SIGNALING CORPORATE SOCIAL RESPONSIBILITY: AN INVESTIGATION OF RECRUITMENT INITIATIVES

by

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ABSTRACT

CLAIRE ALYSE MANSFIELD. Signaling corporate social responsibility: An investigation of recruitment initiatives. (Under the direction of DR. GEORGE C. BANKS)

This study addresses gaps in the recruitment literature by drawing on signaling theory to explore how Fortune 500 firms (n = 91) signal CSR initiatives to attract applicants. A mixed-methods design incorporating topic modeling and qualitative interpretation of latent topics in website text was used to address the research questions. Findings include a taxonomy of the CSR-related signals on Fortune 500 firms' websites and indicate that these signals are emphasized to different extents and diverge from academic literature on CSR.

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LIST OF ABBREVIATIONS

CATA	computer-aided text analysis
CSR	corporate social responsibility
HRM	human resource management
LDA	Latent Dirichlet Allocation
QCA	qualitative content analysis

CHAPTER 1: INTRODUCTION

Research indicates that an effective recruitment process is related to firm performance (Becker & Huselid, 1992; Huselid, 1995; Schmidt, Hunter, McKenzie, & Muldrow, 1979). Firms have the ability to enhance their performance by leveraging recruiting activities to create strategic resources (Huselid, 1995). Thus, firms are interested in making the recruitment process as effective as possible. One way is to make the firm seem attractive by using signals during recruiting. Meta-analytic evidence has illustrated that recruiting signals are crucial in influencing job applicant attraction (Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005). Job applicant attraction is the primary mechanism for attaining human capital, which creates value for firms (Cable & Turban, 2001, 2003; Greening & Turban, 2000). The literature has shown that corporate social responsibility (CSR) initiatives play a key role in applicant attraction (Jones, Willness, & Madey, 2014), however, more attention must be given to firm's CSR initiatives and other recruitment actions as applicant perceptions and reactions may have significant implications for recruitment efforts (Breaugh, 2013). While it is known that firms communicate a variety of different messages to applicants, research is limited on the characteristics of firms' CSR signals such as the strengths and types of CSR signals, the extent to which the signals relate to each other, and the correlates of these signals.

One way to deepen the understanding of signaling, CSR, and recruitment is to examine how companies signal CSR initiatives to applicants. CSR can be characterized

as situations where the firm goes beyond compliance and engages in "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001, p. 1). Although CSR initiatives are known to be one of the best ways to recruit applicants (Jones, 1995), it is not known how CSR attracts applicants in the presence of competing CSR signal types or with differing levels of emphasis within a human resource management (HRM) system. Applicants may find themselves juggling their interest in working for a socially responsible firm with how much they value pay, other job characteristics, or other CSR initiatives. Firms that engage in CSR initiatives are often judged by applicants to be more honest, trustworthy, and ethical (Jones, 1995). In this way, CSR initiatives can influence applicant attraction. Today, most large companies engage in some form of CSR initiatives, some of which may be valued more or less by different job applicants or types of applicants. CSR initiatives can be considered as a form of strategic investment and have positive effects on the maintenance of firm reputation (McWilliams, Siegel, & Wright, 2006). If CSR initiatives fulfill the requirements for strategic resources (i.e., if they are valuable, rare, inimitable, and non-substitutable), they can provide sustainable competitive advantages for firms (Barney, 1991).

Some critical gaps in the recruitment literature pertain to understanding how firms send multiple or competing signals, particularly when signals differ in perceived emphasis (Connelly, Certo, Ireland, & Reutzel, 2011). First, while it is in the best interest of organizations to influence applicant attraction, it is not known how firms send and balance disseminating multiple, or competing, recruiting signals. Current studies in the management literature tend to examine one recruiting signal at a time rather than

competing signals at the same time (Connelly et al., 2011). Examining only one recruiting signal at a time does not enable realistic interpretations of the entire signaling environment, as conclusions that can be drawn based upon analysis of single signals are limited (Bowen & Ostroff, 2004). Factors such as a firm's CSR initiatives may positively or negatively influence outcomes such as applicant attraction or offer acceptance. The current recruitment literature is limited in understanding how firms balance and signal competing information to potential applicants.

A second gap in the current recruitment literature involves the emphasis of signals issued by firms. While firms can choose the *type* of signals sent, they also emphasize signals to varying degrees. Differing emphases of signals can have important effects on recruitment outcomes (Connelly et al., 2011). For example, a firm may place lower emphasis on signals of CSR initiatives and high emphasis on signals of individual achievement and competition. A global firm that manufactures paper may promote its tree-planting initiative and at the same time have a competitive or toxic corporate culture. Applicant perceptions may be positively influenced by signals of CSR initiatives, but if these initiatives are not emphasized to the same degree as signals of interpersonal competition within the firm, the highly emphasized negative signals may more profoundly influence applicant attraction outcomes. Competing signal types and signals with differing levels of emphasis within a human resource management system ultimately influence recruitment outcomes such as the decision to apply. Research on the differential emphasis of CSR signals is needed to extend the recruitment literature and provide a foundation for research on how such differing emphases of signals may influence recruitment outcomes.

In addition to addressing these research gaps, the contribution of the following study includes a more thorough understanding of CSR signals as factors that may affect outcomes such as applicant perceptions in the earlier stages of recruitment. This paper begins by reviewing the resource-based view of the firm and signaling theory in a CSR context and then presents a theoretical framework based on signaling theory and research questions. This research serves as a foundational study and uses mixed methods including topic modeling (Banks, Woznyj, Wesslen, & Ross, 2018) to investigate the kinds of CSR signals firms send to recruit applicants. This information provides a balanced perspective on how top firms' CSR signals manifest in practice and a foundation for follow-up studies on how characteristics of such signals affect how applicants respond to and manage these signals, leading to critical recruitment outcomes such as applicant attraction and job offer acceptance.

CHAPTER 2: THEORETICAL FRAMEWORK

2.1 Recruiting Practices as Strategic Resources

The resource-based view of the firm has been described as one of the most influential frameworks in the strategic management literature (Allen & Vardaman, 2017; Barney, 1991; Barney, Wright, & Ketchen, 2001; Barney & Wright, 1998). Barney and Wright (1998) were the first to mention the resource-based view of the firm in a strategic human resources context. Employees are critical to firm performance and competitive advantage (Barney et al., 2001), which can lead to above-average financial returns (Barney, 1986). Firm attributes that can contribute toward a competitive advantage include characteristics of a firm's human resources such as employee commitment, policies, and practices (Barney & Wright, 1998).

If firms excel at human resources activities such as recruiting practices, they can leverage them as strategic resources. Four conditions of a strategic resource allow it to provide a competitive advantage. First, a strategic resource must be valuable. Human resources functions should either increase firm revenues or decrease costs (Barney & Wright, 1998). For example, a firm may create value by initiating and maintaining outreach programs and emphasizing them to potential recruits. If a firm signals to applicants that employees volunteer often and frequently participate in CSR-related initiatives, it may be more attractive to applicants and therefore able to attract a larger or higher-quality applicant pool needed to gain human capital. The second requirement of a strategic resource is that it must be rare. This means other firms cannot possess the same resource if that resource is to serve as a competitive advantage. For example, a firm may signal to potential recruits that its employees are exceptionally skilled or talented and

unlike those at other competing firms. Alternatively, the firm may signal that it participates in CSR-related community involvement initiatives. Not every firm can have these initiatives available, so those that do find themselves with a competitive strategic advantage. Third, a strategic resource must be inimitable. This means other organizations must be unable to easily copy the resource. Examples of inimitable resources are an organization's unique culture (Barney & Wright, 1998) and a firm's unique community involvement. Other firms or competitors cannot easily imitate community involvement because it is a socially complex strategic resource. Finally, a strategic resource must be non-substitutable. Competing organizations must not be able to create the same competitive advantage generated from the strategic resource by using a different resource. For example, a firm should not be able to substitute another organizational practice and gain the same benefits as another firm engaged in valuable CSR initiatives that make it attractive to applicants.

Recruiting via CSR signals satisfies these requirements for the resource-based view of the firm when they are a part of positive and negative synergies. Fit between interrelated HRM activities such as policies, practices, and processes within a firm allows for the creation of positive synergies and the avoidance of negative synergies (Banks & Kepes, 2015). Recruitment signals should fit together because it creates value and is rare, as well as inimitable because of social complexity. When HRM activities within a system are aligned, they can have positive or negative synergistic effects that can result in sustainable competitive advantages (Barney & Wright, 1998). Vertical fit and intra-fit are two ways to attain positive synergistic effects. According to Banks and Kepes (2015), "vertical fit characterizes the degree of fit within an individual HRM activity area" (p.

359) and “intra-HRM activity area fit refers to alignment between HRM activities within a specific HRM activity area” (p. 360). It is difficult for competitors to understand interacting effects of different HRM recruiting activities on dynamics within the “black box” that then affect outcomes at individual and firm levels (Boselie, Dietz, & Boon, 2005; Boxall, Ang, & Bartram, 2011). The “black box” includes phenomena such as human capital resources and motivation. It operates as a causally ambiguous and socially complex link between HRM activities and outcomes (Banks & Kepes, 2015, p. 355).

The resource-based view of the firm is a critical perspective from which to understand competitive advantage. It helps to explain why different components of recruiting practices are necessary for recruitment to be successful. If firms excel in recruiting practices, they are able to use these human resource activities as strategic resources. Signaling theory helps to explain how differing levels of fit between recruiting signals may have significant implications for recruitment outcomes such as applicant attraction. We now transition to a review of the literature on signaling theory and applicant attraction.

2.2 Signaling Theory and Applicant Attraction

Signaling theory (Connelly et al., 2011; Rynes, 1991; Rynes, Bretz, & Gerhart, 1991; Spence, 1973, 2002) is widely addressed in the recruitment literature and is concerned with communication that serves to reduce the asymmetry of information between a signaler and receiver (Connelly et al., 2011). It explains how a firm can use signals to reduce incomplete information about job and organizational characteristics and guide applicant behavior during the job choice process (Banks, Kepes, Joshi, & Seers, 2016). Firms can signal certain organizational characteristics to applicants in order for

applicants to establish expectancies regarding an available role within the organization and increase the attractiveness of the open job role (Rynes, 1991; Rynes et al., 1991). Applicants make use of signals from recruiters to gather information and create conclusions about the quality of an organization (Rynes, 1991). Different receivers may interpret distinct signals in disparate ways or weight some signals more heavily than others when making decisions. In addition, the interpretation of different signals can be affected by the signaling environment or other receivers (Connelly et al., 2011), as feedback can occur between the signaler and signaling environment. Situations often involve more than one signal or more than one signaler or receiver. CSR initiatives signal to potential applicants about what it might be like to be employed at the firm (Greening & Turban, 2000).

While an increasing number of studies have demonstrated connections between different organizational characteristics and applicant perceptions, the processes behind these connections are not fully understood (Jones et al., 2014). While it is known that different recruiting signals may help to distinguish an organization, and that people want to work in organizations that share their values (Cable & Judge, 1994), it is not known how characteristics such as the strength or type of signal may affect outcomes such as applicant perceptions (Celani & Singh, 2011). Sources of recruitment signals may include corporate rankings, advertising, and word-of-mouth (Highhouse, Thornbury, & Little, 2007), and each of these sources may send different signals. In addition, aligned or misaligned recruitment signals may create positive or negative synergistic effects, which may further affect applicant perceptions.

2.3 Corporate Social Responsibility

The literature on CSR has primarily focused on the firm level of analysis and the relationship between CSR and outcomes at the firm level. Recent research has begun to focus on the individual level of analysis and the role of CSR as a predictor of outcomes at the individual level, including attitudes, perceptions, and behaviors (Aguinis & Glavas, 2017). Findings indicate that CSR as a recruiting signal has a positive effect on applicant attraction (Jones et al., 2014). Given CSR's key role in applicant attraction, it is critical to examine how applicant perceptions of CSR may affect recruitment efforts (Breaugh, 2013). Again, CSR can be characterized as situations where the firm goes beyond compliance and engages in "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001, p. 1). As a result of these actions, firms that engage in CSR are often judged to be more honest, trustworthy, and ethical (Jones, 1995), and the positive effects CSR can have on the maintenance of firm reputation can be considered as a form of strategic investment (McWilliams et al., 2006). There are different attitudes regarding firms' levels of responsibility to engage in CSR initiatives. Some scholars argue that, within legal and ethical constraints, managers have obligations only to profits and stockholders (Friedman, 1970). Others argue that CSR is not only profitable, but allows firms to address externalities and public problems that affect a large range of stakeholders (Freeman, 1984; Smith, 2003).

In practice, CSR can be manifested in many ways and has evolved over time in response to social trends (Silberhorn & Warren, 2007). CSR initiatives are context-dependent and may be interpreted differently by different firms (Wan-Jan, 2006). There

are many varieties of CSR behaviors (Inoue & Lee, 2011) and as a result, academicians and practitioners often disagree on how CSR should be measured (McWilliams et al., 2006). CSR initiatives often revolve around themes of community support, employee issues, diversity, and environmental issues (Albinger & Freeman, 2000; Murray & Ayoun, 2010; Turban & Greening, 1997). For example, CSR initiatives related to employee welfare may indicate a firm's intent to maintain labor standards and fair treatment of employees (Bohdanowicz, 2008; Turban & Greening, 1997). These issues may be critical for outcomes such as applicant perceptions (Day, Karani, Adler, & Nicely, 2013).

Regardless of the level of obligation a firm feels to conduct CSR initiatives, firms that do engage in such initiatives often recognize their strategic value (McWilliams et al., 2006). Conducting CSR initiatives allows firms to signal ethical conduct to stakeholders, attract employees, enhance their reputation, and attain superior financial performance, among other benefits (Albinger & Freeman, 2000). CSR is often conceptualized as a valuable recruitment tool (Day et al., 2013; Jones et al., 2014). CSR is attractive to applicants because people may want to identify with socially responsible organizations (Banks et al., 2016). Individuals define themselves by the values and characteristics of groups to which they belong and applicants may derive psychological benefits from being associated with a particular organization (Ashforth & Mael, 1989; Brewer & Gardner, 1996). CSR is attractive to applicants because it allows them to expand their self-concept by identifying with an organization and enables them to evaluate themselves more positively (Aron, Aron, Tudor, & Nelson, 1991) and make sense of their values and find meaningfulness through work (Aguinis & Glavas, 2017).

Given that perceptions of CSR can impact organizational attractiveness (Greening & Turban, 2000; Luce, Barber, & Hillman, 2001), it is important to determine exactly how firms engage in, present, and promote the CSR initiatives they partake in. Examining how firms engage in and present their CSR initiatives may provide a fruitful way to understand the constructs and themes that appear in firms' CSR-related communications and how different types of CSR signals may be related in terms of emphasis. Specifically, investigating the characteristics of firms' CSR signals such as the strengths and types of CSR signals, the extent to which the signals relate to each other, and the correlates of these signals may lead to a more complete understanding of the factors that affect important recruitment outcomes.

Drawing upon the resource-based view of the firm, CSR initiatives can be leveraged as strategic resources that are important to the recruitment process. Likewise, drawing upon signaling theory, CSR initiatives can be interpreted as recruitment signals to potential stakeholders, such as potential job applicants. Together, these frameworks inform the following research questions.

RQ1a: What CSR-related signals appear in organizations' recruitment initiatives?

RQ1b: How much emphasis do organizations place on these signals?

RQ2: To what extent do CSR-related signals relate to each other?

RQ3: What are the correlates of CSR signals?

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Open Data and Code

The open data and appendices used in these analyses are available on the Open Science Framework (https://osf.io/38hg2/?view_only=0632b080677f48fcb29f01c0bf24a6cb).

3.2 Data Collection

The use of digital data sources is growing in management journals (e.g., Eisenhardt, Graebner, & Sonenshein, 2016). Computer-aided text analysis (CATA) is often used to analyze such digital data (e.g., McKenny, Short, & Payne, 2013; Short, Ketchen, Combs, & Ireland, 2010). This study draws upon these examples and takes an inductive approach not guided by predefined constructs (Eisenhardt, Graebner, & Sonenshein, 2016). CATA involves few assumptions going into the research process (Banks et al., 2018). Following recommendations from Banks et al. (2019), this study uses an exploratory approach and aims to see what variables emerge from website text. In order to determine what kinds of CSR signals firms are sending, this study uses an exploratory method that involves obtaining text from websites of Fortune 500 firms and running topic modeling. While topic modeling is increasing in use (Banks et al., 2018; Hannigan et al., 2019; Schmiedel, Müller, & vom Brocke, 2019), no CSR studies to date have used topic modeling to investigate actual recruiting messages. Recruiting messages displayed on websites are among the first signals a firm sends to potential applicants (Banks et al., 2019). These early signals help potential applicants form impressions about organizations and available positions, which influences their decision to apply (Breaugh & Starke, 2000).

CSR-related website text was scraped from recruitment websites of Fortune 500 firms and a taxonomy of their CSR activities was developed. The Fortune 500 list is a set of publicly available data published annually by *Fortune Magazine* representing the 500 firms in the United States with the highest revenue from their respective fiscal years. It includes both publicly held firms and privately held firms with publicly available revenues ("Fortune 500 Companies 2017," 2017). This list also includes publicly available information used for the correlate portion of this study. The final sample size of (n = 91) Fortune 500 firms was chosen by incrementally adding data until saturation was reached (Herndon & Kreps, 1993). Saturation is defined here as the point at which no new insights are generated and additional information becomes redundant. Data collection was complete when no new or novel topics emerged and the research team was able to determine the number of topics and label them (Becker, Ellevold, & Stamp, 2008; Charmaz, 2006; Glaser, 1999; Glaser & Strauss, 1971). The list was first randomized to ensure even representation. Firms were then added in increments of 50 until saturation was reached. Topic modeling was run after each increment of 50 firms to see if conclusions changed significantly. This sample represented a large enough portion of the Fortune 500 list to include sufficient variation in how CSR practices are presented on websites by top-performing firms.

In order to address the last research question and attain a potentially statistically significant correlation between CSR signals and other correlates (e.g., the industry sector of each firm, the publicly available profits of each firm, the number of employees at each firm, and the amount of information provided on each firm's CSR webpages), a power analysis was conducted a priori. Input parameters were a 2-tailed test with a moderate

effect size of .3 and an alpha of .05. Results of the power analysis indicated to achieve a power of at least .8, a sample size of 82 was required. This sample size was required to correctly reject the null hypothesis and find a statistically significant relationship. Thus, the sample of 91 was sufficient not only for saturation, but also for power to detect significant relationships. Data collection began by visiting general "Careers" or "Jobs" recruitment pages ("splash pages") of Fortune 500 firms, as these pages represent potential applicants' first introduction to organizations' online recruiting efforts (Banks et al., 2019). CSR-related text was web scraped from both main recruitment site pages and pages the main pages linked to. Following recommendations from Banks et al. (2018), pilot data were collected from ten recruitment websites and preliminary analyses were conducted to determine what qualified as "CSR-related text." Examples of CSR-related words are "sustainability," "outreach," "giving," "responsibility," and "community support."

As the focus of this study was on firm-level signals, text such as links to external sites, event information, and information about specific jobs was excluded (Banks et al., 2019). All text from CSR-related pages on each organization's recruitment website was collected. Next, all CSR-related hyperlinks on those pages were opened and text on those subsequent pages was recorded. In accordance with recommendations from Banks et al. (2018) and drawing upon signaling theory (Connelly et al., 2011), CSR-related text was collected from only these first and second level recruitment webpages, because signals on third level webpages are less salient to potential applicants. When CSR-related links linked to CSR-related links on the main webpage, text was gathered from the indicated links. When firms had CSR-related links on the main webpage and not within the main

recruitment link, text was gathered from the CSR-related link on the main webpage. When only a portion of a webpage was CSR related, only CSR-related text was collected. Text aggregated from these sources cumulatively represents the primary and most prominent signals sent to potential applicants because of their proximity to the beginning of the job search process (Bowen & Ostroff, 2004; Breaugh, 2013; Ostroff & Bowen, 2016). Seven of the 100 firms in the original research sample lacked CSR-related information and were excluded from analyses. Two firms in the remaining research sample made up 66 % of the total text collected. Analyses found inclusion of these two influential firms to dramatically change conclusions. These firms were treated as outliers and excluded from the final research sample. Removal of these two firms brought the final research sample down to 91 firms.

3.3 Analysis

3.3.1 Pre-processing website text

Website text was pre-processed to prepare the data for later analyses. Pre-processing is an exploratory, iterative phase comparable to data cleaning in quantitative analyses (Banks et al., 2018). It includes eliminating invalid records, tokenization (i.e., reducing text to individual words or "tokens"), cleaning of text (i.e., creating lower case tokens and removing punctuation and white space), stemming (i.e., reducing words to their roots), and considering the use of n-grams (e.g., including "North Carolina" as one token instead of "North" and "Carolina") (Banks et al., 2018; Jurafsky, 2016). Pre-processing also includes evaluation and removal of stop words (i.e., words that occur too frequently to add value in topic identification) and sparse terms to reduce random noise in the results. Stop words include words such as "and" and "the" (Schofield & Mimno,

2016). Examples of stop words removed during analyses include “can,” “since,” “like,” “also,” “three,” “please,” and “overall.” The full list is presented in the online appendix. Sparse terms are defined as words that appear infrequently or are otherwise idiosyncratic or meaningless (Banks et al., 2018). Once data were pre-processed, further analyses were conducted. These analyses are organized by research question.

3.4 RQ1a: What CSR-related signals appear in organizations’ recruitment initiatives?

3.4.1 Topic Modeling

Topic modeling was conducted to examine topics that emerged from the data, in an iterative process. Topic modeling is a “framework of unsupervised machine learning algorithms that identify clusters of words that co-occur together” that allows researchers to analyze empirically driven word lists and enhances the interpretability of topics (Banks et al., 2018, p. 454). Latent Dirichlet Allocation (LDA; Blei, 2012; Blei, Ng, & Jordan, 2003) was used to quantify qualitative data collected and measure latent topics on recruitment websites of firms.

The use of topic models is based on the assumption that text is produced by latent probabilistic variables, which are understood as topics. Topic modeling was chosen as an alternative to other qualitative methods because it incorporates both a qualitative human element and a quantitative machine element. The qualitative element involves choices made during data collection and interpretation and assignment of labels and definitions to topics that emerge. Few assumptions precede the process, as the data lend themselves to the visualization and interpretation of latent topics. The quantitative element involves the use of topic modeling software to count words that make up latent topics in collected text.

The use of topic modeling allows for a mixed-methods approach that draws upon benefits of qualitative content analysis (QCA). This study blends best practices for constant comparative analysis with CATA. CATA is more appropriate for this study than QCA because it allows for a more systematic process that limits random error. Systematic mapping of words onto topics allows for more reproducible findings (Quinn, Monroe, Colaresi, Crespin, & Radev, 2010). That is, independent researchers could more easily achieve similar results with this method. In addition, while purely computational methods are often unsuitable for more thorough and meaningful interpretation, this mixed methods approach allows for a more interpretive relationship with the data (Nelson, 2017). Finally, while QCA works well for smaller samples, this sample is large enough that topic modeling is appropriate (Quinn et al., 2010).

LDA is one kind of topic modeling used to measure latent topics on webpages. It involves application of a Bayesian hierarchical mixture model to determine emerging topics by drawing upon co-occurrence among words. The model has three key properties, which characterize terms. The first is a document-term matrix that requires specifying the number of topics and quantifies the appearance of each term by document (Banks et al., 2019). The second is a Bayesian mixture model, which includes probability distributions of topics. The LDA algorithm summarizes information by reducing word counts in each document from a larger number to a smaller number of columns (Crain, Zhou, Yang, & Zha, 2012), which leads to the model's first output which is a document-topic matrix in which each document is scored as a probability across identified topics. The third property of the model is that it includes a hierarchy of two probability mixtures, so it can be considered as a hierarchical mixture model consisting of a mixture of topics at the top

and a mixture of words at the bottom (Banks et al., 2018). Topics are each defined as a unique distribution of words, yielding a word-topic matrix. This matrix, the second output of LDA, delivers a conditional probability for each word based on the corresponding topic. Words are rank-ordered by topic to find the most common words (tokens) within each topic (Banks et al., 2018). To examine emerging topics, these frequently occurring words can be identified by looking at top words appearing for each topic, how topics are related, word clouds for each topic, and the most representative documents (Banks et al., 2019). Word clouds from analyses were generated in R and presented in Figures 1a, 1b, 1c, 1d, 1e, and 1f. Finally, to have a full understanding of topics that emerged, the network structure of topics was examined to see how correlated topics were in the network (Banks et al., 2018; Blei, 2012).

[Please insert Figures 1a, 1b, 1c, 1d, 1e, and 1f about here]

In order to inductively label and define the topics that emerged from the analyses, topics were examined in an iterative process with the goal of achieving interpretability, conceptual sense, and parsimony (Banks et al., 2019). A continuous comparative analysis was conducted between data collected and emerging topics, as well as back to CSR literature in an iterative process (Strauss & Corbin, 1990). Topics represented were given labels and definitions that represented the data (Cowan & Fox, 2015) with the goal of confirming that emerging topics represented the data. Next, the research team independently selected words for inclusion in the word lists, Cohen's kappa was calculated for inter-rater reliability, and discrepancies were settled through discussion (Short et al., 2010). Across a sub-set of 100 words, there was 93% agreement on which words should be included in and excluded from the final word lists. This resulted in a

Cohen's kappa of .86, which is considered at the high end of the acceptable range for values of Cohen's kappa (Fleiss, 1981). To help establish face validity, after the research team reached consensus, an independent audit (Creswell & Miller, 2000) was performed by asking subject matter experts to independently review construct definitions and word lists.

3.5 RQ1b: How much emphasis do organizations place on these signals?

Signal strength was operationalized by dividing the total number of words on a website for a given signal by the total number of words on the website, in order to control for the quantity of text on websites (Short et al., 2010). Scale scores were calculated using DICTION. This resulted in an estimate of the relative importance of a signal compared to the total text on a website. A high scale score for a topic means a firm signals that topic more heavily relative to other website. This estimate, or signal strength, represents the extent to which firms emphasize a given signal (Banks et al., 2019).

3.6 RQ2: To what extent do CSR-related signals relate to each other?

In order to determine the extent to which CSR-related signals relate to each other, a correlation matrix of these signals was examined. In order to establish trustworthiness of the findings, inter-rater reliability was calculated with scale scores using Cohen's Kappa.

3.7 RQ3: What are the correlates of CSR signals?

In order to determine correlates of CSR signals for firms in the sample, the industry sector of each firm, publicly available profits of each firm, number of employees at each firm, amount of information provided on each firm's CSR webpages, and types of CSR signals sent by each firm were analyzed. Initially, the industry sector of each firm

was captured from the 2017 Fortune 500 list. The Fortune 500 list categorizes firms into 20 sectors. Next, a set of the following higher-level industry sector categories was formed, informed by profit share by sector, for further analyses: 1 = Financials and Business Services; 2 = Technology and Telecommunications; 3 = Energy; 4 = Health Care; 5 = Industrials and Transportation (Aerospace & Defense, Chemicals, Engineering & Construction, Industrials, Materials, Motor Vehicles & Parts, and Transportation); and 6 = Consumer Services (Apparel, Food & Drug Stores, Food, Beverages, & Tobacco, Hotels, Restaurants & Leisure, Household Products, Media, Retailing, and Wholesalers).

CHAPTER 4: RESULTS

In total, 106,335 words, consisting of 589,394 characters of text from 91 Fortune 500 firms, were analyzed. The mean number of words for each firm was 1,168.52, and the standard deviation was 1,477.19.

4.1 RQ1a: What CSR-related signals appear in organizations' recruitment initiatives?

In total, five CSR signals were identified from websites of the Fortune 500 firms in the research sample. The CSR signals along with their operational definitions and word lists that resulted from analyses are presented in Table 1. These signals are Local Stakeholder Support, Research and Technology, Energy, Environmental Impact, and Corporate Governance.

[Please insert Table 1 about here]

Originally, the most parsimonious topic model output consisted of six topics. This six-topic solution made the most sense of the original output from an interpretation standpoint. Through the iterative process of writing topic definitions and word lists, the research team found some discrepancies between topics. After the research team discussed the output with the goal of settling those discrepancies, a consensus was reached regarding the degree of overlap between two of the CSR signals. While the first iteration of the signal categorization process included a sixth Sustainability signal, it was later decided to absorb this signal into the Environmental Impact signal category. This final five-topic solution incorporated the original Sustainability topic into the Environmental Impact topic because the two topics appeared to inextricably linked. The Sustainability signal involved the preservation of natural resources with the goal of

maintaining an ecological balance, while the Environmental Impact signal appeared to center around the concept of businesses causing adverse effects on the environment through the course of their business practices. These signals both took a long-term perspective on the maintenance of natural resources and the environment. Ultimately, sustainable operations support the environment both in the present and the foreseeable future by preventing the depletion of natural resources (Shrivastava, 1995). Thus, the decision was made to incorporate the Sustainability signal into the Environmental Impact signal category. The five CSR signals are detailed below.

4.1.1 Local Stakeholder Support

Local Stakeholder Support emerged as one of the key CSR signals on Fortune 500 firms' webpages. Local Stakeholder Support signals that a firm engages in activities that support the health and well-being of employees within the firm as well as the overall local community, including volunteering, service, focusing on safety, providing resources, and giving to charity. Here are some examples from the data of Local Stakeholder Support statements:

> At Toll Brothers, we know that a community is made up of more than houses, and that it is only as strong as the people in it. When we build a new community, we believe in adding something vital to the area, something that measurably contributes to the lives within the community in a positive and dynamic way. We take our social responsibility to heart, and we believe in corporate community responsibility. That's why each member of our team takes an active role in giving back to the neighborhoods we build. This commitment is given life through Toll Brothers' ongoing involvement in local community organizations.

> Spectrum is committed to improving communities and impacting lives where our customers and employees live, work and play. Our trusted partners allow us to bring help to those who need it. Rebuilding Together transforms the lives of low-income homeowners by improving the safety and health of their homes and revitalizing our communities. Better Family Life works to establish social, cultural, artistic, youth, economic, housing and educational programs that help promote positive and innovative changes in the lives of individuals and their

> families. Partnership Highlights Spectrum partners with Better Family Life to provide resources and community outreach to support its mission of building trust and improving communities in St. Louis.

These statements signal Local Stakeholder Support by focusing on activities that serve both local communities and employees within the Fortune 500 firms. They illustrate that these companies care about their local stakeholders. This signal from the data appears to be consistent with the CSR literature, which includes a CSR dimension that focuses on local stakeholders and local community needs (e.g., Matten & Crane, 2005; Warhurst, 2001).

4.1.2 Research and Technology

Another signal that emerged from the data was Research and Technology. This signals that a firm engages in activities that invest in research, technology, and education in order to provide current and future stakeholders with safe and advanced products and/or services. An example of this CSR signal is the following statement by one Fortune 500 firm:

> We believe that our technology has the power to help people lead better lives, solve problems in new ways and create lasting value both for Verizon and for society. And when we use our resources to make the world a better place, we also create growth opportunities for Verizon. We don't wait for the future. We build it. In order to compete for the jobs of the future, it's essential for every kid to have access to technology and STEM (science, technology, engineering and math) education. With about 9 million available STEM jobs – and over 4 million available jobs in science and technology alone – our youth need access to education and resources that will prepare them for success in tomorrow's high-tech world. That's why Verizon is giving free technology, free access, and immersive, hands-on learning to kids in need. We need more kids to see the world of possibilities waiting for them.

This statement signals Research and Technology by focusing on activities that invest in technology and education. It illustrates that this company cares about how funding and advocating for research and technology can create value, help prepare for an

increasingly high-technology world, and improve lives. This signal from the data also appears to be consistent with the CSR literature. Though the topic is less prevalent than other CSR dimensions, the literature does include a CSR dimension that focuses on technological advancements, research, and education (e.g., Burke & Logsdon, 1996; Carroll, 1999; Warhurst, 2001).

4.1.3 Energy

Energy also emerged as a dominant CSR topic signaled by firms. It signals that a firm engages in activities that are energy efficient and/or focuses on sources of renewable energy and the reduction of waste and carbon emissions. Here are some examples of Energy statements from the webpages of Fortune 500 firms:

> We continue to drive innovation in our products, technologies, and services to reduce energy consumption and improve productivity for our customers. Automation Solutions introduced the Plantweb™ digital ecosystem which links our digital plant architecture for process control, safety and asset management with the power of the Industrial Internet of Things (IIoT). This helps to deliver improved performance in safety, reliability, production and energy use for our industrial customers. Emerson Commercial & Residential Solutions is working with the commercial refrigeration industry on systems that use more environmentally-friendly refrigerants. They are also working with customers in China to switch from local coal-fired, smog-producing boilers for residential heating to the use of modern energy-efficient electric heat pumps.

> As the leading listing and trading venue for global energy companies and commodities markets, our global range of products continues to grow to meet greater customer demand. Today, we offer more than 1,000 energy contracts across oil, natural gas and power and list 98% of publicly-traded energy companies, by market cap. As a complement to the broad range of energy products traded on our markets, we offer a slate of environmental contracts that support programs established to reduce carbon emissions and encourage the use of renewable energy. ICE lists futures and options contracts in the U.S. and Europe that are based on government programs that seek to reduce greenhouse gas emissions and increase the use of renewable forms of energy, such as wind and solar.

These statements signal Energy by focusing on activities that reduce carbon emissions and are energy efficient. They illustrate that these companies care about sources of renewable energy and the reduction of greenhouse gas emissions. This signal from the data appears to be consistent with the CSR literature, which includes a CSR dimension that focuses on energy consumption, emissions, and efficiency (e.g., Korhonen, 2003; Székely & Knirsch, 2005; Tate, Ellram, & Kirchoff, 2010).

4.1.4 Environmental Impact

Environmental Impact was also one of the key signals in the data. This signals that a firm engages in activities that limit the adverse environmental impacts of their business practices and enhance any positive impacts, including engaging in sustainable practices that are considerate of future generations and stakeholders. For example, here are two Environmental Impact statements from the data:

> We have demonstrated our commitment to environmentally responsible operations by reducing our impact on the environment in multiple areas of our global business. Sustainable operations are a wise investment, improving efficiency and creating value. We report on specific targets we've set for environmental conservation and improvements. We also measure our overall energy and carbon, water, waste, and U.S. sales fleet fuel efficiency performance and share this data. We are committed to practices that strengthen our business while reducing our environmental impact. We're implementing more environmentally responsible approaches in alignment with our business goals. We take action to improve our environmental footprint. We're proud to report in alignment with respected global standards.

> We recognize there is a significant opportunity to reduce, reuse and recycle the plastic, aluminum and other materials we use to put our products in the hands of our consumers. In 2013 we exceeded two of our environmental goals by conserving 60.7 million pounds of PET through light-weighting and packaging redesigns since 2007 and replacing nearly 69,000 outdated coolers and vendors with more energy-efficient equipment since 2009. Protecting and sustaining the environment is at the heart of our corporate social responsibility program. DPS is committed to putting sustainability into action through our environmental initiatives under our philanthropy program. We've partnered with Keep America

> Beautiful and The Nature Conservancy to help with efforts protecting our environment and conserving natural resources.

These statements signal Environmental Impact by focusing on activities that serve both current and future stakeholders through environmental initiatives. They illustrate that these companies care sustainability, the preservation of natural resources, and future stakeholders. This signal from the data appears to be consistent with the CSR literature, which includes a CSR dimension that focuses on sustainability and the environment (e.g., Marsden, 2000; O'Connor & Gronewold, 2013; Orlitzky, Siegel, & Waldman, 2011).

4.1.5 Corporate Governance

The final signal that emerged in the data was Corporate Governance. This signals that a firm engages in ethical governance and management practices to ensure compliance with socially responsible standards and ensure that risks are adequately managed. An example of this CSR signal is the following statement by one Fortune 500 firm:

> Fluor strives to move beyond compliance with laws and regulations, approaching ethics issues proactively. We continually improve and enhance our ethics and compliance program by monitoring evolving risks and benchmarking best practices in our company, our industry and the global business community. Ethical Leadership In a recent survey of global Clients, "ethical" was one of the three unsolicited terms cited most frequently as being associated with Fluor. Throughout Fluor's history, we have made ethical conduct a priority. We believe this is largely due to the fact that integrity has been one of the company's enduring values. Fluor aims to instill a strong ethical standard into its business culture. Our leadership continuously expresses the critical importance that ethical conduct and anti-corruption plays for the success of every employee and business partner, the growth of our company and the benefit of all our stakeholders.

These statements signal Corporate Governance by focusing on ethical conduct, integrity, and business activities that are compliant with laws and regulations. They illustrate that this company cares about monitoring risks and maintaining ethical business

practices. This signal from the data appears to be consistent with the CSR literature, which includes a CSR dimension that focuses on ethical governance practices (e.g., Carroll, 1999; Donaldson & Preston, 1995).

In summary, topic modeling revealed that the above signals emerged from the sample of Fortune 500 firms. These signals appear to align into five main categories. It is evident Fortune 500 firms standardize and send many of the same types of CSR signals to potential applicants, indicating some degree of institutional isomorphism across Fortune 500 firms.

4.2 RQ1b: How much emphasis do organizations place on these signals?

The means and standard deviations among CSR signals are presented in Table 2. The means in this table represent the average number of words for a given signal divided by the total number of words used on the website. This is in an estimate of the signal strength, or relative importance of a signal compared to the total text on a website (Banks et al., 2019; Short et al., 2010). A higher scale score for a certain topic means a firm signals that topic more heavily relative to the other text on a website.

[Please insert Table 2 about here]

The CSR signal with the highest level of emphasis was Corporate Governance (M = .09, SD = .49), followed by Local Stakeholder Support (M = .08, SD = .33), Environmental Impact (M = .06, SD = .17), Research and Technology (M = .02, SD = .03), and Energy (M = .02, SD = .04). These findings indicate Fortune 500 firms emphasize Corporate Governance more than the other CSR signals, and Research and Technology and Energy the least of the CSR signals.

4.3 RQ2: To what extent do CSR-related signals relate to each other?

As mentioned previously, in order to examine the extent to which CSR-related signals relate to each other, correlations among the signal strengths of the Fortune 500 firms' CSR signals were examined. Stronger correlations indicate higher consistency between CSR signals manifested on firms' CSR webpages, while weaker correlations suggest the signals are less related. Correlations among CSR signals are presented in Table 2. Findings show that correlations between the strengths of the signals, such as Local Stakeholder Support and Environmental Impact (r = .94, p = .000), Local Stakeholder Support and Corporate Governance (r = .99, p =.000), Research and Technology and Energy (r = .64, p =.000), and Environmental Impact and Corporate Governance (r = .94, p =.000), all were statistically significant and large in magnitude (Bosco, Aguinis, Singh, Field, & Pierce, 2015). This suggests a high degree of consistency between these signals. In several cases, correlations are very close to 1.0, indicating a very high degree of similarity between signals. Findings also show the correlation between the signal strengths of Energy and Environmental Impact (r = .25, p = .019) was statistically significant and lower in magnitude, suggesting these signals are related, but to a lesser extent than other combinations. Correlations between signal strengths of the other combinations of signals, such as Local Stakeholder Support and Research and Technology (r = .03, p =.791), and Energy and Corporate Governance (r = -.01, p =.906), all were weaker and not statistically significant. The lack of correlation between CSR signals suggests they are not related.

4.4 RQ3: What are the correlates of CSR signals?

As discussed above, in order to determine the correlates of CSR signals for the firms in the sample, the industry sector of each firm, the publicly available profits of each firm, the number of employees at each firm, the amount of information provided on each firm's CSR webpages, and the types of CSR signals sent by each firm were analyzed. The means, and standard deviations, and correlations of the publicly available profits of each firm, the number of employees at each firm, the amount of information provided on each firm's CSR webpages, and the types of CSR signals sent by each firm are presented in Table 2.

In order to test the role the industry sector of each firm plays in the types of signals firms are sending, independent samples t-tests were conducted for all sectors and CSR signals. Industry sectors were not statistically significantly related to any of the CSR signals sent by each firm. Further, the effect sizes for comparisons between sector categories did not exceed Cohen's (1998) convention for a large effect (d = .80), suggesting a low practical significance of these findings, with only two exceptions. The Energy sector category and the Health Care sector category had a moderately practically significant difference in Corporate Governance signals ($t(8) = 1.65$, $p = .121$; $d = 0.80$), indicating the Energy sector category emphasizes Corporate Governance to a greater extent than the Health Care sector category does, and the Health Care sector category and the Industrials and Transportation sector category had a moderately practically significant difference in Energy signals ($t(9) = 1.60$, $p = .122$; $d = 0.64$), indicating the Health Care sector category emphasizes Energy to a greater extent than the Industrials and

Transportation sector category does. Overall though, the Fortune 500 firms appear to be sending the same CSR signals.

Profits were not significantly correlated with the amount of information provided on each firm's CSR webpages or the types of CSR signals sent by each firm. The number of employees at each firm did appear to play a role in what types of signals firms are sending. The correlations between the number of employees at each firm and the CSR signals Research and Technology (r = .52, p = .000) and Energy (r = .70, p =.000) were both statistically significant with effect sizes that were large in magnitude. The amount of information provided on each firm's CSR webpages also appeared to play a role in the types of signals firms are sending. The correlation between the total number of words on each firm's CSR webpages and the CSR signals Research and Technology (r = -.37, p = .000) and Environmental Impact (r = -.22, p =.035) were both statistically significant with effect sizes that were moderate in magnitude, and the correlation between the total number of words on each firm's CSR webpages and the signal Energy (r = -.23, p = .029) was statistically significant with an effect size that was small in magnitude. The relationships between CSR signals and other correlates were all weaker and not significant, indicating these factors do not play a role in the types of signals firms are sending.

CHAPTER 5: DISCUSSION

The literature has shown CSR initiatives play a key role in applicant attraction (Jones et al., 2014). However, less research has focused on what firms signal regarding their CSR initiatives. Little is understood about how firms send multiple and potentially competing signals to applicants (Rynes et al., 1991). In order to deepen the understanding of signaling, CSR, and recruitment, this study examined a total of 106,355 words from the CSR webpages of 91 Fortune 500 firms to discover how companies signal CSR initiatives to applicants. The following sections discuss the key findings along with limitations and directions for future research.

5.1 Key Findings

5.1.1 Taxonomy of CSR Signals

In order to determine what CSR-related signals appear in Fortune 500 firms' recruitment initiatives, a mixed-methods design incorporating CATA and the qualitative interpretation of latent topics in website text was used. A taxonomy of CSR activities on the part of firms was developed from the results in order to determine which kinds of CSR signals firms are sending out to applicants and other stakeholders. Five CSR signals were identified from the webpages of the Fortune 50 firms: Local Stakeholder Support, Research and Technology, Energy, Environmental Impact, and Corporate Governance. Several insights arose during the analysis of these signals.

First, it appeared that the CSR signals that manifested on the websites of Fortune 500 firms diverged to some degree from the academic literature on CSR. As practical manifestations can differ from academic definitions, it is worth noting what did not emerge as prominent signals in these findings. As CSR is socially constructed in specific

contexts (Dahlsrud, 2008), the omission of these signals on the webpages of Fortune 500 companies suggests there may be reasons why these signals are not emphasized. For example, the CSR literature often includes a social component that focuses on the relationship between business and the larger global society (Carroll, 1999; Dahlsrud, 2008; Jenkins, 2004), but this dimension of CSR did not emerge as a prominent signal on the webpages of Fortune 500 firms. The academic literature also includes an economic component of CSR that focuses on the financial aspects of business operations and the preservation of profitability (Dahlsrud, 2008; Hopkins, 2004; Kraus & Brtitzelmaier, 2012), but this dimension also did not emerge as a prominent CSR signal in the sample. There are CSR signals that emerged that are less congruent with the literature than others. Some CSR signals are not mentioned enough on Fortune 500 firms' websites to be considered as prominent signals in practice, whereas some signals that do manifest on firms' CSR webpages are far less prevalent in the literature than others (e.g., Research and Technology), indicating a divergence between practice and the literature. This is critical information for future research, as it may aid in the reduction of the science-practice gap (Banks et al., 2016).

It is plausible that Fortune 500 firms perceive the CSR signals found in this study to be the most effective in attracting potential applicants, and therefore choose to emphasize these CSR signals. This may have practical implications for research on signaling theory as it applies to firms' online recruitment efforts and may inform which recruiting signals should be focused on in future research on CSR in the recruiting context. Future research should further examine how CSR dimensions signaled to applicants differ from those signaled to other stakeholders.

5.1.2 Model of CSR Signals

Second, these findings can be illustrated in a model that draws on signaling theory and presents a view of the prominent CSR dimensions signaled to applicants by Fortune 500 firms. Consistent with stakeholder theory (Harrison, Bosse, & Phillips, 2009), the model is organized into a series of concentric circles. These range from CSR signals at the center of organizational functioning and responsibilities, which affect the least dispersed set of stakeholders, to those in the farthest circles that are more distant from traditionally expected organizational responsibilities and affect a more dispersed set of stakeholders. Larger circles should not be interpreted to incorporate smaller circles or to symbolize greater importance; they merely indicate decreasing levels of centrality to the firm's organizational functioning and responsibilities. This model is presented in Figure 2. Signals of Corporate Governance are located toward the center of the model, as this signal can be conceptualized as closest to the center of organizational functioning and stakeholders affected by this facet of organizational functioning are more centrally located. In contrast, Environmental Impact is located in the largest concentric circle, as this signal can be conceptualized as most distant from traditionally expected organizational responsibilities and stakeholders affected by this facet of organizational functioning are the most dispersed. This model both draws on and advances theory in presenting a way to view prominent CSR dimensions signaled to applicants by Fortune 500 firms.

[Please insert Figure 2 about here]

5.1.3 Emphases of CSR Signals

Corporate Governance and Local Stakeholder Support were emphasized to a greater degree than other CSR signals. Environmental Impact was emphasized more than Research and Technology, and Energy was emphasized least of the CSR signals. This may indicate Fortune 500 firms perceive the most emphasized CSR signals to be most effective in attracting potential applicants and therefore choose to emphasize these signals above others. It is plausible that applicants may be most concerned with the degree to which firms follow ethical business management practices and adhere to socially responsible workplace standards, as these signals may indicate a lawful, stable workplace with fewer risks. Some signals may be valued more or less by different applicants or types of applicants. Future research should examine how applicants assign value to different CSR-related recruitment signals.

5.1.4 Relations Between CSR Signals

The large magnitudes of the correlations between strength of some of the CSR signals provide evidence of consistency between signals. Local Stakeholder Support and Environmental Impact, Local Stakeholder Support and Corporate Governance, Research and Technology and Energy, and Environmental Impact and Corporate Governance were all highly correlated. This indicates a high degree of similarity between these signals. This finding may have important practical implications, as it provides evidence that the dimensions of CSR can be difficult to disentangle in practice. The qualitative component of this mixed-methods study allowed for a more thorough and sensitive examination of the CSR topics that emerged from the data. This led to novel insights about the manifestation of CSR signals on Fortune 500 firms' webpages, which enabled the

development of a taxonomy of CSR signals. Ultimately, these findings contribute to a more thorough understanding of the factors that affect applicant perceptions in the earlier stages of recruitment.

5.1.5 Correlates

Finally, this study explored potential correlates of CSR signals. Profits were unrelated to the types of CSR signals sent by each firm. This provides evidence that wealthier firms do not prioritize different CSR signals than less wealthy firms. The number of employees at each firm was statistically significantly related to signals of Research and Technology and Energy, and the amount of information provided on each firm's webpages was statistically significantly related to signals of Research and Technology and Environmental Impact. The industry sector categories were not statistically significantly related to the types of CSR signals sent by Fortune 500 firms. In most all cases, effect sizes for comparisons between sector categories were very small, suggesting a low practical significance of these findings, with two exceptions. Findings indicated the Energy sector category emphasizes Corporate Governance to a greater extent than the Health Care sector category does, and the Health Care sector category emphasizes Energy to a greater extent than the Industrials and Transportation sector category does. These findings provide some evidence firms in certain industries may prioritize certain CSR signals over others. CSR signals may be more central to organizational functioning in certain industries. It is also plausible that firms in different industries have different conceptualizations of which CSR signals potential applicants value.

Overall, Fortune 500 firms appear to be sending many of the same CSR signals. These findings indicate some correlates may play a role in the types of CSR signals firms are sending. These findings may also indicate that while there are a few differences between industries, there is some degree of institutional isomorphism across industries. This study examined three possible variables that may affect the CSR signals sent by firms. It is important to note that it is not possible to make causal inferences from these findings. Future studies should consider additional correlates of CSR signals.

5.2 Limitations and Future Directions

First, while the CATA method in this study has several advantages over other common content analysis methods, it also has limitations. Topic modeling requires more input and interpretation from the researcher after the quantitative analysis portion is completed (Quinn et al., 2010). This means the researcher must invest time validating the results of the study because no substantive information is built into the topic models. The researcher must establish credibility of the results through independent audits or other methods. However, this process does allow for the CATA method to be used as a valuable investigative tool. It is this exploratory nature of topic modeling that allows new understandings CSR signal manifestation to emerge.

Second, the focus of this study was on website text specifically, rather than images or videos embedded on CSR webpages. While the amount of text collected was large, totaling 106,335 words, future research should also investigate images, videos, and other methods of delivering CSR signals to job applicants via webpages. While text was the most prominent and consistent form of signaling on the webpages, the constantly evolving nature of information delivery on websites warrants the development of

additional methods that capture these additional signaling formats. This study also focused exclusively on Fortune 500 firms. It is not clear the extent to which these findings may generalize to the CSR activities of other types of firms such as non-profit, government, or international organizations.

Third, the practical manifestation of a certain CSR signal does not necessarily translate into the practical manifestation of that CSR initiative. It is possible firms may signal certain CSR initiatives without engaging in those CSR initiatives. While this study focuses on understanding the factors that affect applicant perceptions in the earlier stages of recruitment, future studies should examine the effects of false CSR signaling on applicant perceptions during the later stages of the recruitment process, such as the job offer acceptance stage.

Finally, it is not known how applicants compare CSR-related recruitment signals to other recruitment signals like compensation or type of work, or the extent to which applicants make actual employment decisions based upon these signals. Future research could investigate these questions through the development of an interactive recruitment website that tracks mouse clicks on various webpage links, and ultimately by tracking actual applicants through the recruitment process to discover how these signals link to actual recruitment outcomes. Research investigating these links between recruitment signals, processes, and outcomes could further contribute to the reduction of the gap between science and practice (Banks et al., 2016).

5.3 Conclusions

CSR is one means to attract applicants and attain human capital, which creates value for firms (Cable & Turban, 2001, 2003; Greening & Turban, 2000). By

investigating the characteristics of Fortune 500 firms' CSR signals such as the strengths and types of signals, this research helps to close gaps in the understanding of signaling theory and the early stages of recruitment. This study interprets latent topics in website text to determine what kinds of CSR signals Fortune 500 firms are sending, the correlates of CSR signals, the relations between different CSR signals, and the emphasis firms place on various CSR signals. This information aided in the development of a taxonomy of the CSR-related signals on Fortune 500 firms' websites and helps provide a more balanced perspective on how top firms' CSR signals manifest in practice. This study found differences between dimensions of CSR emphasized in academic literature and dimensions of CSR emphasized in practice. This research informs which recruiting signals should be focused on in future research on CSR in the recruiting context and provides a foundation for follow-up studies on how these signals affect how applicants interpret and respond to CSR initiatives.

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Table 1
Corporate social responsibility signals sent by Fortune 500 firms (n = 91)

Recruiting Signal	Definition	Content Analysis Words with Expert Validation
1. Local Stakeholder Support	Signals that a firm engages in activities that support the health and well-being of employees within the firm as well as the overall local community, including volunteering, service, focusing on safety, providing resources, and giving to charity.	care, charitable, children, communities, community, contributions, culture, donations, employee, families, food, foundation, funding, giving, groups, health, help, hunger, local, partner, people, resources, serve, service, social, support, together, volunteer, volunteering
2. Research and Technology	Signals that a firm engages in activities that invest in research, technology, and education in order to provide current and future stakeholders with safe and advanced products and/or services.	better, education, engineering, funding, future, goal, grants, improve, innovative, learn, learning, new, performance, possibilities, product, products, quality, research, safe, safety, scholarships, schools, science, solutions, students, technology
3. Energy	Signals that a firm engages in activities that are energy efficient and/or focuses on sources of renewable energy and the reduction of waste and carbon emissions.	air, consumption, efficiency, electric, emissions, energy, gas, greenhouse, heat, manufacturing, operate, operations, power, process, processes, production, reduce, reducing, renewable, supplier, suppliers, waste
4. Environmental Impact	Signals that a firm engages in activities that limit the adverse environmental impacts of their business practices and enhance any positive impacts, including engaging in sustainable practices that are considerate of future generations and stakeholders	benefits, chain, climate, commitment, design, drive, environment, environmental, footprint, global, impact, impacts, international, life, lives, materials, packaging, planet, progress, recycling, reduce, reduction, resources, stakeholders, strategy, supply, sustainability, sustainable, vision, water, world
5. Corporate Governance	Signals that a firm engages in ethical governance and management practices to ensure compliance with socially responsible standards and ensure that risks are adequately managed.	business, businesses, citizenship, compliance, customers, ethical, ethics, initiatives, integrity, leadership, organizations, report, responsible, right, rights, standards, values, work, workforce, workplace

Table 2

Means, standard deviations, and correlations of signal strengths

Variable	Mean	SD	1	2	3	4	5	6	7
1. Local Stakeholder Support	.08	.33	-						
2. Research and Technology	.02	.03	.03 (.791)	-					
3. Energy	.02	.04	-.032 (.766)	.64 (.000)	-				
4. Environmental Impact	.06	.17	.94 (.000)	.16 (.130)	.25 (.019)	-			
5. Corporate Governance	.09	.49	.99 (.000)	-.04 (.744)	-.01 (.906)	.94 (.000)	-		
6. Profits (in millions of dollars)	1,960.52	3,083.53	-.06 (.607)	.12 (.246)	.19 (.075)	.02 (.870)	-.04 (.719)	-	
7. Employees	74,122.89	244,728.36	-.03 (.800)	.52 (.000)	.70 (.000)	.16 (.134)	.00 (.982)	.50 (.000)	-
8. Total Words	1,168.52	1,477.19	-.16 (.127)	-.37 (.000)	-.23 (.029)	-.22 (.035)	-.12 (.253)	.03 (.814)	-.02 (.849)

Note. $N = 91$; Exact p values are provided (two-tailed tests).

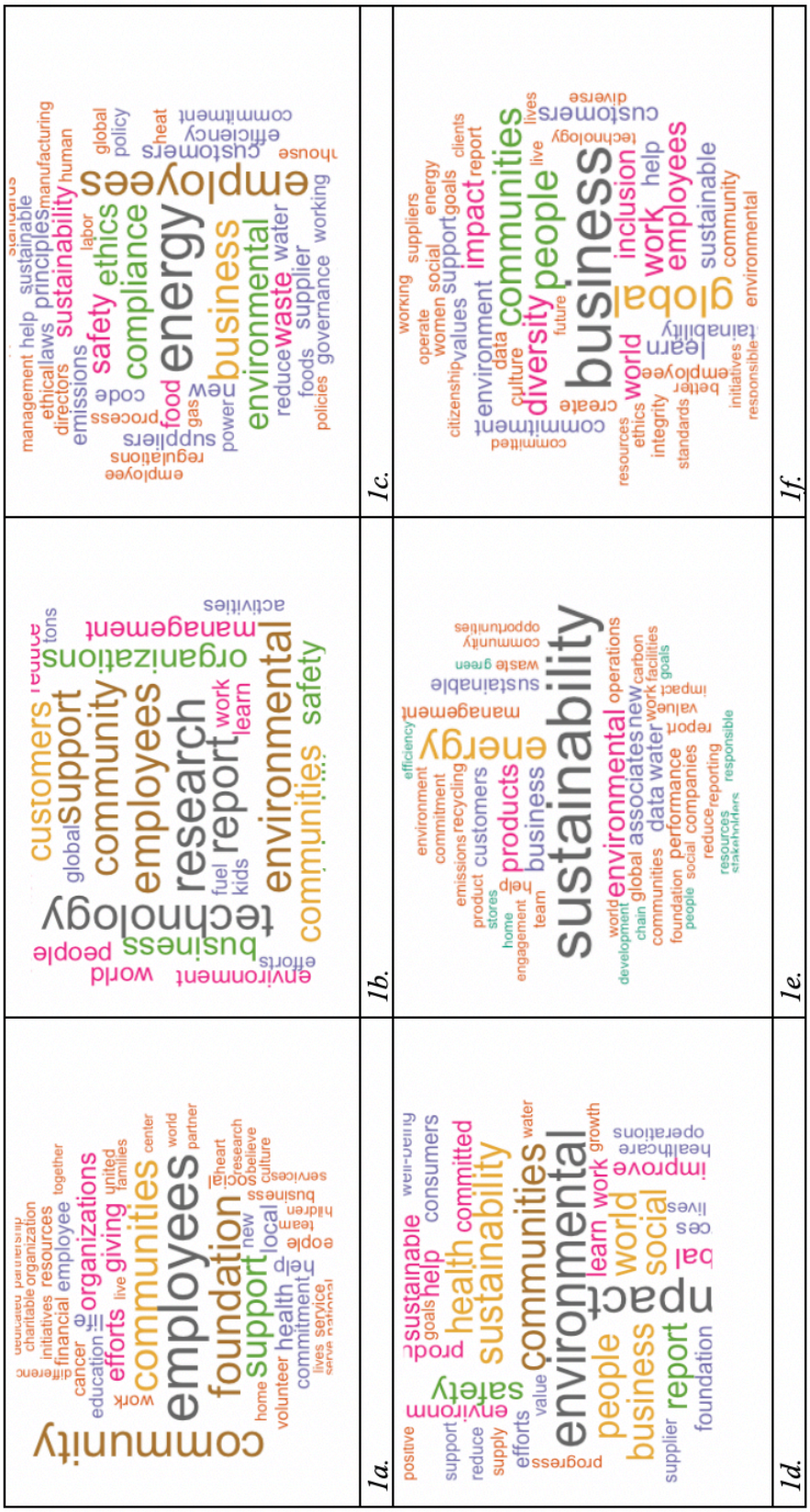

Figure 1. Illustrative word clouds from analyses

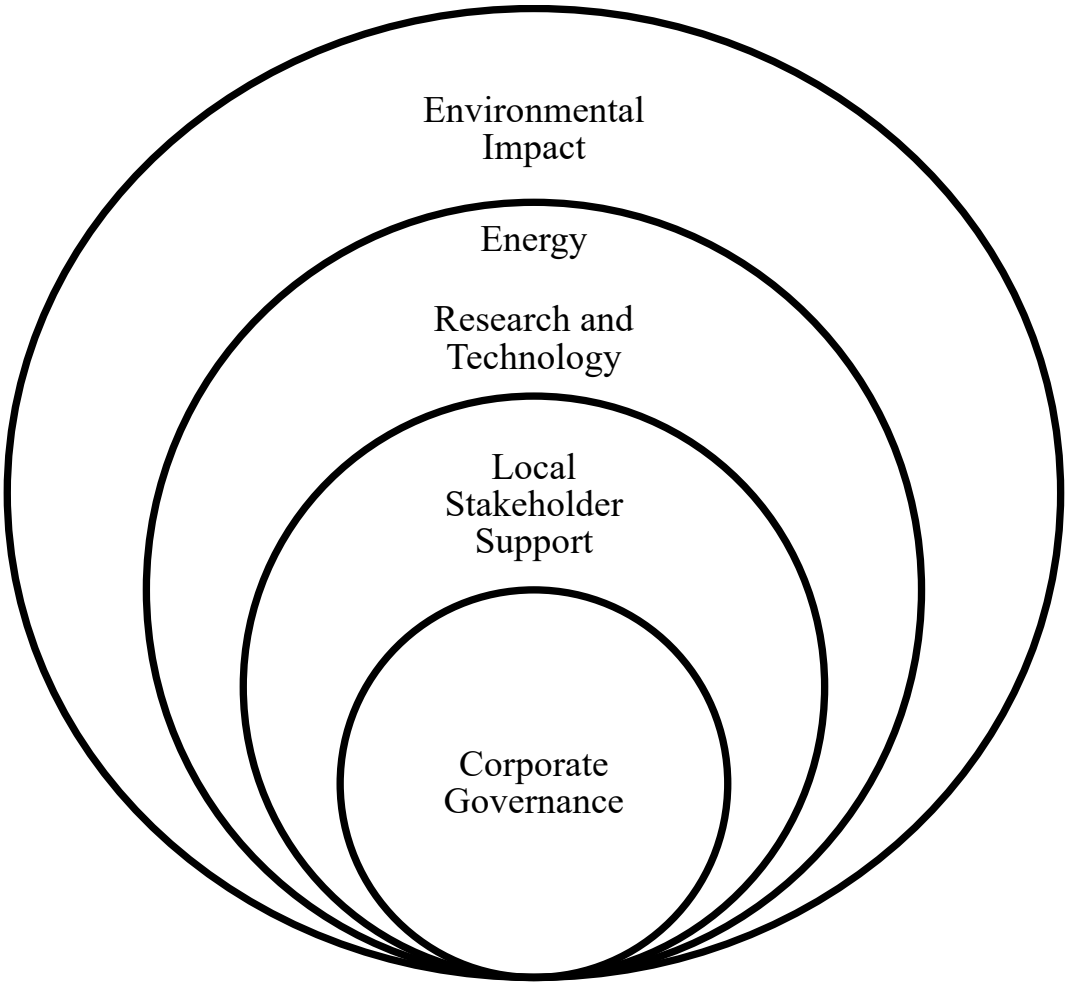

Figure 2. Model of CSR-related recruitment signals

APPENDIX

Table 3
Stop words omitted from text analyses

Access	Across	Also	America
American	Among	Annual	Approach
Areas	Areas	Around	Associate
Association	Back	Based	Best
Beyond	Board	Bring	Can
Chairman	Click	Company	Conduct
Contact	Continue	County	Core
Corporate	CSR	Day	Download
Ehs	Ensure	Even	Every
Everything	Exchange	Find	First
Focus	Following	Ford	Get
Good	High	Hours	Including
Index	Industry	Issues	Key
Letter	Like	Make	Making
Manner	Many	Markets	May
Means	Million	Minimizing	Na
Never	Officer	One	Outcomes
Overall	Part	Past	Percent
Please	Practices	Program	Programs
Provide	Providing	Re	Read
Related	Remain	Responsibility	Review
S	See	Since	Since
Steel	Story	T	Thing
Three	Time	Top	U.S.
Us	Use	Used	Using
Ve	View	Way	Ways
Well	Will	Year	Years
York			