Using digital footprints in entrepreneurship research: A Twitter-based personality analysis of superstar entrepreneurs and managers

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ABSTRACT

Research indicates that individuals' digital footprints, for example in Twitter and Facebook, can reveal remarkably valid information about their personality characteristics. In this study, we use digital footprints to gain insights into the personality of superstar entrepreneurs and managers, a largely understudied population in entrepreneurship research. Specifically, we compare the personality characteristics of 106 of the most influential business leaders employing a computerized text analysis tool based on the individuals' Twitter messages (Receptiviti). Our findings are surprising and indicate that superstar managers are more entrepreneurial in many personality characteristics than superstar entrepreneurs. However, we also found some indications that superstar entrepreneurs seem to show features of a classic "Schumpeterian" entrepreneurial personality with respect to being creative, independent rule-breakers.

1. Introduction

The personality approach is often considered the classic approach in the study of the individual entrepreneur (Hisrich et al., 2007; Schumpeter, 1934). Empirical research has broadly confirmed that a focus on personality characteristics indeed helps to better understand the entrepreneurial mindset (Hisrich et al., 2007; Rauch and Frese, 2007). This follows the general notion in psychological personality research demonstrating the wide-ranging relevance of inter-individual personality differences in explaining differences in human behavior and developmental outcomes, including those in the context of work (Barrick and Mount, 1991; Roberts et al., 2007). When researching the entrepreneurial personality, a topic of particular interest is how entrepreneurs differ from managers (e.g., Stewart and Roth, 2001; Zhao and Seibert, 2006; Brandstätter, 2011).

Existing research on the personality characteristics of entrepreneurs is largely based on subjective self-reports, collected via paper-pencil or online questionnaires. Often, it is also based on surveys of "average" entrepreneurs (i.e., the everyday entrepreneurs within a small business context). In contrast, personality research on highly successful and influential entrepreneurs and managers is rare and often based on anecdotal evidence or case studies (e.g., Isaacson, 2011). This is because it is seldom possible to employ traditional questionnaires to such a prestigious group. However, because these individuals belong to the category of most influential and powerful business leaders, this group of *superstar* entrepreneurs and managers is a particularly interesting research subject (e.g., Baumol et al., 2009; Malmendier and Tate, 2009).

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Recently, a new opportunity emerged that allows an assessment of the personalities of these individuals: digital footprints such as social network sites like Facebook or Twitter. Here, superstar entrepreneurs and managers willingly and voluntarily publish (personal) information to the wider public, thus leaving digital footprints available for research purposes (e.g., Lee et al., 2017). In this study, we apply a new method of personality assessment that is based on a comprehensive language analysis to examine personality characteristics of superstar entrepreneurs and managers. Such online methods have been proven to be important sources in the study of personality traits that can deliver remarkably (and often surprisingly) accurate information about actual personality features (Back et al., 2010; Boyd and Pennebaker, 2015; Kosinski et al., 2013; Yarkoni, 2010). We use a new tool that is designed explicitly to measure personality features of individuals via their language on Twitter (Receptiviti).

This study has two goals. First, we want to gain new insights into the personality features of highly successful superstar entrepreneurs and managers, a hitherto understudied population in entrepreneurship research. In particular, we use univariate and multivariate analyses to empirically assess differences between superstar entrepreneurs and managers across different personality characteristics that have been associated with entrepreneurs in prior research. Second, we want to introduce a new way to assess personality differences in entrepreneurship research by employing a computerized language-based personality assessment tool that analyzes digital footprints.

2. Conceptual framework

2.1. Previous research on the personality of entrepreneurs (vs. managers)

Consistent with a system-approach to personality (McCrae and Costa, 2008), an individual's personality comprises different sets of personality characteristics, such as traits (e.g., the Big Five traits as the leading and best-researched model of personality traits, Digman, 1990) and characteristic adaptations (e.g., skills, orientations, and socio-emotional styles) (see also Obschonka and Stuetzer, this issue). We thus focus on personality characteristics related to both aspects, traits and characteristic adaptations. Specifically, we focus on four sets of personality characteristics that previous research has linked to entrepreneurship (i.e., Big Five, achievement-orientation, social style, well-being). In the following, we describe the personality characteristics that we examine in this study, and discuss existing findings from the literature.

2.1.1. Big Five

The Big Five traits comprise Openness (being open to new ideas and new experiences), Extraversion (feeling energized and uplifted when interacting with others or engaging in activity), Conscientiousness (being reliable), Agreeableness (inclined to please others), and Neuroticism (expressing strong negative emotions). Existing meta-analyses describe differences between managers and entrepreneurs with regard to the Big Five. For example, Zhao and Seibert (2006) show that entrepreneurs score higher in Conscientiousness and Openness while scoring lower in Agreeableness and Neuroticism than managers. The results for Extraversion are insignificant. Similar results are obtained by Zhao et al. (2010), who also show that entrepreneurs score higher in terms of Extraversion than managers.

2.1.2. Achievement-orientation

Achievement-orientation, which can be understood as a characteristic adaptation, has been well studied in previous entrepreneurship research. For example, McClelland (1961) argues that individuals with a higher need-for-achievement prefer tasks that require more skill, provide clear performance feedback, and are more challenging. Because these characteristics often refer to entrepreneurial jobs, McClelland (1961) suggests a link between high achievement-orientation and entrepreneurship. This link has been consistently well documented in previous research, which shows that in terms of individual achievement-orientation (e.g., need-for-achievement) entrepreneurs are often higher than others (e.g., Collins et al., 2004; Stewart and Roth, 2001). In their meta-analysis, Stewart and Roth (2001) show that this is particularly true when comparing managers to entrepreneurs.

2.1.3. Social style

Another stream of research indicates that entrepreneurs have better social skills than others (e.g., Baron, 2000; Obschonka et al., 2012). This is because entrepreneurs need to rely on very good social skills in their daily work as entrepreneurial tasks often require perspective-taking, convincing others, leading employees, or evaluating opportunities within a social setting. Hence, the third group of variables addresses the social style exhibited by the entrepreneurs and managers. Social style can be considered a characteristic adaptation that typifies an individual's psychological orientation towards others (see also Wiggins et al., 1989).

2.1.4. Well-being

Finally, we consider individuals' socio-emotional styles. Studies in psychology and entrepreneurship have suggested that emotions and concerns play an important role in individuals' cognition and behavior (e.g., Grégoire et al., 2015; Shepherd, 2003). Previous research indicates that entrepreneurs tend to have a high well-being (e.g., Cardon et al., 2012). For example, Bradley and Roberts (2004) have connected self-employment to higher job satisfaction, leading to more happiness and excitement, and lower levels of depression. Similarly, Patzelt and Shepherd (2011) and Tata et al. (2017) show that entrepreneurs experience more positive and less