

Digital footprints of entrepreneurs: Towards a deeper understanding of support acquisition in digital spaces

INTRODUCTION

One of the most central questions in entrepreneurship literature is how entrepreneurs can gain crucial support (Denis, 2004; Hanlon & Saunders, 2007). Support can take a wide range of forms, such as tangible assistance (Klyver, 2007; Klyver et al., 2018), emotional aid (Edelman et al., 2016; Klyver et al., 2020), financial resources (Almandoz, 2012; Lungeanu & Zajac, 2016), or information (Autio et al., 2013; Smith & Smith, 2021). Thereby, support may lower stress among entrepreneurs by reducing uncertainty and resolving issues (Fielden & Hunt, 2011; Huang et al., 2019; Pfeil, 2009), constructing an emotional balance (Huang et al., 2019), and enhancing positive and absorbing negative feelings (Barak et al., 2008; Baron, 2008; Wiklund et al., 2019). Also, support might create competitive advantages for new ventures (Bavik et al., 2020; Madjar, 2008) and provide entrepreneurs with resources that enable venture growth (Arregle et al., 2015; Khaire, 2010).

Due to rapid technological advancements in recent years, alternative sources of support have become increasingly important to entrepreneurs (Giones et al., 2020; Majchrzak & Shepherd, 2021). More precisely, entrepreneurs around the world now engage in digital spaces regularly to access support (Smith & Smith, 2021). Digital spaces offer many advantages in comparison to traditional sources of support. First, digital platforms allow entrepreneurs to engage with like-minded individuals that do not belong to their network. Digital spaces may, thus, provide additional support outside of an entrepreneur's established network (Faraj et al., 2016). Moreover, through active, discursive exchanges and passive observation, digital spaces make new forms of entrepreneurial learning available (Schou et al., 2022). Furthermore, when engaging in digital spaces, entrepreneurs may have access to assistance without regard to temporal or geographical constraints (Hwang et al., 2015; Kuhn et al., 2016). Also, digital spaces may facilitate tacit knowledge flows, i.e., they can let users exchange information that is difficult to define, including competence and experience (Faraj et al., 2016). Finally, some digital spaces allow for anonymous support seeking. Thus, there are often no established connections between those seeking help and those that provide it. Loose ties allow entrepreneurs to openly and securely share potentially embarrassing and contentious topics (Huang et al., 2019).

When entrepreneurs engage in support acquisition in digital spaces, fine-grained time-stamped recordings, namely *digital footprints*, result from these encounters (Golder & Macy, 2014). For example, web surfing logs, transaction records, images and videos, GPS locations, media playlists, voice and video call records, and social media texts or e-mails, are specific digital footprint types (Kosinski et al., 2016). The availability of enormous samples of these footprints, paired with computational power and sophisticated methods, opens up exciting new possibilities to gain a deeper understanding of support acquisition in digital spaces (Obschonka & Audretsch, 2020; Prüfer & Prüfer, 2020). For example, digital footprints allow to study which emotions and content entrepreneurs must use to appeal to support-providing audiences (e.g., Barberá-Tomás et al., 2019; Jiang et al., 2019; Tauscher & Rothe, 2021). Indeed, entrepreneurship research seems unprepared and, most likely, overwhelmed by the new advancements around digital footprints (Obschonka & Audretsch, 2020). Consequently, Obschonka & Audretsch (2020, p. 532) call for future research to “unlock the full potential of social media and other digital footprints for entrepreneurship research.”

Unlocking the potential of digital footprints to gain a deeper understanding of entrepreneurs' support acquisition in digital spaces, I point to three major shortcomings in literature. First, previous research highlights that digital spaces can provide various types of crucial support (Faraj et al., 2011, 2015; Faraj & Johnson, 2011; Turner, 2001). Hence, multiple studies have focused on what audiences in digital spaces offer and why they are helpful to entrepreneurs (Obschonka et al., 2020; Olanrewaju et al., 2020; Schou et al., 2022). These studies frame digital spaces as repositories that entrepreneurs can access everywhere and anytime (Kuhn et al., 2016, 2017), downplaying the interactive element between entrepreneurs and audiences. Indeed, current literature has recognized that what audiences in digital spaces provide to users (here: entrepreneurs) depends on how they socially engage with them. For example, research has shown how social interactions with technology aid creating action potentials for entrepreneurs, so-called affordances (Faraj et al., 2012), in recognizing venture ideas (Kreuzer et al., 2022), fostering entrepreneurial learning (Schou et al., 2022), or enabling entrepreneurial ecosystems (Zahra et al., 2022). Support and resource provision in digital spaces demand, thus, a dynamic perspective on digital footprints of entrepreneurs that accounts for socially created action potentials.

Second, although conceptualized as complex sets (Lounsbury & Glynn, 2001; Navis & Glynn, 2011), research has mostly oversimplified the nature of entrepreneurs' digital footprints, such as blog posts or social media comments. Instead of asking which configurations of digital footprints are beneficial to entrepreneurs, current literature investigates to which extent individual elements of digital footprints such as topic (Haans, 2019) or language use (Parhankangas & Renko, 2017) foster support acquisition. This is particularly problematic because audiences evaluate and interpret digital footprints as a whole (Navis & Glynn, 2011), leading to a mismatch between theorizing and applied methodologies (Fiss, 2011). Consequently, digital footprints require a methodological approach that aids in theorizing complex causal relationships between digital footprints and audience reactions.

Third, existing methodological approaches aiming to investigate digital footprints tend to be empirically driven (Golder & Macy, 2014). Studies based on digital footprints commonly involve large amounts of unstructured data that make it difficult to retrieve information (Humphreys & Wang, 2018). Therefore, various methodologies emerged to reduce the complexity of digital footprints and structure the data in a meaningful way (Prüfer & Prüfer, 2020). Existing tools such as topic modeling or machine learning can capture constructs, derive patterns, and systematically filter data (Hannigan et al., 2019; Prüfer & Prüfer, 2020). However, these tools are strongly limited when it comes to the theorizing of digital footprints. In particular, existing methods do not allow for capturing equifinal outcomes, meaning that they cannot account for situations where different types of digital footprints lead to the same outcome. For example, digital footprints, such as social media posts that highlight entrepreneurial success stories, or posts that point to learning from failure, might lead to similar reactions from audiences in digital spaces. Therefore, there is a strong need for novel methodological approaches to digital footprints that allow for the theorizing of complex causality between text and outcomes.

Research aims and questions

My thesis has two goals, which are related to the problematization above. The initial goal is to comprehend and conceptualize digital footprints of entrepreneurs as 1) dynamic and 2) complex self-representations. Therefore, the following questions are of interest in the light of the aforementioned shortcomings of the current literature:

Research question 1: How do different affordances for entrepreneurs emerge from online interactions with audiences?

Research question 2: How can entrepreneurs form digital footprints that attract audience engagement?

To answer these questions empirically, researchers must overcome methodological challenges. I intend to specifically address the constraints in theorizing complex causality of existing approaches to digital footprints, namely, computer-aided text analysis (CATA) tools such as dictionary-based approaches, topic modeling, or machine learning tools. As a result, I pose the following methodological research question:

Research question 3: How can I study the theoretically and methodologically complex nature of digital footprints?

The three listed research questions are the focus of each essay in my dissertation.

SUMMARY OF THE ESSAYS

The first essay – Digital affordances: how entrepreneurs access support in online communities during the COVID-19 pandemic – aims to understand how affordances emerge from entrepreneurs’ interactions with online communities. To do so, I base my qualitative analysis on digital footprints (76’365 posts) from an online community of entrepreneurs on Reddit. My findings draw out four affordances that online communities offer entrepreneurs (resolving problems, reframing problems, reflecting on situations, refocusing thinking and efforts), resulting in a framework of interactions in entrepreneurial online communities. Thus, my study contributes to digital affordances in the entrepreneurship context.

The second essay – Multiple roads lead to audiences’ head and heart! A configurational approach to optimal distinctive entrepreneurial narratives – seeks to shed light on the complexity of digital footprints in the form of entrepreneurial narratives. In particular, scholars argue that the relationship between distinctiveness (= attracting attention and creating cognitive liabilities), legitimacy (= following audiences’ expectations), and online reactions follows an inverted u-shape whereby storytellers need to find the ‘optimal distinctive’ point. Challenging this assumption, I propose that this relationship is much more complex. A fuzzy-set qualitative comparative analysis (fsQCA) of around 2’000 digital footprints on Reddit supports my suggestion. Pointing to the equifinality of entrepreneurial narratives, I extend previous research by highlighting multiple ways of skilled storytelling.

The third essay – Qualitative Text Comparative Analysis (QTCA): A mixed-method approach to large text data – focuses on research question 3 and provides a novel methodological approach to investigating the digital footprints of entrepreneurs. Existing analytical approaches to large amounts of online text data, such as online interactions of entrepreneurs, have prompted concerns about the theoretical meaning of patterns, relationships, or identified constructs and a similar academic plea for greater research in creating meaning from large amounts of unstructured data. We, therefore, propose a methodological approach that I call Qualitative Text Comparative Analysis (QTCA), combining Computer-aided Text Analysis and Qualitative Comparative Analysis. As an action-oriented method of inquiry, QTCA takes a holistic view, structurally getting deep insights and, thus, generating equifinal results from texts. I believe this paper also serves as a general guide for scholars interested in understanding complex causal conditions of online interactions using large amounts of text.

TABLE 1

Key findings, methodological advancements, and theoretical contributions

Essay	Key findings or methodological advancements	Contributions
<p>Essay 1: <i>Digital affordances: How entrepreneurs access support in online communities during the COVID-19 pandemic</i></p>	<p>4 digital affordances on support</p> <ul style="list-style-type: none"> - When entrepreneurs perceive online communities as spaces for problem-solving: <ol style="list-style-type: none"> 1. Resolving entrepreneurs' specific problems 2. Reframing entrepreneurs' complex problems - When entrepreneurs perceive online communities as spaces for sensemaking: <ol style="list-style-type: none"> 3. Reflecting entrepreneurs' situations 4. Refocusing entrepreneurs' thinking and efforts 	<ul style="list-style-type: none"> - While current research highlights especially the function of online communities as a knowledge repository, my study highlights a broader set of social support that entrepreneurs may gain from online communities. <ul style="list-style-type: none"> - Entrepreneurial online communities function as spaces where users jointly collect resources that are openly accessible - Entrepreneurial online communities provide support that may reduce uncertainty after an exogenous shock - Entrepreneurial online communities can provide tailor-made plans for entrepreneurs by engaging in frequent interaction with the support seeker. - I provide a foundation for future research into digital affordances in other areas <ul style="list-style-type: none"> - Entrepreneurial online communities are 'malleable' and can offer different things depending on how entrepreneurs perceive online communities and make use of them. - Depending on their perception of the online community, entrepreneurs receive different responses from the community and unpack different affordances of the community - Deep community engagement enables affordances of reflecting and refocusing.
<p>Essay 2: <i>Multiple roads lead to audiences' head and heart! A configurational approach to optimal distinctive entrepreneurial stories</i></p>	<ul style="list-style-type: none"> - The usage of cognitive terms can aid to connect distinctive content to a familiar cognitive pattern so that venture plausibility as well as social desirability can be detected. - Content is the most central aspect to stand out in entrepreneurial stories and attract audiences' attention. <p>Legitimacy claims alone can foster both cognitive and emotional cultural resonance.</p>	<ul style="list-style-type: none"> - Our analysis reveals that stories may rely on conformity more heavily than previously thought <ul style="list-style-type: none"> - Legitimacy claims cannot only mitigate the cognitive liabilities resulting from the unfamiliarity with distinctiveness claims but allow reasoning based on the value that a venture or entrepreneur creates - Reasoning can either be dedicated to the value that an entrepreneurial endeavor contributes to society or to individual benefits that the audience directly profits from - While the optimal distinctiveness paradigm might well hold for some stories, entrepreneurial stories that focus exclusively on legitimacy claims can equally attract high levels of cultural resonance. - Our findings highlight the importance of configurational thinking in the field of cultural entrepreneurship research <ul style="list-style-type: none"> - Entrepreneurial stories are not about isolated types of claims, but rather a collection of interconnected claims that lead to configurational designs that most effectively capture optimal distinctiveness - A configurational approach allows to arrive at more comprehensive explanations of how entrepreneurial stories relate to cultural resonance and, consequently, support provision. - A configurational approach allows to investigate the nature of equifinality - regarding the influence of various story configurations
<p>Essay 3: <i>Qualitative Text Comparative Analysis (QTCA): A mixed-method approach to large text data</i></p>	<ul style="list-style-type: none"> - Sampling cases from text - Mitigating between text operationalization and calibration - Text analysis as robustness checks for QCA - Configurational theorizing, informed by additional texts insights 	<ul style="list-style-type: none"> - QTCA suggests a unique form of operationalization as well as related calibration of attributes, consistently iterating between theoretical foundations and construct as well as convergent clarity. <ul style="list-style-type: none"> - Supervised machine learning tools can be suitable to avoid calibration and to create crisp sets - We suggest a stepwise procedure that takes theoretical thresholds into account while remaining close to the text - QTCA might be a starting point for QCA scholars to reflect on the role of the data they use - QTCA might be a starting point for scholars to develop new approaches that combine both new data forms and the analysis of causes-of-effects relationships.

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