we calculate a "customer value index" based upon attribute rankings as well as importance weights. The customer value index of each MBA vs competitor CVA attribute is included in the third column of Table 2. Looking at the *practical and relevant* attribute, for example, the DSU MBA program is perceived to be 57% more valuable than competitors' programs. Virtually all 10 of the CVA attributes were evaluated as better than the competitor offerings looking at the customer value ratios in Table 2.

Using an IPA matrix, the data was also mapped in order to identify areas of focus for MBA program administration.

Figure 4
MBA Importance - Performance Attribute (IPA) Matrix



As the map indicates, students (customers) seem to value the *personal*, *flexible* and *practical* dimensions of the program. As these items fall in **Quadrant II**, it is important for the MBA program to continue to emphasize these program attributes to prospective students. It is these features that students seem to value more than any others, and students indicate that the program delivers on these attributes.

In **Quadrant I**, there are items that are extremely important to customers where performance ratings may be lower than desired. This is an area for critical focus. Program attributes *affordable*, *comprehensive*, and *credible* should be examined and explored for additional strategic marketing direction.

Global, *connected*, *ethics*, and *digital* fall in **Quadrant III**, which means the organization may be wasting valuable resources if the program is emphasizing or driving actions relating to these attributes. None of the ten CVA attributes fall in **Quadrant IV**, suggesting that the MBA program is not overemphasizing features that are of lesser importance to the customer, thereby conserving organizational resources.

Recall that the reliability analysis indicated that the items exhibited strong reliability ($\alpha = .82$) suggesting that the survey is a reliable instrument. In order to investigate the data further, exploratory factor analysis (EFA) was conducted (using item means that were presented in Table 1) to determine what role certain items might play in understanding students' choice and commitment to an MBA program.

Principal axis factoring with varimax rotation was performed. Only one factor emerges with an eigen value greater than one. This factor accounts for 51.8% of variance and has been labeled MBAVAL. Factor loadings for MBAVAL are presented in Table 2. The factor items load moderately to strong (.622 to .746) on MBAVAL, indicating a unidimensional factor.

Table 2 MBA PROGRAM ATTRIBUTE LOADINGS ON MBAVAL	
MBA PROGRAM ATTRIBUTES	FACTOR LOADINGS
Personal	.746
Practical	.740
Comprehensive	.735
Credible	.779
Digital	.698
Flexible	.633
Ethics	.619
Connected	.714
Global	.622

DISCUSSION AND FUTURE RESEARCH

One of the precepts of Gale's research was to identify issues critical to customers in terms of value delivery. Although there is some literature available on customer value in education, there do not yet seem to be any "benchmarks" for customer value ratios in the higher education industry, and as concluded from the literature review for this study, the research on CVA in

academia is sparse (Webb and Jagun, 1997; Brown and Mazzarol, 2009). Qualitative research conducted in this study identified dimensions that may be important to a graduate business (MBA) student population. These dimensions include: *practical, flexible, comprehensive, affordable, unique, global, credible, personal, connected* and *digital*. This is the first attempt to apply Gale's CVA modeling process to an MBA program. The dimensions were identified in qualitative non-probability research involving an expert sample. One item was included to represent each dimension to demonstrate student's perception of DSU MBA's performance on this dimension as well as competitors' performance. This instrument exhibited reliability with a strong Chronbach's alpha of .82. One of the first issues that should be addressed in future research is further exploration of application of CVA to higher education programs. Further investigation should include additional testing of the current program attributes and the possible development of other dimensions/attributes.

A second goal of this research was to explore how the MBA program performs relative to key competitors on the proposed attributes. In terms of customer value, it appears that DSU MBA outperforms its competitors on all factors, although performance on the personal and flexible dimensions is highest. While this is certainly respectable, there may be opportunities to grow the value gap between DSU MBA and competing programs. A more significant focus on communicating the dimensions most important to prospective students may yield a larger applicant pool and subsequently, alumni base. Research indicates that this alumni group may be one of the wealthiest at institutions of higher education. Research also indicates that the most influential variable on donation likelihood to the alumni educational institution is the overall value of the MBA (Bruce, 2007).

Another goal of this study was to identify items that are most critical to students (customers) in delivering value. Items were developed and evaluated for the MBA program resulting in a newly proposed model to understand student MBA program selection. We began with 10 items that our qualitative research indicated best represented features that were important to students in terms of graduate program selection. These items were further developed as the result of secondary and qualitative research. Further analysis of these items via univariate analyses and EFA revealed strong reliability and validity. The EFA revealed a one-factor solution, explaining 52% of the variance in the data. We have labeled this factor fittingly as "MBAVAL." The EFA in this study demonstrates that indeed several items are loading strongly on the new proposed factor MBAVAL. Although all items moderately to strongly load on the factor and several items play an important role in describing student choice, a few seem to provide more explanatory power in students' MBA program choice. Consistent with the CVA and IPA models, this analysis suggests exploring first the practical, comprehensive, credible and personal dimensions of the program. Future research should include additional testing of this model with a variety of graduate populations, and possibly additional multivariate analyses.

We also applied an IPA model to identify and highlight program features that are most important to students. In the IPA model, marketing efforts should be maintained and supported completely for attributes that rate highly on both importance and performance. This would include the practical, flexible and personal dimensions of the program. Conversely, if performance ratings on an attribute are low, but the attribute is important to customers, then organizational performance on that program attribute must be improved immediately if it is cost-effective. Our analysis reveals a need to address the *affordable, comprehensive and credible* dimensions of the program. While these items seem to be important to students, respondents indicated that the organization is not performing well on these dimensions. If an organization performs poorly on an attribute, but it is

of low importance to the customer, these features should be considered low. In this case study, this would include features falling into Quadrant III (Low Priority): the *connected, digital, ethics and global* dimensions of the program. Finally, if an attribute is of low importance but has very high performance, the organization may explore decreasing investment resources for that particular attribute. None of the program attributes fall into this quadrant in this study.

Somewhat troubling is the fact that respondents rate the “unique ethics” focus of the program at the lower end of the scale. This is a critical component of the institution’s mission and historically has been the focus of many communication and marketing efforts. This issue may need to be explored with further qualitative research methods.

Focusing on Quadrant I (Concentrate Here), many of the qualitative comments included in the data indicate that respondents selected this program because the tuition payment or deferment was compatible with their employers’ reimbursement plan. Additional issues relative to “affordability” may need to be explored.

The program was recently reaccredited by ACBSP. In order to address the “credible” dimension that students deem important, an exploration of students’ understanding of accreditation may be necessary. Vehicles to more effectively communicate this information may also be useful. This is one of the first attempts to apply Gale’s CVA methods to institutions of higher education graduate programs. We paired this model with both IPA and EFA in order to provide recommendations for strategic marketing direction for program administration. This new information should be explored in the future with a variety of institutions’ markets and students in an attempt to develop a standardized model generalizable to a variety of populations.

CONCLUSION

With this research, we have begun to explore the application of CVA (Customer Value Analysis), IPA and EFA to graduate programs in institutions of higher education. This study seems to suggest that there may be profitable applications for CVA analysis in the higher education industry, so that programs may understand market dynamics and how they are evolving in order to develop more targeted programming to meet the needs of “customers.” We encourage institutions of higher education to explore this and similar models, and we encourage other scholars to continue research in this area.

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APPENDIX

MBA CVA SURVEY

You are invited to participate in the DeSales University MBA survey. In this survey, you will be asked questions about your MBA program experience. The survey should take approximately ten minutes to complete. Your opinions are very important to the successful development and delivery of the MBA program at DeSales University! As a token of appreciation for your time, you will have the opportunity to be entered in to a drawing for an IPAD MINI! You may provide your contact info at the end of the survey.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. Your survey responses will be strictly confidential; data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the study, you may contact Dr. David Gilfoil, MBA Program Director, at david.gilfoil@desales.edu.

Thank you very much for your time and support. Please begin the survey now by clicking on the Continue button below.

Please indicate the extent to which you agree or disagree with the following statements.

The DSU MBA Program is:

	Strongly Disagree	Disagree Somewhat	Neither Agree nor disagree	Agree Somewhat	Strongly Agree
practical and relevant: it is practitioner focused, applied, includes knowledgeable faculty and in-demand concentrations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
flexible: tuition deferral, multiple program entry points, campuses, varied delivery formats, GMAT waiver option	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comprehensive: number of courses, concentrations, degrees, certificates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
affordable: quality education, competitively priced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
unique for its focus on ethics in business, character and Christian humanism.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
global: variety of global course offerings, study tour opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
credible and trusted: ACBSP and MHSCE accredited, state and regional brand recognition, high student satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
personal: attentive advisors, small class size, responsive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
connected: quality network of corporate and educational partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
digital: state of the art classrooms, online programs, training available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please provide a numerical importance weight for each factor (how important is this factor in the selection of your MBA program). The total sum of all of your importance weights should equal 100.

- practical and relevant: it is practitioner focused, applied, includes knowledgeable faculty and in-demand concentrations. _____

- flexible: tuition deferral, multiple program entry points, campuses, varied delivery formats, GMAT waiver option. _____
- comprehensive: number of courses, concentrations, degrees, certificates _____
- affordable: quality education, competitively priced. _____
- unique for its focus on ethics in business , character and Christian humanism. _____
- global: variety of global course offerings, study tour opportunities. _____
- credible and trusted: ACBSP and MHSCE accredited, state and regional brand recognition, high student satisfaction. _____
- personal: attentive advisors, small class size, responsive. _____
- connected: quality network of corporate and educational partners. _____
- digital: state of the art classrooms, online programs, training available. _____

Please rate DeSales University on each factor relative to any competing MBA programs you may have considered.

The MBA Program is:

	DSU much less competitive	DSU less competitive	Neither competitive nor uncompetitive	DSU more competitive	DSU much more competitive
practical and relevant: it is practitioner focused, applied, includes knowledgeable faculty and in-demand concentrations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
flexible: tuition deferral, multiple program entry points, campuses, varied delivery formats, GMAT waiver option	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comprehensive: number of courses, concentrations, degrees, certificates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
affordable: quality education, competitively priced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
unique for its focus on ethics in business , character and Christian humanism.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
global: variety of global course offerings, study tour opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
credible and trusted: ACBSP and MHSCE accredited, state and regional brand recognition, high student satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
personal: attentive advisors, small class size, responsive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
connected: quality network of corporate and educational partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
digital: state of the art classrooms, online programs, training available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate ANY OTHER FACTORS that influenced your choice to enroll in the DSU MBA program and/or ANY OTHER MBA programs you considered:

What is your age group?

1. Under 20
2. 21-35
3. 36-55
4. 56-67
5. 68 & Older

What is your marital status?

1. Married
2. Single
3. Divorced
4. Widowed
5. Other

What is your annual household income?

1. <\$25,000
2. \$25,001-50,000
3. \$50,001-\$75,000
4. \$75,001-\$100,000
5. >\$100,000

What is your gender?

1. Male
2. Female

Are you currently employed?

1. Full-time
2. Part-time
3. Not at all

Please indicate your status in the MBA program:

1. Prospective Student
2. Currently Enrolled
3. Alumnus/alumnae

What is your zip code?

To thank you for your time, we will enter your name in to a drawing for an Ipad Mini! If you'd like to participate, please enter your name and email address below.

CROSS-CULTURAL RESEARCH – ASSESSMENT OF CULTURAL INTELLIGENCE

John Finley, Columbus State University
Kevin Hurt, Columbus State University
Rosemond Moore, South Texas College

ABSTRACT

This study explores cultural intelligence assessment research methodologies. Conducting research in a cross-cultural context can be challenging in terms of assuring accuracy, meaningfulness, and generalizability of the conclusions reached. Given the inherent complexity and variety of culture, this study treats a multi-step process of cross cultural research with a focus on cultural intelligence (CQ). The focus is to provide guidance on a research method that respond to the need for a more thorough yet simple methodology for research related to the Assessment of CQ. The measurement and application of the development of cross cultural knowledge and CQ is increasingly important to firms conducting business worldwide. Global business leaders and expatriates trend toward having high levels of CQ.

The assessment of CQ should entail a strong alignment between the methodology and prevailing literature. This topic should provoke interesting debate and activity in the area of cross-cultural research. CQ assessment will be addressed alongside the multi-step research methodology for this field. The research methodology entails identification of the research objective, level of analysis, data collection methods, and data analysis techniques via the usage of a multifaceted analysis cube and bearing in mind etic-emic perspectives.

Each step is offered as part of a framework that incorporates theories from several areas interconnecting what is known about differences in CQ levels and associated organizational behaviors across cultures and whether cultural differences play dominantly influential role. The objective is to simplify, and perhaps compartmentalize, the analysis of differences among cultures to provide enhanced training to expatriates, sales and marketing groups and research and development teams. This work sets out to review the usage of a multifaceted analysis cube as an approach toward cultural intelligence analysis – with intent of usefulness in business (and perhaps political) environments.

Keywords: *cultural intelligence, cross-cultural research methods, cross-cultural effectiveness, survey methods, research methods*

INTRODUCTION

This study explores cultural intelligence assessment research methodologies. Conducting research in a cross-cultural context can be challenging in terms of assuring accuracy, meaningfulness, and generalizability of the conclusions reached. Given the inherent complexity and variety of culture, this study treats a multi-step process of cross cultural research with a focus on cultural intelligence (CQ). The focus is to provide guidance on a research method that respond to the need for a more thorough yet simple methodology for research related to the assessment of CQ. The measurement and application of the development of cross cultural knowledge and CQ is

increasingly important to firms conducting business worldwide. (Ang, 2015, 2006) Global business leaders and expatriates trend toward having high levels of CQ. The assessment of CQ should entail a strong alignment between the methodology and prevailing literature. This topic should provoke interesting debate and activity in the area of cross-cultural research.

CQ assessment will be addressed alongside the multi-step research methodology for this field. The research methodology entails identification of the research objective, level of analysis, data collection methods, and data analysis techniques. Each step is offered as part of a framework that incorporates theories from several areas interconnecting what is known about differences in CQ levels and associated organizational behaviors across cultures and whether cultural differences play dominantly influential role. The objective is to simplify, and perhaps compartmentalize, the analysis of differences among cultures to provide enhanced training to expatriates, sales and marketing groups and research and development teams. This work sets out to review the usage of a multifaceted analysis cube and bearing in mind etic-emic perspectives – with the intent of usefulness in business (and perhaps political) environments. Cross-cultural research conducted by academics should increasingly attempt to address, among other themes, improvement in the analysis and performance of cross-cultural activity (e.g. assessment of CQ) in the global business environment – including expatriates' cognition and behaviors.

The concept of Cultural Intelligence (CQ) – that is the ability to function in different cultures, involves being skilled and flexible about understanding a culture, learning increasingly more about it, and shaping one's thinking to be more sympathetic to the culture and one's behavior to be more fine-tuned and appropriate when interacting with others from the culture (Ang, Van Dyne, & Koh, 2006). The global environment today has placed a great demand on leadership that is able to function in varying global environments. Crucial are the traits or skills that one learns during international work assignments in building the able intellectual capital and global skills. Globally integrated organizations require certain professional development models-such as expatriate assignments-in order to build culturally intelligent talent (Takeuchi, Tesluk, Yun & Lepak, 2005; Arman, 2013).

LITERATURE REVIEW

Foreign assignment work experience is key in an expatriate's development (Sambharya, 1996). This experience is a robust source of learning for the individual and organization. The wise and proactive organization can enjoy competitive advantage from their expatriates' experience (Spreitzer, McCall & Mahoney, 1997). Some individuals function better in foreign environments than others thus becoming increasingly coveted by organizations as they increasingly expand globally. The ability of an individual to "function effectively in situations characterized by cultural diversity" is the fundamental to CQ and a key element of a multinational organization's team (Ang & Van Dyne, 2015; Triandis, 2006). Flexibility and interactive ability in cultures other than one's own are characteristics of CQ (Thomas & Inkson, 2005; Whitaker, 2017).

As corporations continue to establish operations across national borders, there is a need for cross-cultural research and CQ in order to appropriately address the inherent risk when doing business in varying environments. (Earley, 2003; Chao et al., 2017) There is a need to understand the differences in management practices and organizational behaviors that exist across cultures and whether or not such differences can be solely attributable to cultural differences (Sekaran, 1983). Researchers should therefore assess the validity of existing theory, develop new theories in these cross-cultural contexts (Roth & Kostova, 2003; Bogilovi, 2016), conduct research at multiple

levels of analysis to study complex cultural phenomena (Kostova, 1999; Ott et al., 2016), assure construct equivalence (McArthur, 2007), and assure equivalence of measures (Robert, Lee, & Chan, 2006). Cross-cultural theories should be tested universally (Ember & Ember, 2000) to the extent possible.

Cross-cultural research entails numerous challenges when comparing cultural values, beliefs, and behaviors between or among entities. The use of etic-emic approaches poses such a challenge. A common practice in cross-cultural studies is to take an existing theory used in one country and extend the theory to another country without considering whether the theory is relevant or applicable in the new context (Douglas & Craig, 2005); thus suggesting that social phenomena is culture and context-free, i.e., universal or “etic” (Hantrais, 1999). The culture-bound or “emic” approach sustains the view that cross-cultural research findings can only be properly understood within the context in which they occur and that such findings are not amenable to generalization (Hantrais, 1999). It considers culture in terms of the associated internal aspects instead of in an external to that culture context. The emic perspective, then, would heighten the importance of CQ among expatriates while casting a gloomy shadow for scholars and practitioners who wish to discover global managerial phenomenon.

However, Ember and Ember (2000) argue that to discover explanations that are true worldwide, and to derive practical applications that work worldwide, theories need to be tested as cross-culturally as possible and the only way to find what is true for all humans is to look at a representative sample of them, which requires universal testing. A universal survey might take the form of big data collection from social media sources or via usage of tools such as Google Analytics. This would yield a blend of primary and secondary data retrieved for predictive and behavior analytics purposes. To the authors’ knowledge – there are no recent studies that have contained testing in more cross cultural, representative, or universal samples.

A challenge that must be faced when considering the level of analysis in cross-cultural research is ecological fallacy or aggregation. Hofstede, Bond, & Luk’s (1993) research was originally conducted at the organizational level ($n=20$) and subsequently re-analyzed at the individual level. In spite of a small sample size, their findings suggest that organizational level dimensions were different from those found at the individual level.

In another study Ward et al. (2011) examined the basic elements (Behavioral, Motivational, Cognitive and Meta-cognitive) of CQ as “predictors of cross-cultural adaptation problems in a longitudinal study of international students ($n=104$) in New Zealand and tests the hypothesis that Motivational CQ predicts better psychological and sociocultural outcomes over time” (Ward et al., 2011). The measurements taken were CQ questions pre-term and then adaptation assessments a few months into the program. The aggregation of the individual data into an organizational conclusion created a fallacy that cannot be generalized to other cultural contexts. This paper attempts to address the challenge that a cross-cultural researcher must face when selecting the appropriate level of analysis.

Another challenge to address entails equivalence in cross-cultural research. “The heterogeneity of the samples commonly examined in cross-cultural organizational research raises legitimate concerns about measurement equivalence” (Robert, Lee, & Chan, 2006, p.66). Consider translational and metric equivalence. Translation equivalence might include items in a questionnaire measuring the same thing in different populations (e.g. the measurement instruments mean the same thing to people in different countries after translation). (Mullen, 1995). Metric equivalence exists when scores obtained across countries have the same meaning and interpretation (Bensaou, Coyne, & Venkataraman, 1999). If measurement equivalence is not

established, cross-cultural empirical research results will lead to weak interpretations (Bensaou, Coyle, & Venkataraman, 1999; Chao 2017).

METHOD – LEVEL OF ANALYSIS

In this paper we focus on the cube multi-level analysis of culture. This approach also arguably gives the researcher more flexibility in terms of specific area of focus if desired to ensure that the research findings can be properly understood within the cultural context. This can also aid in determining the extent to which cross-cultural research might be generalized across cultures. The authors suggest a flexible model that identifies a multi-level analytical approach to level of analysis in cross-cultural research with a focus on CQ. This analysis should also inform the preparation of a cross-cultural research survey. We have additionally explored and identified past trends in the use of data collection instruments; thus, answering the call by Schaffer and Riordan (2003) to develop efficient cross-cultural research surveys. These surveys can be used to glean data that informs, among other things, level of CQ.

Level of Analysis

We propose that researchers must evaluate a minimum of two levels when conducting cross-cultural research in order to address the fallacy challenge and provide more thorough complex conclusions in the cross-cultural context. Leung's (1989) comparison of individual vs. cultural level of analysis concluded that cross-cultural research could only be done by ecological level aggregation. Smith (2008) suggests a parallel approach of looking at individual and cultural level concepts for each level of analysis. Staw, Sandelands, and Dutton (1981) identified characteristics important for measure at each level (individual, group, and organization). Dansereau, Yammarino, and Kohles (1999) discuss the concern over the impact of time on the level of analysis. They emphasize the fact that individuals, countries, and organizations can change over time (Ward, 2012) – specifically that homogeneous groups can become heterogeneous groups and vice versa.

While there are many perspectives and approaches to level of analysis, we prescribe that a minimum of two levels should be identified for the research. As such we offer a multidimensional, multilevel model that can be utilized by the cross-cultural researcher to quickly determine and select the two levels of analysis for their research.

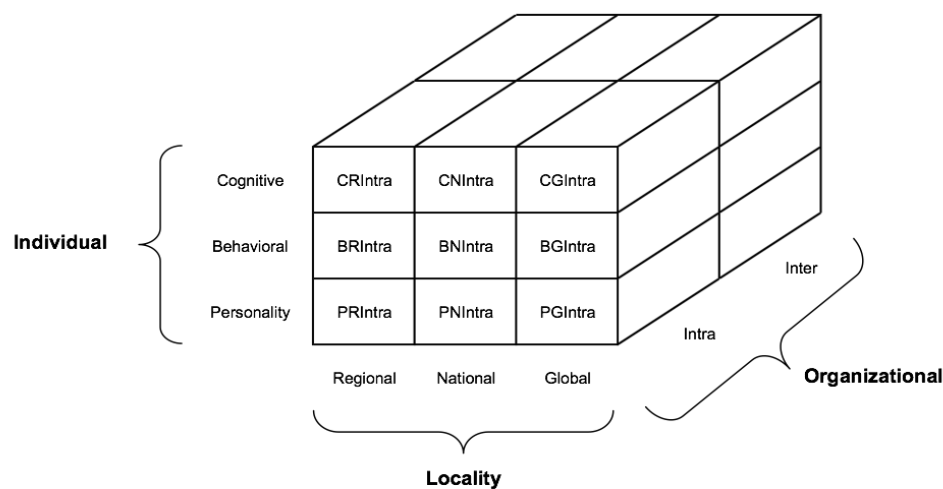
Kostova (1999) highlights the importance of using a multilevel approach, emphasizing the individual, country, and organizational levels of focus for this research. The nature of the research objective in the extant International Management (IM) literature reveals that typically one of the three levels of analysis, but rarely two or more, are considered. The country level analysis trends at 50% while the other areas are analyzed as follows: individual level (23%), organizational level (18%) and multiple levels (8%). The authors opine that all three (country, individual and organizational) are critical levels of analysis and that at least two of these should be selected and planned for in data collection and data analysis research steps. Given that some have begun to argue “that country is often a poor proxy for culture”, (Taras et al., 2016), the above convention trend of using only country as a basis should perhaps be revisited. It can be useful, nonetheless, to use country coupled with one of the other levels (e.g. individual or organizational) or perhaps forgo the use of the nation as a basis for cross-cultural or CQ research. It should be noted that research conducted using multiple levels of analysis is still relatively rare.

There is a perceivable need to conduct research using multiple levels of analysis. Lueng's (1989) research discusses the biases that result from translating research results from the individual level to the country level of analysis. Hofstede, Bond, and Luk (1993) also discuss the use of multiple levels of analysis and how researchers are creating fallacies translating results from one level of analysis to another. These studies lend theoretical support to our notion that it is important to plan, collect data, analyze, and make conclusions based on data from a minimum of two levels of analysis. This leads to the question of how to practice multi-level research.

Model Development: Multilevel, Multidimensional Level of Analysis

Selecting which combination of level of analysis is complex; thus, we introduce a multilevel multidimensional methodological approach to selecting the level of analysis. The model provided gives a 3x3x2 combination of individual, locality, and organizational elements for level of analysis selection (see Figure 1).

Figure 1: Three Dimensional Level of Analysis Cube



The selection for the individual level elements are cognitive, behavioral, and personality. The basis of these items is the 4-factor CQ scale developed by Ang, Van Dyne and Koh (2006). The 4 factors are called CQ knowledge, CQ behavior, CQ strategy and CQ motivation. (2006) In the analysis cube, cognitive is based on 'CQ-Knowledge' which is one's understanding of differences among cultures. "It reflects general knowledge structures and mental maps about cultures [and includes] familiarity with economic and legal systems, norms for social interaction, religious beliefs, aesthetic values, and language in different cultures." (2006). Behavioral stems from 'CQ behavior' which is one's adaptive knowledge and capability regarding verbal and nonverbal cultural nuances and idiosyncrasies (2006). The personality item in the analysis cube

is specifically associated with CQ strategy and motivation which entail how an individual makes sense of different cultures, plans for interactions, and has an interest in other cultures. There already exists a 20-question (4-factor) cultural intelligence scale that can be used or adapted for use in order to collect data on this individual level. An example of this is to what degree one knows the “cultural values and religious beliefs of other cultures” (2006). A more customized survey can, of course, be developed as well per researcher objective.

The selections for locality are regional, national, and global, with global being operationalized as any cross-cultural study with more than 10 countries. Each of these elements suggests where and how the cross-cultural research will be focused. The organizational selection should be based on whether or not the comparison will occur within divisions (intra) or between (inter) organizations across cultures. Research is typically done at the country level and aggregates the data collected at the individual or organizational level. We suggest that the data collection should occur at both levels (assuming only 2 levels are chosen and that one of those levels be locality). Data collection at the locality level will tend to be secondary sources. The analysis should occur simultaneously at both levels, and the conclusions should be made based on understanding of the interrelationship of the results from both phenomena. The cube model serves to help the cross-cultural researcher to select preferred levels according to research needs. As an example of what to choose from the cube for a point of departure, a researcher may select the individual level (cognitive and personality), the regional level (perhaps opining that by nation may not be sufficient), then by inter-firm level (this could be within the same industry or not). Purposes for such a study could be in relation to success or failure rate of expatriates and processes used for expat selection and training. Following the selection of at least two levels of analysis is the development of the data collection methodology.

DATA COLLECTION METHODS

Survey usage is a prominent method used to gather data. The development of a cross-cultural research survey entails methodological issues in achieving efficient cross-cultural research surveys. (Schaffer & Riordan, 2003)

An issue inherent to cross-cultural research is linguistic or semantic equivalence in the survey instruments (Mullen, 1995; Douglas & Craig, 2005). Back-translation is considered a best practice to achieve some level of semantic equivalence. (Schaffer & Riordan, 2003) Back-translation is the translation of a survey instrument is from the original language to the target language then translated back to the original language.

Mallinckrodt et al. (2004) conducted a study on the utility of back-translation to verify semantic equivalence. Their purpose was to promote multicultural comparative research. Although “back-translation always involves subjective evaluations”, the researchers discovered some evidence that back translation had an influence on the study results although they additionally developed “dual-language, split-half [an enhanced/aided version of back-translation]” quantitative methods of verification to supplement back-translation judgments. (Mallinckrodt, 2004)

The need to measure equivalence (e.g., construct, measurement, and translational) is often stressed in the literature (Leung, 1989; Peng, et al., 1991; McArthur, 2007). Nonetheless, this step, for example with respect to measurement invariance, has not been consistently performed. Researchers have either overlooked the importance of measurement invariance entirely or have left out descriptions of how they assessed measurement invariance (Priem, et al., 1998; Anakwe, Igbaria, & Anandarajan, 2000).

Invariant measures cannot be assumed to be equivalent to make valid cross-cultural comparisons. Conclusions based on measures that are not invariant may be misleading or wrong (Murray, et. al., 2007; Schlägel, 2016). While we are encouraged by the number of authors that included a discussion of measurement invariance in their research (Murray, et al., 2007; Song et al., 2008), we join the many authors who have called for the use of invariant measures in a cross-cultural context and urge future researchers to assess measurement invariance, clearly identifying the procedures by which they assured it in their writings.

Researchers have used the work of Hofstede (1980) to base their measurement instruments because the cultural dimensions identified in his work have become an accepted norm to measure culture. The strength of using Hofstede's cultural dimensions is that many other research studies have been conducted and a researcher can compare his/her results with previous work in related fields. The downside is that Hofstede's work used the etic approach, which may not be an invariant measure because constructs measured may not apply to all cultures. Several recent studies lend more support to this point. Littrell et al. (2012) explored leader behavior differences between and within national cultures in China – revealing intra-country regional cultural differences are relatively neglected. Their results indicate that "culture areas" exist in China, which are different from one another.

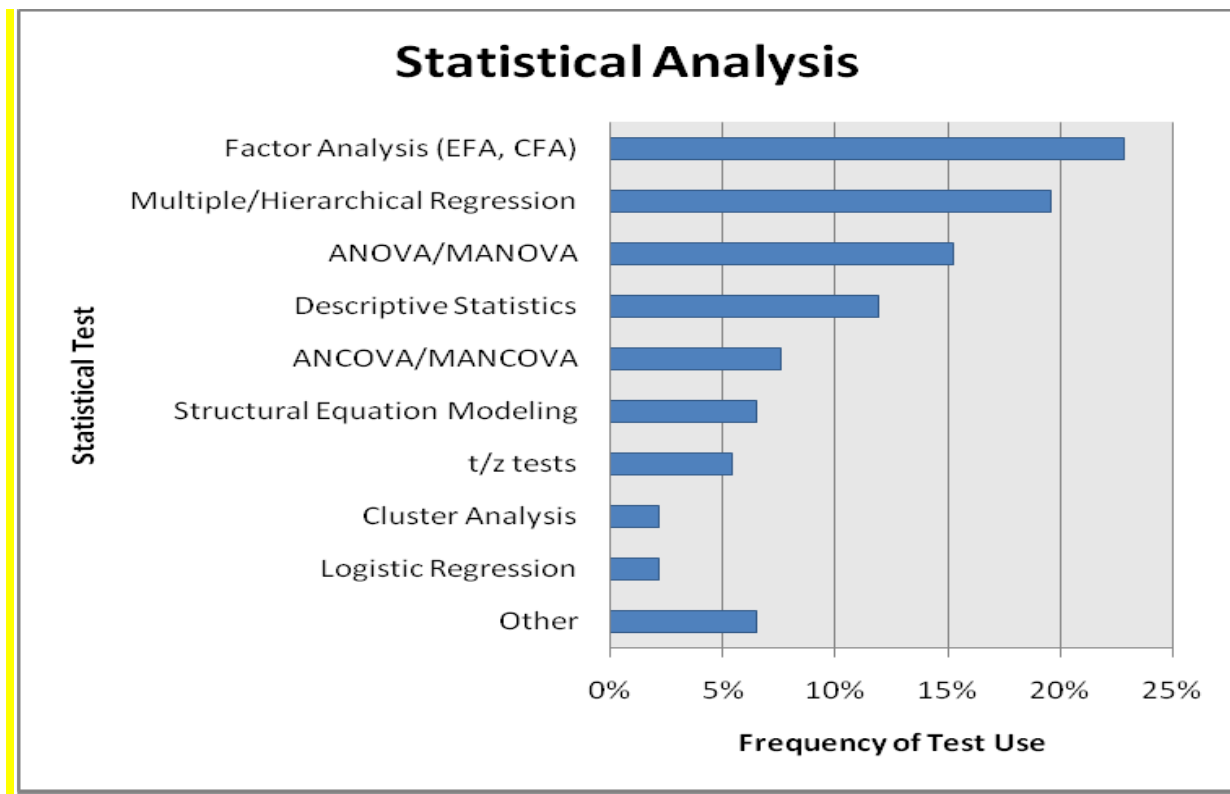
Dickson et al. (2012) study the differing interpretations of leadership across cultures pointing the “conflict in the literature between the quest for universals and the identification of cultural contingencies in leadership theory.”

Items used for cross-cultural analysis should be written in a manner that is answerable and understood by persons in each culture being studied to ensure construct and measurement equivalence (Brislin, 1980). The strength of this argument is based on the reason that if the people from the culture you are trying to analyze do not understand or do not relate to the questions being asked then the data gathered with the instrument is not valid. The items used in research instruments should also consider the emic or etic approach. An emic analysis documents “valid principles that describe behavior in any one culture by using constructs that the people themselves conceive as meaningful and important” (Brislin, 1980). An etic analysis makes “generalizations across cultures that take into account all human behavior...theory building” (Brislin, 1980). Researchers have primarily used an etic approach whereby survey instrument constructs are assumed to be transferable from one culture to any other by simply translating a previously validated survey instrument in one cultural context into the language of the target country. The predominant measurement instrument of choice in cross-cultural studies in this sample was the survey, accounting for over 80% of the studies reviewed, followed by interviews, secondary data or a combination thereof.

Data Analysis Techniques Employed in Cross-Cultural Research

Associated with the complexities of cross-cultural research, England and Harpaz (1983) suggested that multivariate techniques offered a better understanding of cultural differences. Ember and Ember (2000) added that a principle way to compare rival theories objectively is to test them simultaneously via multivariate statistical analysis. Assessing the trends in cross-national management research, Peng et al. (1991) found approximately 40% of the articles they reviewed used multivariate techniques and researchers continue to rely on these techniques when carrying out cross-cultural research (Figure 2).

Figure 2: Cross Cultural Research - Statistical Analysis Results



Factor analysis, whether exploratory or confirmatory, was the dominant multivariate technique employed by researchers, accounting for 23% of the test use frequency. The primary use of factor analysis was twofold: a) development of new scales (Begley & Tan, 2001), then used in conjunction with multiple regression analysis or structural equation modeling to test hypotheses related to those scales, and b) assessment of construct equivalence and measurement invariance (Murray et al., 2007; Song et al., 2008). Multiple regression (hierarchical) analysis and ANOVA/MANOVA were the dominant data analysis techniques employed to test hypotheses framed in a cross-cultural context, each accounting for 20 % and 15 % of use, respectively.

Choosing Among Data Analysis Techniques

Numerous data analysis techniques are applicable in a cross-cultural context, just as they would be in a mono-cultural context. Hair et al., (1998) suggest that the research objective, the type of relationship being studied, and the properties of the data should dictate which type of statistical technique to use. Moreover, the metric and non-metric properties of the dependent and independent variables in any given research context may preclude the use of certain data analysis techniques.

Interestingly, full structural equation modeling, which incorporates both factor analysis and path analysis, accounted for only 7% of the studies in our review. The underutilization of this technique is surprising, given structural equation modeling's large potential in a cross-cultural research context (Singh, 1995). Though caution is recommended when applying structural equation modeling due to model fit interpretations, structural equation modeling's flexibility, ability to incorporate latent constructs, and ability to simultaneously examine a series of dependence relationships are all important assets for cross-cultural research (Van de Vijver & Leung, 1997). The prescription of structural equation modeling in the context of our framework is relevant, due to the nature of the dual level of analysis selection. Structural equation modeling is the only technique that allows for the simultaneous analysis of the relationships between the two or more levels of analysis. Thus, we encourage cross-cultural researchers to capitalize on these assets and incorporate structural equation modeling in future cultural intelligence and related cross-cultural studies.

CONCLUSION

An implication for multinationals increasingly utilizing expatriates is that CQ can be developed and enhanced via training and exposure to a multinational context (Ng et al., 2009). Fundamental to higher CQ levels is one's ability to adjust thinking, perspectives, and the willingness to learn more about other cultures in a practical and useful manner (Earley, Ang & Tan, 2006; Shaffer & Harrison, 1998). Such individuals have keener ability to discern and act on cultural differences – which manifests in communication behaviors (verbal and non-verbal) as well (Chen et al., 2010).

Levels of CQ understanding and generalizability across cultures can be measured with a cross-cultural test (Ember & Ember, 2000). Inherent to cross-cultural research are difficulties and absolute facts resulting from scientific research in the social sciences can be elusive (Pedhazur & Schmelkin, 1991). This work reviews the usage of a multifaceted analysis cube as an approach toward cultural intelligence analysis – with intent of usefulness in business (and perhaps political) environments. Based on our review, the use of this analysis cube allows for greater flexibility and precision (if desired) in cross-cultural research. This study hopes to contribute to an enhanced study of cross-cultural and cultural intelligence topics. Further research should have as its focus the cross-cultural validation of the scale aligned with the dynamic needs of global firms in their cross-border endeavors.

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