

6-15-2020

## **Don't be so emotional: How social media communication affects potential applicants' engagement**

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### **Recommended Citation**

Moser, Kilian J.; Tumasjan, Andranik; and Cable, Dan, "Don't be so emotional: How social media communication affects potential applicants' engagement" (2020). *Research Papers*. 123.

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# DON'T BE SO EMOTIONAL: HOW SOCIAL MEDIA COMMUNICATION AFFECTS POTENTIAL APPLICANTS' ENGAGEMENT

*Completed Research Paper*

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## **Abstract**

*Companies use social media (e.g., Twitter) to engage with potential applicants and build their reputation as attractive employers. To analyze how Twitter message content influences engagement with these messages, we employ computational linguistics and analyze  $N=216,828$  Tweets collected from the human resource (HR) Twitter accounts of Fortune 500 companies. Our results show that, surprisingly, job-focused content creates less engagement than content focusing on relational aspects at work. We further demonstrate that distinct (vs. generic) content positively affects engagement, whereas emotional content negatively affects engagement. These effects are conditioned on firms' employer image and not on job posting content. In contrast to prior research, our results suggest that less emotional and more distinct (company-specific) communication is beneficial for increasing engagement. We advance our understanding of the functioning of Twitter as an increasingly popular employer image impression management platform and extend research on employer image management on the Internet.*

*Keywords: Social Media, Employer Image, Engagement, Content Analysis.*

## 1 Introduction

In the last decade, employer communication has extended beyond the confines of traditional recruitment channels (e.g., job ads, newspaper advertisements, corporate websites), providing firms with new ways to position themselves as employers (e.g., Carpentier et al., 2017). Since social media communication on platforms like Twitter or Facebook play a major role in peoples' daily life (Dabirian et al. 2017; Goh et al, 2013; Jeske and Shultz, 2016; McFarland and Ployhart, 2015; Zhang et al., 2011), firms actively use social media for recruitment and to engage with their target audiences (Aggerholm and Andersen, 2018; Felix et al., 2017; Jeske and Shultz, 2016; Zhang et al., 2011). By using social media for recruitment, firms hope to reach out to a large number of potential applicants at lower costs, and position themselves as attractive employers to their target groups (Chui et al. 2012; Pitt et al. 2018). Although some firms simply use social media to post links to their online job ads, many firms are interested in going beyond job ads and improving their employer image (Landers and Schmidt, 2016; Lievens and Slaughter, 2016). In this article, we focus on how firms use Twitter to go beyond mere job ads to shape their employer image and affect the reactions of their social media followers. Taking general models of communication as a basis, (McQuail and Windahl, 1993; Petty and Cacioppo, 1986), we draw on previous work (Chandler et al., 2005; Cheung and Thadani, 2012; Cober et al., 2003; Kraichy and Chapman, 2014) to argue that firms may shape their employer image in social media through message content and style.

In terms of message *content* (i.e., the “what” of communication), firms may communicate purely transactional, job-focused information (e.g., pay, job requirements, and skills) to provide potential applicants with in-depth information on the firm's employment conditions. On the other hand, firms also may choose to communicate relational, non-job-focused content (e.g., leisure activities, family benefits, and general life advice) to connect to potential applicants' identities and build relational and social currency (Rousseau, 1990). If firms communicate job-focused content, such as job requirements and salary, they provide valuable information which may be beneficial to potential applicants (e.g., “realistic job preview”). However, by focusing on job-related content, firms will mainly emphasize the *transactional* promises of their employment offering (Mai et al., 2016). Consequently, a firms' social media audience may view the employer-employee relationship as contractual and mainly “economic” in nature (Ryan, 2012). Conceptually, a transactional approach may negatively influence firms' employer images and reduce potential applicant engagement (Kahn, 1990; Mossholder et al., 2011). If firms communicate relational, non-job-focused content, such as general life advice and employee stories, they may be perceived as caring about individuals' personal needs and being interested in establishing a more relational connection with potential employees. This could improve an employer's attractiveness. Conversely, firms' social media audience could see such *relational* content as irrelevant to job-related information they seek, resulting in lower engagement.

Aside of message content, firms can try to persuade their social media audience through communication styles (the “how” of communication). When it comes to message *style*, research has demonstrated that firms mainly follow two fundamental principles in persuasive communication to trigger audience engagement: distinctiveness and emotionality (e.g., Keller, 2009; Kraichy & Chapman, 2014; Thompson, Rindfleisch, & Arsel, 2006). Communicating in a *distinctive*, company-specific language has a long tradition in the marketing literature and is essential in differentiating firms from their competitors (e.g., Holt, 2004; Rossolatos, 2013). According to message styling literature (Kraichy and Chapman, 2014), such style elements form the cognitive properties of messages. Similarly, *emotional* tone has been widely heralded as vital for creating close firm-consumer bonds, and, ultimately, establishing firms' competitive advantage in the market place (Thompson, Rindfleisch, & Arsel, 2006). An emotional message style forms the affective properties of messages (Kraichy and Chapman, 2014). Whereas the communication principles of distinctiveness and emotionality are well-established in marketing research (e.g., Morrison & Crane, 2007; Rossolatos, 2013; Thompson et al., 2006) there is little research regarding these principles in social media recruitment communication (but see Kraichy and Chapman, 2014). Thus, we currently do not know whether, and to what extent, communicating information in a distinctive, company-specific style will help engage potential applicants. *Distinctive* messaging may provide firms with opportunities to differentiate themselves from their competitors

(Keller et al., 2002), but may backfire if firms' social media followers perceive such communication as illegitimate. Likewise, *emotionality* may increase engagement with a firm's employment offering, but could endanger a firm's professionalism.

In summary, our research is motivated by the following question: **How does firms' recruitment-related social media communication affect the engagement of their followers?**

We focus our empirical investigation on social media accounts exclusively maintained by firms for recruitment-related communication and consider followers of these accounts potential applicants. By investigating employer image in the social media context, we respond to recent calls in the literature to keep pace with these emerging trends (Collins and Kanar, 2013; Lievens and Slaughter, 2016; McFarland and Ployhart, 2015) and to revisit how potential applicants process information in light of social media (Risius and Beck, 2015; van Knippenberg et al., 2015). In addition to adding to theory, we make an important methodological contribution by using computational linguistics methods to identify themes in firms' social media communication. Such approaches have been called for (George et al., 2014; Leonardi and Vaast, 2017) since they allow us to examine entire populations of social media postings, and identify which content resonates with potential applicants and increases their engagement with a potential employer (Collins and Kanar, 2013; Turban and Cable, 2003).

## 2 Theory and hypotheses

Firms may use recruitment-related communication on social media to promote a favorable employer image, or simply to increase the reach of their job postings. We focus on followers engagement with firms' employer image communication in social media, where engagement is defined as a positively-valenced brand-related attitude or activity (Hollebeek et al. 2014; Malhotra et al. 2012, 2013). For example, potential applicants might develop their image of a potential employer by following its social media channel, and respond by sharing, liking, or commenting on the firm's social media posts.

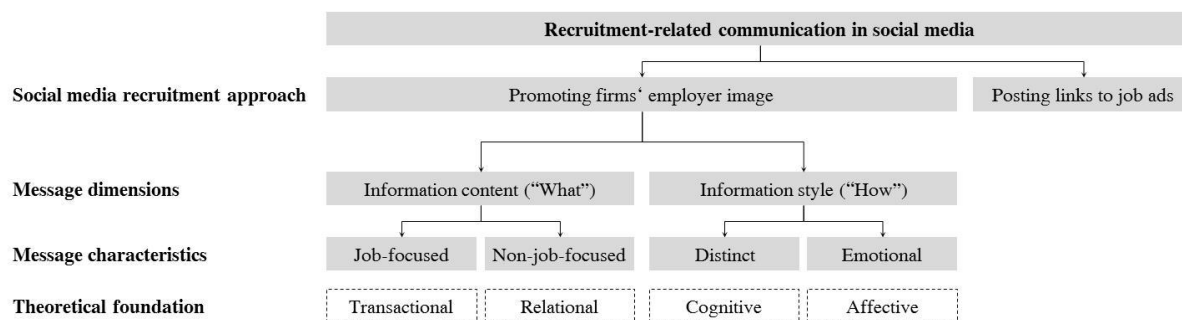


Figure 1: Conceptual model of study constructs

Note: Although in practice firms use social media to post links to job ads (i.e., merely linking to company job board), this study focuses on understanding potential applicants' engagement with firms' employer image communication.

Figure 1 illustrates the conceptual model of our study, which we develop below. To understand how firms may persuade potential applicants to engage with them on social media, we study the effects of message *content* through the lens of psychological contract theory (Rousseau, 2001) and message *style* (Kraichy and Chapman, 2014).

### 2.1 Employer image and social media engagement

In general, firms engage in recruitment activities to position themselves as employers with an attractive employer image (Lievens and Slaughter, 2016). Employer image refers to an individuals' set of beliefs about a relationship with an employing organization (e.g., Backhaus and Tikoo, 2004; Edwards, 2010). Potential applicants start to develop beliefs about employers in the early stages of the applicant attraction phase of recruitment (Backhaus and Tikoo, 2004; Barber 1998). In this phase, potential applicants seek out information about firms' employment offering and the potential employee-employer relationship. In line with to psychological contract theory (Rousseau, 2001), a firms' employer image is shaped not only by potential applicants' beliefs about *transactional*, *job-focused* as-

pects of their employee-employer relationship, but also by beliefs about *relational, non-job-focused* such as leisure activities and friends (Geurts and Demerouti, 2003; Greenhaus and Powell, 2003; Ilies et al., 2011). As such, recruitment information can influence perceptions of work and non-job aspects of the employee-employer relationship and trigger different levels of potential applicants' engagement.

*Transactional vs. relational content.* In some cases, the relationship between potential applicants and an employer is based on information regarding expected tasks and required skills in exchange for pay, rewards or other economic currency (Rousseau, 1990; Thompson & Bunderson, 2003). For recruitment managers, it is traditional to inform potential applicants about the expected work tasks, required skills, and the monetary compensation offered in return for the employees' efforts. In fact, in many job descriptions, such job-related information plays a central role (Nolan et al., 2013), suggesting that many recruitment managers think that it is the best route for engaging with potential applicants.

If a firm's recruitment activities focus entirely on transactional, job-related information (e.g., information regarding remuneration and work tasks) its employer image could be perceived as purely "economic" or "transactional" by potential applicants (Ryan, 2012). Conversely, a relational, non-job-focused approach to recruitment communication, including information about employees' non-work interests, can signal an employment exchange that includes social bonds and personal connections in the employment relationship (Lawler, Thye, & Yoon, 2009; Ryan, 2012; Thompson & Bunderson, 2003; Yu, 2014). Firms may signal a social bond with potential applicants if they communicate, for example, personal stories about their employees (e.g., leisure activities) or highlight a family-like company culture (e.g., employee friendships beyond work). As such, non-job-focused content addresses individuals' desires for personal growth and self-expression (Rousseau, 2001; Thompson & Bunderson, 2003), which should be attractive to potential applicants according to social identity theory (Highhouse et al., 2007; Hogg and Terry, 2000). This argument also is consistent with the literature on meaningful work (Chalofsky, 2003; Koloc, 2013; Lepisto and Pratt, 2017), which suggests that employers create higher employee engagement if they do not only talk about work itself, but also include personal elements of the employment relationship. Accordingly, we predict:

**Hyp. 1a:** Transactional employer image content is negatively associated with social media engagement.

**Hyp. 1b:** Relational employer image content is positively associated with social media engagement.

## 2.2 Message style and social media engagement

The communication style of a message is more subtle than the content, offering indirect cues about the credibility, likability, and professionalism of an employer. Aside of communicating relevant employer image content, using an appropriate message style can help firms to better engage with potential applicants. Past research on message style tailoring has distinguished cognitive and affective message styles (Kraichy and Chapman, 2014). Accordingly, messages that follow a company-specific, distinctive communication style appeal to individuals' thought-based (i.e., cognitive) information processing style. In contrast, messages with an emotional communication style appeal to individuals' feeling-based (i.e., affective) information processing style (Kraichy and Chapman, 2014). Research suggests that employer image communications are likely to work best when they reflect a distinctive and emotionally-appealing style (Gardner et al., 2011; Uggerslev et al., 2012). For example, in the context of social media platforms, McFarland and Ployhart (2015) emphasized that to create engagement, firms need to offer content in a distinct and novel style. They argue that social media messages with a distinct and firm-specific style lead to a "broader and more consistent exposure to the firm and its people" (McFarland and Ployhart, 2015, p. 1665) and, thereby, create higher engagement among the firm's social media audience. Furthermore, Hyvärinen and Beck (2019), McFarland and Ployhart (2015), and Stieglitz and Dang-Xuan (2013) described how emotional tone helps predict audience engagement with social media. The authors refer to social-contagion theory (Barsade, 2002) in explaining how the emotional tone of a message affects the engagement of social media followers with a message. Following this research, we examine how potential applicants' engagement with social media messaging is affected by *distinctive message style* and an *emotional message style*.

### 2.2.1 Distinctive message style

Distinctiveness has become a core building block of marketing and brand management (e.g., Holt, 2002, 2004; Rossolatos, 2013; Thellefsen and Sørensen, 2007), stemming from the fields of linguistics and semiotics (i.e., the study of signs and symbols). Likewise, in recruitment research, a distinct, company-specific employer image helps differentiate a firm's employment offering from competing firms (Dineen and Allen, 2016; Lievens and Slaughter, 2016). In this regard, we define a distinctive message style as the use of company-specific stylistic elements, language and wording in communicating persuasive aspects of firms' employer image. A distinctive message style speaks to individuals' cognitive properties of information processing (Kraichy and Chapman, 2014). Thus, when information about a firm's employment offering is communicated in a distinctive style, it may play a key role in increasing potential applicants' employer knowledge and affecting their engagement (Uggerslev et al., 2012).

For companies, the conversational nature of social media (especially microblogs, such as Twitter) offers a convenient means for communicating different aspects of a firm's employment offering (McFarland and Ployhart, 2015; Swider et al., 2015). Specifically, firms may use social media for sharing company-specific information that increases employer knowledge and thus develops a distinct employer image (Gardner et al., 2011). For example, Microsoft shares employee achievements ("Meet Donna Warton and see how she helped build the Devices Operations Team around #Surface. Microsoft, 2016") on their social media accounts. In this way, firms provide insights into daily working life by sharing employees' stories. As illustrated in the Microsoft example, promoting an employer image in a distinct style often may entail using uncommon vocabulary.

Specifically, we expect information expressed in a distinctive, company-specific style (e.g., "How a sense of humor & focus on social good helps keep #audit professional Paige Hall in balance #DeloitteCareers (Deloitte, 2016)") to lead to greater engagement than generic marketing content (e.g., "Flexibility + great job → Happy employees! #remotework (Dell, 2016)"). This is because using a distinctive style provides potential applicants with more meaningful information about an employer than generic information, and thereby increases their employer knowledge. Consequently, we hypothesize that social media recruitment messaging with a distinctive message style will result in more engagement from potential applicants, compared to a generic message style.

**Hyp. 2a:** A distinctive message style is positively associated with social media engagement.

### 2.2.2 Emotional message style

Social contagion theory (Barsade, 2002) suggests that social networks serve as a conduit where information is disseminated based on "infectious" characteristics such as emotional tone (i.e., level of emotionality) (McFarland and Ployhart, 2015). Related, we define an emotional message style as the use of affective elements, language and wording in communicating persuasive aspects of firms' employer image. As such, an emotional message style speaks to individuals' affective properties of information processing (Kraichy and Chapman, 2014). In the context of recruitment messages, emotions can be conveyed through employers' image-building communications. For example, a social media message may address the anxiety of the job search situation through social media messages, such as "Tip: Connect with recruiters on @linkedin-they love to help! But, #whateveryou do avoid these #pitfalls" (3M Careers 2012). Recruitment messages may also send emotionally-appealing company insights, such as "A little [...] volunteering, a little fun, a lot of #GivingBack. [...] #WeAreCisco" (Cisco Careers 2015).

Past research shows that emotional tone affects which kind of information is spread in social media. For example, Stieglitz and Dang-Xuan (2013) found that emotionally-evocative political communication (i.e., information with high levels of either positive or negative sentiment) was shared more among social media users than political communication that expressed a neutral sentiment. Similarly, Berger and Milkman (2012) suggest that product advertisement is more successful when it creates emotional arousal among consumers. They find that both positive and negative sentiment stimulates information sharing, and thus supports brand building. In product marketing, emotionally-appealing brands have been shown to create more engagement among brand followers (Thompson, Rindfleisch,

& Arsel, 2006). In the recruitment context, we hypothesize that content communicated with a high emotional tone will result in more engagement from potential applicants, compared to content with low emotional tone.

**Hyp. 2b:** An emotional message style is positively associated with social media engagement.

### 2.3 The moderating role of employer image content vs. job ads content

When it comes to using social media for recruitment communications, many firms merely post titles of job openings (e.g., “senior service engineer wanted”) with a hyperlink to the respective job ad on the firm’s website. With the limited amount of text available on social media such as Twitter (i.e., limit of 280 characters), posts containing job title vacancies and links to job ads leave little room for original information or emotionally-appealing messages. In social media, research suggests that to develop a desirable employer image in candidates’ minds, firms need to create a two-sided conversation between firms and potential applicants (Lievens and Slaughter, 2016; McFarland and Ployhart, 2015). While a “job opening” message may be functional, it is not likely to create a meaningful conversation or help develop a nuanced relationship. To unfold the positive effects of a distinct and emotional message style, there must be meaningful content where these message styles can be applied. A distinctive or emotional message should have a stronger effect if it is applied in the context of employer image content compared to a job ad. Thus, we argue below that the effect of *distinctiveness* and *emotional tone* on social media engagement will be moderated by content type. Specifically, we predict that the effects of *distinctiveness* and *emotional tone* depend on whether message content is simply a job ad (e.g., a job title and hyperlink to the job ad on the firm’s website) vs. content tailored to shape the employer image (e.g., insights into the firm’s culture).

First, in terms of distinctive communication style, even distinctive job ad content does not provide potential applicants with much insight about a potential employer. Research shows that job applicants are interested in employer culture and values, and place even greater emphasis on value congruence than job characteristics such as pay or location (Cable and Judge, 1996). Given the uncertainty that applicants face during job search, they look for credible, visible signals from employers to make inferences about less visible organizational attributes (Cable and Judge, 1994; Rynes and Miller, 1983). Thus, distinctive social media messages that offer novel insights about an employer’s image should generate greater engagement from potential applicants than distinctive messages about the job listing.

Likewise, we expect that an emotional message style will have a greater effect on potential applicants when it appears in the context of employer image content rather than job ad messages. This is because job ad content (e.g., job title or location) is a less appropriate context for emotional tone compared to informing potential applicants about an employer’s working life (e.g., quotes from the company’s senior management on their leadership philosophy), employer recognitions (e.g., the company has been named on Forbes “America’s Best Employers” list), or cultural information (e.g., the company’s stand on diversity). Conversely, a job ad only draws interest and engagement if it fits a potential applicant’s job search profiles; otherwise, it is irrelevant (e.g., an engineering vacancy seen by a nurse). Therefore, even if job ad content contains high levels of emotional tone, potential applicants’ engagement should not be affected since the vacancy’s relevance does not increase with high emotional tone. For example, the tweet “Hot, Hot, Hot...Vacancy - Technical Support Agent; Ref: BE CCA2; Alness, Permanent, £8.00 per hour” may not engage potential applicants more than job ad content with lower emotional tone (e.g., “Vacancy: Off Grid Mobile Finance Access Advisor: <http://...>”) if it is irrelevant to them. Therefore, we argue that content type (i.e., employer image content vs. job ad content) will moderate the effects of information distinctiveness and emotional tone on potential applicants’ engagement.

**Hyp. 2c:** The effect of *distinctive message style* on engagement will be moderated by content type, such that for employer image content the effect will be more positive than for job ad content.

**Hyp. 2d:** The effect of *emotional message style* on engagement will be moderated by content type, such that for employer image content the effect will be more positive than for job ad content.

### 3 Data and Method

#### 3.1 Data collection and sample

In this study, we focused on social media engagement of firms' employer image messages on the microblogging platform Twitter. Today, companies post a variety of different HR-related content on Twitter (e.g., related to recruitment communication, insights into the company, or job openings). For our data collection, we examined all US Fortune 500 companies that maintain an active (i.e., accounts with at least 20 tweets) Twitter channel exclusively for HR, recruitment, and employer image management-related communication. While we acknowledge a potential systematic bias, we argue that individuals would only follow such dedicated social media channels if they were potentially interested in employment at the respective firm as these channels are dedicated to provide information for potential applicants interested in working for the firm. We identified a total of 166 Fortune 500 companies that maintained an active recruiting-specific Twitter channel (as of September 2015).

Using Twitter's public API, we downloaded 3,200 tweets per company (which is the maximum that can be obtained at any one time due to download restrictions imposed by Twitter) resulting in a sample of tweets that were published on Twitter between September 2008 and October 2015. The large majority (about 88%) of the tweets in our dataset have been posted on Twitter in 2013 or later. For each of the 166 Twitter channels in our sample, we collected on average 1,256 tweets per channel (SD = 1,075 tweets). Following past research using Twitter as a data source (e.g., Lovejoy et al., 2012; Sprenger et al., 2014; Stieglitz and Dang-Xuan, 2013; Tumasjan et al., 2011; Zhang et al., 2011), we used "retweets" and "favorites" as measures of social media engagement. Characteristic for our sample is that only around one quarter (22.16%) of all tweets in our sample were retweeted at least once and only one fifth (18.78%) of all tweets were favorited by at least one user. Accordingly, the large majority of a company's tweets receive very little attention from Twitter users.

#### 3.2 Method

We took several methodological steps to study how tweet content ("what") and style ("how") influence engagement. First, we used a support vector machine learning model for automated text categorization to group the tweets in our sample into recruitment themes. This first step ensured that we only study content that actually represents employer image management. Second, to extract the "what" and "how" of firms' employer image building activities, we used computational text analysis, specifically the dictionary based classifier "Linguistic Inquiry and Word Count (LIWC)" (Tausczik and Pennebaker, 2010), which identifies specific psychological characteristics of a given input text. Third, we used regression analysis to analyze the predictive validity of the "what" and "how" dimension for candidate engagement. The LIWC dictionary and software (Tausczik and Pennebaker, 2010) has been applied in a variety of social science research ranging from identifying negative emotional tone in transcribed interactions between sales personnel and customers (King et al., 2006) to studying agentic and communal characteristics in letters of recommendation (Madera et al., 2009). LIWC has the advantage that it has been tested with over 100,000 text files including a large share of tweets, thus providing validated text analysis results (Pennebaker et al., 2015; Tausczik and Pennebaker, 2010). LIWC has been used in studies to draw conclusions from tweets (e.g., Pennebaker et al., 2015; Tumasjan et al., 2011). As described below, we used LIWC to assess both message content (i.e., *job-focused* and *non-job-focused content*) and message style (i.e., *emotional* and *distinctive style*).

*Job-focused content* – To assess the level of job-focused employer image content, we relied on the LIWC variables *work*, *money*, and *reward* which reflect transactional, job-focused variables (i.e., being of a primarily economic nature) (Uggerslev et al., 2012).

*Non-job-focused content* - To assess the level of non-job-focused employer image content that focuses on personal connections (including outside of work), we relied on the LIWC variables *family*, *friends*, and *leisure*. These variables reflect personal concerns, social processes, relationships at work, and the work/non-work interface (Geurts and Demerouti, 2003).



*Distinctive message style* – In linguistics, the use of distinctive and unique language is expressed as the share of words that are rare in common language use (Mollet et al., 2010). Accordingly, lexical rarity describes how much language is used that is not part of a standard language corpus (Chung and Nation, 2004; Nation and Kyongho, 1995). Thus, to measure the *distinctive style* of a tweet, we analyzed how many words in each tweet was recognized by LIWC. In its 2015 version, LIWC recognized on average 85.18% of all words in its 100,000 test text files and on average 82.60% of test tweets (Pennebaker et al., 2015). Thus, LIWC is able to capture a large share of words used in standard (i.e., books, newspapers) as well as social media texts (i.e. blog posts or tweets). As a result of these validation efforts, LIWC provides averages for each linguistic characteristic, permitting comparison of a given input text against its average. This permits inferences about whether a text's linguistic characteristics are typical or atypical.

*Emotional message style* – We relied on the LIWC variable *affect* to analyze the percentage of words in our tweet sample that were related to emotional tone. Measuring emotional tone with textual data has a long history in LIWC (Tausczik and Pennebaker, 2010). In its 2015 version, LIWC's dictionary features a total of 1,393 distinct words that are associated with *emotional tone* (such as happy, love, nice, and sweet, or cried, hurt, ugly, and nasty) (Pennebaker et al., 2015).

## 4 Analysis and results

### 4.1 Identification of content themes related to employer image building

To identify meaningful content themes in our sample that relate to employer image management, we followed the process laid out in existing research (Sprenger et al., 2014; Stieglitz and Dang-Xuan, 2012). Thus, the two lead researchers independently, manually analyzed the tweet content of a smaller subset of tweets ( $N = 500$ ). We arrived at a total of five content themes, namely *Insights*, *Events*, *Advice*, *Direct interaction*, and *Job ads*. Table 1 contains an overview of the five content themes including a short definition as well as an example tweet. As noted above, tweets following the *Job ads* theme merely contained job titles and hyperlinks to job openings on the firms' vacancies website, and thus do not represent employer image building (see Table 1). Accordingly, job ad tweets were excluded from the initial analysis (tests of hypotheses 1, 2a, and 2b) to arrive at a sample of tweets that represents employer image management content. To test Hypotheses 2c and 2d, we then examine the moderating effect of job ad (versus employer image) tweets in the entire sample. Based on these five content themes, two other trained coders manually classified a set of  $N = 3,215$  tweets. The two coders independently classified the same tweets, and results revealed 85.80% agreement on all classification decisions. Following the recommendations by Krippendorff (2004), we calculated Scott's  $\pi$  to be .791, indicating high interrater reliability. To automatically categorize the remaining (i.e., previously not manually classified) tweets in our sample, we turned to methods of automated text categorization developed in the area of computational linguistics (Sebastiani, 2002). Specifically, we used machine learning techniques that are common for solving text categorization tasks as the one present in our tweet sample (Joachims, 1998; Sebastiani, 2002). Instead of relying on a predefined set of rules on how to classify a text according to categories, machine learning follows an inductive approach of automatically building a text classifier (Liu, 2007; Sebastiani, 2002). Supervised machine learning uses training data to both automatically learn and test a classification model. Using a machine learning model optimized to our text categorization task, each of the 213,613 remaining tweets (i.e., tweets of our sample not used in the pre-study) was assigned to one of the five content themes. For text categorization tasks, a variety of classifiers and learning models have been developed, such as Naïve Bayesian text classification or support vector machines (SVM) (Liu, 2007). We relied on a SVM approach. SVM has also successfully been used to study tweet sentiments (Agarwal et al., 2011), or to identify predictors of influenza rates based in tweet content (Collier and Doan, 2012). Among supervised machine learning models, SVM has been frequently reported as the most accurate method for text categorization tasks (Liu, 2007; Moraes et al., 2013). We used SVM to train a linear classifier that uses statistical learning theory to map text features in high dimensional spaces (a common mathematical transformation used in computational linguistics) and separate these text features in so-called "hyperplanes" (i.e., a mathematical way of dimension reduction). Using the text features provided for each

content category as part of the training set, these hyperplanes are mathematically optimized to achieve the widest margin between category features to effectively distinguish the features belonging to different content categories (Cardoso-Cachopo and Oliveira, 2003; Joachims, 1998; Liu, 2007). We trained our text categorization classifier with three distinct feature sets, namely the actual content of the tweet, the hash-tags used in each tweet as well as tweet-specific characteristics (i.e., “Is this tweet a reply to another tweet?”, “How many users were mentioned in this tweet?”, and “How many URLs did this tweet contain?”).

Content theme	Definition	Example tweet
Insights	Tweets describing work life, achievements, or employee stories of the company.	“At 3M, we believe diverse perspectives are essential to innovation. I'm in. We're all in. Are you in? #LifeWith3M”
Events	Tweets informing followers about meeting opportunities and company events related to recruitment.	“We're recruiting at @michiganstateu's Career Gallery! Stop by to learn about opportunities w/Alcoa. #MySpartanCareer”
Advice	Tweets giving general life advice or advice for potential applicants.	“Starting a new job can feel intimidating; take these tips for starting out your new position on the right foot!... <a href="http://t.co/SIZEcQVH1r">http://t.co/SIZEcQVH1r</a> ”
Direct interaction	Tweets directly interacting with followers, e.g., by asking for answers to a question or directly responding to followers questions.	“Tell us: What is the key to a great work and life balance? #OurAnthem”
Job ads	Tweets distributing a company's job openings by linking to job ads.	“If you are a recent #graduate with a #computer or #engineering degree, take a look at our #design positions: <a href="http://t.co/nJNKndIMxn">http://t.co/nJNKndIMxn</a> ”

Table 1. Description of content themes including example tweets.

In line with other research following a SVM approach (e.g., Cardoso-Cachopo and Oliveira, 2003; Joachims 1998), the actual tweet text was preprocessed in two steps. First, we applied term frequency–inverse document frequency (tf-idf) weighting. Term frequency (tf) is a measure of how often a term appears in a text corpus. Inverse document frequency (idf) increases the weight that rarely-appearing terms receive in the classifier and decreases the weight of frequently appearing terms in the classifier. Second, we used latent semantic analysis (LSA) to ensure that terms that appear closer to each other (e.g., within the same tweet or in tweets of the same category) receive more weight when classifying our tweet sample than terms that appear further apart (e.g., in tweets of different content categories). To tune the weight that each of the three feature sets (i.e., tweet content, hash-tags, tweet characteristics) should receive in the classifier we applied a grid search technique. Grid search trains a variety of classifiers each using different weights for the three feature sets. This process ensures that at the end the classifier is tuned for best classification performance.

Our classifier was trained using a random selection of 2,668 tweets over all five content categories (i.e., 80% of the manually classified training sample). In line with prior research, we retained 20% of the manually classified training data (i.e., 547 tweets) to evaluate the performance of our classifier using the standard recall, precision and  $F_1$  measures (Liu, 2007; Moraes et al., 2013; Yang & Liu, 1999). Overall, the averages of all three fit statistics over all five content categories (i.e., recall = .91, precision = .91, and  $F_1$  score = .91) indicate a high performance of our classifier in line with other studies using a SVM approach to classify tweets (e.g., Agarwal et al. 2011; Collier and Doan 2012). Using our classifier, the tweets were grouped in content theme as follows: Insights = 55,715, Events = 7,576, Advice = 13,129, Job ads = 124,618, and Direct interaction = 12,575 tweets.

## 4.2 Analysis of content and style as predictors of applicants' engagement

Table 2 presents means and standard deviations for the number of times tweets have been favorited and retweeted, and their level of employer image content (i.e., transactional and relational content) and style (emotional tone and information distinctiveness) grouped by content theme. We used these variables as predictors in a series of regression analyses to test our hypotheses. Our analyses include several control variables. Following past social media research (Stieglitz and Dang-Xuan, 2013), we control for Tweet characteristics such as text length (i.e., word count), the number of user mentions, hash-

tags (i.e., attributions to certain topics), as well as the number of URLs (i.e., references to images or additional information such as job ads). Additionally, we control for Tweets' level of "netspeak", a variable that includes words frequently used in social media such as "thx" (thank you) or "lol" (laughing out loud) (Pennebaker et al., 2015).

Content themes:	Insights		Events		Advice		Dir. interact.		Job ads	
	M	SD	M	SD	M	SD	M	SD	M	SD
<b>Dependent variables</b>										
1. # of favorites	1.37	6.44	0.83	6.76	1.06	17.42	0.38	0.86	0.31	1.71
2. # of retweets	1.43	4.53	0.98	2.55	1.09	12.39	0.20	0.69	0.38	1.87
<b>Job-focused content</b>										
3. Work	6.63	6.44	8.66	5.86	9.54	6.74	4.69	6.18	16.66	8.78
4. Money	1.00	2.63	0.57	1.81	0.47	1.72	0.54	2.08	3.12	4.70
5. Reward	1.52	3.13	1.15	2.57	1.98	3.17	2.99	6.67	0.81	2.25
<b>Non-job-focused cont.</b>										
6. Family	0.13	0.99	0.05	0.52	0.06	0.63	0.06	0.71	0.13	0.85
7. Friends	0.24	1.25	0.16	0.88	0.11	0.80	0.25	1.41	0.14	0.91
8. Leisure	1.48	3.17	0.99	2.29	0.70	2.06	0.98	3.18	0.68	2.04
<b>Communication style</b>										
9. Distinctiveness	25.14	16.37	21.62	15.88	18.41	12.76	11.16	16.56	32.59	13.05
10. Emotional tone	4.38	5.49	4.28	4.29	3.92	4.55	12.40	11.66	2.05	3.64
<b>Control variables</b>										
11. # of URLs	0.61	0.50	0.36	0.48	0.93	0.39	0.24	0.44	0.98	0.21
12. # of hash tags	0.98	1.15	1.16	1.16	1.11	1.17	0.31	0.70	2.52	2.00
13. # of user mentions	0.88	1.19	1.18	1.36	0.46	0.63	1.16	0.76	0.06	0.26
14. Tweet word count	19.16	4.86	21.10	4.01	19.92	4.41	14.98	6.99	18.05	3.88
15. Tweet netspeak	6.87	4.24	3.73	3.44	6.41	3.28	3.70	5.87	6.68	2.22

Table 2. Means, standard deviation of dependent, independent & control variables per content theme.

Given the count-like nature of a tweet's favorites and retweets, we used negative-binomial regressions, following past research analyzing Tweets (e.g., Stieglitz and Dang-Xuan 2013). We report the results in Table 3. Hypothesis 1a stated that the level of job-focused content in social media employer image communication has a negative effect on potential applicants' engagement. Our regression analyses indicate that content related to *work* and *money* decrease the number of times a tweet has been favorited by 1.41% ( $exp(b) = .9859, p < .001$ ) and 3.66% ( $exp(b) = .9634, p < .001$ ) respectively. Content related to *work* and *money* also decreased the number of times a tweet has been retweeted by 1.08% ( $exp(b) = .9892, p < .001$ ) and 1.13% ( $exp(b) = .9887, p < .001$ ) respectively. However, contrary to our expectations, content related to *reward* increases the number of times a tweet has been favorited by 1.95% ( $exp(b) = 1.0195, p < .001$ ) as well as the number of times a tweet has been retweeted by 1.52% ( $exp(b) = 1.0152, p < .001$ ). Thus, Hypothesis 1a is partially supported for "work" and "money", but not for "reward".

Hypothesis 1b stated that the level of non-job-focused content in social media employer image communication has a positive effect on potential applicants' engagement. Our regression analyses indicates that content related to *friends* and *leisure* increases the number of times a tweet has been favorited by 2.5% ( $exp(b) = 1.0250, p < .001$ ) and 2.34% ( $exp(b) = 1.0234, p < .001$ ) respectively. Content related to *family* did not significantly affect tweets' number of favorites. Content related to *family*, *friends* and *leisure* increases the number of times a tweet has been retweeted by 2.17% ( $exp(b) = 1.0217, p < .05$ ), 1.47% ( $exp(b) = 1.0147, p < .05$ ), and 2.53% ( $exp(b) = 1.0253, p < .001$ ) respectively. Thus, Hypothesis 1b is supported.

Hypothesis 2a stated that the distinctiveness of social media employer image content has a positive effect on potential applicants' engagement. Our regression analyses indicates that *distinctiveness* increases the number of times a tweet has been favorited by 1.86% ( $exp(b) = 1.0186, p < .001$ ) as well as the number of times a tweet has been retweeted by 0.67% ( $exp(b) = 1.0067, p < .001$ ). Thus, Hypothe-

sis 2a is supported. Hypothesis 2b stated that the emotional tone of social media employer image content has a positive effect on potential applicants' engagement. However, our regression analyses indicated that *emotional tone* decreases the number of times a tweet has been favorited by 0.77% ( $\exp(b) = .9923$ ,  $p < .001$ ) as well as the number of times a tweet has been retweeted by 1.71% ( $\exp(b) = .9829$ ,  $p < .001$ ). Thus, Hypothesis 2b is not supported.

	Number of favorites				Number of retweets			
	main effects				main effects			
	<i>b</i>		SE	$\exp(b)$	<i>b</i>		SE	$\exp(b)$
Transactional content								
Work	-.0142	***	.00	.9859	-.0109	***	.00	.9892
Money	-.0373	***	.00	.9634	-.0114	***	.00	.9887
Reward	.0194	***	.00	1.0195	.0150	***	.00	1.0152
Relational content								
Family	-.0007		.01	.9993	.0215	*	.01	1.0217
Friends	.0247	***	.00	1.025	.0146	*	.01	1.0147
Leisure	.0231	***	.01	1.0234	.0250	***	.00	1.0253
Message style								
Distinctiveness (cognitive)	.0185	***	.02	1.0186	.0067	***	.00	1.0067
Emotional tone (affective)	-.0078	***	.01	.9923	-.0173	***	.00	.9829
Control variables								
# of URLs	-.5467	***	.02	.5788	-.5920	***	.02	.5532
# of hash tags	.1798	***	.01	1.197	.2801	***	.01	1.3233
# of user mentions	-.3671	***	.01	.6927	-.1174	***	.01	.8892
Tweet word count	.0668	***	.00	1.0691	.0922	***	.00	1.0966
Tweet Netspeak level	.0122	***	.00	1.0123	.0942	***	.00	1.0988
Constant	-1.2197	***	.05	.2953	-2.1447	***	.05	.1171
Pseudo $R^2$	0.05				0.09			
N observations	88,995				74,257			
Log likelihood	-104,373.10				-95,521.41			

Note: *b* is the estimated coefficient.,  $\exp(b)$  is the exponentiated coefficient, and SE is estimated robust standard errors. Pseudo  $R^2$  is Maximum Likelihood  $R^2$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 3. Negative binomial regression of employer image content and style on favorites and retweets.

Hypotheses 2c and 2d stated that the effect of a distinct (2c) and emotional (2d) message style on potential applicants' engagement will be moderated by content type, such that distinct and emotional message styles are more predictive of engagement for employer image content than for job ad content. To test these hypotheses, we dummy-coded tweets of all five content themes into two categories, namely tweets containing employer image content (i.e., containing all tweets of the themes *Insights*, *Events*, *Advice*, *Direct interaction*) and tweets containing job ads. We included this dummy-variable as a moderator in two negative-binomial regression models predicting favorites and retweets, respectively. These two models included tweets' emotional tone and distinctive style as well as the interaction effects with the dummy-coded content categories. Using the indirect method of simple slope testing (Dawson 2014), results revealed that content type indeed moderates the effect of both distinctiveness and emotionality on individuals' engagement. Figure 2 illustrates the interaction plots of our results. Panels A and B illustrate that the effect of a distinctive message style on potential applicants' engagement is more positive for employer image content (favorites: 0.83%,  $\exp(b) = 1.0083$ ,  $p < .001$ ; retweets: 0.82%,  $\exp(b) = 1.0082$ ,  $p < .001$ ) than for job ads (favorites: -3.10%,  $\exp(b) = .9690$ ,  $p < .001$ ; retweets: -2.69%,  $\exp(b) = .9731$ ,  $p < .001$ ), supporting Hypothesis 2c. This result reveals that the effect for information distinctiveness is negative when it comes to job ads. Panels C and D illustrate that the effect of an emotional message style is more negative for employer image content (favorites: -2.01%,  $\exp(b) = .9799$ ,  $p < .001$ ; retweets: -3.07%,  $\exp(b) = .9693$ ,  $p < .001$ ) than for job ads (favorites: 0.09%,  $\exp(b) = 1.0009$ ,  $p > .10$ ; retweets: -0.45%,  $\exp(b) = .9955$ ,  $p > .10$ ). These results are in line with the findings of Hypothesis 2b: increasing levels of emotional tone are negatively related to potential applicants' engagement, particularly for employer image content. To examine the robustness of the results, we analyzed the data with and without the control variables. Results were nearly identical after controlling for these variables (no significance levels were affected).

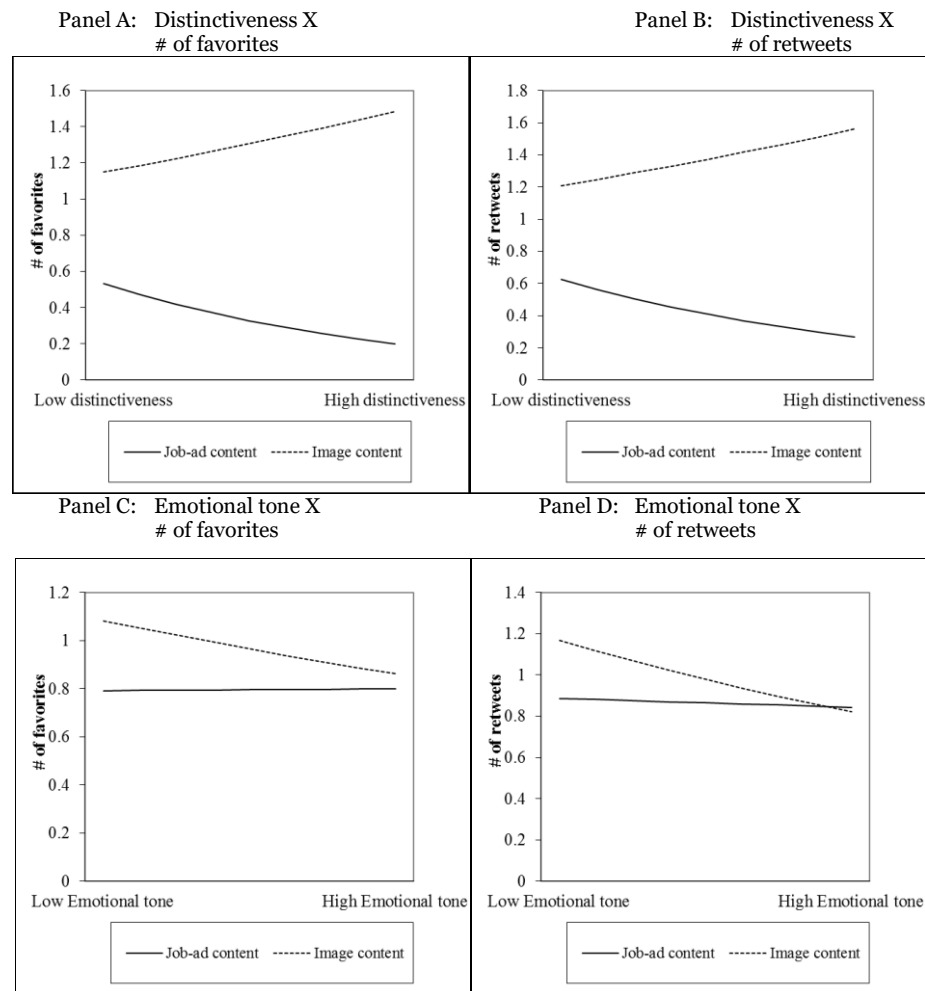


Figure 2. Interaction plots of message styles and engagement variables based on message content

## 5 Discussion and Conclusion

### 5.1 Theoretical implications

In this study, we focused on how recruitment and HR tweets affected social media engagement. Based on psychological contract theory (Rousseau, 2001) and message style research (Kraichy and Chapman, 2014), we show how the content and style of social media messages affect engagement. Based on a large data collection effort of about 215,000 recruitment-related tweets, our study makes three primary contributions to the literature. First, our study contributes to the recruitment literature by showing how message content and style of social media communication are related to potential applicants' engagement. In terms of content, tweets about *work* and *money* have a negative effect on potential applicants' engagement, whereas tweets about *family*, *friends* and *leisure* increase potential applicants' engagement. Accordingly, a job-focused recruiting approach, traditionally proposed in the HRM literature (Lievens, 2007; Turban and Cable, 2003), may hinder engagement with a firm's employer image building activities. Building a positive employer image and improving potential applicant engagement may be achieved better by focusing on relational rather than transactional issues.

Next, this study contributes to the literature by focusing on the message *style* of firms' communication, an area that has been virtually overlooked in recruitment research (but see Kraichy and Chapman, 2014). Conceptually, we integrated research on emotional tone (e.g., Berger and Milkman 2012; Stieglitz and Dang-Xuan, 2013) with conceptual research on information distinctiveness (Gardner et al., 2011) to make predictions about how cognitive and affective message styles affect engagement.

Methodologically, we introduced computational text analysis software to the recruitment domain (LIWC; Tausczik & Pennebaker, 2010), which allowed us to identify specific psychological characteristics of recruitment communications. We used supervised machine learning to apply our grounded classification model, and to categorize a very large sample of recruitment communications. The combination of new conceptual, methodological, and analytical approaches offers important new insights on the effects of message style in the context of recruitment, and also suggests new ways to answer research questions about recruitment.

Third, we contribute to the literature on how social media communications help firms build their employer images, responding to recent calls (Lievens and Slaughter, 2016; McFarland and Ployhart, 2015). We add to this field by identifying five themes of firms' social media communication: *Insights*, *Events*, *Advice*, *Direct interaction*, and *Job ads*. We argued and showed that *job ads* (posting job openings via Twitter) are not conceptually equivalent to employer image information, and do not serve firms' aim of increasing potential applicants' engagement. In this vein, results indicate that message content (i.e., employer image vs. job ad) moderates the effects of message style (i.e., distinctiveness and emotional tone) on potential applicants' engagement. Thus, our results show that firms going beyond job postings can use social media as a low-cost, instantaneous marketing tool to build employer knowledge and increase potential applicants' engagement. Our results also suggest that caution is advised in social media recruiting: whereas employer image content benefits from higher levels of a distinctive message style, simple job ad tweets create *less* engagement when they are overly specific (i.e., written in a highly distinctive way). Thus, future research needs to differentiate between types of message content on social media when investigating the effect of image-building strategies.

Finally, our results contribute to the literature on viral marketing, which has focused on why certain social media messages are shared and liked more than others. Past research mainly has relied on social contagion theory to explain how emotional tone affects the sharing behavior of social media audiences (McFarland and Ployhart, 2015). In this regard, research has suggested that social media messages are more likely to be passed on if they emotionally connect with the message recipient (Dobele et al., 2007; Kaplan and Haenlein, 2011). However, our results revealed a *negative* effect of emotional tone on potential applicants for employer image content. Interestingly, emotional tone had no effect on potential applicants' engagement for job ad content. Thus, a strategy of emotionally-loaded employer image building decreases engagement for image content but does not affect reactions to job ads. Apparently, the context of employment image changes the way emotionality is interpreted (Yu, 2009), and future research is needed in this direction.

## 5.2 Limitations and Future Work

Despite exclusively focusing on HR and recruitment-related social media accounts in our data collection, our study is limited in that we cannot be certain of the actual intentions of the followers of these accounts and the reasons for their engagement with the content posted. Future research, for example on LinkedIn, will be needed to increase our understanding of potential applicants' reactions to social media content. Future work might look at potential interaction effects between work and non-work-related content. Also, separating emotional tone into its negative and positive components might further advance our understanding of the influence of emotional tone on social media engagement.

In conclusion, we develop a theoretical frame to study the "what" and "how" of firms' recruitment communication in a social media context. As such, we contributed to a call for research (Benthaus et al., 2016) to further advancing organizational impression management strategies in the context of recruiting. We find that potential applicants' engagement, expressed through social media actions of liking and sharing, are related to message content (i.e., job-focused vs. non-job-focused) as well as to message style (i.e., emotional tone and distinctiveness). We hope that our study stimulates further research on employer image building using social media, and its influence on applicant attraction.

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