The employability of former entrepreneurs – Pre-hire analyses of employers' perceptions

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CHAPTER 1: INTRODUCTION

Extensive research has been devoted to different stages in the "entrepreneurial journey" and tackled questions about the formation of entrepreneurial intentions (Schlägel & König, 2014), how new ventures can be successful (Song et al., 2008), or how they organize their exit (DeTienne et al., 2015; Wennberg & DeTienne, 2014). However, entrepreneurship is not a final career destination (Burton et al., 2016) but rather a "bridge between different career opportunities" (Merida & Rocha, 2021, p.1). Past research implied that 64% of individuals persist in entrepreneurship no longer than five years (Kaiser & Malchow-Møller, 2011), and 35% of those who exit entrepreneurship turn toward paid employment (Goebel et al., 2019). Accordingly, Burton and colleagues called for "a more dedicated inquiry into how entrepreneurship intersects with and impacts individual career trajectories and outcomes" (Burton et al., 2016, p. 238).

There is an emerging debate in the entrepreneurial careers literature about the employability of former entrepreneurs in subsequent paid employment. Current research investigates whether the labor market rewards or penalizes past entrepreneurial experience by comparing the salaries of former entrepreneurs to those of wage employees (e.g., Bruce & Schuetze, 2004; Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019; Merida & Rocha, 2021). By that, the literature takes a post-hire perspective on those former entrepreneurs with a "successful" transition into paid employment but neglects those individuals who suffer from a locked-in entrepreneurship effect (Failla et al., 2017). Research on the pre-hire employability of former entrepreneurs is scattered (Botelho & Chang, 2020; Koellinger et al., 2015; Marshall, 2016), and it is not intuitively clear if former entrepreneurs are preferred job candidates in the eyes of future employers. Therefore, this dissertation adds a pre-hire perspective to the literature of entrepreneurial careers by understanding employers' pre-hire perceptions of former entrepreneurs in a recruitment and selection context.

RESEARCH QUESTIONS

The literature on individuals' careers in paid employment after an episode in entrepreneurship is emerging (Wennberg & DeTienne, 2014). When summarizing this literature, research deals with the labor market value of former entrepreneurs by investigating their financial outcomes in subsequent paid employment. For example, some studies propose earning premiums for former entrepreneurs in paid employment (e.g., Campbell, 2013; Daly, 2015; Luzzi & Sasson, 2016; Manso, 2016). Other studies suggest wage penalties upon their return to paid employment (e.g., Baptista et al., 2012; Bruce & Schuetze, 2004; Failla et al., 2017; Kaiser & Malchow-Møller, 2011; Mahieu et al., 2019). Despite the meaningful contributions of this research, the literature occurs predominantly on the macro-economic level with large-scale administrative data, concentrates on post-hire performance measures for such individuals with a "successful" transition into paid employment, and is far away from a consistent picture on the employability of former entrepreneurs. In other words, this literature neglects those entrepreneurs failing to pass the employment gate and overlooks employment-related contingencies of pre-hire employability effects. Moreover, there is only a little understanding of the underlying mechanisms explaining how employers perceive former entrepreneurs in the recruitment and selection context (Botelho & Chang, 2020; Koellinger et al., 2015; Marshall, 2016). Therefore, a more dedicated inquiry of employers' perceptions is warranted as they may determine the number and quality of former entrepreneurs' job options (e.g., Feldman, 1996; Leana & Feldman, 1995; Marks & Harold, 2011). Accordingly, employers' perceptions initial career outcomes and alter former entrepreneurs' career trajectories toward their "upward, downward, or lateral mobility" (Burton et al., 2016, p. 241). *Therefore, this dissertation addresses this void by zooming into employers' subjective perceptions of former entrepreneurs' employability. By that, this dissertation establishes a pre-hire and cognitive-based perspective grounded in categorization and attribution theories to contributes to the employability debate about former entrepreneurs.*

Three overarching topics guide this cumulative dissertation to clarify the puzzle of former entrepreneurs' employability within a recruitment and selection context. A fourth topic tackles a methodological issue in entrepreneurship research. First, it is unclear whether employers (e.g., recruiters and executives) perceive the characteristic of being a former entrepreneur as a benefit or a liability for paid employment and how employer-, job-, and applicant-related contingencies (Derous & Ryan, 2019) explain the heterogeneity in such perceptions. Furthermore, past research suggested several mechanisms to explain employers' evaluations of former entrepreneurs. For example, Marshall (2016) suggested job-role-related stereotypes to explain the employability of former entrepreneurs. More recently, Mahieu and colleagues (2019) proposed an alternative mechanism grounded in an inherent uncertainty about former entrepreneurs. As those perspectives have received some attention, empirical evidence is missing to disentangle the specific mechanisms. Hence, it is not clear which mechanisms account for the employability perceptions of former entrepreneurs, especially when information is incomplete and imperfect.

Second, former entrepreneurs are confronted with not necessarily positive stereotypes when seeking employment. Research has begun to theorize on the employment-related stereotypes about former entrepreneurs (Marshall, 2016): For example, entrepreneurs are suggested to be "hard to tame", "un-committed to the company", or "low in teamwork, and current research uses theses stereotypes to explain the employability of former entrepreneurs (e.g., Merida & Rocha, 2021). However, the understanding of these employability stereotypes is scattered, and the positive employability stereotypes are relatively unexplored. Past research identified positive associations about entrepreneurs (e.g., Rauch & Frese, 2007), which could be transferable to paid employment. For example, it is reasonable that the broad stereotypes resonating with entrepreneurs such as "born leader", "hard and passionate worker", or "initiative taker" (Buttner & Rosen, 1988; Rauch & Frese, 2007) enhance former entrepreneurs' employability. Furthermore, an empirical investigation

of employers' stereotypes about former entrepreneurs is missing, and it is relatively unclear to which degree the various stereotypes affect employability perceptions directly. Hence, a more systematic and empirical investigation of the stereotypes about former entrepreneurs' employability is needed.

Third, as failure belongs to the natural life cycle of entrepreneurship, it is likely that entrepreneurs exit entrepreneurship because of failure (Coad, 2014; Knott & Posen, 2005; Shepherd & Haynie, 2011; Wennberg et al., 2010). Entrepreneurial failure is usually covered by the media (Cardon et al., 2011) and, thus, is exposed to the public (Kibler et al., 2017). Therefore, failure represents a salient milestone in an entrepreneur's vita (Shepherd & Patzelt, 2015) and an essential factor for employers when evaluating former entrepreneurs (Botelho & Chang, 2020; Koellinger et al., 2015; Manso, 2016; Merida & Rocha, 2021). Accordingly, the third issue deals with employers' perceptions of the entrepreneurs' sense-making of failure. As entrepreneurial failure is sometimes accompanied by social stigma (Landier, 2005), employers engage in questioning the failure. Past research emphasized that applicants' failure ascriptions influenced hiring decisions (Dipboye, 1992; Silvester, 1997). As there is a mix of failure ascriptions (Weiner, 1985), past research demonstrated that failure was perceived as more positive when the causes were ascribed as external, unstable, and uncontrollable (Graham et al., 1993; Graham et al., 1997; Kibler et al., 2017; Tomlinson & Mryer, 2009). However, it is not intuitively clear how employers react to such failure ascriptions when a long-term relationship is at stake because person-centered failure ascriptions are associated with a faster recovery from failure (Ucbasaran et al., 2013), critical self-reflection (Cope, 2003, 2011), or learning (Yamakawa & Cardon, 2015).

The last issue of this dissertation deals with a methodological aspect when conducting experiments in entrepreneurship research. Metric conjoint experiments are popular with entrepreneurship scholars because they enable causal inferences, unravel complex decision making, and, accordingly, advance predictive theory building (Aiman-Smith et al.,

2002; Grégoire et al., 2019; Lohrke et al., 2010; Maula & Stam, 2020; Shepherd & Zacharakis, 2018). A common recommendation for such experiments is reporting the test-retest reliability as an internal validation method to infer the study's validity (e.g., Aiman-Smith et al., 2002; Karren & Barringer, 2002; Lohrke et al., 2010; Zhu et al., 2021). However, there is no robust evidence supporting this assumption. Accordingly, it is questionable if the test-retest reliability is a credible validity metric for such experiments because statistical power is sufficiently high to control the test-retest error variance. Moreover, current research continuously follows the commonly accepted threshold of $r = 0.7$. However, this threshold relies on a misinterpretation of Nunnally (1978) and is somewhat arbitrary, creating a false sense of validity.

CONTRIBUTION AND OUTLINE

This dissertation examines employment implications for former entrepreneurs. In an overall effort to contribute to the burgeoning literature on entrepreneurial careers (e.g., Burton et al., 2016), this cumulative dissertation picks up the research topics to build a more cognitive-based theory on the employability of former entrepreneurs. Accordingly, this dissertation centers on employers' perceptions and evaluations of former entrepreneurs. It contains four research papers: The first paper of this dissertation (Chapter 2) develops and tests novel theory about the employability of former entrepreneurs by accounting for the heterogeneity in employers' perceptions and the underlying mechanisms. The second article (Chapter 3) addresses the stereotypes about former entrepreneurs more directly by directly exploring the job-related stereotypes which resonate with being a former entrepreneur and how such stereotypes affect employability evaluations. The third paper (Chapter 4) targets employers' perceptions of former entrepreneurs' failure attributions. The fourth and final paper of this dissertation (Chapter 5) illustrates the concerns with the current use of test-retest

reliabilities in metric conjoint experiments (a recurring issue of the previous chapters) and provides recommendations to ensure the validity in metric conjoint experiments.

Research paper 1 (Chapter 2), "*Employability perceptions of former entrepreneurs*" (co-authored by Prof. Dr. Matthias Baum), theorizes on employment implications for former entrepreneurs in the pre-hire stage of paid employment. Drawing on categorization theories (Derous & Ryan, 2019; Kulik et al., 2007), this research develops mechanisms grounded in positive and negative stereotypes and inherent uncertainty about such applicants to explain how the cue of "being a former entrepreneur" is evaluated. Furthermore, several employment-related contingencies may explain the heterogeneity of these evaluations, which are specified on the level of the target position (personnel responsibility), the applicant (past failure), and employer (similarity). Two empirical studies offer broad support for our theorizing. In Study 1 (a vignette study with 375 recruiters), employability perceptions are mediated by positive and negative stereotypes and the uncertainty about former entrepreneurs. The second study (a metric conjoint experiment with two independent samples – recruiters (n = 129) and executives (n = 123)) emphasizes that entrepreneurs are less likely to face negative evaluations when the job is entitled to personnel responsibility, when they have failed, or when employers are more similar to the former entrepreneur. Accordingly, this research contributes to the entrepreneurial career literature (e.g., Burton et al., 2016) by developing a cognitive-based framework that departs from the post-hire and outcome-based research (e.g., Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019).

Research paper 2 (Chapter 3), "*Hard to tame" or "born leader": The role of employability stereotypes about former entrepreneurs*" (co-authored by Prof. Dr. Matthias Baum), investigates the employability stereotypes about former entrepreneurs more directly. Grounded in the knowledge activation framework (Higgins, 1996), this study develops a framework about the specific stereotypes about former entrepreneurs' employability. An experimental priming study with 278 recruiters implies that the general perceptions of former

entrepreneurs are negative. Furthermore, this research captured qualitative data obtained from the stereotype-induced priming task, which were categorized following a model of workplace performance (Bartram, 2005) to explore the positive and negative employability stereotypes about former entrepreneurs. Thus, this research transfers a workplace performance model (Bartram, 2005) into the entrepreneurial context to advance a stereotype-induced perspective about former entrepreneurs (Marshall, 2016). Finally, multi-level analyses reveal the impact of the specific stereotypes on employability perceptions. Here, results indicate that negative stereotypes associated with following instructions, future entrepreneurship, or teamwork explain the negative employability perceptions. On the other hand, stereotypes associated with entrepreneurial and commercial thinking, taking responsibility, or making decisions, positively affect employability perceptions. Hence, this research paper contributes to the entrepreneurial career literature (Burton et al., 2016) by not only revealing the stereotypes about former entrepreneurs but, more importantly, empirically demonstrating which stereotypes drive employability perceptions of former entrepreneurs.

Research paper 3 (Chapter 4), "*Blaming yourself rather than the circumstance! Entrepreneurial failure attributions in job interviews*" (co-authored by Prof. Dr. Matthias Baum), contributes to the emerging literature on entrepreneurial failure. Drawing on the results from a metric conjoint experiment with 188 recruiters, this research investigates how former entrepreneurs' failure attributions affect recruiters' employability perceptions. Therefore, this research paper transfers attribution theory (Weiner, 1985) to the intersection of entrepreneurship and recruitment and selection and suggests that person-centered failure attributions (e.g., internal locus of causality) are more effective when aiming at a long-term and future-oriented relationship. Hence, this research highlights an essential boundary condition within the entrepreneurial failure debate because the general public perceives failure as more positive when the entrepreneur distances him- or herself from the failure. Additionally, this research enhances the literature on female entrepreneurship research. We

contribute with gender-specific theory from leadership research (Eagly & Karau, 2002) by comparing recruiters' perceptions of failure attributions when the former entrepreneur was either male or female. Entrepreneurs usually externalize failure (Rogoff et al., 2004). However, our findings suggest that this attributional tendency is especially harmful to failed female entrepreneurs because it is incongruent with recruiters' mental schemas about female entrepreneurs.

Research paper 4 (Chapter 5), "*Test-retest reliability in metric conjoint experiments. Important requirement or overrated nuisance?*" (co-authored by Dr. Jens Schueler and Prof. Dr. Matthias Baum), investigates the role of test-retest reliabilities in metric conjoint experiments. Past research described the test-retest reliability as a necessary condition for the validity of a metric conjoint experiment (e.g., Aiman-Smith et al., 2002; Green & Srinivasan, 1978, 1990; Karren & Barringer, 2002; Lohrke et al., 2010; Shepherd & Zacharakis, 1999, 2018; Zhu et al., 2021) and referred to this reliability as an internal validation method (Lohrke et al., 2010). However, this assumption lacks robust evidence because it remains questionable how sensitive conjoint results are upon test-retest reliabilities. Accordingly, the current approach of interpreting this test statistic may lead to an ungrounded inference of a study's validity. Furthermore, the common reliability threshold of r = 0.70 is an arbitrary cutoff point as it relies on a misinterpretation of Nunnally's seminal work (Lance et al., 2006; Nunnally, 1978). Hence, using such an arbitrary cutoff threshold may exacerbate the problem for metric conjoint experiments. Using a literature review and Monte-Carlo simulations, the antecedents of test-retest reliabilities are analyzed to investigate the true meaning of test-retest reliability on multi-level regression coefficients and their corresponding p-values. Accordingly, this research contributes to the entrepreneurship literature by resolving that the test-retest reliability and the current threshold represent an inefficient validity marker. Hence, best-practice recommendations are offered to infer a study's validity.

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CHAPTER 2: EMPLOYABILITY PERCEPTIONS OF FORMER ENTREPRENEURS

ABSTRACT

We examine employment implications for former entrepreneurs in the pre-hire stage. Grounded in categorization theories, we argue that (positive and negative) stereotypes and uncertainty drive employability perceptions about former entrepreneurs and that employability perceptions are contingent upon the target position as well as the background of the applicant and of the evaluating person. Two empirical studies yield broad support for most of our predictions. Study 1 (a vignette study), we find lower employability perceptions compared to applicants with no such background, which are significantly mediated by positive and negative stereotypes as well as uncertainty perceptions. In Study 2 (a conjoint experiment with two separate samples – recruiters and executives), we substantiate the results for Study 1 and show that when former entrepreneurs apply for a job entitled to personnel responsibility or with failure in their vita, they are less likely to face devaluations. Furthermore, we find evidence for similarity effects. When the recruiter is a part-time entrepreneur and the executive is also the owner, entrepreneurs do not suffer from the employability devaluation. We discuss the implications as part of the employability debate about former entrepreneurs.

Keywords: Entrepreneurship, paid employment, stereotypes, uncertainty, personnel responsibility, failure, similarity

Research Paper 1 is co-authored by Prof. Dr. Mathias Baum

INTRODUCTION

Hiring an ex-entrepreneur can be a risky venture […]. While they likely have the chops to make it in a managerial role, hiring them for anything besides leadership could be a decision you regret in the future. (Mandy Gilbert, INC)

This statement anecdotally illustrates two related points. First, entrepreneurship is not necessarily a final destination but rather a step along the career trajectory (Burton et al., 2016). Second, former entrepreneurs seeking employment may be confronted with general uncertainty on their employability as well as specific positive and negative job-role-related stereotypes. For example, toward paid employment, entrepreneurs have been associated as being "hard to tame" and "un-committed to the company" on the one hand (Marshall, 2016), and being "initiative takers", and "high achievers" on the other hand (Luzzi & Sasson, 2016). In a parallel vein, recent research (Mahieu et al., 2019; Merida & Rocha, 2021) suggests an alternative mechanism emphasizing that employers are occupied with an inherent uncertainty about such applicants. Given these diverging views, it is not intuitively clear if and under which conditions employers are reluctant to employ former entrepreneurs.

We seek to address this puzzle by entering categorization theories into this debate (Derous & Ryan, 2019; Kulik et al., 2007; Zarate & Smith, 1990). This stream of literature emphasizes that individuals (e.g., those involved in the recruitment and selection process) use the available cues to categorize applicants, especially when information is imperfect and incomplete. Such categorization processes are likely to activate stereotypes (e.g., Fiske & Taylor, 1991) or come along with an inherent uncertainty about applicants in this category (e.g., Kagan, 1972). Thus, we develop theory-induced mechanisms which are relevant pre-hire employability factors (e.g., Agerström & Rooth, 2011; Hendricks et al., 2003; Uhlmann & Cohen, 2007). This way, categorization theories help to research how stakeholders in the recruitment and selection process perceive the employability of former entrepreneurs.

Employability perceptions are important career indicators that determine the number

and quality of job options (e.g., Feldman, 1996; Gerhart & Rynes, 1991; Leana & Feldman, 1995; Marks & Harold, 2011) and by that can alter entrepreneurs' career trajectories toward their "upward, downward, or lateral mobility" (Burton et al., 2016, p. 241). By conceptually informing employability perceptions, categorization theories also provide a new perspective toward the entrepreneurial careers literature that has predominantly dealt with post-hire administrative data estimating the economic returns from entrepreneurship in paid employment (e.g., Bruce & Schuetze, 2004; Campbell, 2013; Daly, 2015; Failla et al., 2017; Kaiser & Malchow-Møller, 2011; Luzzi & Sasson, 2016; Manso, 2016; Merida & Rocha, 2021). Our approach allows us to generate a more compelling understanding of the pre-hire career implications of former entrepreneurs, which is essential given the high dynamics of entrepreneurial careers due to their increased probability of exiting the market (DeTienne & Wennberg, 2016) and entering paid employment (DeTienne & Wennberg, 2016; Kaiser & Malchow-Møller, 2011).

We observe the employability perceptions of former entrepreneurs with multiple empirical studies. In a vignette study (Study 1) with a recruiter sample, we zoom into the different underlying mechanisms that explain the employability perceptions of former entrepreneurs. By differentiating mechanisms based on stereotypes (e.g., Fiske & Taylor, 1991; Hilton & Hippel, 1996) and uncertainty (e.g., Griffin & Grote, 2020; Kagan, 1972; van den Bos & Lind, 2002), we help to understand the respective relevance of these theoretical logics as it is not intuitively clear which is predominant to explain employability perceptions of former entrepreneurs. Second, in a set of conjoint experiments (Study 2), we seek to understand how employment gatekeepers (recruiters and executives) perceive former entrepreneurs' employability and how this perception is altered by characteristics of the applicant, the job, and the evaluator (Derous & Ryan, 2019). We propose that evaluating former entrepreneurs causes uncertainty above and beyond stereotypes about entrepreneurs, which in turn explains negative employability perceptions. However, as we disentangle

different mechanisms and further investigate variations in employability perceptions, our research also helps to explain why entrepreneurs do not always face disadvantages in paid employment (Merida & Rocha, 2021).

With our paper, we seek to make the following contributions to the entrepreneurship literature. First, we contribute to the burgeoning literature on entrepreneurial career episodes (Burton et al., 2016) by developing and testing a theory about employability perceptions of former entrepreneurs in the pre-hire stage of paid employment. We add to the current debate by departing from the previous labor-economic and outcome-based approaches (e.g., Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019) and apply a cognitive-based perspective, which provides a richer context to explain employers' pre-hire reactions and by that initial the career outcomes from entrepreneurship toward paid employment.

Second, our research acknowledges the heterogeneity in employers' perceptions of former entrepreneurs. Past research emphasized several contingencies specified on levels of the screening context, the applicant and the employer (Derous & Ryan, 2019), which enhance or inhibit categorization (Kulik et al., 2007). We integrate those contingencies to our model of employability perceptions of former entrepreneurs by testing specifications of the target position (with or without personnel responsibility), the background of the applicant (failure), and the employer (similarity). Hence, our model extends our understanding of employment implications for former entrepreneurs above and beyond currently discussed objective criteria such as industry and work experience (Hyytinen & Rouvinen, 2008).

Third, past research suggested different independent mechanisms explaining employability perceptions –via stereotypes (Marshall, 2016) or via an inherent uncertainty (Mahieu et al., 2019; Merida & Rocha, 2021). Both perspectives have received theoretical attention, while empirical tests on their respective relevance are missing so far. Our study helps to address this issue and helps to understand the importance of stereotypes and uncertainty perception in explaining employability perceptions about former entrepreneurs.

THEORY DEVELOPMENT

Outcomes from entrepreneurship in subsequent paid-employment

Research about subsequent employment of former entrepreneurs is a burgeoning field[1], providing critical first insights but also leaves open questions, mainly because of the inconclusive findings on the role of entrepreneurship on subsequent paid employment. For instance, Campbell (2013) showed that experience in entrepreneurship has a persistent positive effect on subsequent earnings in paid employment for those who transitioned from employment to entrepreneurship and back. Daly (2015) analyzed US panel data and found no evidence that such individuals engaging in self-employment were financially punished when entering paid employment. In another study, Kaiser and Malchow-Møller (2011) analyzed Danish panel data. They found that a background in entrepreneurship was only positive for subsequent salaries in paid employment for entrepreneurs transitioning within the same industry. Luzzi and Sasson (2016) analyzed data from Norway. They provided evidence that a background in entrepreneurship was positively related to subsequent salaries in paid employment only if the business had performed well or if entrepreneurs came from highly innovative sectors. Manso (2016) examined lifetime earnings from entrepreneurship and implied that especially failed entrepreneurs were not punished financially upon their return to paid employment. Most recently, Merida and Rocha (2021) found the timing and type of entrepreneurial experience to impact future wages in paid employment. Compared to non-entrepreneurs, individuals received better pay in the long run when they tested entrepreneurship for a short time soon after graduation.

Contrarily, Bruce and Schuetze (2004) found that brief episodes in self-employment reduced average hourly earnings in paid employment and reported difficulties for those

[1] There are conceptual differences as some focus on entrepreneurship (e.g., Luzzi & Sasson, 2016), self-employment (e.g., Bruce & Schuetze, 2004), or business ownership (e.g., Baptista et al., 2012). We also include such studies – given the low number of studies – even though such constructs are only weak indicators for entrepreneurship (Henrekson & Sanandaji, 2014).

returning to wage work. The findings are largely supported by Hyytinen and Rouvinen (2008). They conclude that re-entering paid employment comes with a considerable wage penalty, lower in the US than in Europe. Baptista et al. (2012) analyzed data from Portugal and found that former business owners had lower salaries and jobs in rather smaller companies but entered paid employment at higher job levels. Researching employment stability, Failla et al. (2017) analyzed Danish data and suggested a locked-in entrepreneurship effect as entrepreneurs' return to the labor market was occupied with a financial penalty. Mahieu et al. (2019) proposed that employers see entrepreneurs as "risky hires" (p.1) and respond with pay cuts to account for this uncertainty.

To the best of our knowledge, there are currently only two field studies (Botelho & Chang, 2020; Koellinger et al., 2015) and one theoretical study (Marshall, 2016) investigating pre-hire employment effects of former entrepreneurs. In both field studies, the authors sent hypothetical job applications to real job openings observed that former entrepreneurs received systematically fewer responses than their matched counterparts. Additionally, Botelho and Chang (2020) found that successful entrepreneurs received fewer callbacks than failed entrepreneurs. Marshall (2016) suggested that employers "may not value entrepreneurial experience as much as entrepreneurs presume" (p. 13) because they consider entrepreneurs to lack commitment, teamwork capability, and the ability to follow their leader in paid employment.

What follows from this review is that we are far away from a consistent picture of entrepreneurs' employability. Current research predominantly adopts post-hire and large-scale performance measures as employability proxies. A logical limitation of such research is the focus on individuals with a "successful" transition into paid employment and the neglect of individuals suffering from a locked-in entrepreneurship effect (Failla et al., 2017). Furthermore, it overlooks the empirical mechanisms explaining such effects. Hence, research on pre-hire employability perceptions is warranted to explore the employability of former

entrepreneurs further.

Theoretical considerations about the employability of former entrepreneurs

In the recruitment and selection process, employers use job-related cues (e.g., from résumés) to categorize applicants for their overall impression of the applicant (Derous & Ryan, 2019; Kulik et al., 2007; Zarate & Smith, 1990). Individuals are attuned to use category-based cues at hand when information levels are incomplete and imperfect (e.g., Connelly et al., 2011; Higgins & Gulati, 2006; Huang et al., 2013; Sanders & Boivie, 2004). Categorization describes a process in which individuals group others. Common social categories develop from demographic criteria such as age (e.g., Finkelstein et al., 1995), gender (e.g., Eagly & Karau, 2002), or ethnicity (e.g., Derous et al., 2012). Moreover, social categories develop from grouping individuals who share similar identity attributes (Navis & Glynn, 2011), which holds especially strong for entrepreneurship (e.g., Austin et al., 2006; Gundry & Welsch, 2001; Wry & Lounsbury, 2013). Accordingly, the entrepreneurship category should be relevant for grouping applicants as a prior occupation (Smith et al., 1996) and job type (Koenig & Eagly, 2014; Macrae et al., 1994) were essential categories for recruitment and selection-related decisions. As employers categorize applicants, they draw on category-based stereotypes for their evaluations (Agerström & Rooth, 2011) to process the incoming information easier and faster (Hilton & Hippel, 1996). Alternatively, the categorization induces uncertainty when established schemas are incompatible with the situation (Kagan, 1972) and when future outcomes are difficult to predict (van den Bos & Lind, 2002). Thus, uncertainty about others is high when the specific judgment to be made is vague (Molden & Higgins, 2004).

Our model transfers these perspectives towards the evaluation of former entrepreneurs when applying for paid employment. The following section emphasizes the specific mechanisms that emanate from underlying stereotypes that correlate with the entrepreneurship category. Moreover, we explain a mechanism by building on the inherent

uncertainty with the entrepreneurship category.

A stereotypes perspective about the employability of former entrepreneurs

Employers have an inherent interest in evaluating applicants quickly (Frieder et al., 2016). Individuals can do so by putting others "into a satisfactory category and use this category as a means of prejudging the solution […]" (Allport, 1954, p. 20). The categories are readily available upon the applicant cues (Zarate & Smith, 1990), and individuals can draw on the stereotypes which correspond with the entrepreneurship category. Such stereotypes contain the knowledge, beliefs, and expectations (Hilton & Hippel, 1996; Mackie & Smith, 1998; Sherman et al., 2005) and serve as functional shortcuts to infer about cause-effect relationships in complex social situations (Fiske & Taylor, 1991; Tajfel, 1981) especially when information levels are low (Derous & Ryan, 2019).

Following the above logic, stereotypes are activated by the entrepreneurship category label by means of mental associations between the category and the information cues (Bodenhausen & Macrae, 1998; Macrae et al., 1994). The entrepreneurship category can be matched to traits such as self-efficacy, proactivity, need for achievement, passion for work, or stress tolerance (Rauch & Frese, 2007). Such positive characteristics about members from the entrepreneurship category are likely to translate into positive employment stereotypes such as being hard-working individuals with a preference for innovation (e.g., Buttner & Rosen, 1988; Gupta et al., 2009; Navis & Glynn, 2011). Contrarily, there are specific characteristics for the entrepreneurship category, such as a need for autonomy and flexibility or lower levels of rigidity and norm orientation (Rauch & Frese, 2007). Such characteristics may be obstructive for paid employment as they are associated with negative employment stereotypes such as being hard-to-tame, atrocious team players, or fractionally committed to the company (Marshall, 2016).

Stereotypical beliefs are meaningful in organizational hiring situations (e.g., Agerström & Rooth, 2011; Uhlmann & Cohen, 2007), especially when the applicant is a

former entrepreneur (Marshall, 2016). They can be eminent over objective criteria (Gilmore & Ferris, 1989; Kinicki et al., 1990) and can influence perceptions directly (Macrae et al., 1994) unconsciously and automatically (Devine, 1989; Greenwald & Banaji, 1995), even if other relevant information is available (Bodenhausen & Wyer, 1985). Employers hiring intentions of former entrepreneurs result from the compatibility between their stereotypical perceptions of job applicants and job- and company-related requirements (Kulik et al., 2007), which implies that employers have expectations of success when their stereotypical perceptions of the applicant match the job requirements (Heilman, 1983, 1995). However, the impact of stereotypes varies along with the social and organizational context (Cuddy et al., 2011; Derous & Ryan, 2019; Kulik et al., 2007), which implies that there are situations in the recruitment and selection process under which the impact of positive and negative stereotypes may shift (e.g., Rudman & Glick, 1999).

An uncertainty perspective about the employability of former entrepreneurs

We refer to uncertainty[2] as a psychological state of doubt toward unexplained events (DiFonzo et al., 1994; Downey & Slocum, 1975) and the unpredictability of the future (van den Bos & Lind, 2002). In situations of low uncertainty, individuals are likely to engage in exploration such as the search for new possibilities, risk-taking, and experimentation and, thus, adaptive performance outcomes. When uncertainty is perceived as high, however, individuals choose certainty, efficiency, or routines to delimit the variance of outcomes (Greco et al., 2019; March, 1991). Uncertainty about other people is generally aversive (Fiske & Taylor, 1991) because individuals have an inherent need to feel certain about their world to keep control over their life (van den Bos & Lind, 2002).

There are at least two relevant sources of uncertainty when employers face the social

[2] There are two independent sources of uncertainty: One of which we have direct control (endogenous uncertainty) and one of which we have limited control (exogenous uncertainty) (e.g., Griffin & Grote, 2021). We focus on the first to investigate if employers are likely to choose the more uncertain applicant (the former entrepreneur).

category of former entrepreneurs. First, uncertainty occurs because of the incompatibility between cognitive structures, namely when individuals encounter a discrepant situation from an established schema (Kagan, 1972). Such discrepancy results in discomfort and insecurity (Festinger, 1957), and individuals feel the need for more information to understand important features of the situation (van den Bos & Lind, 2002). The second source of uncertainty occurs when individuals are unable to predict future events (Kagan, 1972). This unpredictability of future outcomes is associated with undesirable risks. The literature on organizational risk-taking (e.g., Sitkin & Pablo, 1992) indicates that organizational risks are only attractive if counterbalanced with higher expected returns (e.g., Bowman, 1980). However, individuals need specific knowledge to predict the outcomes of their actions (March, 1991). Without such knowledge, outcomes are uncontrollable, making it difficult to calculate the expected higher returns from taking the risk (Sitkin & Pablo, 1992). Hence, organizational members are likely to avoid risks (Busenitz & Barney, 1997). There is some evidence from research on gambling underlining our reasoning: Individuals have a preference to bet on events with known outcomes such as rolling the dice compared to events they feel uninformed about (Kahneman & Tversky, 1982). Hence, gambling is enhanced if individuals feel knowledgeable, familiar, and experienced but is diminished if relevant information is unavailable (Heath & Tversky, 1991).

Variations in employability perceptions

Stereotypes and uncertainty constitute mechanisms potentially explaining the employability perceptions of former entrepreneurs. We further contextualize our model by describing several characteristics that cause variations in employability perceptions. As previously stated, applicant cues signal membership to a social category (e.g., Zarate & Smith, 1990). However, such categories need further interpretation (Derous & Ryan, 2019). Past research emphasized that "the perceiver will attend to other noticeable information, information necessary to form an impression beyond the essentially perceptual, rapid, initial

categorization (Fiske & Neuberg, 1990, p. 6). Hence, there are contingencies that may alter the way categorization takes place and facilitate more individualized considerations of categories (Kulik et al., 2007). Translated to our research context, there are contingencies under which the entrepreneurship category – and their implications for paid employment – changes its impact on the overall judgment of the applicant. Current research suggests that such contingencies are situated within the broader job screening context, the applicant, and individual differences among decision-makers (Derous & Ryan, 2019; Kulik et al., 2007). We assume that characteristics of the job position, applicants' background, and the recruiting person make a difference on how the cue "being a former entrepreneur" is evaluated regarding the potential employability.

Specifically, we focus on the *target position, past failure, and entrepreneurial experience of the recruiter or executives' ownership status* as contingencies. We focus on the target position (with/out personnel responsibility) because requirements – and hence expectations about applicants – differ across job levels (e.g., Jeanneret & Strong, 2006; Podsakoff et al., 2011; Rotundo & Sackett, 2004; Wilk et al., 1995) which is important for applications from entrepreneurs (Baptista et al., 2012). Moreover, jobs at higher levels require more leadership (Mumford et al., 2007), implying the need for specific meta-capabilities such as the use of heuristics (Alvarez & Busenitz, 2001; Welter & Kim, 2018) or being less reliant on others (Rauch & Frese, 2007). We focus on *past failure* because failure represents a salient information criterion (Shepherd & Patzelt, 2015), represents a factor why entrepreneurs (re-) enter paid employment (Marshall, 2016), is an important factor when evaluating former entrepreneurs (Botelho & Chang, 2020; Koellinger et al., 2015; Mahieu et al., 2019; Manso, 2016; Merida & Rocha, 2021), and is a common phenomenon in entrepreneurship (e.g., Cardon et al., 2011; Coad, 2014; Kibler et al., 2017; Shepherd & Patzelt, 2015). We focus on recruiters' *part-time entrepreneurship* status and executives' *ownership status* as those characteristics potentially induce similarity perceptions (D. Byrne,

1971). Since ambiguous information (e.g., the information value of the entrepreneurship characteristic) ends up with different meanings for different information recipients (Derous & Ryan, 2019), perceptions of similarity may automatically induce interpersonal attraction in the selection process (Cable & Judge, 1997), and implies more optimistic evaluations of applicants (Herriot, 1981; Lin et al., 1992; Rand & Wexley, 1975; Zajac & Westphal, 1996).

HYPOTHESES

The employability of former entrepreneurs

When making inferences about applicants' employability, employers engage in stereotypical thinking about entrepreneurs (Marshall, 2016) or feel an inherent uncertainty (e.g., Mahieu et al., 2019). Considering stereotypes, former entrepreneurs are likely to be confronted with a mix of positive and negative stereotypes. In the selection process, employers infer about applicants' future productivity (Ployhart et al., 2017). We argue that several positive stereotypes are associated with former entrepreneurs' future productivity. Entrepreneurs operate under conditions associated with high uncertainty, novelty, or time pressure (Baron, 1998). Hence, entrepreneurs usually develop a preference for innovation and risk-taking (Rauch & Frese, 2007; Shane & Venkataraman, 2000). Moreover, past research emphasized that entrepreneurs have a higher achievement motivation than corporate managers (Stewart et al., 1999). Accordingly, entrepreneurs may be stereotyped as hard-working and productive.

Besides productivity, there are other characteristics of entrepreneurs which make them a valuable contribution to paid employment. Hayward et al. (2010) argued that entrepreneurs develop emotional, cognitive, social, and financial resilience during their entrepreneurial endeavors. Moreover, past research suggested that entrepreneurs are more confident than non-entrepreneurs and are persistent when confronted with challenges and setbacks (Chen et al., 1998; Fay & Frese, 2001). Hence, entrepreneurs have higher levels of

emotional stability than managers as they experience higher levels of psychological stress (working long hours in unstructured environments with a personal and financial stake) (Zhao & Seibert, 2006). Similarly, Rauch and Frese (2007) suggested that entrepreneurs are usually associated with characteristics such as endurance, tenacity, and stress tolerance. Accordingly, entrepreneurs might be perceived to be more resilient to adverse situations in paid employment, tenacious even when things are not going as planned, able to adapt quickly to novel situations, and to find creative solutions for emerging problems. Taken together, we hypothesize:

> *H1a. Former entrepreneurs (compared to employees) are associated with positive stereotypes leading to enhanced employability perceptions (i.e., the effect of former entrepreneurship on employability perceptions is mediated by positive stereotypes).*

However, employers may also draw on negative stereotypes about former entrepreneurs. First, employers engage in stereotypical thinking to infer applicants' motivation to apply and stay with the company. Here, employers are likely to believe that entrepreneurs have intentions to engage in future entrepreneurship and fear a lack of commitment due to the turnover intentions of such applicants (Marshall, 2016). In a recent study, employees in entrepreneurial ventures negatively interpreted the entrepreneurs' passion for founding because they believed that the entrepreneur would engage in new founding activities and move to a new firm once the current business was established (Breugst et al., 2012). A lack of commitment leads to higher turnover rates (Meyer et al., 2002). Indeed, there is evidence that former entrepreneurs quit paid employment sooner than others, with the entrepreneurial identity as a key factor of this voluntary turnover (Feng et al., 2021). Accordingly, employers have a strong incentive to look for any characteristic that reduces potential commitment and turnover (at least in their eyes) and filter out job candidates that show such characteristics.

Second, employers have stereotypical beliefs about how former entrepreneurs act toward superiors and colleagues. Here, employers have stereotypical beliefs that entrepreneurs have power struggles with superiors, low teamwork capabilities, and trouble with hierarchies (Marshall, 2016). Employers stereotype former entrepreneurs as "hard to tame" (Luzzi & Sasson, 2016, p. 404). Indeed, entrepreneurs are deemed to prefer flexibility and a less formalized work environment (e.g., Rauch & Frese, 2007; Stewart & Roth, 2007). Moreover, entrepreneurs have been associated with overconfidence, "overestimating the probability of being right" (Busenitz & Barney, 1997, p. 10). However, in paid employment, individuals rely on others (LePine et al., 2000) and are more likely to be monitored by organizational structures and superiors (Zhao & Seibert, 2006), which may explain why employers are reluctant toward former entrepreneurs.

H1b. Former entrepreneurs (compared to employees) are associated with negative stereotypes leading to reduced employability perceptions (i.e., the effect of former entrepreneurship on employability perceptions is mediated by negative stereotypes).

When employers evaluate applicants, they usually engage in uncertainty appraisals by interpreting information categories (Griffin & Grote, 2020). However, the categories (such as the characteristic of being a former entrepreneur) need interpretation (Perkins & Hendry, 2005). As applications from former entrepreneurs are usually less common, their applications deviate from their established schemas of a typical applicant, which induces uncertainty (Kagan, 1972). Moreover, former entrepreneurship is more difficult to interpret, making it difficult for employers to predict future performance (Mahieu et al., 2019). Past research emphasized that work experience is an important factor for selection decisions (e.g., Singer & Bruhns, 1991). However, entrepreneurship cue provides less information about an entrepreneurs' work experience as they act as their own reference. Hence, Mahieu et al. (2019) suggest that an entrepreneur "holds a low rather than a negative information value"

(p.1) which makes it difficult to infer about their future performance. Accordingly, we hypothesize the following:

> *H1c. Former entrepreneurs (compared to employees) are associated with higher uncertainty leading to reduced employability perceptions (i.e., the effect of former entrepreneurship on employability perceptions is mediated by perceived uncertainty).*

Contingencies of the effects of former entrepreneurship

The moderating effect of the target position. We expect a shift in employers' perceptions when former entrepreneurs apply for a job with personnel responsibility resulting in less categorization. Several arguments underline this hypothesis. First, employers are more familiar with applications for positions with personnel responsibility because entrepreneurs usually enter paid employment at higher levels (Baptista et al., 2012). Second, personnel responsibility requires some form of leadership (Bass & Riggio, 2006). Leadership functions to move employees toward constructive or adaptive change by establishing a direction, aligning people, motivating and inspiring them (Kotter, 1990) to achieve a shared goal (Newstead et al., 2019). These features are more in line with potential stereotypes about former entrepreneurs. Accordingly, employers should perceive entrepreneurship as an advantage for a position with personnel responsibilities. Such positions need a broad set of competencies and business knowledge (Dragoni et al., 2009; Spreitzer et al., 1997; Sturm et al., 2017) because leaders have to understand how and why employees react the way they do and, more importantly, identify and develop employee potential (Mumford et al., 2007). Therefore, the jack-of-all-trades characteristic of entrepreneurs (Lazear, 2002, 2004) is a beneficial characteristic for personnel responsibility in paid employment. Moreover, past research demonstrated that entrepreneurs are associated with characteristics such as independence and autonomy (Rauch & Frese, 2007). Individuals with such characteristics are

self-directed and rely less on others, and go against the grain to make things happen (Spreitzer et al., 1997), which is essential when establishing a strategic direction. Cogliser and Brigham (2004) reviewed the entrepreneurship and leadership literature and reported theoretical and empirical overlaps between leadership and entrepreneurship. Similarly, Vecchio (2003) suggested that entrepreneurship is leadership "within a narrow, specific context" (p. 322). Concluding, we theorize that employers engage in less categorization about former entrepreneurs as the entrepreneurship cue is more congruent with a job that comes with personnel responsibility. Thus:

> *H2. The influence of being a former entrepreneur on the employability perception is moderated by the target position: The employability perception is more positive for former entrepreneurs (compared to former employees) when the job opening entails personnel responsibilities than when the job does not.*

The moderating effect of prior failure. In this study, we focus on salient project failure, which is defined as "the termination of a project due to the realization of unacceptably low performance" (Shepherd & Cardon, 2009, p. 924). At least two lines of argumentation imply a positive moderating effect of failure on the entrepreneurship-employability relationship. First, employers make assumptions about why individuals apply for a job (Chan, 2010) which are generally filled with uncertainty when evaluating former entrepreneurs (Mahieu et al., 2019). This uncertainty decreases when former entrepreneurs have salient failure in their vita. Failure represents a plausible reason for entrepreneurs to apply for paid employment, as exiting entrepreneurship is more likely after a low performance (Manso, 2016). Moreover, entrepreneurs engage in environments characterized as unpredictable (Chandler et al., 2005), unreliable (West & Meyer, 1998), and work under high ambiguity (Alvarez & Busenitz, 2001) and time pressure (Baron, 1998). Hence, failure belongs to the natural life cycle of entrepreneurship (Wiklund et al., 2010), making the entrepreneurship

category more congruent with failure.

Second, past research emphasized that failure had severe negative consequences on the psychological level such as grief (Jenkins et al., 2014; Shepherd, 2003; Singh et al., 2007), social level such as a denigration of entrepreneurial reputation (Shepherd & Haynie, 2011), and the economic level such as financial pressure (Singh et al., 2007). Hence, the feasibility and desirability of future entrepreneurial intentions should be less likely after failure (Krueger et al., 2000; Krueger & Carsrud, 1993; Ucbasaran et al., 2013), which makes turnover similar likely for entrepreneurs and non-entrepreneurs (e.g., moving to another company). Similarly, failure can also have positive effects for former entrepreneurs. Past research acknowledged the positive effects of failure in entrepreneurship (Shepherd, 2003) because failure is related to self-reflection (Cope, 2003, 2011) and learning (McGrath, 1999). For example, employers may believe that failed entrepreneurs have learned from their failure to engage more successfully in similar situations in the future. However, employers have such positive failure perceptions more likely about former entrepreneurs as employees' learning from failure is restricted by substantial obstacles such as low learning-goal orientation, cognitive biases, non-supportive work environments, or organizational stigmatization of failure (for an overview, see Shepherd et al. (2011)). Hence, failure in entrepreneurship may increase positive stereotypes about former entrepreneurs, which account for the general negative effect. Thus:

> *H3: The influence of being a former entrepreneur on the employability perception is moderated by prior failure. The employability perception is less negative for former entrepreneurs (compared to former failed employees) when they have failed in their previous career episode*

The moderating effects of similarity (recruiter and executives). As noted previously, perceptions of similarity are important in decision-related situations, especially when information levels are low (D. Byrne, 1971). Most of the existent research across

disciplines has in common that such perceptions of similarity lead to more positive perceptions of others (e.g., Elkins et al., 2002; Franke et al., 2006; Murnieks et al., 2011; Wilson et al., 2016). Past entrepreneurship research indicated that investors evaluated opportunities as more positive when the entrepreneur was more similar to them (Franke et al., 2006; Murnieks et al., 2011). In a parallel vein, false consensus impacts employers' stereotypes about applicants (Martinko et al., 2006). Herriot (1981), for instance, argued that employers have more positive stereotypes about candidates they perceive as similar to them. These findings imply that employers who share similar characteristics with former entrepreneurs, such as the degree of being entrepreneurial, will be more inclined to the characteristic of being a former entrepreneur and are more likely to subconsciously suppress the negative stereotypes or the inherent uncertainty about the employability of former entrepreneurs.

Perceptions of similarity should hold especially for recruiters who engage in part-time entrepreneurship and for executives who are also the owner of their business: Past research emphasized that a common form of entrepreneurship is a combination of engaging in entrepreneurship while retaining the primary job in paid employment (Burke et al., 2008; Folta et al., 2010; Petrova, 2012; Raffiee & Feng, 2014). Through part-time entrepreneurship, individuals obtain entrepreneurial competencies (Wennberg et al., 2006). Toward the executives, recent research showed that innovation was related to the company's ownership status (Cucculelli & Peruzzi, 2020). Similarly, Man et al. (2002) theorized that owners of small and medium-sized companies needed entrepreneurial competencies to ensure their firms' competitiveness in the market. Thus, owners have more similar tasks to those of entrepreneurs (e.g., being innovative) and are inclined to have less negative stereotypes about former entrepreneurs as they perceive themselves as more similar to entrepreneurs than non-owners.

In a similar vein, we argue that both recruiters with part-time entrepreneurship and

owner-executives take a more empathic perceptive toward former entrepreneurs when making selection-related decisions, which induces less negative stereotypes. Krebs (1975) demonstrated that individuals who believed to be more similar to others showed more empathy to them. Regan and Totten (1975) found that when individuals empathize with others, their attributional perspective would be more similar to them. Moreover, Shepherd and Patzelt (2015) demonstrated that individuals with greater empathy were less harsh in their evaluations of failed entrepreneurs. Hence, recruiters engaging in part-time entrepreneurship and owner-executives show more empathy toward former entrepreneurs implying less negative stereotypes about former entrepreneurs in paid employment. Taken together, we hypothesize:

> *H4. The influence of being a former entrepreneur on the employability perception is moderated by perceptions of similarity specified as the entrepreneurship status of the recruiter or the ownership status of the executive. The employability perceptions are less negative for former entrepreneurs (compared to former employees) when the employer is more similar to the entrepreneur.*

METHODS AND RESULTS

We designed two empirical studies to investigate employability perceptions about former entrepreneurs. Study 1 is a vignette study to test the underlying stereotyping and uncertainty mechanisms as articulated in H1a-c. Study 2 is a metric conjoint experiment that further substantiates the findings from Study 1 and helps to test contingencies (H2-H4) of the effect of former entrepreneurship on employability perceptions.

Study 1: A vignette experiment investigating the mechanism toward employability perceptions of former entrepreneurs

We argued that there are specific positive and negative stereotypes as well as

uncertainty about former entrepreneurs. Study 1 was designed to test these stereotypes about former entrepreneurs to disentangle the underlying mechanism of how former entrepreneurs are perceived for paid employment.

Methods: Study 1

Experimental design. We conducted a vignette study (randomized between-subject experimental design) with a recruiter sample in Germany to test hypothesis H1a-c. Our vignettes are short applicant profiles that participants had to evaluate. We developed a 2x2x2 between-subjects design (applicant is a former entrepreneur: 1 = yes, 2 = no; failure detected during application process: 1 = yes, 0 = no; applicant applies for a position with personnel responsibility: 1 = yes, 0 = no) to also capture the contingencies investigated in Study 2. The first two variables were manipulated within the applicant profiles. The personnel responsibility variable was manipulated within the overall study description. To make the vignettes more realistic, we added further job-related information to their profiles. An overview of the vignettes is in Appendix A. Following current suggestions on developing study material (Grégoire et al., 2019), we conducted preparatory interviews with recruiting experts and business development managers. We used their feedback to ensure the validity of the study material and that vignettes were, beyond our manipulations, equivalent.

In the study, participants judged hypothetical job applicants for an open job on the management level in their company (Baptista et al., 2012) (for a detailed description of the study material, see Appendix A). Once randomly assigned to one of the vignette conditions, we instructed participants that the HR team had already screened job applicants and now needed advice on the remaining three applicants who were, in principle, eligible for the position. Therefore, the colleagues had created short profiles with the essential information about the three applicants, such as industry and work experience (e.g., Kaiser & Malchow-Møller, 2011), employment history (e.g., Campbell, 2013), or timing (Merida & Rocha, 2021). The first applicant profile was the one we manipulated (either an entrepreneur or an

employee, with all other characteristics equal). In contrast, the two others were always held constant among the different manipulations and served primarily for realism purposes (e.g., Jones et al., 2014).

After we presented the three applicant profiles, we assessed participants' expectations about only one of the applicants, which we told participants was randomly selected. However, we always presented the first applicant. After participants provided their specific expectations about the applicants, we presented all three applicants again and asked participants to provide their final employability evaluation. After the experiment, we conducted manipulation checks, evaluated the study, collected the controls and demographical data. To incentivize participants, we offered a summary of our results.

Participant recruitment and sample characteristics. We followed a multisampling approach and collected data from several sources: First, we collaborated with a professional online panel provider similar to other entrepreneurship research (Kibler et al., 2017; Kollmann et al., 2017; Moser et al., 2017). From this provider, we obtained 262 complete questionnaires. Additionally, we contacted potential study participants via LinkedIn following Lanivich (2015): Here, we contacted about 2.800 potential participants, of which 924 agreed to participate (response rate: 33%). A total of 218 recruiters completed the questionnaire (completion rate: 8%), which leads to a total of 480 completes. We used bogus items to identify careless responses to ensure data quality (Meade & Craig, 2012). Further, we deleted potential speedster and slowster (see Appendix B for the data cleaning process). Overall, we excluded 105 participants due to careless responding or speeding the questionnaire leading to a final sample of 375 participants. Table 1 provides an overview of the sample characteristics.

To evaluate nonresponse bias (Armstrong & Overton, 1977), we compared the information (gender, education) obtained from the LinkedIn profiles and found no significant difference across respondents and non-respondents ($p>0.05$). For the panel provider data, we assessed the extent of nonresponse with an archival analysis (Rogelberg & Stanton, 2007),

which has recently been conducted in entrepreneurship research (e.g., Kibler et al., 2017). Therefore, we compared the demographics of both samples with the German working population, as reported by the German Federal Statistical Office (Federal Employment Agency, 2019). We find that our samples seem to be representative in terms of age and gender towards the general population. Hence, nonresponse bias is no serious issue in our data.

TABLE 1
Sample characteristics for both samples

	Study 1	Study 2	
	Recruiters (n = 375)	Recruiters (n = 129)	Executives (n = 123)
	Mean (SD) or percentage	Mean (SD) or percentage	Mean (SD) or percentage
Personal demographics			
Male (%)	45	45.7	85.4
Age (years)	38.25 (11)	45.2 (10.1)	46.55 (9.57)
Education (%)			
Bachelor degree	28.8	21.7	9.8
Master degree	46.4	42	63.3
PhD	1.87	1.6	9.8
Vocational training	23	35	17.1
Professional experience			
Recruiting/management exp.	8.89 (6.93)	11.71 (8.14)	16.46 (9.08)
Personnel respons. (%)	50	72	-
Working part time (%)	13	12	-
Part-time entrepreneur (%)	17.33	17	-
Company owners (%)	-	-	56
Company founders (%)	-	-	38
Founded more than once (%)	-	-	27
Industry* (%)			
Engineering	11.47	9.3	11.4
Internet and information tec.	11.73	9.3	10.6
Consulting	6.93	12.41	12.2
Consumer goods and trading	6.93	10.1	11.4
Public sector	10.13	7.75	4.06
Transportation and logistics	6.93	11.63	4.07
Company size (%)			
0 - 50 employees	10.93	8.53	23.58
51 - 100 employees	10.4	8.53	16.26
101 - 200 employees	14.13	10.85	13.01
201 - 500 employees	16	17.05	19.51
501 - 1.000 employees	11.2	13.95	16.26
More than 1.000 employees	37.33	41.09	11.38
Recruiting participation (%)			
Often or always	-	-	64.2
Sometimes	-	-	32.5
Never	-	-	3.3

* For a detailed list of the industries (>20), please contact the main author.

Variables. The *dependent variable* employability likelihood is measured as the likelihood to invite a job applicant to a job interview (1 = not likely at all; 10 = extremely likely) following other prior research (e.g., Moy, 2006). We manipulated the *independent variables* in the vignette experiment, namely whether the applicant was a former entrepreneur or a manager. Moreover, we manipulated whether the applicant had prior failure (yes/no) or applied for a position with personnel responsibility or not to additionally capture the hypothesized contingencies of employers' perceptions of former entrepreneurs (Appendix A). All *mediator variables* were measured on 5-point Likert scales (1 = very unlikely; 5 = Very likely). Drawing on our theorizing, we derived the potential stereotypes about former entrepreneurs' employability. As stereotypes are context-specific and no existing measurement of positive and negative stereotypes of entrepreneurs in an employment situation was available, we adopted an inductive, qualitative, and multistage approach to developing our measures (e.g., Chen et al., 2018).[3]

Toward the negative stereotypes about former entrepreneurs, we included items to measure recruiters' perceptions of applicants' preference for organizational structure (adapted from Cable and Edwards (2004), hard-to-tame (adapted from Hsieh and Lee (2020)), and teamwork (adapted from Welbourne et al. (1998). Moreover, we measured recruiters' perceptions of applicants' turnover intentions (adapted from Mitchell et al. (2001) and Liñán and Chen (2009)) and organizational commitment (adapted from Shore et al. (1995)). Toward

[3] First, we conducted multiple in-depth interviews with recruiters, managers, and executives about their impressions of former entrepreneurs and what they would think if former entrepreneurs applied for a job in their organization. We additionally used qualitative information that we gathered in other empirical studies (e.g., another conjoint experiment with n=278 recruiters) and statements from participants of our pre-tests (N= 226 recruiters and executives in total). In several rounds of discussions in the research team (where we also incorporated the feedback of other scholars familiar with the research area), we filtered and condensed the most salient stereotypes. In this step, we moved back and forth several times, while also informing this process with previous studies on associations about entrepreneurs (e.g., Luzzi & Sasson, 2015; Marshall, 2016). Finally, we conducted another round of interviews (n = 5) to further establish content validity and to ensure theoretical saturation – i.e., that not new themes emerged (e.g., Glaser & Strauss, 1967; Petriglieri et al., 2019). We then used the salient stereotypical features associated with entrepreneurs when recruiting for a given job and searched the literature on existing scales that reflect these features. We found for each salient stereotypical association a suitable, well-validated scale which we used for creating our stereotype constructs. Accordingly, we do not claim that our list of potential stereotypes about former entrepreneurs is complete. Instead, the study aims to assess the underlining mechanisms more generally.

the positive stereotypes, we used items to measure recruiters' perceptions of applicants' preference for autonomy (adapted from Cable and Edwards (2004)), preference for variety (adapted from Cable and Edwards (2004)). Moreover, we measured recruiters' perceptions of applicants' achievement motivation (adapted from Liu et al. (2010)), heuristic decision making (developed from Alvarez and Busenitz (2001)), leadership effectiveness (adapted from B. van Knippenberg and van Knippenberg (2005) and D. van Knippenberg (2011), and personal initiative (Frese et al., 1997). Finally, we reviewed the literature on measuring psychological uncertainty (Colquitt et al., 2012; Li et al., 2020; Windschitl & Wells, 1996) and adapted two items measuring participants' uncertainty about applicants. All items, descriptions, and Cronbach's alphas are in Appendix C. We presented the stereotype constructs in randomized order to avoid ordering effects.

We used equal-weight composite scores (Bobko et al., 2007; Edwards, 2001) to identify the general mechanism explaining employability perceptions of former entrepreneurs. Such measures are frequently used in entrepreneurship (e.g., Radosevic & Yoruk, 2013), management (e.g., Krishnan et al., 2016), and psychology (Tsai et al., 2007) because they capture complex and multi-dimensional topics and hence provide "the big picture" (Saisana et al., 2005). We created the composite measures by taking the mean scores of each z-standardized item. For the uncertainty construct, we used the two uncertainty items.

We used several *controls.* We added one item in which we asked participants' if their company had such (or similar) position in their company. Further, we included one item measuring participants' recruiting experience (in years) because it has been associated as important in decision-making (Ashby & Maddox, 1992; Judge & Miller, 1991). We added current personnel responsibilities (0 = has no personnel responsibility; 1 = has personnel responsibilities) because recruiters with personnel responsibility are likely to differentiate better between the requirements for positions with or without personnel responsibility. Finally, we added recruiters' part-time entrepreneurship status (0 = no part-time

entrepreneurship; 1 = part-time entrepreneurship (currently or in the past)) to be consistent with Study 2. We checked the *manipulations and the validity* of the responses with several statements (e.g., "one of the applicants is a former entrepreneur").

Results: Study 1

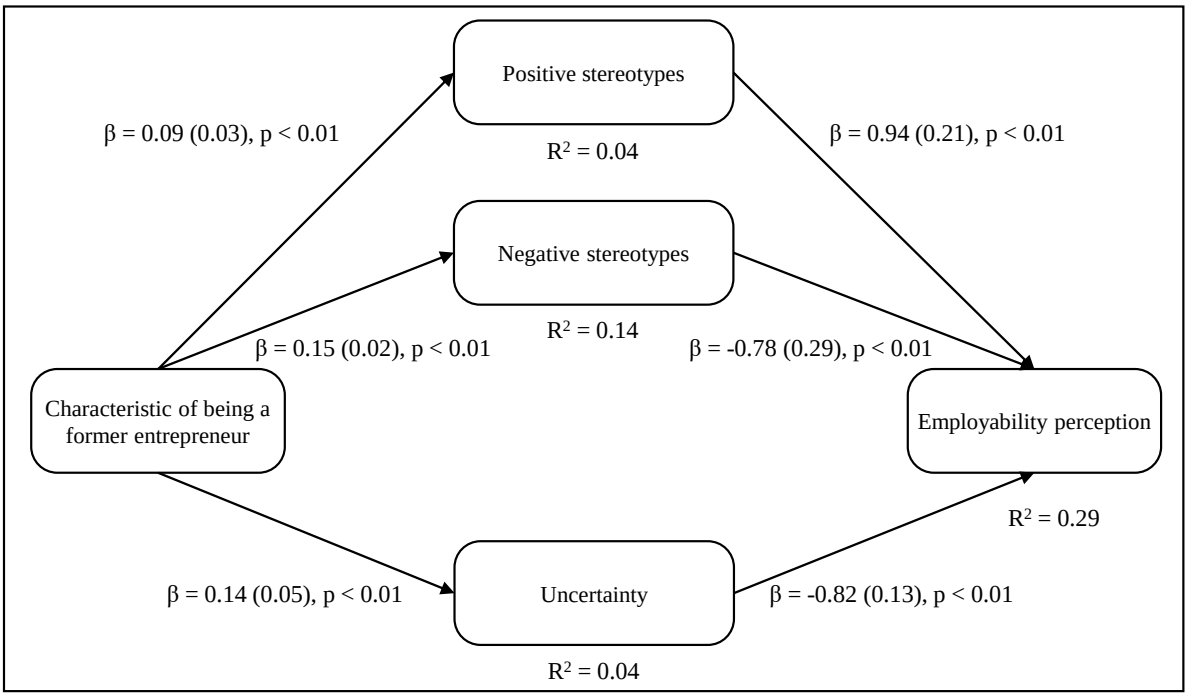
With Study 1, we aim to test H1a-c. Table 2 reveals the descriptive statistics of our study variables. Manipulation checks via independent t-Tests suggest that our manipulations worked as intended (Podsakoff et al., 2011). We tested a mediation model and applied 10,000 bootstraps to estimate the indirect effects and their confidence intervals in Mplus (Muthén & Muthén, 2015). The resulting models fit the data well (χ^2 [df] = 47.836 [13], p = 0.19; CFI = .99; RMSEA = .03) predicting a significant share of employability perception (R^2 = 0.29). We find support for all three hypotheses specified in H1a-c (Figure 1) as our results indicate a significant indirect effect via the positive stereotypes (β = 0.09; p < 0.01; 95% CI = [0.03; 0.14]), the negative stereotypes (β = -0.12; p = 0.02; 95% CI = [-0.22; -0.03]), and the uncertainty (β = -0.12; p < 0.01; 95% CI = [-0.21; -0.04]). Thus, recruiters' perceptions are mediated via the positive and negative stereotypes, and their uncertainty about entrepreneurs.

TABLE 2
Means (M), standard deviations (SD), VIF, and correlations for Study 1

Variables	M	SD	VIF	1	2	3	4	5	6	7	8
1. Employability perception	6.67	2.41	-								
2. Entrepreneur	0.49	0.50	1.24	-0.12							
				0.02							
3. Positive stereotypes	3.61	0.60	1.18	0.38	0.23						
				0.00	*0.00*						
4. Negative stereotypes	3.04	0.50	1.60	-0.40	0.29	-0.18					
				0.00	*0.00*	*0.00*					
5. Uncertainty	3.11	1.10	1.47	-0.50	0.18	-0.25	0.53				
				0.00	*0.00*	*0.00*	*0.00*				
6. Experience	8.88	6.93	1.33	-0.06	-0.03	-0.14	-0.01	-0.01			
				0.25	*0.53*	*0.01*	*0.93*	*0.93*			
7. Recr. Leader	0.49	0.50	1.26	0.07	0.01	-0.02	-0.09	-0.05	0.41		
				0.20	*0.88*	*0.63*	*0.11*	*0.27*	*0.00*		
8. Job BD	0.59	0.49	1.05	-0.01	-0.11	0.02	-0.06	-0.14	-0.15	0.01	
				0.81	*0.04*	*0.66*	*0.29*	*0.00*	*0.00*	*0.85*	
9. Part-time E.	0.17	0.37	1.06	0.10	0.04	0.07	-0.09	-0.11	0.16	0.15	0.03
				0.05	*0.40*	*0.17*	*0.09*	*0.04*	*0.00*	*0.00*	*0.55*

Note. n = 375. Corresponding p-values are in italics. Recr. Leader = Recruiter has personnel responsibility; Job BD = Company has a position business development; Part-time E. = Recruiter is part-time entrepreneur.

FIGURE 1
The results of the mediation model



Notes. n = 375. Z-standardized predictors are used. Standard errors in parentheses.
Modelfil: χ^2 (13) = 17.25, p = 0.19, CFI = 0.99, RMSEA = 0.03
Control variables included. Covariances between mediators and between controls allowed. 10.000 bootstraps conducted for indirect. effects
Indirect effect (via positive stereotypes): β = 0.09 (0.03), p < 0.01, 95% CI = [0.03; .14]
Indirect effect (via negative stereotypes): β = -0.12 (0.05), p < 0.05, 95% CI = [-0.22; -0.03]
Indirect effect (via uncertainty): β = -0.12 (0.05), p < 0.01, 95% CI = [-0.21; -0.04]

Robustness checks. We conducted several robustness checks. We calculated a partial mediation model. The model fits the data equally well, and the direct effect is negative and significant (β = -0.25; p = 0.02). Furthermore, we tested each indirect effect in a separate model. Moreover, we recalculated the partial mediation model and tested several specifications. We added recruiters' decisions of Applicant 2 and 3 to the model, calculated a model without control variables (Becker et al., 2016), or added additional controls for firm size and industry dummies (manufacturing vs. service firms) to cover potential biases by firm-level variables (e.g., Luzzi & Sasson, 2016). The findings remain stable across all extra analyses.

Study 2: A metric conjoint experiment on employability perceptions of former entrepreneurs with two independent samples (recruiters; executives)

In the second study, we conducted a metric conjoint experiment with two independent samples (recruiters; executives) to investigate variations in employability perceptions of former entrepreneurs (H2-4). We investigated employability perceptions early (recruiters) and late (executives) in the selection process with the two-sample approach. Hence, we depict two different perspectives, recruiters who usually act as initial employment gatekeepers and executives who have the final say in selection decisions.

Methods: Study 2

The study material was comparable to Study 1. In both samples, participants were asked to judge hypothetical job applicants for open job vacancies on the management level in their companies, which they had to fill within the next three months (Appendix D). Participants were instructed that their human resources (HR) department already screened job applicants and referred only those applicants who were, in principle, eligible for the open positions. To incentivize participants, we offered them a summary of our results.

Experimental design. Metric conjoint analysis is well-suited for our research because it allows us to uncover the decision-making process while keeping all else constant

(Lohrke et al., 2010; Louviere, 1988; Shepherd & Zacharakis, 1999). Participants make a series of decisions regarding several applicant profiles. In both samples, each profile is a combination of four attributes with two values each, resulting in 16 distinct decision profiles. As a full-replication was very time-consuming for study participants, we followed Warnick et al. (2018) and replicated four profiles. Similar to prior research (Hauswald et al., 2016), we added a practice profile to familiarize the participants with the conjoint task and randomized the order of the profiles to avoid confounding effects (Chrzan, 1994). In total, participants made 21 decisions.

Participant recruitment and sample characteristics. In Study 2, we followed the same participant recruiting approach as in Study 1. We collaborated with two professional online panel providers, from which we obtained 139 complete questionnaires from recruiters and 159 complete questionnaires from executives. After controlling for careless responses, speedsters, and slowsters (Appendix B), we had 100 recruiters and 92 executives from the two panel providers.

Again, we searched the LinkedIn network to increase the data quality further. We created a list with the most relevant participants (recruiters: n = 202; executives: n = 235) upon our eligibility criteria (Appendix B). Once accepted our request, we asked participants to participate in our web-based experiment and sent up to three reminders. For the recruiters, 77 recruiters responded to our approach and were willing to participate in the study (response rate of 38%), of which 30 individuals completed the study. We excluded one recruiter post-hoc because they did not meet our quality criteria. Thus, we collected 29 additional questionnaires from recruiters. For the executives, 124 accepted to participate in the study (response rate of 53%, similar to Lanivich (2015): 47%). In total, 36 executives filled out the questionnaire, of which we excluded five post-hoc. Overall, we have a final sample of 129 recruiting managers and 123 executives. Table 1 gives an overview of all sample characteristics. Similar to Study 1, we found that nonresponse bias was no serious issue.

Variables. We used one item to measure the *dependent variable* as common in metric conjoint experiments (Shepherd & Zacharakis, 2018): For the recruiter sample, we measured the employability likelihood (1 = not likely at all; 10 = extremely likely) to invite a job applicant to a job interview (Moy, 2006). For the executives, we asked participants to report the likelihood of making a job offer (Cable & Judge, 1997). We adjusted the wording in the executive sample to account for the different decision situations allowing us to delve into the decision-making processes of different stakeholders. The *level 1 variables* (manipulated in the conjoint experiment***)*** were presented in the decision profiles and consisted of four variables summarized in Table 3. The first attribute *target position* on the conjoint profiles described whether the job opening was with or without personnel responsibility, the second attribute *employment* described the prior employment status of the applicant (either being a former entrepreneur or an employee with no entrepreneurial experience), the third attribute *failure* described whether failure was detected in applicant information. We added one control attribute, *prior personnel responsibility*, representing applicants' prior functional experience (applicant had or had not personnel responsibility in the prior job) to disentangle the strong connection between entrepreneurship and leadership (e.g., Antonakis & Autio, 2007).

TABLE 3
Description of the attribute values, as used in Study 2

Attribute	Level	Description
Target position	Without personnel responsibility	Target position in management **without** personnel responsibility
	With personnel responsibility	Target position in management **with** personnel responsibility
Employment	Employee	Applicant was in **paid employment**
	Entrepreneur	Applicant was an **entrepreneur**
Failure	No failure discovered	**No failure** discovered within application process
	Failure discovered	**Failure** discovered within application process (either with venture failure as entrepreneur or with major project as employee)
Prior personnel responsibility	No	Previously, applicant **had no personnel responsibility**
	Yes	Previously, applicant **had personnel responsibility** for several employees

The *level 2 variables* were measured after the experiment**.** To test H4, we assessed the entrepreneurship status of the recruiters (0 = no part-time entrepreneurship; 1 = part-time entrepreneurship (currently or in the past)) and added one item to assess the ownership status of executives (0 = executive is not the owner; 1 = executive is also the owner). We used several *level 2 control variables***.** We added two control variables for each sample: for the recruiters, we used recruiting experience and if recruiters had personnel responsibility similar to Study 1. For the executives, we asked if they had experienced failure in the past (1 = yes; 0 = no) and examined their attitudes toward failure for which we used two items from (Politis & Gabrielsson, 2009) (1= disagree completely; 5 agree completely) (Cronbach's alpha = 0.68). We added both items because executives are likely to have experienced failure in the past (Semadeni et al., 2008), which could interfere with the failure attribute. Finally, we asked participants to briefly explain their decisions *post hoc* to probe more deeply in their underlying decision structures about the employability of former entrepreneurs.

Results: Study 2

Table 4 gives an overview of the descriptive statistics for both samples. We computed mean test-retest correlations to analyze whether participants responded reliably and report 0.78 for the recruiters and 0.77 for the executives. Those correlations are above the currently accepted threshold of 0.70 (Karren & Barringer, 2002) and consistent with previous conjoint studies (e.g., Choi and Shepherd (2004): 0.82; Haynie et al. (2012): 0.79; Monsen et al. (2010): 0.73). Thus, we emphasize that all study participants answered reliably. For further analyses, we z-standardized all predictors (Aguinis et al., 2013).

TABLE 4
Means (M), standard deviations (SD), variance inflation factors (VIF), and correlations of Study 2 variables (Cronbach's Alpha on the diagonal) for both samples

Variables (Recruiters)	M	SD	VIF	1	2
1. Part-time E.	0.17	0.37	1.24		
2. Recruiting experience	11.71	8.14	1.18	0.16	
				0.05	
3. Recr. Leader	0.72	0.45	1.60	0.14	0.14
				0.13	*0.10*

Note. Recruiter sample: n = 129. Corresponding p-values are in italics. Part-time E. = Recruiter is part-time entrepreneur. Recr. Leader = Recruiter has personnel responsibility.

Variables (Executives)	M	SD	VIF	1	2
2. Owner-executive	0.56	0.49	1.00		
3. Attitude toward failure	3.26	1.05	1.05	-0.05	
				0.55	
4. Experienced failure	0.44	0.49	1.05	-0.04	0.22
				0.63	*0.01*

Note. Executives sample: n = 123. Corresponding p-values are in italics. Cronbach's alpha values: Attitude failure: 0.68.

We applied multilevel regression analyses in STATA 16 to account for the nested data structure (Raudenbush & Bryk, 2002). Participants made 16 conjoint decisions that produce 2,064 nested data points for the recruiters and 1,968 for the executives. As recommended, we followed a multi-level model-building process (Aguinis et al., 2013). For both samples, we report the results of Model 2 to investigate H2-H3 because the random intercept fixed slope (RIFS) models fit the data equally well compared to Modell 3 (random intercept random slope (RIRS)). For the cross-level interactions (H4), we draw on Model 4.

TABLE 5
Results of the multi-level analysis for all models (Recruiter sample)

	Model 1 RIFS		Model 2 RIFS		Model 3 RIRS		Model 4 RIRS	
Variable	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	6.46***	0.13	6.46***	0.13	6.46***	0.12	6.46***	0.13
Level 1 Controls								
Prior personnel responsibility	0.39***	0.05	0.39***	0.05	0.39***	0.04	0.39***	0.04
Level 2 Controls								
Experience recruiter	0.09	0.13	0.08	0.13	0.10	0.13	0.10	0.13
Leadership recruiter	0.21†	0.12	0.20	0.14	0.20	0.13	0.20	0.13
Level 1 Variables								
Target position	-0.01	0.04	-0.04	0.04	0.00	0.03	-0.01	0.04
Entrepreneur	-0.12**	0.04	-0.12**	0.04	-0.12**	0.04	-0.12**	0.04
Failure	-0.88***	0.07	-0.88***	0.07	-0.88***	0.07	-0.88***	0.07
Level 2 Variables								
Part-time entrepreneurship	0.08	0.14	0.08	0.14	0.08	0.14	0.08	0.14
Level 1 Interactions								
Entrepreneur * Target position			0.06*	0.02	0.06*	0.02	0.05*	0.02
Entrepreneur * Failure			0.05*	0.02	0.06*	0.02	0.06*	0.02
Cross-level interaction								
Entrepreneur * Part-time entrepreneurship							0.10**	0.03
Variance components								
Residual variance	2.97		2.96		2.96		2.95	
Intercept variance (L1)	2.00		2.00		1.36		1.36	
Slope variance (L2)					0.64		0.64	
Slope covariance (L2)					-0.44		-0.44	

Note: 2064 decisions in n = 129; † p < 0.1; * p < .05; ** p < .01; *** p < .001. ICC (Null-Modell) = 0.34. Maximum-likelihood estimations.
Coef. = Regression coefficients of z-standardized predictors; SE = Robust standard errors; RIFS = Random intercept fixed slope model; RIRS = Random intercept random slope model
Experience recruiter: In years; Leadership recruiter: 0 = Recruiter has no personnel responsibilities; 1 = Recruiter has personnel responsibilities
Target position: 0= Without personnel responsibility, 1= With personnel responsibility; Entrepreneur: 0= Employee, 1= Entrepreneur; Failure: 0= No failure, 1= Failure; Prior personnel responsibility: 0= No, 1= Yes; Part-time entrepreneurship: 0 = Recruiter is no part-time entrepreneur, 1 = Recruiter is part-time entrepreneur.

TABLE 6
Results of the multi-level analysis for all models (Executives samples)

	Model 1 RIFS		Model 2 RIFS		Model 3 RIRS		Model 4 RIRS	
Variable	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	6.06***	0.13	6.06***	0.13	6.06***	0.13	6.06***	0.13
Level 1 Controls								
Prior personnel responsibility	0.33***	0.04	0.33***	0.04	0.33***	0.04	0.33***	0.04
Level 2 Controls								
Attitude toward failure	-0.05	0.15	-0.05	0.15	-0.05	0.15	-0.05	0.15
Experience failure	0.19	0.13	0.19	0.13	0.19	0.13	0.25	0.12
Level 1 Variables								
Target position	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.03
Entrepreneur	-0.03	0.04	-0.03	0.04	-0.03	0.04	-0.03	0.04
Failure	-0.50***	0.07	-0.50***	0.07	-0.50***	0.07	-0.50***	0.07
Level 2 Variables								
Owner-executive	-0.14	0.13	-0.14	0.13	-0.14	0.13	-0.21	0.13
Level 1 Interactions								
Entrepreneur * Target position			0.05†	0.03	0.05†	0.03	0.05†	0.03
Entrepreneur * Failure			0.03	0.03	0.03	0.03	0.03	0.03
Cross-Level Interactions								
Entrepreneur * Owner-executive							0.10*	0.04
Variance components								
Residual variance	2.47		2.47		2.47		2.47	
Intercept variance (L1)	1.99		1.99		1.02		1.56	
Slope variance (L2)					0.97		0.48	
Slope covariance (L2)					0.21		-0.29	

Note: 1968 decisions in n = 123; † p < 0.1; * p < .05; ** p < .01; *** p < .001. ICC (Null-Modell) = 0.46. Maximum likelihood estimations.
Coef. = Regression coefficients of z-standardized predictors; SE = Robust standard errors; RIFS = Random intercept fixed slope model; RIRS = Random intercept random slope model
Attitude toward failure: 1= Negative attitude, 5= Positive attitude; Experience failure: 0= No failure experience in the past, 1= Failure experience in the past; Owner executive: 0= No; 1= Yes.
Target position: 0= Without personnel responsibility, 1= With personnel responsibility; Entrepreneur: 0= Employee, 1= Entrepreneur; Failure: 0= No failure, 1= Failure; Prior personnel responsibility: 0= No, 1= Yes.

We calculated pseudo R^2 (Raudenbush & Bryk, 2002), showing an explained variance of 25% for the recruiters and 14% for the executives at the decision level, which is comparable to other studies investigating the employability of former entrepreneurs (e.g., Baptista et al. (2012): $R^2 = 0.21$; Koellinger et al. (2015): $R^2 = 0.23$). We find a significant negative main effect only in the recruiter sample (recruiters: $ß = -0.12$, $p < 0.01$, CI [-0.21, -0.04][4]; executives: $ß = -0.03$, $p > 0.05$, CI [-0.11, 0.06]). In alignment with the current debate on effect sizes (e.g., Bosco et al., 2015), we assessed the relative importance of each attribute by plotting the z-standardized coefficients with their corresponding 95% confidence intervals (Moser et al., 2017) in Appendix E. We find small effect sizes for the entrepreneurship category.

In Study 2, we are primarily interested in contingencies such as personnel responsibility (H2), prior failure (H3), and similarity (H4). We find a positive and significant interaction with a personnel responsibility in both samples (recruiters: $ß = 0.06$, $p < 0.05$, CI [0.02, 0.10]; executives: $ß = 0.05$, $p < 0.07$, CI [0.00, 0.10]) Drawing on the slope analyses in Figure 2, the negative main effect is in the recruiter sample is only significant for a position without personnel responsibility (slope without personnel responsibility: $ß = -0.17$ ($p < 0.01$); slope with personnel responsibility: $ß = -0.07$ ($p = 0.16$)). For the executives (Fig. 2b), simple slopes remained both insignificant ($p = 0.15$; $p = 0.63$). However, slopes are significantly different ($p = 0.06$). Drawing on the graphical analysis, executives have slightly higher employability perceptions when entrepreneurs apply for a job with personnel responsibility than former entrepreneurs who do not. Overall, we find support for our hypothesis in the recruiter sample (and some indication in the executive' sample) that employability perceptions are higher when entrepreneurs applied for a position with personnel responsibility.

[4] We report 95% confidence intervals as suggested by Bosco et al. (2015). Tables with all confidence intervals can be obtained from the authors.

In H3, we argued that employability perceptions about former entrepreneurs are less negative if they had previously failed. We find a significant interaction of failure in the recruiter sample but not in the executives' sample (recruiters: $ß = 0.05$, $p < 0.05$, CI [0.01, 0.10]; executives: $ß = 0.03$, $p > 0.05$, CI [-0.02, 0.08]). Figure 2c shows the significant interaction in the recruiter sample which suggests that the negative main effect holds only for such entrepreneurs with no failure (slope no failure: $ß = -0.18$ ($p < 0.01$); slope failure: $ß = -0.06$ ($p = 0.17$)). Thus, we find partial empirical evidence supporting H3b. While failure has negative employment implications in total, perceptions are indifferently by recruiters when comparing failure of former entrepreneurs with salient failure of an employee.

In H4, we were interested if screener characteristics (entrepreneurship status of recruiters and ownership status of executives) affected the employability perceptions of former entrepreneurs. We find empirical support in both samples for our theorizing (recruiter sample: $ß = 0.09$; $p < 0.01$, CI [0.02, 0.15]; executives sample: ($ß = 0.10$, $p < 0.05$, CI [0.01, 0.18]). Further analyses (Figure 2d-e) indicate, that the negative main effect does only hold for those study participants who are more similar to former entrepreneurs (slope no part-time entrepreneurs: $ß = -0.17$ ($p < 0.01$) vs. slope part-time entrepreneurs: $ß = -0.03$ ($p = 0.58$); slope non-owner ($ß = -0.12$, $p < 0.07$) vs. slope owner $ß = 0.07$, $p = 0.15$)). Thus, we find support for H4 that the employability perceptions are only lower when the participants are less similar to former entrepreneurs. Thus, our data indicate that employability perceptions about former entrepreneurs are more balanced when more similar recruiters or executives have the final say.

FIGURE 2
Interactions effects for both samples in Study 2

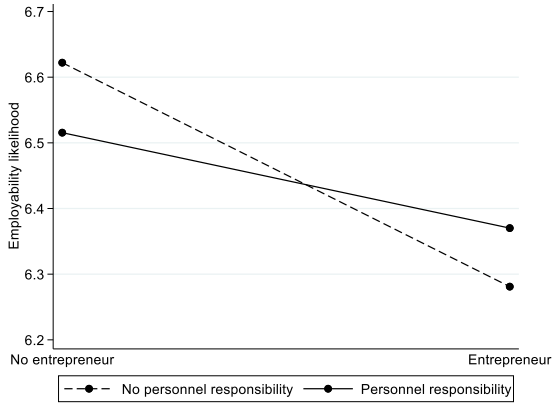


Figure 2a. Recruiter sample: Employability likelihood for former entrepreneurs when leadership position varies. The simple slope for entrepreneurship is -0.17 (p<0.01) when position is without leadership, whereas it is -0.07 (p=0.16) when it is with leadership. Slope difference is significant (p<0.05).

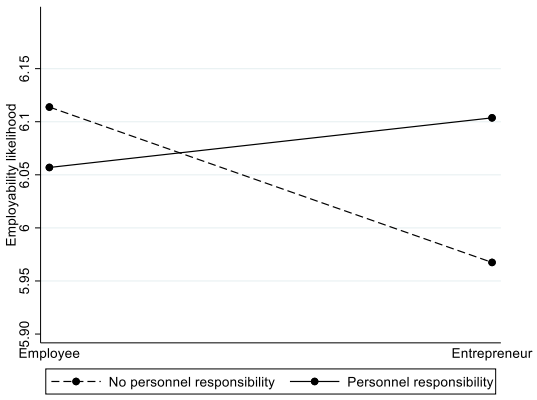


Figure 2b. Executive sample. Employability likelihood for former entrepreneurs when leadership position varies. The simple slopes for entrepreneurship is -0.07 (p = 0.15) when position is without leadership, whereas it is 0.02 (p = 0.63) when position is with leadership. Slope difference is marginally significant (p = 0.06).

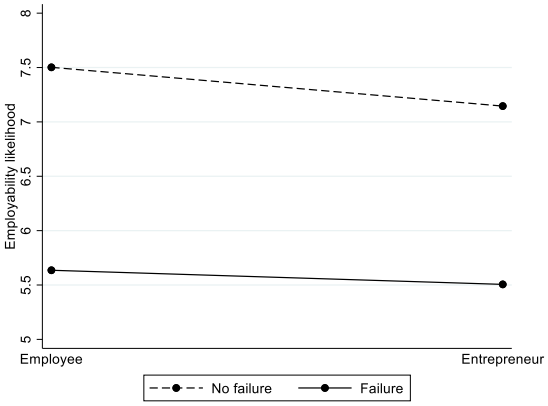


Figure 2c. Recruiter sample: Employability likelihood for former entrepreneurs when failure varies. The simple slope for entrepreneurship is -0.18 (p<0.01) when the entrepreneur has no failure in the vita, whereas it is -0.06 (p=0.17) when the entrepreneur has failure in the vita. Slope difference is significant (p<0.01).

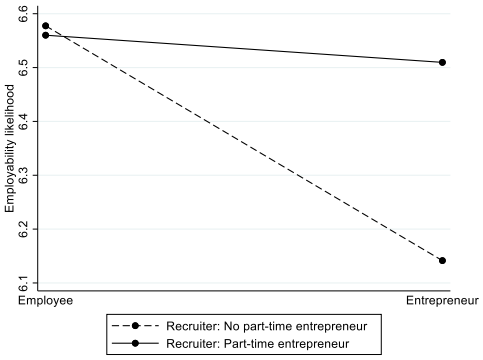


Figure 2d. Recruiter sample: Employability likelihood for former entrepreneurs when recruiters are part-time entrepreneurs. The simple slope for entrepreneurship is -0.17 (p<0.01) when recruiters are no part-time entrepreneur, whereas it is -0.03 (p=0.58) when recruiters are part-time entrepreneurs themselves. Slope difference is significant (p<0.01).

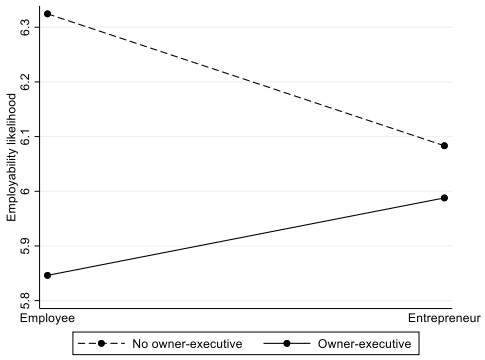


Figure 2e. Executive sample. Employability likelihood for former entrepreneurs when in executive ownership varies. The simple slope for entrepreneurship is -0.12 (p<0.07) when executive is a non-owner, whereas it is 0.07 (p=0.15) when executive is an owner. Slope difference is significant (p<0.05).

Robustness checks. We conducted a variety of robustness checks. We conducted all analyses with the total samples (including the replicated decision profiles), calculated all models without the level 2 control variables (Becker et al., 2016), included additional controls for firm size and industry dummies (manufacturing vs. service firms) separately, and ran the models including only one interaction term at a time. Across all robustness checks, the reported results remain stable. Furthermore, we recalculated the mediation analyses from Study 1 and added the contingencies from this study as moderators. The failure variable significantly moderates each first-stage mediation path. The personnel responsibility variable moderates the uncertainty, whereas the part-time self-employment variables do not interact with the mediation paths. Detailed information is available upon request.

DISCUSSION

The current research offers novel insights for the employability debate of former entrepreneurs, which is – beside the outcome-based approaches (e.g., Luzzi & Sasson, 2016) – largely unchartered territory. By entering categorization theories (Derous & Ryan, 2019; Kulik et al., 2007; Zarate & Smith, 1990) into this debate, this paper builds theory – grounded in stereotypes (e.g., Fiske & Taylor, 1991) and uncertainty (e.g., Kagan, 1972) – about employers' pre-hire employability perceptions of former entrepreneurs. Our studies show that a) differential mechanisms co-exist driving employability perceptions about former entrepreneurs b) an inherent uncertainty seems to be the predominant factor to explain such perceptions resulting in overall negative perceptions of former entrepreneurs and c) contingencies defined at the level of the job, the applicant and the evaluator mitigate the negative impact of the entrepreneurship attribute.

Employability perceptions about former entrepreneurs

Both empirical studies indicate that the employability perceptions about former entrepreneurs are in principal negative and significant. In line with current research findings

(Botelho & Chang, 2020; Koellinger et al., 2015), employers, especially recruiters and non-owner executives, seem reluctant when evaluating former entrepreneurs even if they apply for a management position (Baptista et al., 2012) and have reasonable industry experience (Kaiser & Malchow-Møller, 2011). Interestingly, entrepreneurs in the vignette study also had experience in paid employment, whereas there was no such information about the entrepreneurs in the conjoint studies. By that, we acknowledged the heterogeneity of entrepreneurial career trajectories (e.g., Campbell, 2013; Merida & Rocha, 2021), which further underlines the robustness of our or findings. Accordingly, our results add to the current post-hire perspective of the employability of former entrepreneurs (e.g., Bruce & Schuetze, 2004; Mahieu et al., 2019) by suggesting disadvantages of former entrepreneurs in the recruitment and selection process. Taken together, our cognitive and pre-hire perspective departs from the outcome-based approaches and offers new insights into entrepreneurs' career trajectories (Burton et al., 2016).

The underlying mechanisms of employability perceptions

Our findings indicate that the entrepreneurship category stimulates positive and negative stereotypes and an inherent uncertainty to explain employment implications about former entrepreneurs. This helps to understand better the countervailing cognitions that co-exist about former entrepreneurs when entering paid employment – at least in our empirical context. Even though there is a positive mechanism via positive stereotypes, the undesirable effects via negative stereotypes and uncertainty are more prominent in predicting employability perceptions. Accordingly, the current research adds a theoretical and empirical link to other research by explicitly explaining the underlining mechanisms of employability perceptions about former entrepreneurs (Botelho & Chang, 2020; Koellinger et al., 2015).

Uncertainty about former entrepreneurs seems to be the strongest mechanism to explain recruiters' employability perceptions. Employers have an inherent interest in understanding why individuals apply for the respective position (e.g., Posthuma et al., 2002).

When entrepreneurs apply for ‘regular’ employment, the underlying reasons and motivations for such a decision may be less clear, stimulating uncertainty perceptions about this type of applicant. Moreover, the entrepreneurship category is difficult to interpret as such applications are less common, making it difficult to predict future performance (Mahieu et al., 2019). Being uncertain about the up- and downsides of an option enhances cognitive conflict and skepticism, making it harder for individuals to turn toward such a ‘gamble’ – particularly if safer options are available (e.g., Griffin & Grote, 2020; Kahneman & Tversky, 1982; van den Bos & Lind, 2002). Accordingly, employers are biased toward selecting non-entrepreneurs, who are less risky picks.

Furthermore, our results support that negative employability stereotypes about former entrepreneurs drive employability perceptions of former entrepreneurs (Marshall, 2016). Negative stereotypes can have various facets – one being that entrepreneurs would be lowlily committed to paid employment and leave the recruiting company quickly. Indeed, there is evidence that their fears are legitimate, as Feng et al. (2021) found that the entrepreneurial identity of former entrepreneurs mediated voluntary turnover in established firms. Similarly, we find that employers associate former entrepreneurs with the hard to tame stereotype – struggling with organizational structures or authorities. In sum, negative stereotypes are a specific mechanism that inflicts the employability perceptions of former entrepreneurs.

On the bright side, there are several stereotypical characteristics about former entrepreneurs, such as proactive behaviors, achievement motivation, and autonomy (Rauch & Frese, 2007) which seem valuable for paid employment. Such entrepreneurial capabilities are specific benefits that attenuate the overall negative employability perceptions and are especially helpful for jobs in highly innovative and dynamic sectors (Luzzi & Sasson, 2016). Taken together, we provide evidence for – partly countervailing – mechanisms to explain the employment implications of former entrepreneurs, which indicate the necessity for cognitive

theories to research the employability of former entrepreneurs.

Mitigating effects of job-level, applicant-level, and evaluator-level contingencies

Furthermore, we address contingencies on variations of the target position (with/out personnel responsibility), the applicant (failure background), and the evaluator (similarity) to acknowledge the heterogeneity in employers' perceptions of former entrepreneurs. We gain further empirical insights into the entrepreneurship-employability relationship in a set of metric conjoint experiments (with recruiters and executives' samples). These elaborations of Study 2 confirm the picture of Study 1. Employability perceptions of former entrepreneurs are lower compared to applicants with no entrepreneurship background, at least for the recruiters and non-owner executives in our study. Importantly, our findings identify no specific situation in which former entrepreneurs are perceived as an advantage for paid employment compared to applicants with no such background. Instead, there are three contingencies in which entrepreneurship seems to have "neutral" employability implications. First, our data suggest that employability perceptions are less negative if entrepreneurs apply for a position with personnel responsibility. Accordingly, entrepreneurs do not suffer from a disadvantage when applying for a job that entails personnel responsibility compared to jobs with no such features. Hence, they probably enter paid employment at higher job levels (Baptista et al., 2012) because requirements for such positions are tailored to the characteristics of entrepreneurs (e.g., using heuristics, being less reliant on others, leadership). The findings are also interesting for research in the intersection of entrepreneurship and leadership (e.g., Cogliser & Brigham, 2004; Hmieleski & Ensley, 2007) as former entrepreneurs seem to be suitable candidates for jobs with personnel responsibility.

Second, we investigated how applicant failure affected employment perceptions because failure is a salient phenomenon in entrepreneurship (e.g., Cardon et al., 2011) and an important characteristic for employers when evaluating former entrepreneurs (e.g., Botelho & Chang, 2020). We find evidence for a positive interaction effect in the recruiter sample,

suggesting that failure has less severe consequences for former entrepreneurs than for other applicants. However, we find no support for this hypothesis in the executives' sample. Executives usually enter the recruitment process at later stages and base their decisions on those applicants who had been screened intensively by the HR department (only applicants with reasonable failure explanations remain). Hence, applicant failure is likely to represent similar characteristics across applicant groups. Interestingly, the direct effect of failure is less important for executives than for recruiters, which further supports this argument. Furthermore, employers seem to have higher general aspiration levels toward entrepreneurial failure. Thus, the consequences of failure are more severe for employees because they are not expected to fail as often as entrepreneurs. Similarly, employers have fewer negative stereotypes, such as a fear of turnover about former entrepreneurs when entrepreneurs have previously failed. This pattern contrasts with our current understanding of entrepreneurial failure perceptions (stigma of failure (e.g., Landier, 2005)). After all, our findings are intriguing for the entrepreneurial failure literature. This stream has emphasized the negative perceptions of entrepreneurial failure, for example, in the media (Cardon et al., 2011) or the general public (Kibler et al., 2017; Shepherd & Patzelt, 2015). We suggest that employers also acknowledge the positive aspects associated with entrepreneurial failure (e.g., learning (Shepherd, 2003), at least compared to failed employees.

Third, we focused on perceptions of similarity specified as recruiters' part-time entrepreneurship status and executives' ownership status as they induce more positive perceptions about entrepreneurs. The interaction analyses confirm our theorizing that employability perceptions of former entrepreneurs are less negative when the evaluators were more similar to former entrepreneurs. Although not significant on the conventional level, the owner-executive slope implies the former entrepreneurs have an advantage for management positions compared to non-entrepreneurs. However, we call for more research on this hard-to-reach target group (e.g., further increasing the similarity perceptions). With our findings, we

also add to the literature on similarity, which has primarily focused on the positive outcomes of similarity (e.g., García et al., 2008; Murnieks et al., 2011). By examining perceptions of similarity in an employment-related context, we emphasize that perceptions of similarity do not necessarily lead to positive outcomes per se but can also have neutralizing effects of actual disadvantages.

Results from the qualitative information in both studies

We asked participants in both studies to provide insights about the applicants' post hoc. Specifically, these additional qualitative data help us to probe more deeply into the underlying evaluations. In the vignette study (we did not ask for participants' opinions about entrepreneurs directly due to the study design), we find some indication for the potential stereotypes. For example, one recruiter said that entrepreneurs are extremely valuable when they accept that they have someone "above" them again. Another participant implied that former entrepreneurs are risky hires and usually difficult to integrate into the team. Similarly, one participant was confident that entrepreneurs move the company forward even though a quick exit was likely to occur. In more favorable terms, one participant said: "If entrepreneurs can inspire the team and the chemistry suits his superiors, then he is the best choice. Because he has supervised many different projects independently, knows how to do sales and successfully obtain orders and has a high level of disciplinary management responsibility."

In the conjoint study, we find further indication for our categorization perspective. For instance, one recruiter puts it as follows: "Working in a corporation with a complex matrix requires a high degree of process orientation, coordination, patience, etc. An entrepreneur has a high degree of freedom in his or her decisions and potentially struggles to find the right place in this environment". Similarly, one executive said: "Integrating a previous entrepreneur into a new company is usually very difficult or almost impossible!". On the other side, there are also more positive comments. For example, one owner emphasized that "there is [in management] often a lack in entrepreneurship – here only entrepreneurs

know what they are talking about" or "Entrepreneurs may have a broader picture of a company and in such about management processes than an employee". Taken together, we find additional qualitative support for the categorization perspective on former entrepreneurs' employability perceptions.

Practical implications

Understanding employers' perceptions of former entrepreneurs has essential implications for organizations. Applicant screening has continuously been shown to be vulnerable to bias, especially when information levels are low (Derous & Ryan, 2019). Our results imply a disadvantage for a former entrepreneur due to common stereotypes and an inherent uncertainty about such applicants. This means that organizations need to openly address these potential issues if they do not want to turn former entrepreneurs (inadvertently) down and reduce their chances of joining their firm. Previous research suggests that one way to reduce such biases are structured interviews (Levashina et al., 2014). Similarly, we recommend employers to develop specific interview questions to reduce their reservations and uncertainty about applicants deviating from the norm, such as former entrepreneurs. For example, employers could screen former entrepreneurs' entrepreneurial identity to be more certain about the motives for their applications as the entrepreneurial identity is related to turnover. We derive another practical implication. Failure is generally perceived as a negative event with negative employment implications for applicants. However, our results emphasize that failure can have positive effects, namely that failure reduces uncertainty about entrepreneurs. Hence, we emphasize organizations to have a more benevolent attitude toward failure, especially in Germany. Taken together, we encourage employers to open up for former entrepreneurs to allow a more diverse workforce and see former entrepreneurs as a chance for innovation.

Limitations and further research

Even though our multi-study design enables us to draw a comprehensive empirical picture of our research questions, this study is not without limitations and boundaries, which we see as avenues for further research. We developed a recruitment and selection situation in which we used clear cut categories such as the target position (Baptista et al., 2012), industry experience (Kaiser & Malchow-Møller, 2011), and experience in entrepreneurship (Merida & Rocha, 2021). We acknowledge that future research may investigate how more nuanced variations or other presentations of the entrepreneurship category (e.g., evaluations of real entrepreneurs and actual job openings) affect the strength of the category, employability perceptions, or other measures such as fit. For example, the entrepreneurship category could be less important when the period of entrepreneurship was rather short (Merida & Rocha, 2021), not the most recent episode in a career trajectory, or for specific positions (e.g., corporate entrepreneurship). Similar, research could further explore how evaluator-specific variables such as recruiters' like-mindedness affect the interpretation of the entrepreneurship category.

In a related vein, it is reasonable that industry and firm-level variables further explain employability perceptions about former entrepreneurs (Baptista et al., 2012; Luzzi & Sasson, 2016): Even though we tested for such contingencies post-hoc, we urge future research for more thorough investigations. For example, future research could investigate how latent firm-level variables (e.g., entrepreneurial orientation, Covin and Slevin (1991)) affect employability perceptions to investigate potential countervailing mechanisms: Even less entrepreneurial organizations may have some interest in entrepreneurs to boost their entrepreneurial energy, particularly in higher positions (e.g., Grühn et al., 2017). Contrarily, organizations with higher levels of entrepreneurial orientation may similarly not only look for previous entrepreneurs but also want to attract employees who can rather work on exploiting the entrepreneurial projects. In any case, this point requires further investigation, and we

encourage future studies to delve more deeply into these potentially countervailing mechanisms.

We operationalized failure as the detection of salient (project) failure (Shepherd & Cardon, 2009) to compare applicants across both employment conditions. There are at least three limitations: First, it may be difficult for recruiters to detect failure in application documents. Therefore, we told participants that several pre-interviews and checks had already been done. A second limitation related to failure is grounded in the salience likelihood of failure and applications from former entrepreneurs more generally. Entrepreneurial failure is likely to receive external attention (Cardon et al., 2011), which is less likely for employee failure. Therefore, we asked participants in the vignette study post-hoc how often they had detected failure in application documents and, similarly, how often they received applications from entrepreneurs (6-point Likert scale (0= never; 5= very often)). More than 65% indicated that they detected failure at least sometimes, and 38% had applications from former entrepreneurs sometimes or more often, which substantiates the external validity of our treatments (Grégoire et al., 2019). Third, we emphasize that there are other types of failure, such as bankruptcy (Shepherd & Haynie, 2011), which could have more severe consequences for former entrepreneurs (Shepherd & Patzelt, 2015). Thus, we recommend further research to probe more deeply into how different types of failure affect the employability of former entrepreneurs.

CONCLUSION

Drawing on categorization theories (Derous & Ryan, 2019; Kulik et al., 2007), we take a cognitive perspective to address employability perceptions of former entrepreneurs. In a vignette study, we empirically substantiate three separate mechanisms –positive and negative stereotypes and an inherent uncertainty – to explain employability perception of former entrepreneurs. Further, we investigated contingencies of such perceptions with a metric conjoint study. The results suggest that recruiters and non-owner executives have negative perceptions of former entrepreneurs. However, when the job opening comes with personnel responsibility, the entrepreneur has previously failed, or if the employer is more similar to the entrepreneur, the characteristic of being a former entrepreneur has "neutral" employment implications.

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APPENDIX A
Study 1: The vignette experiment

In this study, you take on the role of a recruiter. Imagine that a management position (Personnel responsibility: Business Development, with personnel responsibility for several employees // No personnel responsibility: Business Development, without personnel responsibility) needs to be filled in your company in the near future.

Therefore, the HR department defined a multi-stage application process to fill the position: The position was already advertised, and several applicants applied for the job. In addition, the HR department conducted initial interviews and created a selection of three candidates. The three candidates fulfill the job requirements with their professional expertise, industry experience and - based on their salary expectations - are in principle eligible for the job.

The responsible colleague now asks you for your support in assessing the candidates. For this purpose, an anonymous application profile was created for each of the three potential candidates. This profile summarizes the most important information from the cover letter, CV, and interview. Based on your assessments of the three candidates, personal job interviews with the direct supervisor will then take place to decide who receives the job offer. Therefore, your assessments are important for the final decision. On the next page, you will see an example of an application profile. Then, we present the three application profiles. Once you have seen all application profiles, we choose one profile randomly, of which we ask you to provide a detailed assessment. Finally, we present each of the three profiles again and ask you to assess how likely you would invite each respective application to the personal job interview.

Please note that profiles may look very similar. Therefore, pay special attention to the details.

Example profile	
Current job	**Employee** in a medium-sized company (4 years) • Manager with responsibility for a team of several employees • Focus: Marketing • Planning, coordination and implementation of (digital) campaigns and media strategies
Career	Employee Media Planner (3 years) • Supporting clients in the creation of media plans • Preparation and interpretation of campaign reports
Education	University degree in business administration (Master, grade: very good)
Further notes/ comments from the first interview	*Motivation for application:* Interesting new tasks *Other:* Lean Management (certified)

Profile 1	
Current job/ status	**Self-employed entrepreneur (**Employee condition: **Employee in a medium-sized company** (4 years) • Founder and managing director with a team (Employee condition: Project manager with responsibility for a team) of several employees • Focus: Digital transformation • Development and implementation of a digital platform as a comprehensive communication solution for medium-sized clients
Practical career	Employee Strategy (3 years) • Supporting the management in identifying fields of action and in strategic management • Development of business ideas for strategic corporate planning
Academic training	University degree in business administration (M.Sc., grade: very good)
Further notes/ comments from the first interview	*Motivation of application:* **Reorientation after failure with a prestigious project** (No failure condition: **Would like to broaden his/her horizon in a new environment)** *Other:* Agile project management (certified)

Profile 2	
Current job/ status	**Employee** in a medium-sized company (4.5 years) • Manager with responsibility for several employees • Focus: Brand strategy and communication • Responsible for the development and implementation of a long-term brand strategy
Practical career	Employee Market Research (2.5 years) • Design and implementation of local primary research studies • Participation in forecasting processes and strategic planning as well as implementation of assumptions and market knowledge
Academic training	University degree in business administration (M.Sc., grade: very good)
Further notes/ comments from the first interview	*Motivation of application:* Identification with the company *Other:* Agile project management (certified)

Profile 3	
Current job/ status	**Employee** in a medium-sized company (3 years) • Project manager with responsibility for several employees • Focus: Financial Services • Technical responsibility for sales projects with a focus on the further development of core processes
Practical career	Employee Sales (4 years) • Development of sales measures to increase sales figures • Coordination of all relevant activities for the market launch
Academic training	University of applied sciences degree in Business Administration (M.Sc., grade: very good)
Further notes/ comments from the first interview	*Motivation of application:* Would like to broaden his/her horizon in a new environment *Other:* Six-sigma (certified)

APPENDIX B
Data cleaning process

	Study 1		Study 2			
	Provider 1	LinkedIn	Providers 3 and 4		LinkedIn	
	Recruiters	Executives	Recruiters	Executives	Recruiter	Executives
Complete Questionnaires	262	218	139	159	30	36
Careless Response[1]	-79	-16	-19	-41	0	-2
Potential Speedster[2]	-10	-	-10	-10	0	-1
Potential Slowster[3]	-	-	-10	-14	-1	-2
Included in analyses	**173**	**202**	**100**	**92**	**29**	**31**
Response rate	-		-	-	38%	53%
Completion rate	-		-	-	14%	13%
Total N						
Recruiter sample	375		129			
Executives' sample	-		123			

Note. Ex-ante defined eligibility criteria: Recruiters = 5-year experience in recruitment and selection, employed in HR as full- or part-time employees in Germany; Executives = Top-level managers (e.g., CEO or members of the board) in Germany. Exclusion criteria: Recruiter = Freelancer or personal service provider; Executives = Freelancer, Academia, Lower-level management.
1 We used three bogus items and deleted participants if they had less than two bogus items correct.
2 Speedster = time less than half of the median completion time.
3 Slowster = time outside 99% confidence interval of completion time.

APPENDIX C
Constructs and items used for the stereotypes indices and the uncertainty construct in Study 1

Constructs used for the positive stereotypes index (about the employability of former entrepreneurs)

Construct	Alpha	Item	Source
Autonomy	0.85	This candidate… does the job in his / her own way determines how his / her work is to be done makes own decisions	Cable & Edwards (2004)
Variety	0.87	This candidate… wants to do a variety of tasks would like to do a variety of projects	Cable & Edwards (2004)
Achievement motivation	0.8	This candidate… loves to face the challenges of the job wants to take risks in order to accomplish the tasks sets challenging goals and achieves them is happy when accomplishing a difficult task	Liu et al. (2010)
Heuristics	-	This candidate… uses heuristics to make strategic decisions in complex situations	Alvarez & Busenitz (2001)
Leadership effectiveness	0.9	This candidate… would be effective as a leader would be a good leader would be an excellent supervisor would lead his / her team in a way that motivates team members	van Knippenberg & Van Knippenberg (2005)
Personal initiative	0.91	This candidate… actively attacks problems immediately looks for a solution when a problem arises accepts the challenge if there is a chance to actively participate takes the initiative immediately, even when others don't. uses opportunities quickly to achieve his / her goals does more than is required of him / her is particularly good at realizing ideas	Frese et al. (1997)

Constructs used for the negative stereotypes index (about the employability of former entrepreneurs)

Construct	Alpha	Item	Source
Organizational structure*	0.81	This candidate… prefers clear organizational structures likes to follow a defined chain of command gets along well with organizational hierarchies	Cable & Edwards (2004)
Hard-to-tame	0.74	This candidate would like to design his/her area according to his/her own preferences even if his / her preferences conflict with the preferences of a superior. even if his / her preferences contradict accepted rules. even if this could harm other people in your company in a professional manner	Hsieh & Lee (2020)
Teamwork*	0.81	This candidate… works excellently as part of a team asks for information from other team members ensures that his / her team is successful responds to the needs of his / her team members	Welbourne et al. (1998)
Turnover intentions	0.76	This candidate… could start their own business in the near future could switch to a new company after a short time could leave your company after a short time (change of company; self-employment)	Mitchell et al. (2001) Linán & Chen (2009)
Organizational commitment*	0.84	This candidate… will be committed to your company will feel "emotionally connected" to your company will see your company's problems as its own will take care of the fate of your company	Shore et al. (1995)

Note. * Items of these constructs were recoded to reflect the negative employment stereotypes about the employability of former entrepreneurs

Items used for the uncertainty construct (about the employability of former entrepreneurs)

Uncertainty	0.85	In principle, I have an uncertain gut feeling about this candidate I'm uncertain if we should hire this candidate	Colquitt, et al. (2012) Li et al. (2021); Windschitl & Wells (1996)

APPENDIX D
Study 2: The conjoint experiment

Instructions [instructions for executives in parentheses]

In this study, you take the role of a recruiter (executive) in your company. Imagine that several positions in management (with and without personnel responsibility) will become vacant in your area of responsibility within the next three months which you should now fill [executives' sample: Imagine that you should fill several management positions (with and without leadership responsibility) in your area of responsibility with suitable candidates in the next three months]. The candidates should be found as soon as possible. It is your job to take a close look at the applicant profiles and assess the likelihood that you would invite them to a job interview (hire them).

The positions have already been advertised. Your team has screened all application documents and is now suggesting such applicants who, based on their professional expertise and industry knowledge, would in principle be considered for employment [executives' sample: Your team has reviewed all application documents and conducted initial telephone interviews with suitable candidates. In addition, the responsible department in your company held personal interviews with the candidates and suggested such applicants who, based on their professional expertise and industry knowledge, would in principle be considered for employment].

Since you are currently testing a new selection system, all suitable applicants were anonymized after the interviews and classified according to the following criteria:

Criteria 1: Target position

Management without personnel responsibility: Applicant has applied for a position in management without personnel responsibility.

Management with personnel responsibility: Applicant has applied for a position in management with personnel responsibility

Criteria 2: Prior employment

Employee: Applicant comes from a dependent employment relationship (full-time)

Entrepreneur (founder): Applicant was an independent entrepreneur (full-time)

Criteria 3: Prior leadership

None: Applicants previously had no personnel responsibility

For several employees: Applicant previously had personnel responsibility for several employees

Criteria 4: Evaluation of the application documents

No failures discovered: No failure discovered during the application process

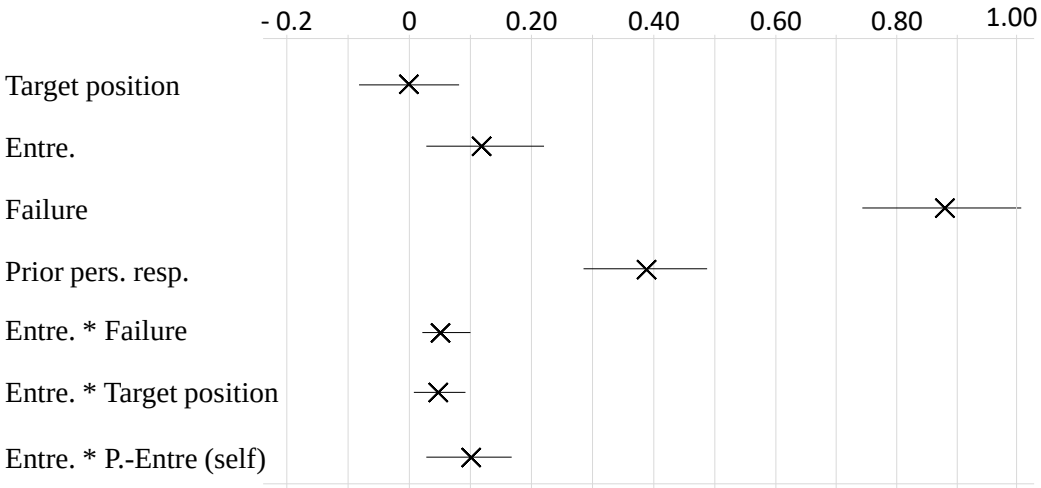
Failures discovered: Failure with self-founded company OR Failure with a larger project as an employee in the company

All applicants are approximately the same age (between 30-40 years), have a very good high school diploma, and graduated from a renowned university with excellent grades. Thus, all applicants differ only within the categories mentioned. The job market is currently advantageous for employees, so that all applicants would also find a job in another company. Now, take a look at each applicant and indicate the likelihood that you would offer this applicant a job interview (job offer) on a scale from 1 (low) to 10 (high). On the next page, you will see a sample profile:

	Situation
Target position	Management with personnel responsibility
	Applicant characteristics
Prior employment	Entrepreneur (founder)
Prior leadership responsibility	For several employees
Evaluation of application documents	No failure discoverd

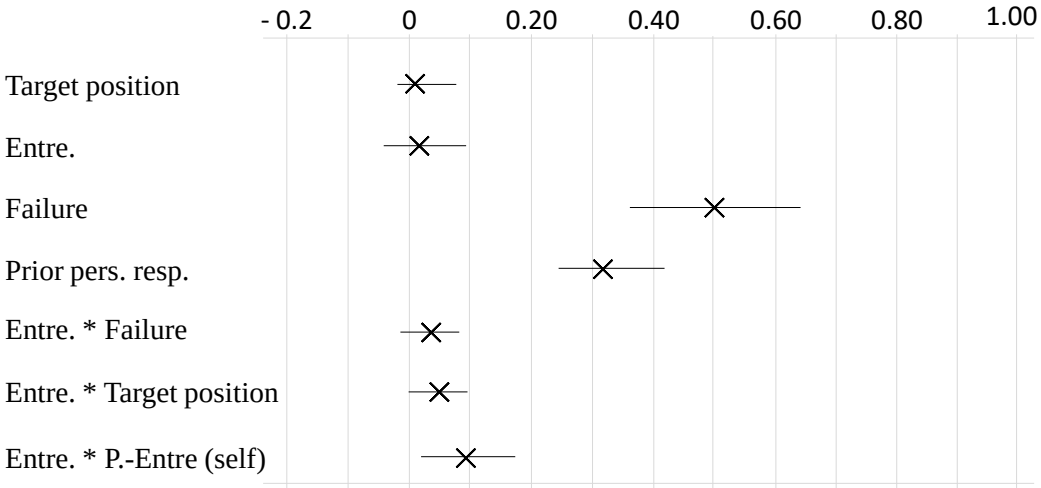
APPENDIX E
Coefficients of employers' employability perceptions including 95% confidence intervals for both experiments.

Sample 1: Recruiters



Note. Entre. = Entrepreneurship attribute. P.-Entre (self) = Recruiter is part-time entrepreneur. All effects are positivized for better readability. Standardized effects and 95% confidence intervals are taken from Model 2 except for the cross-level interaction effect (Model 4).

Sample 1: Executives



Note. Entre. = Entrepreneurship attribute. P.-Entre (self) = Recruiter is part-time entrepreneur. All effects are positivized for better readability. Standardized effects and 95% confidence intervals are taken from Model 2 except for the cross-level interaction effect (Model 4).

CHAPTER 3: "HARD TO TAME" OR "BORN LEADER": THE ROLE OF EMPLOYABILITY STEREOTYPES ABOUT FORMER ENTREPRENEURS

ABSTRACT

We examine the employment implications for former entrepreneurs. Taking a pre-hire perspective, we explore recruiters' employability stereotypes about former entrepreneurs in an experimental priming study (n= 278) and investigate which of them affect employability perceptions. Our data reveals that general employability perceptions are negative. Moreover, we find that this perception is dependent on specific employability stereotypes. The general negative effect centers on recruiters' attributions about their inability to function in a team. On the other side, we find that recruiters with explicitly positive stereotypes (e.g., taking responsibility) have no negative perception of former entrepreneurs. Our results add to entrepreneurship research by contributing to post-entrepreneurial career outcomes.

Keywords: Employability, post-entrepreneurial careers, stereotypes, priming

Research Paper 2 is co-authored by Prof. Dr. Mathias Baum

INTRODUCTION

Recently, entrepreneurship has been considered as "a step along a career trajectory" (Burton et al., 2016, p. 237), which implies that entrepreneurs exit their entrepreneurial endeavors and turn toward other career opportunities such as paid employment (e.g., Campbell, 2013; Hyytinen & Rouvinen, 2008; Luzzi & Sasson, 2016). Therefore, the literature has examined the outcomes of entrepreneurship and found both penalties (e.g., Baptista et al., 2012; Kaiser & Malchow-Møller, 2011) and rewards (e.g., Campbell, 2013; Luzzi & Sasson, 2016) for entrepreneurial experience on subsequent paid-employment. Additionally, research suggested several employment-related stereotypes about entrepreneurs, some being positive while others are instead reflecting negative stereotypes, which could explain the uncertainty in employability perceptions about former entrepreneurs put forward in previous studies (Mahieu et al., 2019).

Despite this growing body of research on former entrepreneurs' employability, the empirical literature has not explicitly addressed the specific stereotypes employers have about former entrepreneurs and if they affect employment-related perceptions. Therefore, the current study develops a qualitative framework of positive and negative employability stereotypes toward former entrepreneurs' ability, personality, or motivation to succeed in paid employment. Moreover, we test this framework in a within-subject experiment with recruiting managers.

Current employability research about former entrepreneurs occurs mostly with administrative data, focusing on outcomes of entrepreneurs with a "successful" transition into paid employment (e.g., Baptista et al., 2012; Bruce & Schuetze, 2004; Campbell, 2013; Daly, 2015; Failla et al., 2017; Kaiser & Malchow-Møller, 2011; Luzzi & Sasson, 2016; Mahieu et al., 2019). One explanation for the heterogeneous findings is that employability perceptions about former entrepreneurs rely heavily on stereotypical stereotypes. Early in the screening process, recruiters have employment-related stereotypes by interpreting applicants' salient

characteristics toward organizational characteristics and job demands (van Vianen & Kmieciak, 1998).

Researching employability stereotypes adds an essential piece to the overall employability debate (Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019; Manso, 2016). For instance, stereotypes could explain why the characteristic of being a former entrepreneur impedes future career paths through organizational boundaries and hence may explain fewer job interview invitations (Koellinger et al., 2015), for potential wage penalties (e.g., Kaiser & Malchow-Møller, 2011) of former entrepreneurs, and ultimately for a locked-in entrepreneurship effect (e.g., Failla et al., 2017). On the other side, if stereotypes are relatively positive, they could explain why some former entrepreneurs enter at higher job levels (Baptista et al., 2012), are not devalued for previous failure (Manso, 2016), or receive wage premiums (Luzzi & Sasson, 2016). Accordingly, understanding stereotypes towards entrepreneurs may help to address some of the conflicting findings in previous research.

Our study seeks to resolve this puzzle by conducting a within-subject experiment with intensive post-hoc analyses of the current stereotypes about the employability of former entrepreneurs by drawing on a sample of 278 recruiters. Recruiters are important stakeholders because they act as employment gatekeepers and thus decide over former entrepreneurs' "upward, downward, or lateral mobility" (Burton et al., 2016, p. 241). We selected recruiters either in a negative or a positive priming condition in which they had to specify their stereotypes about former entrepreneurs. In a subsequent within-subject experiment, we investigated if the stereotype priming affected employability perception. Then, we categorized the qualitative data from the priming to build a framework of positive and negative employability stereotypes about former entrepreneurs and added the framework to the analysis to further assess which stereotype factors influenced employability perceptions about former entrepreneurs.

In doing so, our study makes two primary contributions to the entrepreneurial career

literature (e.g., Burton et al., 2016). First, our research approach centers around the early selection phase and thus extends the majority of administrative data and post-hire research on the employability of former entrepreneurs (Campbell, 2013; Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019; Manso, 2016). Grounded in attribution theory (Heider, 1958) and the knowledge activation framework (Higgins, 1996), we use positive and negative primes to zoom into recruiters' subjective evaluations of former entrepreneurs (compared to applicants without entrepreneurial experience). Thus, we respond to prior research (Marshall, 2016) by building an employability model that emphasizes employability stereotypes about former entrepreneurs and explains employment implications for such applicants.

Second, we conducted extensive post-hoc analyses by exploring and clustering the employability stereotypes from the priming manipulation. We develop a framework derived from competency research (Bartram, 2005) that centers on stereotypes about entrepreneurs' ability, personality, or motivation to succeed in paid employment. By explicitly addressing stereotypes, this framework is suitable to explain further "postentrepreneurial career outcomes" (Burton et al., 2016, p. 243). Additionally, we refine our employability model by adding the clustered stereotypes to our employability model and test which of them have more and which have fewer implications for former entrepreneurs. Thus, we further reveal the nature of recruiters' knowledge structures about the employability of former entrepreneurs, which are predominantly negative. Taken together, we specifically answer not just *if* but offer empirical evidence *why* entrepreneurship is – in the eyes of recruiters – a liability for paid employment.

THEORY AND HYPOTHESES

Theory development

Recruiters investigate applicants' fit with organizational characteristics and job demands during the recruitment and selection process (Kristof-Brown et al., 2005). As information levels are usually lower in the early stage of this process (e.g., résumé screening), stereotypes and attributional biases are likely to influence employment-related perceptions (e.g., about applicants ability, personality, or motivation) and thus employability perceptions (Derous et al., 2012; Derous et al., 2015; Fiske & Taylor, 1991; Hodgkinson, 2003). A cognitive-based approach – grounded in attribution theory (Heider, 1958) and the knowledge activation framework (Higgins, 1996) – helps us to explain how employment-related stereotypes come to exist and how they shape employability perceptions about former entrepreneurs. Attribution theory has a long history in selection-related research (Knouse, 1989), and scholars have begun to acknowledge the potential of attribution theory for entrepreneurship research (Breugst & Shepherd, 2017; Kibler et al., 2017; Shaver et al., 2001; Shepherd & Patzelt, 2015). Similarly, the knowledge activation framework can significantly enhance entrepreneurship scholars' understanding of cognitive factors within the entrepreneurial process (Baron & Ward, 2004).

In general, attribution theory concentrates on "how the social perceiver uses information to arrive at causal explanations for events [and] examines what information is gathered and how it is combined to form a causal judgment" (Fiske & Taylor, 1991, p. 23). Central in attribution theory are causal attributions of individuals (i.e., the recruiter) that contain information about possible cause-event relationships (e.g., stereotypes about future work performance) of other individuals such as job applicants (Heider, 1958). Therefore, stereotypes influence employability decisions (Silvester, 1997) and are dependent on the applicant's perceived ability, personality, and motivation to succeed. Stereotypes and other biases affect employment-related perceptions (Fiske & Taylor, 1991) and are especially

strong about entrepreneurs (Buttner & Rosen, 1988). Stereotypes are activated automatically when specific cues about entrepreneurs are available (Devine, 1989) and then affect dispositional perceptions (Gilbert et al., 1988).

To investigate the importance of stereotypes on recruiters' employability perceptions about former entrepreneurs, we developed a negative or a positive priming condition to activate explicitly negative or explicitly positive stereotypes about former entrepreneurs. This approach is grounded in the knowledge activation framework (Higgins, 1996), which defines the accessibility of knowledge as the likelihood of that knowledge being used. Two fundamental factors influence the possibility that individuals activate and used specific knowledge (e.g., about former entrepreneurs) in a selection-related context: *Accessibility* implies the "activation potential of available knowledge" (Higgins, 1996, p. 134), and *applicability* describes the relationship between a stimulus (stereotype-induced priming) and an individual's available knowledge. A greater overlap between a prime and available knowledge indicates a greater likelihood that available knowledge will be activated and used when assessing former entrepreneurs' employability. Thus, priming implies the temporary activation of specific knowledge structures, which increases the likelihood that such structures affect study participants' perceptions. Importantly, Devine (1989) theorized that a symbolic representation of the social group (e.g., description of specific applicants) is sufficient to activate stereotypical thinking, translating into stereotype-congruent responses. Empirically, Bargh et al. (1996) demonstrated that negatively primed individuals showed more rude behavior than participants from a positive priming condition. Therefore, we conclude that activating specifically negative stereotypes about former entrepreneurs leads to negative employability perceptions of former entrepreneurs, whereas we expect the opposite effect when activating specifically positive stereotypes.

Employability perception of former entrepreneurs

Employability perceptions of former entrepreneurs are lower compared to similar

applicants with no background in entrepreneurship. We argue that negative stereotypes about former entrepreneurs are generally more applicable to recruiters (Higgins, 1996) because uncertainty about such applicants is high (Mahieu et al., 2019) as recruiters' mental models utilize the image of the lifelong entrepreneur (Burton et al., 2016) and connect a transition to paid employment with some sort of stigma (Koellinger et al., 2015). Moreover, there are critical stereotypes when selecting former entrepreneurs, such as organizational commitment, teamwork skills, and followership behavior, which are predominantly negative about former entrepreneurs (Marshall, 2016). In the following, we explain in more detail how such employment-related stereotypes shape recruiters' negative employability perceptions about former entrepreneurs.

First, organizational commitment implies an individual's identification and involvement with their employer (Mowday et al., 1979) and has been related to job performance (Neininger et al., 2010). Morrow (2011) identified several antecedents of organizational commitment, such as employees' value systems or turnover intentions. Williamson et al. (2009) demonstrated that employees with low collectivistic values (compared to high) declared more substantial organizational commitment levels when pay and autonomy were perceived as high. However, when pay and autonomy were perceived as low, employees with high collectivist orientation levels indicated higher organizational commitment levels. We argue that recruiters attribute a similar pattern to former entrepreneurs: Entrepreneurs are usually considered to favor an individualistic value system and are thus less collectivist in nature (Tiessen, 1997). Moreover, the degree of autonomy is generally lower in paid employment compared to entrepreneurship. Therefore, recruiters are likely to attribute lower organizational commitment to applicants with a background in entrepreneurship.

Similarly, organizational commitment has been associated with the intention to quit. Importantly, Tyagi and Wotruba (1993) found that turnover intentions were a stronger

predictor of organizational commitment than vice versa. As recruiters have stereotypes about applicants' motivation to apply, they attribute higher turnover intentions to former entrepreneurs because they fear that entrepreneurs use paid employment for initiating a new venture. Thus, they further attribute a lower organizational commitment to former entrepreneurs. Empirically, Breugst et al. (2012) demonstrated a similar pattern in entrepreneurial ventures: Here, employees interpreted the entrepreneurs' passion for founding negatively because they believed that entrepreneurs were more interested in starting a new venture once the current business was established. Thus, there are several antecedents (value system, turnover) of organizational commitment of which recruiters have negative stereotypes about when evaluating former entrepreneurs.

Second, followership includes the characteristics (e.g., role orientation) and behavior (e.g., obeying) of employees to their leaders (Uhl-Bien et al., 2014). In other words, there are no leaders without followers. Howell and Mendez (2008) developed a typology of followership roles in which they described an independent role orientation reflecting a trend of employees to act more independently. Such a followership role can create constructive situations because it enables employees to solve problems on their own. However, such role orientations may also imply nonconstructive circumstances with negative consequences for the company. Howell and Mendez (2008) describe employees with such role orientations to have a high need for independence and to believe in being more capable of making work-related decisions and thus equate the independent role orientation with a "rebellious orientation" (Howell & Mendez, 2008, p. 34). In a similar vein, there are several typical followership behaviors that are (not always) appreciated by leaders, such as proactive behavior (Grant et al., 2009) because it can represent a threat to the leader. From a more traditional viewpoint, there are typical behaviors grounded in obedience and subordination, which respond to the structured and hierarchical organization of paid employment, resulting in common beliefs that employees' task is to follow orders (Heckscher, 1994). As recruiters

have stereotypes about applicants' personalities, they attribute lower followership behavior to former entrepreneurs because entrepreneurs are usually characterized with high levels of proactivity (Fay & Frese, 2001), autonomy (Santarelli & Vivarelli, 2007), and leadership traits (Cogliser & Brigham, 2004) which are characteristics considered as inappropriate for traditional followership in paid employment. Importantly, the research identified that entrepreneurs and managers differ in their personalities (Zhao & Seibert, 2007). Building on their work, Rauch and Frese (2007) assigned experts to assess the specific traits' important to entrepreneurs' tasks. Here, they found that a proactive personality and need for autonomy were among the important traits, and conservatism, norm orientation, and conformity were considered as unrelated to entrepreneurship. Moreover, they meta-analyzed their findings and found that the proactive personality and the need for autonomy were essential predictors for business creation and success. Thus, recruiters have further negative stereotypes about former entrepreneurs as they perceive such applicants as unable to "transition from being 'the leader' to being 'led' (Marshall, 2016, pp. 690–691).

Third, and consistent with the previous, stereotypes about former entrepreneurs' teamwork capabilities have been suggested to be important toward such applicants' employability (Marshall, 2016). Nowadays, organizations rely largely on team-based settings to design most of the work (e.g., Cascio, 1995). LePine et al. (2000) suggested that contextual performance is important for teamwork settings, which they defined as "individual-level behavior that supports the social, organizational, and psychological environment in which task behaviors are performed" (p.53). In a study on selection criteria for team settings, Morgeson et al. (2005) demonstrated that, among other factors, social skills (reflecting the ability to act effectively in social situations (Huffcutt et al., 2001)) and teamwork knowledge (reflecting conflict resolution or task coordination knowledge within teams (Stevens & Campion, 1994)) were important capabilities in the selection of applicants as they both predicted contextual performance. We argue that recruiters have negative stereotypes toward former entrepreneurs'

teamwork capabilities. One argument for our assumption is that many entrepreneurs, especially in Germany, are solo self-employed (e.g., Sorgner et al., 2017) and thus are not used to work in teams. Moreover, entrepreneurship research identified the social skills relevant to entrepreneurs' success, such as reading others, making a good first impression, or being persuasive (Baron & Markman, 2000). In an up following study, Baron and Markman (2003) found that entrepreneurs scored higher on social perception (e.g., reading others well) and expressiveness (e.g., showing emotions) and lower on social adaptability (e.g., adjusting to social situations). Hence, we argue that social skills are valuable for entrepreneurial success but are perceived as a liability for paid employment (e.g., persuading customers is key for entrepreneurial success, but persuading work colleagues is interpreted as being stubborn). Taken together, we state:

Hypothesis 1. The employability perception is lower if the applicant is a former entrepreneur (compared to a project manager).

Effect of stereotype-induced priming on employability perceptions of former entrepreneurs

We expect that activating positive stereotypes should act as a boundary condition for our theorizing: When activating positive stereotypes about entrepreneurs, we expect a shift toward more positive perceptions when evaluating former entrepreneurs. On the flip side, when activating specifically negative stereotypes, we expect a further decrease in perceptions. Past research identified several positive attributes about former entrepreneurs such as being broad generalists (Lazear, 2004), hard-working individuals (e.g., Sarasvathy, 2001), high in opportunity recognition (e.g., Alvarez & Busenitz, 2001), and achievement motivation (e.g., Stewart & Roth, 2007). Thus, several stereotypes should increase former entrepreneurs' employability perception. The theoretical mechanism explaining the shift in employability perceptions anchors in the knowledge activation framework (Higgins, 1996): Individuals

automatically have positive evaluations when positive primes are presented and vice versa (Fazio, 2001). In our context, when positive stereotypes are activated, recruiters will direct their attention to the immediate assets of entrepreneurs (e.g., hard-working individuals), which leads to positive evaluations of former entrepreneurs. Similarly, when confronted with specific negative stereotypes, recruiters will directly think about the disadvantages of entrepreneurs and how they affect their organization, leading to more negative employability perceptions. Hofhuis et al. (2016) recently investigated a similar pattern: They demonstrated that priming recruiters with either positive or negative outcomes of workplace diversity led to higher ratings of applicants from a minority group when recruiters were in the positive priming condition and vice versa. Thus, activating specific negative or specific positive stereotypes about the employability of former entrepreneurs leads to either more negative or positive employability perceptions:

Hypothesis 2a. When recruiters are negatively primed about entrepreneurs, the employability perception of former entrepreneurs further decreases (compared to project managers).

Hypothesis 2b. When recruiters are positively primed about entrepreneurs, the employability perception of former entrepreneurs is positive (compared to project managers).

METHOD

As we were interested in employability stereotypes about former entrepreneurs, we conducted a web-based priming experiment where recruiters were randomly selected in a negative or positive priming condition. Once primed with either positive or negative stereotypes about entrepreneurs' employability (recruiters had to name two stereotypes), recruiters participated in an experiment in which they made decisions about several hypothetical applicants (some with a background in entrepreneurship). In further post-hoc

analyses, we used the qualitative data from the priming and clustered them according to a competency framework (Bartram, 2005). Then, we added the clustered stereotypes to our statistical models and assessed which factors affected recruiters' perceptions of former entrepreneurs' employability. Combining qualitative and quantitative methods (for an overview, see Creswell and Plano Clark (2018)) is frequently used in the management literature (e.g., Grant et al., 2008) as it combines the advantages of qualitative research and quantitative experiments. Thus, our data are eligible to tackle exploratory questions (e.g., which are the specific stereotypes about former entrepreneurs' employability) and confirmatory questions (e.g., which of the stereotypes significantly drive employability perceptions). Next, we explain the research procedure and then describe the priming (from which we obtain the qualitative data) and the within-subject experiment.

Research procedure. We invited actual recruiting managers to our web-based employability experiment and told them to make employment-related decisions about several job applicants toward a position as head of business development (with managerial responsibility) in their organization. To hide the research's actual purpose, we explained that several job applicants had completed a new online screening test as part of the pre-screening process and that the results were, together with brief CVs, summarized in anonymized applicant profiles. We assigned recruiters to view the applicant profiles independently to assess each applicant's likelihood of a personal job interview. In the next step, we explained the applicant profiles (see variables section). We assured that all applicants had similar career backgrounds (in terms of age (35-40 years old), education (excellent master's degree at a German university), job entrance (the first job at a medium-sized company in Germany). We included two "practice" profiles (Appendix A), which is common in within-subject experiments to familiarize recruiters with their tasks (e.g., Warnick et al., 2018). Both practice profiles were excluded from the statistical analysis. Before the within-subject experiment, we randomly selected recruiters in either the negative or positive priming condition. After the

experiment, they could explain their decisions to probe more deeply into their underlying decision structures. Finally, we collected demographic data and offered a practical summary of our results to incentivize participants.

Priming. As described above, recruiters were randomly selected in either the positive or the negative priming condition before the main experiment. In broad terms, priming experiments offer two independent stimuli: the first is the prime, and the second is the target (the within-subject experiment) (Baron & Ward, 2004). Moreover, the authors emphasize that priming occurs when study participants, exposed to the prime (here, the positive or negative priming condition), respond significantly differently to the target (which is the within-subject experiment). The advantage of such priming experiments is the random composition of experimental groups to investigate the phenomenon of interest within a clean experimental setting with high internal validity (Vandor & Franke, 2016). Such priming experiments have been suggested to be a valuable tool for entrepreneurship research (Baron & Ward, 2004). They have been conducted to explore entrepreneurs' creativity (Qin et al., 2020), entrepreneurial cognition (Frederiks et al., 2019), or evaluation of business opportunities (Vandor & Franke, 2016). Moreover, priming experiments have been conducted in recruitment- and selection-related contexts (e.g., Hofhuis et al., 2016).

We introduced both conditions by emphasizing that there were some former entrepreneurs among the applicants. In the positive (negative) condition, we further emphasized that entrepreneurs were characterized with valuable characteristics (disadvantages) for paid employment, such as entrepreneurial thinking (power struggles) (see Appendix B for the detailed description). Like Hofhuis et al. (2016), we also asked recruiters to write either two positive or negative attributes about former entrepreneurs' employability to increase the accessibility and activation of employability stereotypes (Higgins, 1996). Following Vandor and Franke (2016), we conducted content analyses of the stereotypes as a manipulation check and concluded that the primes were effective in all cases. Moreover, we

use additional qualitative data to explore the broad stereotype themes about former entrepreneurs' employability.

Within-subject experimental design. After the priming, we conducted a within-subject experiment similar to policy capturing (Karren & Barringer, 2002) or metric conjoint experiments (Lohrke et al., 2010). Such experiments are common in entrepreneurship (e.g., Choi & Shepherd, 2005; Hauswald et al., 2016; Moser et al., 2017) and have also been conducted in HR-related contexts (e.g., Moy, 2006; Newman & Lyon, 2009). They overcome the general limitations of post-hoc methods (Choi & Shepherd, 2004)) such as "faulty memory" of study participants (Golden, 1992, p. 848), overestimation of decision criteria (Shepherd & Zacharakis, 2018), or constraints with causal relationships (Antonakis et al., 2010). In our experiment, recruiters make employment-related decisions upon several applicant profile combinations. Therefore, we assess individuals' "theory in use" rather than retrospective accounts (Lohrke et al., 2010, p. 19) because we statistically decompose the decision into their underlying structure (Shepherd & Zacharakis, 1999). Applicant profiles are a combination of the attributes of interests where each attribute is labeled by one of its values. In more detail, each applicant profile is a combination of four attributes (Table 1). We applied a full orthogonal design (Hahn & Shapiro, 1966), which is in line with prior research (Shepherd & Patzelt, 2015). Such a design implies zero correlation between attributes and excludes multicollinearity issues (Karren & Barringer, 2002). Hence, we presented recruiters 16 distinct applicant profiles (2^4). We added four profiles for test-retest reliabilities (Warnick et al., 2018) and used two additional profiles for practice purposes, which we excluded from the main analysis. As our experiment bears the risk of study participants' fatigue, we applied a short memory task between the first ten and the last ten profiles. Importantly, we randomized the profile order to avoid confounding effects (Chrzan, 1994).

There are some limitations with within-subject designs that we briefly address now. First, such designs are hypothetical and may be criticized for their external validity as study

participants base their decisions only on a limited number of attributes. However, past research emphasized that individuals base their "real-life" decisions only on three to seven attributes (Stewart, 1988). Moreover, we developed the research design from a robust theoretical basis (Shepherd & Zacharakis, 1999), guaranteed confidentiality of study results (Monsen et al., 2010), and applied feedback questions and space for personal comments for study participants to evaluate the experiment. Those data helped us to confirm that our decision scenarios were like those in the real world. Finally, we asked recruiters to assess the study's quality (disagreement = 1, agreement = 7). The mean values were 4.55 (attributes were sufficient to decide), 4.74 (profiles were realistic), 4.40 (easy to decide for or against an applicant). Thus, we conclude that decision attributes were important when making employability decisions.

TABLE 1
Description of the attribute values, as used in the within-subject experiment

Attribute	Level	Description
Fit to the job (job requirements are met, e.g., through specific abilities, skills, and abilities)	Average	Applicant scored average in the online recruitment test
	Top 25%	Applicant scored high on the online recruitment test
Fit to the company (e.g., to culture, values, and goals of your company)	Average	Applicant scored average in the online recruitment test
	Top 25%	Applicant scored high on the online recruitment test
Current employment relationship	Project manager	Applicant was previously a project manager with personnel responsibility for over ten employees
	Entrepreneur	Applicant was previously an entrepreneur with ten employees
Duration of the last employment relationship	2017 – today	Last job for about three years
	2013 – today	Last job for about seven years

Participant recruitment and sampling

We first defined eligibility criteria for participation: Study participants had to work as a recruiter with more than five years of experience in recruitment and selection and had to be employed as full- or part-time employees in Germany. Additionally, we had exclusion criteria such as working as freelancers or personal service providers. We collaborated with two professional panel providers for the data collection, similar to other recent research (e.g.,

Kollmann et al., 2017). Furthermore, we used the LinkedIn network to contact additional recruiters following the procedure suggested by Lanivich (2015). We applied several steps such as screening questions (before the experiment; e.g., if they were actively involved in the recruiting process for positions with managerial responsibility) or bogus items (Meade & Craig, 2012) to ensure data quality. We thus collected a total of 278 complete questionnaires from the three sources. They were 57% female, 41 years old (SD: 10.96), had recruiting experience of 9.52 years (SD: 6.82), and came from several industries such as information technology (12.23 %), the public sector (11.87%), the industry and mechanical engineering sector (8.63 %), or transportation and logistics (7.19 %). In total, 51% (49%) of our study participants were randomly selected in the positive (negative) priming condition. We conducted several tests and found no significant differences in the demographic variables between the two manipulation conditions ($p > 0.05$) and conclude that randomization was successful.

Variables

In the following, we will refer to the level of analysis within individuals (e.g., decisions) as *Level 1* and to the level of analysis between individuals (e.g., control variables) as *Level 2*.

Dependent variable. We broadly define employability decisions as recruiters' perceptions of applicants' employability. Therefore, we measure the employability decisions as recruiters' perceived likelihood to invite each applicant to a personal job interview (1= not likely at all; 10= extremely likely), which is similar to other experimental studies (Moy, 2006).

Level 1 variables. As described earlier, applicant profiles consisted of 4 attributes, each varying on two levels (Table 1). The first attribute described the prior employment status with the levels entrepreneur or project manager: *Entrepreneur* – the applicant is a founder and CEO of a company (with ten employees); *Project manager* – the applicant is a project

manager in a company (responsible for ten employees). To further enhance the study's realism, we added a second work appointment to the employment history (before the attribute of interest), which was constant across all applicants (see sample in Appendix A). Thus, all hypothetical applicants have had experience in paid employment to some degree (similar to Campbell (2013)). To minimize threats toward external validity and to enhance the realism of our study, we added three attributes as level 1 controls (person-job fit (PJ-fit), person-organization-fit (PO-fit), and duration of last employment): As recruiters make fit assumptions in selection-related situations (e.g., Chatman, 1989; Kristof-Brown, 2000; Rynes & Gerhart, 1990), we added PJ- and PO-fit. PJ-fit describes the match between an applicant and a specific job (Kristof-Brown, 2000), and PO-fit is generally defined as the "congruence between individuals' and organizations' values" (Cable & Judge, 1997, p. 547). Past research emphasized that recruiters differentiate between PJ- and PO-fit (Kristof-Brown, 2000), and meta-analytic evidence linked both dimensions to recruiters' intent to hire (Kristof-Brown et al., 2005). Both fit dimensions were described on two levels (*Top 25%; Average*). As it is crucial to exclude "unrealistic" profile combinations (Patzelt & Shepherd, 2008), we did not apply a low condition for PJ- and PO-fit because it is unreasonable to present applicants who failed the online assessment test. Finally, we added the duration of the last employment relationship (Duration of previous employment: *3 years*; *7 years*). Grounded in the uncertainty framework (Mahieu et al., 2019), recruiters' employability perceptions are more negative for applicants with a longer spell of self-employment because the uncertainty of the entrepreneurs' real motives for paid employment is higher.

Level 2 variable. As described earlier, we used the priming condition (0 = negative priming condition; 1 = positive priming condition) to assess the overall influence of positive and negative stereotypes on employability perceptions about former entrepreneurs.

Level 2 control variables. Additionally, we added control variables to account for additional variance across recruiters. We added study participants' recruiting experience (in

years) and part-time entrepreneurship (0= no, 1= yes). More experienced recruiters attribute applicant characteristics more likely to situational factors (Martinko et al., 2006). Thus, they are less likely to have negative stereotypes about former entrepreneurs. Recruiters' part-time entrepreneurship status was added because it represents an essential source of false-consensus bias (Ross et al., 1977). Past research identified this bias as important in decision-related research in entrepreneurship (e.g., Murnieks et al., 2011) and recruitment and selection (e.g., Graves & Powell, 1995) because such recruiters engaging in self-employment are more likely to have positive stereotypes about applicants who have a background in entrepreneurship.

Data analysis

In the within-subject experiment, we base our statistical analysis on 16 employability decisions of each of the 278 recruiters, which results in 4.448 independent data points. Therefore, the employability decisions are nested within each study participant. Those "captured" decisions are likely to be autocorrelated because each study participant's mental models are independent and divergent of other recruiters (Monsen et al., 2010). Therefore, we conducted multi-level regression analyses (Aguinis et al., 2013) in STATA 16 to adjust for potential autocorrelation of nested data and to minimize the risk of type I error (Raudenbush & Bryk, 2002). Moreover, multi-level regression analysis allows for the analysis of cross-level interactions (Aguinis et al., 2013), which is necessary for the post-hoc analyses.

RESULTS

The within-subject experiment's goal was to lend support for the importance of stereotypes in recruitment-related situations. Table 2 provides the descriptive statistics of the level 2 variables. Correlations between Level 1 variables are zero due to the orthogonal design and neglected in the descriptive analysis (Patzelt & Shepherd, 2008). As reliability is a severe issue in within-subject experiments (Shepherd & Zacharakis, 2018), we conducted test-retest analyses using Pearson R correlation to assess whether recruiters answered in a reliable

fashion. We report a correlation of 0.77, which is consistent with previous research (e.g., Monsen et al. (2010): 0.73) and above the generally accepted threshold of r = 0.70 (Karren & Barringer, 2002).

For the multi-level regression analyses, we will report the findings from Model 5 (Table 3): First, we calculated pseudo R^2 (Raudenbush & Bryk, 2002), which indicates that Model 5 explained 29% of the variance. We find that former entrepreneurs' general employability was lower than former project managers ($ß = -2.29$, $p < 0.01$). Thus, we find support for hypothesis 1, which stated that the employability likelihood was lower when the applicant was a former entrepreneur. Moreover, we were interested in whether former entrepreneurs' employability perception was influenced by the priming condition recruiters were randomly selected in. Here, we find a significant interaction effect ($ß = 1.04$, $p < 0.01$). We graphed this relationship in Figure 1 for further interpretation: We find that former entrepreneurs' employability perception further decreases when recruiters were in the negative priming condition (simple slope: $ß = -2.29$, $p < 0.01$). When recruiters were in the positive priming condition, the negative main effect is less strong (simple slope: $ß = -1.25$, $p < 0.01$). Thus, we find support for hypothesis 2a, which stated that former entrepreneurs' employability perception was even lower when study participants were in the negative priming condition. However, there is no support for hypothesis 2b, which stated that employability perception was higher when recruiters were in the positive priming condition: Rather, the data indicate that the general reservations recruiters have about former entrepreneurs do not resolve in the positive priming condition.[5]

[5] We conducted several robustness checks with the control variables which are in Appendix C.

TABLE 2
Means (M), standard deviations (SD), variance inflation factors, and correlations of Level 2 variables

Variables	M	SD	VIF	1		2		4		5		6		7		8		9		10		11		12	
				r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*
1 Recruiting experience	9.52	6.82	1.1																						
2 Part-time entrepreneur	0.16	0.37	1.1	0.09	*0.15*																				
3 Priming condition	0.51	0.50	-[a]	0.05	*0.43*	0.10	*0.10*																		
4 Neg. L&D	0.03	0.16	1.1	0.05	*0.45*	-0.07	*0.24*																		
5 Neg. S&C	0.18	0.38	1.9	-0.01	*0.91*	-0.03	*0.64*	0.04	*0.46*																
6 Neg. I&P	0.00	0.06	1.10	0.06	*0.34*	-0.03	*0.66*	-0.01	*0.87*	-0.03	*0.64*														
7 Neg. A&I	0.05	0.22	1.2	-0.07	*0.24*	-0.10	*0.09*	-0.04	*0.54*	0.02	*0.73*	-0.01	*0.82*												
8 Neg. C&C	0.02	0.13	1.1	-0.08	*0.17*	-0.06	*0.32*	-0.02	*0.72*	0.08	*0.20*	-0.01	*0.89*	-0.03	*0.60*										
9 Neg. O&E	0.21	0.41	2.1	-0.03	*0.65*	0.04	*0.52*	0.03	*0.61*	0.04	*0.55*	-0.03	*0.61*	0.00	*0.96*	-0.07	*0.25*								
10 Neg. A&C	0.08	0.26	1.2	-0.01	*0.84*	0.06	*0.33*	-0.05	*0.45*	0.04	*0.47*	-0.02	*0.78*	0.06	*0.33*	0.06	*0.29*	0.12	*0.04*						
11 Neg. E&P	0.12	0.32	1.4	-0.15	*0.01*	-0.07	*0.27*	-0.06	*0.34*	-0.02	*0.71*	-0.02	*0.72*	0.07	*0.23*	0.04	*0.55*	0.04	*0.54*	-0.02	*0.8*				
12 Neg. Failure	0.05	0.21	1.3	0.00	*0.99*	-0.05	*0.40*	-0.04	*0.55*	-0.02	*0.80*	0.27	*0.00*	0.03	*0.66*	-0.03	*0.62*	-0.03	*0.62*	0.00	*0.98*	0.19	*0.00*		
13 Neg. Salary	0.08	0.26	1.5	-0.04	*0.53*	-0.09	*0.14*	0.04	*0.50*	-0.06	*0.30*	-0.02	*0.78*	-0.07	*0.27*	0.06	*0.29*	-0.01	*0.83*	-0.03	*0.62*	0.15	*0.01*	-0.06	*0.29*

Variables	M	SD	VIF	1		2		14		15		16		17		18		19		20	
				r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*	r	*p*
14 Pos. L&D	0.29	0.45	2.4	0.10	*0.08*	0.04	*0.46*														
15 Pos. S&C	0.04	0.20	1.1	0.08	*0.20*	-0.09	*0.14*	0.03	*0.57*												
16 Pos. I&P	0.10	0.30	1.4	0.04	*0.51*	-0.08	*0.17*	-0.03	*0.64*	0.05	*0.36*										
17 Pos. A&I	0.09	0.29	1.3	0.04	*0.50*	0.06	*0.32*	0.10	*0.11*	0.00	*0.98*	-0.03	*0.67*								
18 Pos. C&C	0.11	0.32	1.5	-0.06	*0.30*	0.15	*0.01*	0.00	*0.97*	0.05	*0.45*	0.00	*0.94*	0.00	*0.95*						
19 Pos. O&E	0.03	0.16	1.1	-0.06	*0.30*	0.01	*0.05*	-0.05	*0.39*	-0.03	*0.59*	0.02	*0.71*	0.11	*0.08*	0.02	*0.79*				
20 Pos. A&C	0.07	0.26	1.3	0.00	*0.96*	0.03	*0.63*	0.01	*0.90*	0.01	*0.80*	-0.09	*0.12*	0.01	*0.92*	0.08	*0.19*	0.04	*0.46*		
21 Pos. E&P	0.18	0.38	1.6	-0.04	*0.54*	0.03	*0.65*	0.10	*0.09*	-0.05	*0.45*	0.25	*0.00*	-0.05	*0.39*	0.02	*0.79*	-0.01	*0.82*	0.05	*0.37*

Note. n = 278. a VIF is 1.01 without the stereotype factors. No correlations are presented between the negative and positive factors.

TABLE 3
Results of the ML-regression analyses

	Model 1		Model 2 RIFS		Model 3 RIFS		Model 4 RIRS		Model 5 RIRS	
Variable	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	7.02 ***	0.07	5.76 ***	0.15	5.99 ***	0.23	5.97 ***	0.23	6.76 ***	0.08
Controls										
PJ fit (L1)			1.35 ***	0.07	1.35 ***	0.07	1.35 ***	0.07	1.35 ***	0.07
PO fit (L1)			1.40 ***	0.06	1.40 ***	0.06	1.40 ***	0.06	1.40 ***	0.06
Duration of last employment (L1)			-0.04	0.04	-0.04	0.04	-0.04	0.04	-0.04	0.04
Experience Recruiter (L2)			-0.01	0.01	-0.01	0.01	-0.01	0.01	-0.01	0.01
Part-time entrepreneur (L2)			0.00	0.16	-0.02	0.16	-0.03	0.16	-0.03	0.16
Level 1 Variables										
Former entrepreneur					-0.72 ***	0.09	-0.72 ***	0.09	-2.29 ***	0.28
Level 2 Variables										
Priming					0.09	0.13	0.09	0.13	-0.43 **	0.13
Cross-Level Interaction										
Former entrepreneur*Priming									1.04 ***	0.16
Variance components										
Residual variance	2.99		1.97		1.84		1.84		1.76	
Intercept variance (L1)	1.01		1.07		1.08		2.05		2.03	
Slope variance (L2)							0.29		0.28	
Slope covariance (L2)							-0.56		-0.55	
ICC	0.25									
R^2 (Level 1)			0.24		0.27		0.27		0.29	
R^2 (Level 2)			0.00		0.01		0.01		0.01	

Note: 4.448 decisions in n = 278; † p < 0.1;* p < .05; ** p < .01; *** p < .001. Maximum-likelihood estimations.
RIFS = Random intercept random slope model; RIRS = Random intercept random slope model.
Coef. = Unstandardized regression coefficients; SE = Robust standard errors.
PJ fit: 0 = Average, 1 = Top 25%; PO fit: 0 = Average, 1 = Top 25%; Duration of last employment: 0 = 3 years, 1 = 7 years;
Experience recruiter = in years; Part-time entrepreneur: 0 = no part-time entrepreneur; 1 = part-time entrepreneur
Former entrepreneur: 0 = Project manager, 1 = Entrepreneur; Priming: 0 = Negative priming condition 1 = Positive priming condition

FIGURE 1
Interaction effect of the priming condition

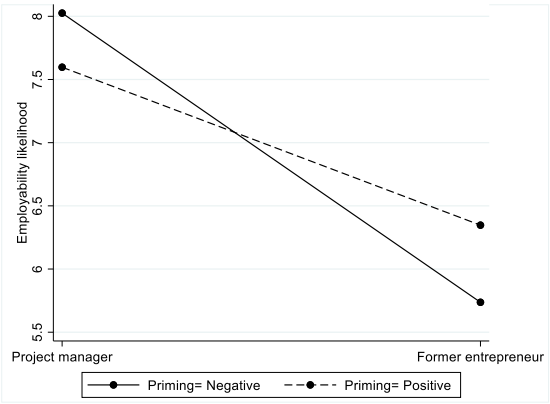


Figure 1. The effect of being a former entrepreneur on the employability likelihood across the negative and the positive priming condition. Simple slopes are -2.29 (p<0.01) when participants were in the negative priming condition and are -1.25 (p<0.01) when recruiters were in the positive priming condition. The slope difference test is significant (p<0.01).

Post-hoc analyses

The goal of the post-hoc analyses was to analyze further the stereotypes named by recruiters. As each recruiter (N=278) named either two negative or two positive employability stereotypes about former entrepreneurs as part of the priming manipulation, we had a total of 272 negative stereotypes (n_N = 136) and 284 positive stereotypes (n_P = 142). We organized the stereotypes following the Great Eight competency framework (Kurz & Bartram, 2002) with their eight general factors and their supplementing competency dimensions (Bartram, 2005). This framework embodies a workplace performance model and is suitable for our context because the competencies are based on individuals' ability, personality, or motivation and thus are compatible with employability stereotypes. Moreover, the framework has advantages which we will briefly address: First, the framework follows a criterion-centric approach "for making predictions from measures of competency potential (ability, personality, and motivation) to ratings of actual work performance" (Bartram, 2005, p. 1188). Hence, the model enables us to categorize employability stereotypes to workplace behavior related to job performance. Second, the framework has been meta-analytically validated (Bartram, 2005) and adopted in research (Ronay et al., 2019). Third, the model subsumes 112 components within 20 competency dimensions, which are aggregated under eight general

factors (Bartram, 2005), which allows us to draw a detailed picture of former entrepreneurs' diverse employability stereotypes. Fourth, this framework received validation across multiple countries (including Germany) and job types (including managerial jobs).

The primary author and one research assistant grouped the stereotypes independently to assure reliability. We calculated the percentage of agreement, which is a sufficient measure for inter-rater reliability when the number of categories is high (Perreault & Leigh, 1989). Here, we report an agreement of 88% for the negative stereotypes and 94% for the positive stereotypes. In the following step, both raters intensively discussed the disagreements and decided on the final categories. Notably, the raters agreed to establish two additional categories for the negative stereotypes, which they named *Failure* and *Salary*. The reason for the two supplementary categories was that recruiters in the negative priming condition mentioned several stereotypes that were unrelated to future work performance and targeted past performance (failure) or performance unrelated issues (salary negotiation) instead. Importantly, no stereotypes were discarded due to irreconcilable disagreement.

Tables 4 and 5 present the coding procedure results (the factors and their supplementing competency dimension[6]). Toward the negative employability stereotypes (total of 272 stereotypes), the critical factors with the most counts were the Supporting and Cooperating factor (dimension: working with people), the Organizing and Executing factor (dimension: following instructions & procedures), and the Enterprising and Performing factor (dimension: achieving personal work goals & objectives). Concerning the positive employability stereotypes (total of 282 stereotypes), the central factors were Leading and Deciding (dimension: deciding & initiating action), Enterprising and Performing (dimension: entrepreneurial & commercial thinking), and Creating and Conceptualizing (dimension: creating & innovating).

[6] We also coded the 112 competency components and are available upon request from the main author.

TABLE 4
Illustrative quotes of negative stereotypes

Factor	Dimension	Illustrative Quotes
L&D *Total: 7 (3%)*	Leading & Supervising *(4)* Deciding & Initiating Action *(3)*	Too much delegation of tasks, less hands-on. Too independent.
S&C *Total: 74 (27%)*	Working with People *(64)* Adhering to Principles & Values *(10)*	Dealing with colleagues; Know-it-all; Accepts only own opinion. Can convince other department heads to oppose the management to become CEO again; No loyalty to the employer.
I&P *Total: 1 (0%)*	Persuading & Influencing *(1)* Relating & Networking *(0)* Presenting & Communicating Information *(0)*	Insufficient assertiveness.
A&I *Total: 16 (6%)*	Applying Expertise & Technology *(16)* Analyzing *(0)* Writing & Reporting *(0)*	Overqualification; Lack of expertise.
C&C *Total: 5 (2%)*	Formulating Strategies & Concepts *(4)* Creating & Innovating *(1)* Learning & Researching *(0)*	Own ideas about the vision. Little innovation.
O&E *Total: 74 (27%)*	Following Instructions & Procedures *(71)* Planning & Organizing *(3)*	Difficulty accepting instructions that do not match their ideas; Want to make decisions themselves; Back in line. Coordination to prioritize work tasks.
A&C *Total: 22 (8%)*	Adapting & Responding to Change *(19)* Coping with Pressure & Setbacks *(3)*	Difficulties in the employee role; Lack of freedom Inability to criticism.
E&P *Total: 34 (13%)*	Achieving Personal Work Goals & Objectives *(34)* Entrepreneurial & Commercial Thinking *(0)*	No long-term commitment, as he will definitely create something of his own again; Employment is a stopover before jumping into the next project.
Failure *Total: 13 (5%)*	-	No business sense when own business failed.
Salary *Total 26 (10%)*	-	Raves too much about his earlier, higher earnings, which can lead to excessive salary demands.

Note: L&D = Leading & Deciding; S&C = Supporting & Cooperating; I&P = Interacting & Presenting; A&P = Analyzing & Interpreting; C&C = Creating & Conceptualizing; O&E = Organizing & Executing; A&D = Adapting & Coping; E&P = Enterprising & Performing; Number of counts in parentheses.

TABLE 5
Illustrative quotes of positive stereotypes

Factor	Dimension	Illustrative Quotes
L&D	Deciding & Initiating Action *(79)*	Taking responsibility; Initiative; Decision maker
Total: 103 (37%)	Leading & Supervising *(24)*	Good people management; Leadership experience
S&C	Working with People *(6)*	Good team-building skills
Total: 11 (4%)	Adhering to Principles & Values *(5)*	Loyalty
I&P	Persuading & Influencing *(17)*	Assertiveness; Negotiation skills
Total: 28 (10%)	Relating & Networking *(8)*	Existing networks
	Presenting & Communicating Information *(3)*	Communication
A&I	Applying Expertise & Technology *(21)*	Knowledge; Experience
Total: 28 (10%)	Analyzing *(7)*	Problem-solving ability; Solution-oriented
	Writing & Reporting *(0)*	
C&C	Creating & Innovating *(19)*	Innovative thinking; Creativity
Total: 34 (12%)	Formulating Strategies & Concepts *(15)*	An eye for the big picture; Vision; Strategic thinking
	Learning & Researching *(0)*	
O&E	Planning & Organizing *(4)*	Organizational talent
Total: 7 (2%)	Delivering Results & Meeting Customer Expectations *(3)*	Efficient
	Following Instructions & Procedures *(0)*	
A&C	Adapting & Responding to Change *(15)*	Knows processes and structures; Flexibility
Total: 21 (7%)	Coping with Pressure & Setbacks *(6)*	High-stress level; Resilience
E&P	Entrepreneurial & Commercial Thinking *(32)*	Entrepreneurial spirit; Cost awareness
Total: 50 (18%)	Achieving Personal Work Goals & Objectives *(18)*	Do not give up quickly; Ambition; Motivation

Note: L&D = Leading & Deciding; S&C = Supporting & Cooperating; I&P = Interacting & Presenting; A&P = Analyzing & Interpreting; C&C = Creating & Conceptualizing; O&E = Organizing & Executing; A&D = Adapting & Coping; E&P = Enterprising & Performing; Number of counts in parentheses.

As the priming manipulation was a significant moderator, we conducted additional regression analyses to explore which employability stereotype factors significantly influenced participants' employability perceptions. We tested each factor in an independent regression model, which is summarized in Table 6. Toward the negative employability stereotype factors, we find significant and negative interactions for four factors (Leading & Deciding, Analyzing & Interpreting, Organizing & Executing, Enterprising & Performing), two marginally significant interactions (Supporting & Cooperating, Salary), and three non-significant interactions (Creating & Cooperating, Adapting & Coping, Failure). For the positive employability stereotypes, we find significant interaction effects for four factors which are positive and significant (Leading & Deciding, Interacting & Presenting, Organizing & Executing, Enterprising & Performing), one marginally significant interaction (Supporting & Cooperating), and three insignificant factors (Analyzing & Interpreting, Creating & Conceptualizing, Adapting & Coping). Additionally, we conducted simple slope analyses (Appendix D): As expected, the employability perceptions are significantly lower (e.g., slope different tests ($p < 0.05$)) for the negative stereotypes. However, there is a different pattern for the positive factors: Here, all stereotypes compensate for the general negative effect, but there is no factor under which the characteristic of being a former entrepreneur is an advantage for paid employment.

TABLE 6
Cross-level interaction effects of the factors on the perceived employability of former entrepreneurs

	Model 6 [a] (negative factors)		Models 6a-j [b] (negative factors)			Model 7 [a] (positive factors)		Model 7 a-h [b] (positive factors)		
	RIFS		RIRS			RIFS		RIRS		
			Former entrepreneur x					Former entrepreneur x		
Variable	Coef.	SE	Coef.	SE	%	Coef.	SE	Coef.	SE	%
Leading & Deciding	0.12	0.64	-1.53*	0.73	3	0.05	0.31	0.74***	0.16	37
Supporting & Cooperating	0.06	0.29	-0.41†	0.22	27	-0.21	0.35	0.63†	0.38	4
Interacting & Presenting [c]					0	0.02	0.32	0.67*	0.30	10
Analyzing & Interpreting	0.14	0.39	-0.92*	0.47	6	-0.07	0.26	0.34	0.26	10
Creating & Conceptualizing	0.45	0.38	0.10	0.32	2	-0.04	0.31	0.27	0.30	12
Organizing & Executing	0.24	0.27	-0.74**	0.23	27	-0.24	0.42	1.18***	0.31	2
Adapting & Coping	0.03	0.35	-0.30	0.35	8	0.23	0.36	0.41	0.30	7
Enterprising & Performing	0.30	0.25	-0.74**	0.24	13	0.04	0.24	0.71***	0.20	18
Failure	0.70*	0.32	-0.15	0.27	5					
Salary	0.25	0.35	-0.50†	0.26	10					

Note: 4.448 decisions in n = 278; †p < 0.1;* p < .05; ** p < .01; *** p < .001. Maximum-likelihood estimations.
RIFS = Random intercept random slope model; RIRS = Random intercept random slope model.
Coef. = Unstandardized regression coefficients; SE = Robust standard errors. % = Percentage of importance of each factor
Each interaction in models 6a-j and 7a-h is tested in a separate model
a Models include all variables from Model 3 (which are excluded here for better readability)
b Models include all variables from Model 4 (which are excluded here for better readability)
c We excluded this factor in the negative priming condition due to too little answers

DISCUSSION

The literature on the employability of former entrepreneurs has been conducted predominantly with administrative data (Campbell, 2013; Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019), and research on the individual level is rare (Koellinger et al., 2015) or theoretical in nature (Marshall, 2016). To date, there is no rigorous examination of employability perceptions about former entrepreneurs in the pre-hire context. Hence, we offer a framework of employability stereotypes that explains which stereotypes about entrepreneurs are perceived as a liability (e.g., Organizing & Executing) or an asset for employment (e.g., Leading & Deciding).

The results from a within-subject experiment with a sample of 278 recruiters indicate that the characteristic of being a former entrepreneur is a general disadvantage. As our priming was significantly interacting with the employability perception of former entrepreneurs, we conclude that stereotypes are important drivers to explain the entrepreneurship-employability relationship in more detail: six stereotype factors are especially important to explain the negative perceptions of former entrepreneurs, and four stereotype factors compensate the general negative effect. Notably, there are no factors under which the characteristic of being a former entrepreneur is perceived as an advantage for paid employment.

Drawing on extensive post-hoc analyses, we built an empirical framework that centers on stereotypes about former entrepreneurs' ability, personality, and motivation to succeed in paid employment. The framework thoroughly categorizes the negative and positive stereotypes recruiters have about former entrepreneurs. Hence, we respond to the field of entrepreneurial careers, calling for research on pre-hire employability issues of applicants with a background in entrepreneurship (e.g., Burton et al., 2016; Marshall, 2016). By integrating and extending a model of workplace performance from the psychology literature (Bartram, 2005) to the research of entrepreneurial careers, we contribute to the employability

debate as our framework addresses explicitly the factors that characterize the un-employability of former entrepreneurs (e.g., Organizing & Executing) and those factors that describe the potential of former entrepreneurs in paid employment (e.g., Leading & Deciding). By adding two additional factors to the framework (Salary and Failure), we further adjusted the framework to the context of entrepreneurial careers. Our findings are somewhat surprising that salary-related concerns are manifest in recruiters' mental models toward former entrepreneurs because individuals in entrepreneurship do not necessarily earn more than their match counterparts in paid employment (Sorgner et al., 2017). A reasonable explanation is that former entrepreneurs are believed to enter wage work to catch up with previous lower incomes in entrepreneurship.

Similarly, we find that failure is somewhat a critical issue, even though hypothetical applicants were unrelated to failure. The entrepreneurship literature has long acknowledged that entrepreneurial exit is a self-contained career choice and only marginally related to failure (e.g., DeTienne, 2010; DeTienne & Wennberg, 2016; Wennberg & DeTienne, 2014). However, one recruiter mentioned: "It is good to have leadership experience, but it can be learned, and founders can be good at their job, but maybe they have failed". Thus, it seems that exit is somewhat connected to failure in recruiters' mental models and is perceived as a negative outcome.

With our entrepreneurship-specific framework of work-related stereotypes grounded in recruiters uncertainty about former entrepreneurs (Mahieu et al., 2019), we further contribute to the entrepreneurial careers literature and extend the majority of post-hire research (Campbell, 2013; Failla et al., 2017; Luzzi & Sasson, 2016; Mahieu et al., 2019; Manso, 2016). Our framework further explains why some entrepreneurs engage in necessity as they encounter a locked-in entrepreneurship effect (Failla et al., 2017). Our findings suggest that stakeholders' reservations toward the employability of applicants with an entrepreneurial background outweigh the advantages of such applicants, no matter if they

have had experience in paid employment before their entrepreneurial endeavor (Campbell, 2013). One recruiter in the study put it as follows: “I have made the experience that entrepreneurs find it very difficult in a permanent position and the risk that the new employee leaves the company during the probationary period is very high”. This quote illustrates that recruiters fear not only the risk that former entrepreneurs are unsuitable employees but also the risk that such employees withdraw themselves from their company independently. Thus, organizations are primarily reluctant toward hiring entrepreneurial experience. As career paths in paid employment are somewhat obstructed, numerous applicants with a background in entrepreneurship ultimately decide against a career in paid employment – negative stereotypes may unfold unfavorable on salary negotiations (Mahieu et al., 2019) – and remain in entrepreneurship instead (Failla et al., 2017). Thus, a significant share of individuals may engage in serial necessity entrepreneurship as other career opportunities are disadvantageous. Here, more research is needed as scholars have predominantly focused on how (Hayward et al., 2010) and why (Wright et al., 1997) opportunity-driven individuals engage in serial entrepreneurship. The issue of serial necessity entrepreneurs, however, remains mostly unchartered territory.

Moreover, our research offers important implications for those scholars concerned with theories explaining why (or why not) individuals recognize entrepreneurship as a future career path (Marshall, 2016). There is a void in the entrepreneurship literature as most of the research addresses when individuals become entrepreneurs (e.g., Douglas & Shepherd, 2000; Hellmann, 2007) by tackling questions about the formation of entrepreneurial intentions (Schlägel & König, 2014), risk factors (van Gelderen et al., 2005), or entry barriers (e.g., M. Robertson et al., 2003) and how to make a venture successful (Song et al., 2008). However, the probability of a restrained future career path is a neglected topic. Therefore, we emphasize a double risk consideration: Taking risk is an essential feature for new entry initiatives (Wales et al., 2020). However, the exit risk of entrepreneurship – a risk of constrained careers – is

additionally crucial for the question of when (and maybe why) individuals become entrepreneurs or not.

Implication for entrepreneurs

Our research also has practical implications relevant to those former entrepreneurs who are in the transition to paid employment. As we identify overarching employability stereotypes, there are two recommendations for those applicants with a background in entrepreneurship: Former entrepreneurs could apply for those jobs in which the negative employability stereotypes may play a minor role (e.g., a position with staff function, without teamwork requirements) or apply for a job in which the positive stereotypes are especially important (e.g., a position with leadership). If such an approach is not applicable, we recommend former entrepreneurs to develop strategies on how to downplay potential negative stereotypes and how to trigger the specific positive stereotypes: For example, former entrepreneurs should emphasize their teamwork capabilities, especially as successful ventures are usually team-based (Foo et al., 2006). In a similar vein, applicants with a background in entrepreneurship need to clarify that following directions and procedures are not an issue, for example, by addressing how they interacted with venture capitalists or business angles (Kaplan & Stromberg, 2003)).

Limitation and further research

Our research approach offers evidence of the specific employability stereotypes recruiters have about former entrepreneurs and if they affect their recruitment perceptions. However, we acknowledge several limitations to our study, which we see as avenues for further research. First, our experimental approach allows us to predict causal inferences from qualitative data on employability perceptions (Marshall, 2016). However, future research should adopt other survey methods such as qualitative interviews to establish a more fine-grained picture toward employability stereotypes about former entrepreneurs (e.g., in which industries and jobs are stereotypes more or less important). Here, the Great Eight competency

framework (Bartram, 2005) offers guidance to evaluate employability stereotypes further. Another direction could be more quantitative (e.g., metric conjoint experiment) by investigating the importance of stereotypes in specific situations. For example, it seems reasonable that former entrepreneurs are particularly eligible for leadership in paid employment because recruiters' stereotypes are predominantly positive. Such research would contribute to the intersection of entrepreneurship and leadership (e.g., Cogliser & Brigham, 2004).

Second, the study focuses on the perceptions of recruiting managers only. This stakeholder group's advantage is that they act as initial employment gatekeepers and thus decide which applicants advance in the selection process and which do not (Koellinger et al., 2015). However, this is also a limitation, as there are other important stakeholders in the selection process. Our research does not provide information about employability stereotypes (and their consequences) of those stakeholders with the final say in selection decisions (e.g., CEOs or line managers). Moreover, it seems likely that employability stereotypes may not directly affect the overall selection decision, but rather other factors such as the employees' salary (Mahieu et al., 2019). Thus, recruiting managers represent a critical first target group, but it needs further research to investigate former entrepreneurs' future career prospects. A novel approach would be to conduct a study with professional actors (representing former entrepreneurs) to assess how employability stereotypes affect the salary negotiation process.

Third, we did not limit our research to a specific job position or industry to generate a broad and generalizable framework of employability stereotypes about former entrepreneurs. However, our sample is limited to one cultural context (Germany). Although scholars emphasized that entrepreneurial exit is a distinct phenomenon from failure (e.g., Wennberg & DeTienne, 2014), our data indicate that some recruiters consciously connected exit with failure. As failure is usually stigmatized (Landier, 2005), especially in Germany (Shepherd & Patzelt, 2015), there might be regional variations of employability stereotypes.

Further research should extend this boundary condition by replicating and advancing the study in several cultures to substantially contribute to our understanding of regional differences (Cardon et al., 2011).

CONCLUSION

The current research examined employment implications for former entrepreneurs from a pre-hire perspective. By analyzing specific employability stereotypes that were triggered in a priming experiment, we answer not just if but also why entrepreneurship is – in the eyes of recruiters – a liability for paid employment. Several stereotype factors (such as Organization & Executing) explain this liability. As we also focused on positive stereotypes about former entrepreneurs, we find several stereotypes factors (e.g., Leading & Deciding) that compensate for the negative effect. However, we find no condition under which being a former entrepreneur is an advantage over other applicants with no entrepreneurship background.

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APPENDIX A
Instructions for the within-subject experiment

In this study, you take the role of a recruiter (executive) in your company. Imagine that in the next three months, there is a position to be filled as Head of Business Development (with personnel responsibility). As part of the application process, all applicants have completed a new type of online recruitment test. The results were summarized in applicant profiles together with applicants' résumés in anonymized form.

Your job is to take a close look at the applicant profiles and assess the likelihood that you would invite them to a job interview.

The applicant profiles were designed according to the following criteria:

Category 1: Person-job fit (with job requirements, e.g., through specific abilities or skills)

Average: Applicant scored average in the online recruitment test

Top 25%: Applicant scored high on the online recruitment test

Category 2: Person-organization fit (e.g., to culture, values, and goals of your company)

Average: Applicant scored average in the online recruitment test

Top 25%: Applicant scored high on the online recruitment test

Category 3: Current employment relationship

Project manager: Applicant was previously a project manager with personnel responsibility for ten employees

Founder and CEO: Applicant was previously an entrepreneur with ten employees

Category 4: Duration of the last employment relationship

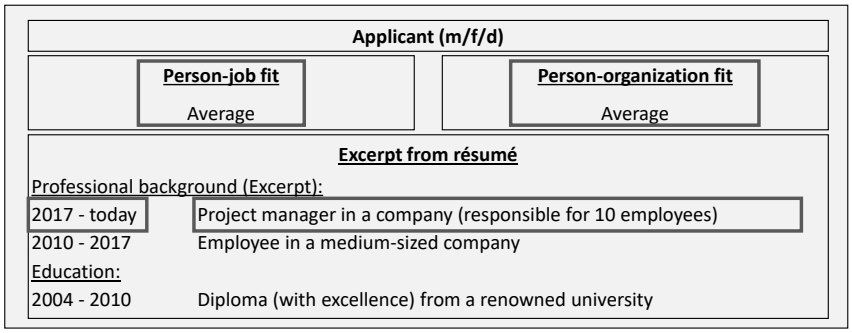
2017 – today: Last job for about three years

2013 – today: Last job for about seven years

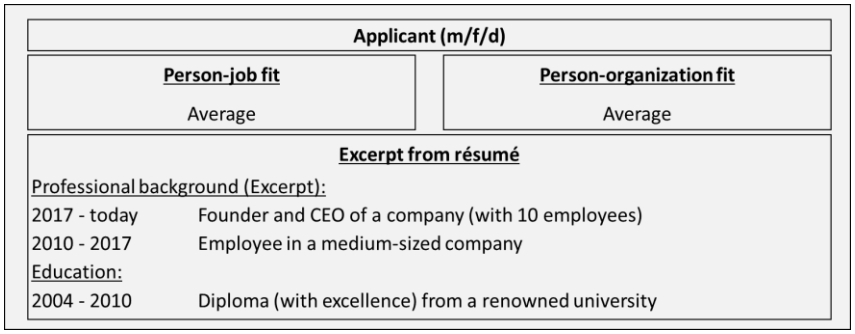
All applicants are approximately the same age (between 30-40 years), have an excellent high school diploma, and graduated from a renowned university with excellent grades. Thus, all applicants differ only within the categories mentioned. The job market is currently

advantageous for employees so that all applicants would also find a job in another company. On the following page, you will see an example.

Here, you can see an example of an applicant profile. (The possible differences between applicants have been highlighted in this example for easier understanding)



In the following, you can see another example of an applicant profile (as it will be presented in the experiment).



APPENDIX B
Positive and negative priming condition

Negative Priming:

After a first review of the applicant profiles, you noticed that there are also former entrepreneurs among the applicants. You know from research that entrepreneurs are associated with undesirable characteristics and find it difficult to fit into an employment relationship (e.g., power struggles with superiors).

Please name two other disadvantages for your company that hiring a former entrepreneur could entail:

Positive Priming:

After a first review of the applicant profiles, you noticed that there are also former entrepreneurs among the applicants. You know from research that entrepreneurs are associated with interesting qualities that are particularly valuable in an employment relationship (e.g., entrepreneurial thinking).

Please name two other positive qualities for your company that hiring a former entrepreneur could entail:

APPENDIX C
Robustness check

For a more thorough picture of the results, we conducted several robustness checks with the control variables as recommended in the literature (e.g., Becker et al., 2016): Toward the level 1 control variables, we find a significant interaction between the attributes entrepreneurship and PJ-fit (ß = -0.22, $p < 0.01$), entrepreneurship and PO-fit (ß = -0.09, $p = 0.05$), and entrepreneurship and duration of last employment (ß = -0.25, $p < 0.01$). Toward the interaction effects with the level 2 control variables, the interaction between the attribute entrepreneurship and recruiters' experience is insignificant (ß = -0.01, $p = 0.34$) and significant with the self-employment status of the recruiters (ß = 0.48, $p = 0.01$). Again, we conducted simple slope analyses for further interpretation: Simple slopes indicate a negative effect of the attribute entrepreneurship when PJ-fit is average (ß = -0.61, $p < 0.01$), which is more negative when PJ-fit is high (ß = -0.83, $p < 0.01$). Slopes are significantly different ($p < 0.01$). Toward PO-fit, simple slopes indicate a negative effect of the attribute entrepreneurship when PO-fit is average (ß = -0.67, $p < 0.01$) which is more negative when PO-fit is high (ß = -0.76, $p < 0.01$). Slopes are significantly different ($p = 0.05$). Toward the duration of last employment, simple slopes indicate a negative effect of the attribute entrepreneurship when the applicant was an entrepreneur for three years (ß = -0.59, $p < 0.01$), which is more negative when the applicant was an entrepreneur for seven years (ß = -0.85, $p < 0.01$). Slopes are significantly different ($p = 0.05$). Regarding the recruiters' self-employment status, the simple slopes for entrepreneurship are ß = -0.79 ($p < 0.01$) when the recruiter was not part-time self-employed. However, when recruiters were part-time self-employed, the negative effect was insignificant (ß = -0.31, $p = 0.053$).

APPENDIX D

FIGURE D1
Simple slope analyses of negative stereotype factors

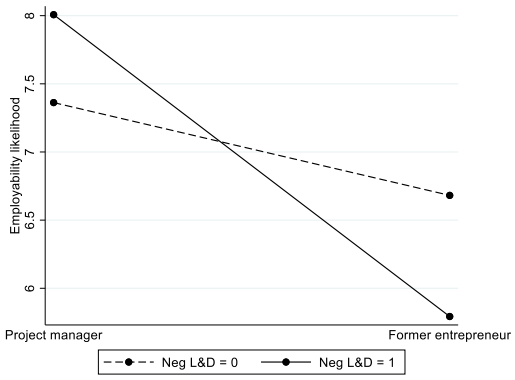


Figure D1a: Simple slope for Neg L&D= 0: β= -0.68 (p<0.01); Simple slope for Neg L&D= 1: β= -2.21 (p<0.01). The slope difference test is significant (p=0.036).

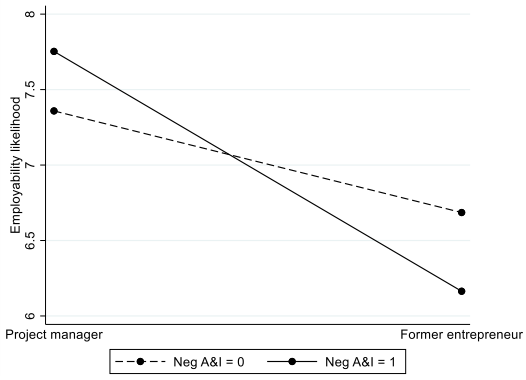


Figure D1b: Simple slope for Neg A&I= 0: β= -0.67 (p<0.01); Simple slope for Neg A&I = 1: β= -1.58 (p<0.01). The slope difference test is significant (p=0.049).

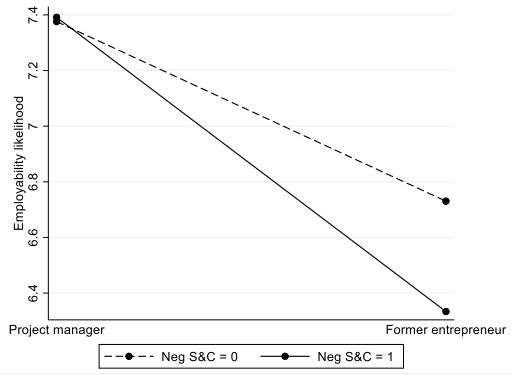


Figure D1e: Simple slope for Neg S&C= 0: β= -0.64 (p<0.01); Simple slope for Neg S&C= 1: β= -1.06 (p<0.01). The slope difference test is significant (p=0.055).

Figure D1f: Simple slope for Neg Salary= 0: β= -0.68 (p<0.01); Simple slope for Neg Salary= 1: β= -1.17 (p<0.01). The slope difference test is significant (p<0.01).

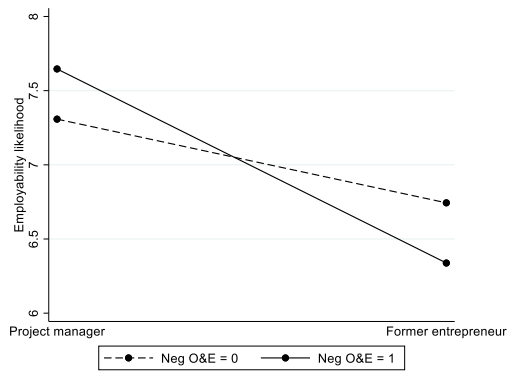


Figure D1c: Simple slope for Neg O&E= 0: β= -0.56 (p<0.01); Simple slope for Neg O&E= 1: β= -1.31 (p<0.01). The slope difference test is significant (p<0.01).

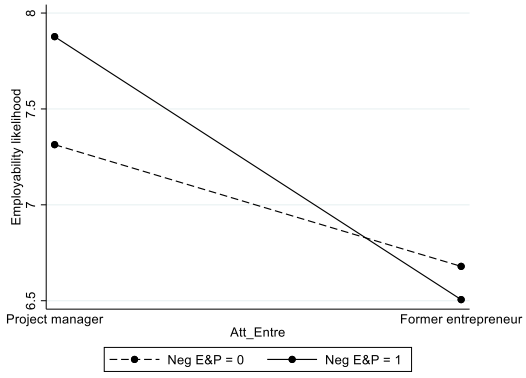


Figure D1d: Simple slope for Neg E&P= 0: β= -0.63 (p<0.01); Simple slope for Neg E&P= 1: β= -1.37 (p<0.01). The slope difference test is significant (p<0.01).

FIGURE D2
Simple slope analyses of positive stereotype factors

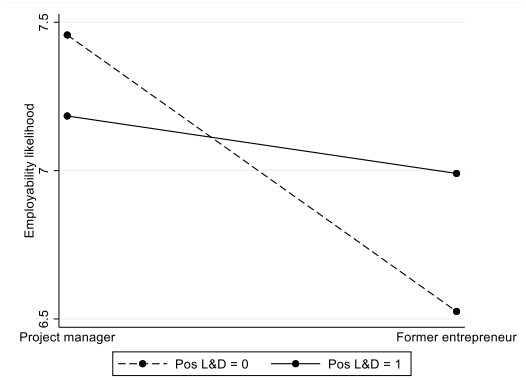


Figure D2a: Simple slope for Pos L&D= 0: β= -0.93 (p<0.01); Simple slope for Pos L&D= 1: β= -0.19 (p=0.09). The slope difference test is significant (p<0.01).

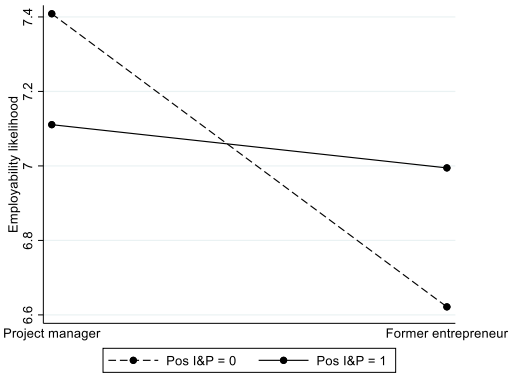


Figure D2b: Simple slope for Pos I&PD= 0: β= -0.79 (p<0.01); Simple slope for Pos I&P= 1: β= -0.12 (p=0.67). The slope difference test is significant (p<0.01).

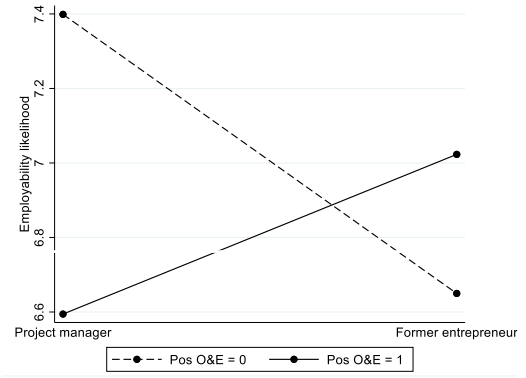


Figure D2c: Simple slope for Pos O&E= 0: β= -0.74 (p<0.01); Simple slope for Pos O&E= 1: β= -0.43 (p=0.14). The slope difference test is significant (p<0.01).

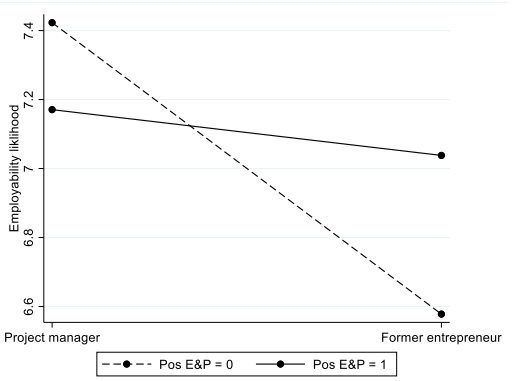


Figure D2d: Simple slope for Pos E&P= 0: β= -0.85 (p<0.01); Simple slope for Pos E&P= 1: β= -0.13 (p=0.44). The slope difference test is significant (p<0.01).

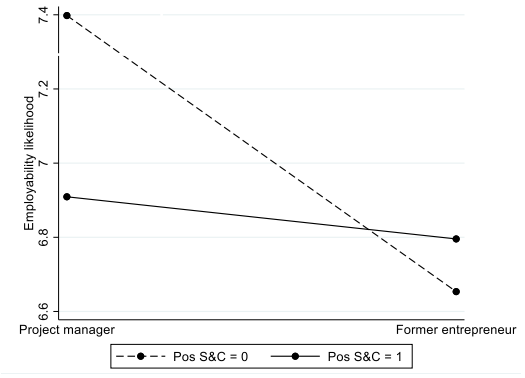


Figure D2e: Simple slope for Pos S&C= 0: β= -0.74 (p<0.01); Simple slope for Pos S&C= 1: β= -0.11 (p=0.75). The slope difference test is significant (p=0.09).

CHAPTER 4: BLAMING YOURSELF RATHER THAN THE CIRCUMSTANCE! ENTREPRENEURIAL FAILURE ATTRIBUTIONS IN JOB INTERVIEWS

ABSTRACT

Failure in entrepreneurship is common, and a transition to paid employment is a usual consequence. As such failure is a salient milestone in an entrepreneurs' work history, the factors entrepreneurs ascribe the failure to affect how entrepreneurs are perceived in an employment interview when applying for a job after they experienced failure in their entrepreneurial career. Drawing on attribution theory, we conducted a conjoint experiment using 188 recruiters and addressed the question of how former entrepreneurs' failure attributions affect recruiters' employability perceptions. Our results show that unstable failure attributions and person-centered attributions (e.g., lack of skills) are more effective than distancing attributions (e.g., the poor economic situation of customers). Additionally, we demonstrate that employability perceptions upon failure attributions are reliant on the entrepreneurs' gender: Person-centered attributions are more effective for former female entrepreneurs and less effective for former male entrepreneurs. Implications for theory and practice are discussed.

Keywords: Entrepreneur, employability, exit, failure, failure attributions

Research Paper 3 is co-authored by Prof. Dr. Mathias Baum

INTRODUCTION

Entrepreneurial failure is an involuntary change of ownership due to poor performance (Shepherd, 2003; Shepherd & Patzelt, 2015; Ucbasaran et al., 2013) and is common in entrepreneurship (Coad, 2014; Wennberg et al., 2010; Wiklund et al., 2010). Yet, the extant research on perceptions of entrepreneurial failure is still in its infancy (Wennberg & DeTienne, 2014). Currently, we have a burgeoning understanding of sense-making of entrepreneurial failure (e.g., O. Byrne & Shepherd, 2015; Vaara et al., 2016; Wolfe & Shepherd, 2015), to which factors entrepreneurs publicly attribute their failure (e.g., Kibler et al., 2020; Mandl et al., 2016; Mantere et al., 2013), and if such failure attributions are legitimate to broader audiences (e.g., Cardon et al., 2011; Kibler et al., 2017; Shepherd & Patzelt, 2015).

Past research viewed entrepreneurship as a more transitory occupation (e.g., Kaiser & Malchow-Møller, 2011; Luzzi & Sasson, 2016; Mahieu et al., 2019) because a significant part of former entrepreneurs turn away from entrepreneurship and seeks other career options such as paid employment (Simmons et al., 2014). Since entrepreneurial failure is frequently accompanied by a distress sale (Wennberg et al., 2010) or the bankruptcy of the entrepreneurial venture (Shepherd & Haynie, 2011), such a failure is usually covered by the media (Cardon et al., 2011) and thus exposed to the public (Kibler et al., 2017; Shepherd & Patzelt, 2015). Hence, failure represents a salient milestone in an entrepreneurs' work history which is associated with social stigma (Landier, 2005) and thus is likely to impede future careers of the key actors (e.g., Semadeni et al., 2008; Wiesenfeld et al., 2008). However, research is surprisingly limited on how specific stakeholders (i.e., employers) react to the factors former entrepreneurs attribute the failure to, especially when it comes to a potentially long-term relationship, such as when entrepreneurs apply for paid employment.

To address this gap, we build on attribution theory (Heider, 1958; Weiner, 1985) to investigate recruiters' employability perceptions – as critical external stakeholders – of

entrepreneurs' failure attributions in the employment interview. Therefore, we conducted a conjoint experiment with a sample of 188 actual recruiters (from different companies and industries in Germany) and focus on which failure attributions are perceived as appropriate for former entrepreneurs to explain failure when seeking paid employment. Additionally, we propose that entrepreneurial failure attributions are not equally effective for all former entrepreneurs but are dependent on the former entrepreneurs' gender: The recruitment and selection literature has demonstrated a gender bias toward applicants' interview strategies that is independent of the recruiters' gender (e.g., Buttner & McEnally, 1996) and the leadership literature offers theory that emphasizes employers' gender-specific beliefs toward female and male applicants (Eagly & Karau, 2002; Koenig et al., 2011). Similarly, we expect that such gender-specific beliefs drive recruiters' perceptions of entrepreneurs' failure attributions.

The employment interview offers an appropriate situation for our research approach because it adds incremental validity in performance predictions over other factors such as cognitive ability (Pulakos & Schmitt, 1995; Schmidt & Hunter, 1998). In general terms, the interview is a social interaction between the recruiter and the applicant from which the recruiters form employability perceptions about future work performance (Levashina et al., 2014). As business failure is a salient characteristic in the vita of the former entrepreneur (Kibler et al., 2017; Shepherd & Patzelt, 2015), recruiters are likely to have employability concerns and thus engage in questions about the failure (Tsai et al., 2007; Tsai et al., 2011). Silvester (1997) emphasized that applicants' responses to such questions (e.g., factors they attribute the failure to) substantially affect recruiters' employability perceptions (Silvester, 1997) and consequently influence the organizations' final hiring decisions (Dipboye, 1992). Thus, they substantially impact former entrepreneurs' career trajectories by determining their "upward, downward, or lateral mobility" (Burton et al., 2016, p. 241). Similarly, failure is usually associated with social costs (Ucbasaran et al., 2013), such as a social stigma (e.g., Cardon et al., 2011; Landier, 2005), which forces entrepreneurs to reduce uncertainty within

the employment interview.

With our research, we contribute to the emerging literature on entrepreneurial failure in several ways: First, there is a mix of attributions that co-exist as alternative "readings" for previous negative events (Weiner, 1985). Research demonstrated that the general public perceives negative events as more positive when the causes were external, unstable, or uncontrollable (e.g., Graham et al., 1993; Graham et al., 1997; Kibler et al., 2017; Tomlinson & Mryer, 2009). Our research highlights a specific boundary condition by suggesting that person-centered attributions (internal, controllable, and the combination of both attributions) are more effective in situations where entrepreneurs aim to engage in a long-term and future-oriented relationship. Therefore, we transfer attribution theory to the intersection of entrepreneurship and HR by investigating how entrepreneurial failure attributions – varying along the three attributional failure dimensions – the locus of causality, controllability, and stability – affect employability perceptions (Heider, 1958; Weiner, 1985).

Second, we probe more deeply into the gender and failure debate by comparing the effectiveness of failure attributions across gender. We extend attribution theory with gender-specific theory from leadership research (e.g., Eagly & Karau, 2002) to illustrate that internal, controllable, and the combination of both attributions are more effective for female entrepreneurs and less for male entrepreneurs. This focus is important because previous research (Powell & Butterfield, 1980) suggests that gender has a specific effect on evaluations in situations where information is limited. Thus, we specifically add theory and empirical evidence to the emerging body of female entrepreneurship research (e.g., de Bruin et al., 2006, 2007; Hughes et al., 2012; Justo et al., 2015).

THEORY DEVELOPMENT

Movements between entrepreneurship and paid employment are frequent and occasionally caused by prior business failure (e.g., Kaiser & Malchow-Møller, 2011; Mahieu et al., 2019; Wennberg et al., 2010). As such failure is salient in former entrepreneurs' vita (Cardon et al., 2011; Shepherd & Haynie, 2011), recruiters form their employability perceptions as part of former entrepreneurs' failure attributions. Consequently, our research departs at the intersection of the literature of recruitment and selection (i.e., perceptions of failure attributions in general) and entrepreneurship (i.e., perceptions of entrepreneurial failure attributions), which is why we briefly review research from both literature streams.

Perception of failure attributions within the entrepreneurship literature

Within the entrepreneurship literature, research on perceptions of entrepreneurial failure attributions is still in its infancy. For example, Shepherd and Haynie (2011) described several strategies for entrepreneurs to overcome failure, such as concealing the failure, defining failure in a positive light, denying responsibility, or avoiding social interactions with individuals holding a negative view of them. Among the first to empirically explore entrepreneurial failure attributions were Cardon et al. (2011). They categorized failure attributions in two broad categories (misfortune and mistake) and suggested that stigmatization was the primary consequence of the failed entrepreneurs, especially when the attributions were rather external. More recently, Kibler et al. (2017) investigated how the general public perceived entrepreneurial failure attributions. They found that it was most effective for failed entrepreneurs to attribute failure to external, uncontrollable, and unstable factors and thus suggested entrepreneurs to distance themselves from the previous failure.

Perception of failure attributions in the recruitment and selection literature

Within the literature of recruitment and selection, the role of employers' attributions toward applicants' résumés, letters of recommendation, or within the employment interview has a long history (for a review, see Knouse (1989)). Toward applicants' failure attributions,

Struthers et al. (1992) indicated that attribution theory offered a "conceptual framework that identifies the key variables associated with an applicant's work history and an interviewer's cognition, affect, and decision to hire" (p. 801). Their study on the influence of applicants' failure attributions on hiring decisions demonstrated that applicants' causal explanations for past failure affected employability decision: Applicants with external-unstable failure attributions (e.g., bad luck) were most likely to get hired, whereas other explanations (e.g., task difficulty or low ability) were less effective. Building on those findings, Silvester (1997) counted the number of causal attributions applicants made about positive and negative events and found that successful applicants make significantly more stable and personal attributions for adverse events than unfavorable applicants. Silvester and colleagues (Silvester et al., 2002) focused on recruiters' impressions due to attributions of failure events in graduate job interviews. They found that recruiters have the most positive view of applicants who present internal-controllable attributions for negative events. In a study on overqualified applicants, Thompson et al. (2015) demonstrated that recruiters made lower hiring recommendations when the applicants used internal-controllable attributions to justify their overqualification negatively compared to applicants with external-uncontrollable attributions.

Summary of the literature review

What follows from our review is that research on the outcomes and effects of failure attributions is still in its infancy. Within the entrepreneurship literature, research has primarily engaged in establishing a theoretical foundation in the effectiveness of failure attributions (Shepherd & Haynie, 2011) or explored general public legitimacy perceptions of failed entrepreneurs (Cardon et al., 2011; Kibler et al., 2017). Research on stakeholder perceptions (e.g., future employers) with which former entrepreneurs are seeking to build up a close relationship is yet to explore because such stakeholders have a long-term and future-oriented perspective when selecting applicants (Ployhart et al., 2017). The literature on recruitment and selection offers in attribution theory a theoretical foundation (Struthers et al., 1992). However,

this literature stream is far from a consistent picture. Thus, we complement previous research and examine which failure attribution is effective toward employability perceptions to fill this void.

Theoretical considerations

Attribution theory provides an overarching framework for gaining theoretical and empirical insights how failure attributions cause variation in recruiters employability perceptions as this theory explains "how the social perceiver uses information to arrive at causal explanations for events [and] examines what information is gathered and how it is combined to form a causal judgment" (Fiske & Taylor, 1991, p. 23). Heider (1958) postulated that individuals (i.e., recruiters) have causal schemas (i.e., about applicants' employability), which depend on the perceived skills and ability of the individual (i.e., the applicant). Moreover, causal schemas are susceptible to errors, especially in the case of negative events and when information levels are low (Fiske & Taylor, 1991; Kelley & Michela, 1980; Martinko et al., 2006). When evaluating applicants' failure in the employment interview, recruiters are especially prone to the fundamental attribution error (Ross, 1977) because individuals are more likely to attribute the failure of others to internal dispositions. Furthermore, recruiters are likely to make a responsibility error (Shaver, 1975; Shaver & Drown, 1986) as individuals search for responsibilities and make such attributions automatically when they detect a specific source causing the failure.

When evaluating past failure, recruiters search for causes (Wong & Weiner, 1981) and are interested in who was involved, whether the failure was under the entrepreneurs' control and whether the causes of failure are likely to reoccur (Kibler et al., 2017). Such information contains causal ascriptions or explanations for why the negative event took place (Weiner, 1985) and varies along three dimensions: *Locus of causality*, *controllability*, and *stability*. The locus of causality dimension identifies the location of the cause as either internal (dispositional or behavioral characteristics) or external (situational factors) to the individual

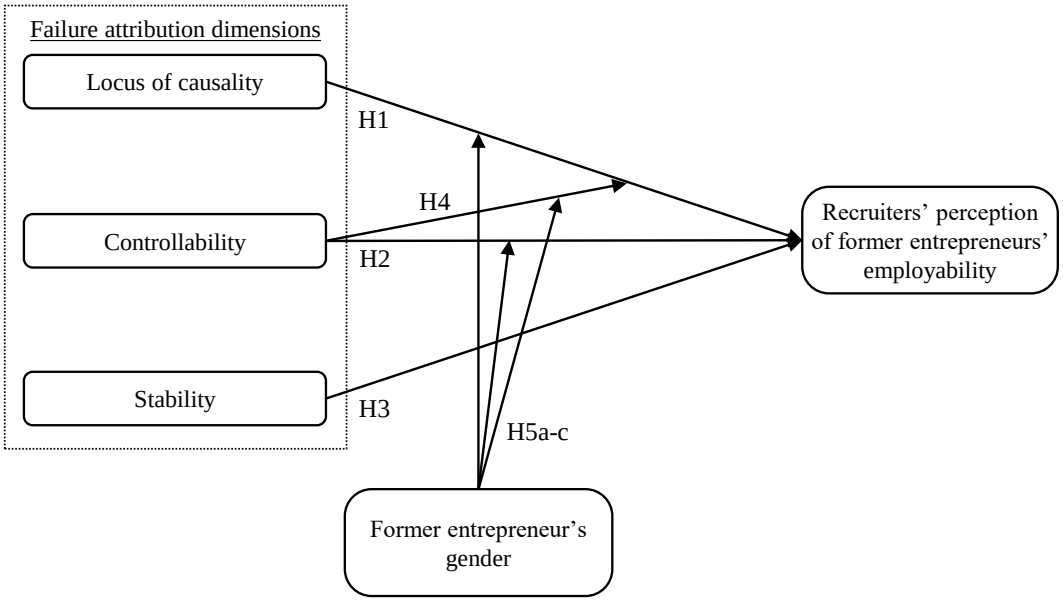
(Harvey et al., 2014). For example, an entrepreneur is making an internal attribution if s/he perceives the business failure to be due to a lack of his or her skills (e.g., in accounting). An external attribution is present if the cause for business failure is explained by a bad economic situation of key customers. The controllability dimension describes whether the negative event was under the volition of the individual (Weiner, 1985). For example, causes such as a lack of effort are usually described as controllable attributions, whereas causes such as task difficulty are termed as uncontrollable attributions. Finally, the stability dimension refers to the permanence of the cause of a negative event (Harvey et al., 2014). Thus, the cause of the negative event is attributed to be stable if the entrepreneur believes that the failure is likely to reoccur and unstable if the entrepreneur thinks that the failure was temporary and unlikely to reoccur (Weiner, 1985).

The three attributional dimensions are key facets to explain prior business failure (Mandl et al., 2016). Building on these dimensions, there emerge several opportunities for former entrepreneurs when interacting with recruiters familiar with their failure. Former entrepreneurs can adopt a mastery strategy to their business failure, which implies a renewed focus and drive for the future (Cardon & McGrath, 1999). Such a strategy contains either internal or controllable attributions. Similarly, former entrepreneurs can define failure in a positive light, which suggests that the failure is unlikely to reoccur in the future and emphasizes unstable attributions (Shepherd & Haynie, 2011). Moreover, former entrepreneurs engage in accepting or denying responsibilities to justify their failure (Mantere et al., 2013). Accepting responsibility implies that former entrepreneurs admit the discrediting event and take the burden, whereas denying responsibility suggests that former entrepreneurs recognize the discrediting event but blame others (Sutton & Callahan, 1987). Both attributional strategies are frequently adopted in the employment interview (Silvester et al., 2002) and have their emphasis on either internal and controllable attributions or on external and uncontrollable attributions (Kibler et al., 2017).

Consistent with the recruitment and selection literature, we propose a gender bias on the applicant side when recruiters elaborate on former entrepreneurs' attributions to overcome past failure. Research has demonstrated that recruiters have, regardless of their own gender, a gender bias toward applicants' resumés (Cole et al., 2003), their employment interview performance (Gilmore et al., 1986), or their impression management strategies (Buttner & McEnally, 1996). Similarly, we argue that there are more and less successful failure attributions for former entrepreneurs depending on whether they are female or male: Recruiters have gender-specific beliefs, which include role-based expectations about the applicant (Fiske & Taylor, 1991). Importantly, such gender expectations evolve not only on how females and males are (descriptive element) but also on how they should be (prescriptive element) (Heilman et al., 2004). Drawing on leadership research, such expectations are more communal for females (e.g., being kind and gentle) and more agentic for males (e.g., assertive and ambitious) and lead to positive (or negative) outcomes when expectations match (mismatch) with the individual's behavior (Eagly & Karau, 2002). Translated to our research context, we argue that employability perceptions are higher for former female entrepreneurs when attributing the failure to factors to themselves as such attributions are congruent with recruiters' expectations about female applicants (not causing damage to others). For former male entrepreneurs, we believe a reversed mechanism with attributions related to outside circumstances (not causing damage to the self) to be more effective.

Drawing on our previous theoretical elaborations, we develop empirical hypotheses on how such failure attributions affect recruiters' perceptions of former entrepreneurs' employability in the next chapter. Moreover, we investigate the moderating effect of former entrepreneurs' gender on the relationships between the locus of causality, controllability, and the combination of both and the employability perceptions. Figure 1 provides an overview of our theorizing.

FIGURE 1
Conceptual model



Note. Person-centered failure attributions are ascribed to factors that are internal, controllable, or the combination of both, whereas distancing from failure implies the ascription of failure to factors that are external, uncontrollable, or the combination of both.

Locus of causality

Based on the above theoretical foundation, we argue that recruiters had higher employability perceptions when the former entrepreneur adopted a mastery-strategy with internal attributions to handle their business failure in the employment interview: First, recruiters have several positive attitudes toward former failed entrepreneurs who use internal failure attributions to business failure: Internal failure attributions initiate a sense-making process (Shepherd et al., 2011) and critical self-reflection (Cope, 2003, 2011), which in turn changes entrepreneurs' mental models (Shepherd, 2003; Ucbasaran et al., 2013; Yamakawa & Cardon, 2015). Thus, internal attributions may lead to a faster recovery from failure (Ucbasaran et al., 2013), more learning (Yamakawa et al., 2015), and expanding knowledge, skills, and personal capabilities for further activities (e.g., McGrath, 1999). Empirically, Silvester (1997) found that successful candidates made more internal failure attributions than unsuccessful candidates in the employment interview. Thus, the previous failure may increase one's probability of future success (Cope, 2011).

Second, attribution theory suggests that individuals make causal attributions about responsibilities (Shaver, 1975; Shaver & Drown, 1986). Recruiters expect that entrepreneurs take and accept responsibility as they were, as owners, in charge of the business strategy, the selection of projects, or the allocation of financial resources (e.g., Müller & Turner, 2005; Turner & Müller, 2004). Silvester (1997) indicated that recruiters are less likely to accept job applicants who externalize responsibility in case of failure. Thus, denying responsibility by externalizing the causes for business failure could interfere with recruiters' assumptions of responsibilities. Moreover, recruiters make assumptions about how new employees may fit in the organizational environment (Kristof-Brown et al., 2005) and associate those former entrepreneurs, who deny responsibility for failure, to be either unpopular with future work colleagues or to be unable to work in a team setting. Indeed, Wang and Anderson (1994) found that individuals with an external locus of control were "uniformly more prone to use excuses than internals, both for other actors and for themselves" (p. 294). Taken together, we believe that recruiters have higher employability perceptions of failed entrepreneurs if they adopted internal failure attributions. Thus, we hypothesize:

H1: Recruiters' perception of former entrepreneurs' employability is higher if the failure was caused by internal factors.

Controllability

Next, we hypothesize that recruiters had higher employability perceptions when the former entrepreneur adopted a mastery strategy with controllable attributions to handle their business failure in the employment interview. Controllable failure attributions indicate that the business failure was under the volitional control (e.g., lack of effort (Mantere et al., 2013)) of the entrepreneur (Harvey et al., 2014; Weiner, 1985). Taking a psychological perspective, entrepreneurs are action-oriented individuals with an active goal, planning, and feedback regulation (Frese, 2009). Moreover, Stewart and Roth (2007) provided meta-analytical

evidence that entrepreneurs exhibit higher levels of achievement motivation than managers. Attribution theory postulates that individuals (i.e., former entrepreneurs) with high achievement motivation are more likely to attribute failure to insufficient effort (Weiner & Kukla, 1970). Thus, former entrepreneurs are likely to persist longer in a similar negative situation because they actively control their environment (Silvester et al., 2002): They actively use the feedback from their past experience to invest more effort to make better plans or set higher goals to avoid similar negative events. Therefore, recruiters associate controllable factors as more applicable to former entrepreneurs' explanations of business failure. Therefore, we hypothesize:

H2: Recruiters' perception of former entrepreneurs' employability is higher if the failure was caused by controllable factors.

Stability

We hypothesize that recruiters had higher employability perceptions when the former entrepreneur adopted a strategy that defines business failure as a non-recurring event. Weiner (1985) noted that the stability of an event determines future expectancies in such a way that subsequent failures are likely to reoccur. Such expectancies are relevant for recruiters in the employment interview to infer about applicants' future work performance (Levashina et al., 2014). Struthers et al. (1992) note that recruiters have unfavorable performance expectations and adverse emotions about such applicants making stable failure attributions and report evidence that hired applicants made more unstable attributions about negative events. Therefore, recruiters have positive performance expectations when the business failure is unlikely to reoccur and hence have higher employability perceptions. In a similar vein, Harvey et al. (2014) argued that stable failure attributions are associated with higher ascriptions of blame, and Kibler et al. (2017) provided empirical evidence that entrepreneurial failure, which was unlikely to reoccur, had a significant and positive influence on legitimacy

judgments. Therefore, we hypothesize:

H3: Recruiters' perception of former entrepreneurs' employability is higher if the failure is unlikely to reoccur.

The interaction between internal and controllable factors

We now develop a moderating hypothesis and emphasize that recruiters have higher employability perceptions when former entrepreneurs apply a mastery strategy as a combination of both internal and controllable failure attributions. Two reasons support our line of reasoning. First, we argue that recruiters make stronger attributions about responsibility if the entrepreneur combines internal and controllable failure attributions. Past research constantly indicated that broad audiences show negative reactions when individuals make responsibility attribution (Kibler et al., 2017) or attribute failure to factors related to the self of the individual (Graham et al., 1993; Graham et al., 1997). However, as previously argued, we emphasize that recruiters are more specific because they evaluate in committing a close relationship with the former entrepreneur. In a departure from this, we indicate that core person-centered attributions (the combination of internal and controllable factors for the business failure) may turn out positively because recruiters' beliefs strengthen about former entrepreneurs' learning from failure: Recruiters stereotypically believe that the retrospective confession of a lack of skill and effort will boost the entrepreneurs' learning process because they assume that entrepreneurs know which skill-set and effort they need to persist in similar situations. Indeed, there is research that indicates that learning is especially strong when the business failure is ascribed to factors within the entrepreneur (Yamakawa & Cardon, 2015).

Second, we draw on organizational psychology and take a voluntaristic perspective, which emphasizes that managers are the decision-makers of the company and thus are the fundamental cause for the failure (Mellahi & Wilkinson, 2004). This school of thought has recently been adopted within the entrepreneurship domain (Cardon et al., 2011; Khelil, 2016).

Therefore, we argue on attribution theory that recruiters are more likely to have person-based schemas toward factors causing the business failure because of the fundamental attribution error (Fiske & Taylor, 1991) and because the entrepreneur was the main decision-maker and thus is more likely to be the central cause for the business failure (e.g., Walsh & Cunningham, 2016). Therefore, internal and controllable failure attributions are more congruent with recruiters' beliefs about business failure and thus should be more favorable over the combination of external and uncontrollable failure attributions.

There is empirical evidence that supports our theorizing. Silvester (1997) found that those job applicants who were ultimately hired were less defensive in their attributions and described past failure rather than to ongoing and personal reasons. Moreover, Silvester et al. (2002) demonstrated that recruiters had more positive impressions of a job applicant with internal-controllable failure attributions than for a job applicant with external-uncontrollable failure attributions. Taken together, we hypothesize:

H4: Recruiters' perception of former entrepreneurs' employability is higher if the failure was caused by a combination of internal and controllable factors.

The moderating effect of former entrepreneurs' gender on the effectiveness of their failure attributions

Employability perceptions should be dependent on the gender of the former entrepreneur in such a way that the positive effect of attributions related to the self of the entrepreneur is stronger for former female entrepreneurs and weakens for former male entrepreneurs. Therefore, failure attributions that are related to internal or controllable factors, or a combination of both, are more effective if the former entrepreneur was female and less effective if the former entrepreneur was male. At least two arguments speak for such a moderation effect. First, recruiters have pre-defined schemas and stereotypes about males and females in the workplace. Past research has argued that each sex is associated with typical and

specific traits and behaviors (e.g., Eagly & Diekman, 2005; Eagly & Karau, 2002). For example, females are usually described to be affectionate, kind, or sensitive, whereas males are typically linked to being assertive, self-sufficient, or forceful (Eagly & Karau, 2002). Building on those typical gender characteristics, we argue that recruiters rate the person-centered failure attributions of females more positively because they are more congruent with their causal schemas about females. On the other hand, situation-related failure attributions are more congruent with recruiters' schemas about males, which decreases the general positive effect of person-centered attributions. The underlying theoretical mechanism here can be best described with the accessibility and applicability principles of knowledge (Higgins, 1996): When individuals respond to a given stimulus (e.g., failure attributions), those causal schemas (gender-specific stereotypes about their characteristics) are more accessible and thus applicable for employability decisions which have been used more frequently.

Second, recruiters may have a tendency embedded in their causal schemas that males attribute failure more often to situation-specific causes than females. Indeed, there is meta-analytical evidence toward such a gender-specific self-serving bias (Mezulis et al., 2004): The authors found that male entrepreneurs were generally more prone to a self-serving attributional bias with a stronger tendency to attribute success to internal attributes and failure to external attributes. Therefore, we argue that recruiters are more likely to expect males to attribute failure to situation-specific causes. Hence, we hypothesize:

> *H5: If the former entrepreneur is explicitly female, recruiters' perception of former entrepreneurs' employability is higher if the failure was caused by a) internal factors, b) controllable factors, or c) a combination of both.*

METHOD

We conducted a metric conjoint study where study participants (i.e., recruiters) made several employability decisions about different combinations of failure attributions. Hence, we evaluate if failure attributions composed of the thee-dimension attribution taxonomy derived from Weiner (1985) vary in their effect on recruiters' employability decisions. Metric conjoint analysis is well-established in the entrepreneurship literature (e.g., Choi & Shepherd, 2004; Kibler et al., 2017; Moser et al., 2017; Shepherd & Patzelt, 2015) and is appropriate for our research context as the attributional dimensions are independent (Tomlinson & Mryer, 2009). Moreover, such a within-subject design allows us to decompose the employability perception in their underlying structure (Shepherd & Zacharakis, 1999) and offers causal relationships (Grant & Wall, 2009). Finally, our design is robust toward nonverbal and unrelated cues, which is important because confirmation bias is especially strong in selection interviews (Dougherty & Turban, 1999), and research showed that interviewers combine relevant and irrelevant information cues when making employment decisions (Posthuma et al., 2002). Next, we clarify how we generated the failure attributions for the main experiment through intensive pre-testing and explain the research design, the sample, and our variable.

Failure attributions

For accurate and precise decision profiles, we developed failure attributions based on a literature review on the three attribution dimensions – locus of causality, controllability, and stability (e.g., Silvester, 1997; Struthers et al., 1992; Weiner, 1985). To ensure the validity of our manipulation, we invited a student sample (n = 78) to a pre-study and presented them all combinations of the failure attributions. We used the revised causal dimension scale (CDSII, McAuley et al. (1992)) and found significant differences for each dimension, which showed that participants identified dimensions correctly, even if the other dimensions were present at the same time. However, we note that the mean differences were comparatively small. Therefore, we conducted a second pre-study check with another student sample (n = 37),

where we tested each dimension separately. Again, we found significant differences, and mean differences were considerably larger. We used the feedback from the two pre-studies to further improve the failure attributions. We conducted several interviews with professional recruiters to maximize the realism and ecological validity of our study (Warnick et al., 2018). Here, the professionals told us that the experiment was consistent and easy to understand. Finally, we ensured that the required time to finalize the experiment was proportionate.

Experimental design

Following other studies (Shepherd et al., 2019), we explained the context before the participants went through the study: We told the participants that they had to fill open job vacancies at the management level in their companies within the next three months. Applicants were already screened by their colleagues from the human resources department, which had to fill the vacancies and had already conducted semi-structured interviews. Thus, all remaining applicants had been convincing with their job and industry expertise and were, in principle, suitable for the position. Second, we told participants that the remaining applicants had similar university degrees and were approximately the same age (30 to 40 years) to avoid confounding effects. In the experiment, we presented a series of written interview sequences (decision profiles) of small business failure attributions following O. Byrne and Shepherd (2015), which we told participants were recorded in a personal interview. After each decision profile, participants evaluated the likelihood of further considering this applicant in the application process (a sample can be found in the Appendix). After the experiment, we provided open-ended questions (e.g., “What was most important when making an employability decision?”) to provide room for further explanations. Finally, we captured their demographics.

In the main study, each decision profile is a combination of four attributes with two values each, of which three attributes contain the failure attributions, and one contains the applicant’s gender. As recommended for conjoint studies (Choi & Shepherd, 2004; Moser et

al., 2017), we reduced the number of distinct profiles to eight (Hahn & Shapiro, 1966) to keep participant fatigue at a minimum. We added one practice profile to familiarize participants with the task. Similar to Jones et al. (2014), we added additional failure attributions of failed managers to enhance the realism of our study. Moreover, we duplicated four profiles for test-retest reliabilities (Warnick et al., 2018). In total, each participant completed a total of 20 profiles. As carryover effects, participant fatigue, or ordering effects are a potential thread in data collection (Chrzan, 1994), we randomized the order of decision profiles in the questionnaire. Each profile was presented individually, and participants could not refer back to previous pages in the experiment. Additionally, we added three Sudokus after a set of five decision profiles to reduce participant fatigue and boredom. This was important because professionals in the pre-study indicated that reading 20 decision profiles was tiring.

Participant recruitment and sampling

We used the professional networking site *LinkedIn*, similar to the approach of Lanivich (2015). First, we identified recruiters based on our eligibility criteria: We used several keywords such as recruiter, recruiting managers, senior recruiter, head of recruiting, human resources, and HR. Moreover, we specified our search terms by focusing on individuals located in Germany. We excluded all individuals with less than five years of HR work experience, freelancers, HR consultants, and academics. Overall, we generated a list of 1.744 potential participants and contacted them over two months. Seven hundred and fifty-four recruiters responded to our request and agreed to participate in our study (response rate of 43%, similar to other web-based research (Rogelberg & Stanton, 2007). We asked them to complete our web-based experiment on selection-related decisions and offered a summary of our results for successful participation. Once they accepted our request, we sent up to three reminders every week. In total, 203 participants completed the questionnaire, which results in a completion rate of 11.7%.

On average, participants were 35.66 years old (SD = 6.49) and had 8.54 years (SD =

4.68) of experience in HR. Across all participants, 41% were male, 25% had leadership responsibilities, and 13% were part-time entrepreneurs. Additionally, we asked for the job interview frequency (5-point Likert scale with 1 = very low and 5 = very high) and reported a mean of 4.21 (SD = 1.15). As we did not restrict our study to a specific industry, participants had diverse industry backgrounds, such as information technology (19%), industrial manufacturing (13%), automotive (12%), or transportation and logistics (11%). Most of our participants indicated that they worked in a company with more than 1.000 employees (75%), followed by 14% who worked in a company with 201-1.000 employees and 11% who worked in a company with less than 201 employees. Regarding their educational level, 87% held a university degree, 8% finished vocational training, and 4% had a high school degree.

Ensuring data quality in online data collection is a serious issue. Therefore, we applied two quality criteria. First, we placed two bogus items in our study to identify careless responses (Meade & Craig, 2012) and deleted 11 participants. Additionally, we identified potential speedster (time, less than half the median), which led to an additional exclusion of four participants, producing a final sample of 188 participants. We tested for non-response bias (Armstrong & Overton, 1977) on the demographics presented on their *LinkedIn* profiles. We found a significant sampling difference in gender ($\phi = 0.15$, $p < 0.01$) but no significant difference in education ($\phi = 0.06$, $p > 0.05$). On further examination, we find a bias in which men are slightly over-represented of those who accepted our research request. To overcome this limitation, we applied two independent steps (Rogelberg & Stanton, 2007): We compared the demographics of early vs. late respondents and found no significant difference on both variables. Second, we include participants' gender as a control to account for the distortion.

Variables:

Dependent variable. In alignment with attribution theory, we measured the employability perception of former entrepreneurs as the recruiters' likelihood to consider this applicant in the selection process further. Following other studies that focused on

employability ratings in conjoint studies (e.g., Moy, 2006), we used a one-item measure to assess participants' employability likelihoods: After each decision profile, we asked for the likelihood to further consider this applicant (male or female in bold letters) in the application process and used a ten-point Likert scale (1= not likely at all; 10 = extremely likely). Additionally, we asked participants to explain their decision in an open text after the experiment.

Level 1 variables (manipulated in the experiment). Table 1 provides an overview of our attributes and their levels, which we presented in different compositions (see also the Appendix for a sample). For the gender attribute, we used the most common German surnames and randomly assigned them to the male or female condition (Mr. vs. Mrs.) (Derous et al., 2015). We explained each attribute in detail before the experiment and presented one practice profile to familiarize participants with the tasks.

TABLE 1
Description of the attribute values, as used in the conjoint study

Attribute	Level	Description
Locus of causality	External	That was clearly due to **external circumstances**. Important customers had to struggle with a poor economic situation. These could someday no longer pay their bills, so that as an entrepreneur* had more and more difficulties in covering the costs.
	Internal	**I misjudged the costs**. At some point, these ran out of round, and I could not cover them with the revenue. I take responsibility as an entrepreneur*.
Controllability	Uncontrollable	In retrospect, the situation was not completely to be influenced. This was mainly because my company was in **fierce competition** in a highly competitive market.
	Controllable	In retrospect, it was mainly homemade circumstances. I should have dealt more with the cost calculation and **invested more time here myself**.
Stability	Unstable	Such failure **will not happen** to me **again** in comparable situations in the future.
	Stable	Such failure happens and **cannot be avoided** in comparable situations in the future.
Gender f. entrepreneur	Female	Mrs. Mueller, Mrs. Meyer, Mrs. Weber, Mrs. Hofmann
	Male	Mr. Schmidt, Mr. Schneider, Mr. Fischer, Mr. Wagner

Note. * We use the German gender form here.

Control variables. We added recruiters' gender, their recruiting experience (in years), and their self-employment status (1= part-time self-employed; 0= no self-employment). We added gender as a control because research showed that recruiters attribute

applicants from the opposite sex as more similar to themselves (Graves & Powell, 1995). Accordingly, this positively correlates with an interpersonal attraction, which may lead to more positive ratings (for a review on socio-demographic variables, see Posthuma et al. (2002)). Moreover, we added their gender as a control to account for the non-response bias, as explained earlier. Second, we added recruiting experience because the more experienced recruiters tend to have extreme employability ratings due to ingrained stereotypes. Finally, we added self-employment status as a third control variable to control for the self-serving attributional bias (Fiske & Taylor, 1991). In line with the current debate on control variables (Bernerth & Aguinis, 2016), we calculated further interaction analyses with the controls to further investigate the hypothesized effects.

RESULTS

Descriptive statistics and correlations

We present the descriptive statistics, correlations, Cronbach's α values, and variance inflation factors (VIF) of our level 2 variables in Table 2. As recommended by (Karren & Barringer, 2002), we calculated the mean test-retest reliability, which was 0.65, similar to other conjoint studies (Domurath and Patzelt (2016): 0.67; Shepherd and Zacharakis (2000): 0.65). As the test-retest reliability falls below the generally accepted threshold of 0.70, we additionally conducted paired sample t-tests as recently suggested (Drover et al., 2014). The means for the summated dependent variables were 5.48 vs. 5.76 and 3.72 vs. 3.89. In both cases, mean differences were statistically insignificant ($t = -1.96$, $p > 0.05$; $t = -1.42$, $p > 0.05$, respectively). Thus, we assume that participants answered reliably, and no further study participants were deleted from the sample.

TABLE 2
Means (M), standard deviations (SD), variance inflation factors and correlations of Level 2 variables (Cronbach's Alpha on the diagonal)

Variables	M	SD	VIF	1.	2.
1. Gender Recruiter	0.41	0.49	1.01	-	
2. Experience Recruiter	8.30	4.29	1.00	0.01	
3. Part-Time Entrepreneur	0.13	0.34	1.01	0.04	0.07

Note. N= 188. * p < .05; ** p < .01

Results of the multi-level analyses

As each of the 188 participants made eight employability decisions, we have 1,504 nested data points in our sample. Given the nested data structure, we apply multi-level regression analyses in STATA 16 to account for a potential autocorrelation in our data (e.g., Raudenbush & Bryk, 2002). Following recent suggestions on how to conduct multi-level regression analyses (Aguinis et al., 2013), we run the analyses in several steps (Table 3) where Model 1 includes the control variables. Model 2 adds the level 1 attributes and Model 3 the interactions.[7]

We calculated pseudo-R^2 for Model 2 (Raudenbush & Bryk, 2002) and report an explained variance of 27%. Regarding the first three hypotheses, we hypothesized that employability perceptions were higher if the failure was either caused by internal factors (H1), by controllable factors (H2), or by unstable factors (H3). Here, we report a $ß = 0.67$ ($p < 0.001$, CI [0.49, 0.85][8]) for internal failure attributions, a $ß = 0.20$ ($p < 0.001$, CI [0.01, 0.40]) for controllable failure attributions, and a $ß = -2.01$ ($p < 0.001$, CI [-2.28, -1.73]) for stable failure attributions. Thus, we find empirical support for H1-3. Moreover, we hypothesized that employability perceptions were higher if the former entrepreneur employed person-centered attributions as a combination of both internal and controllable failure attributions.

[7] We additionally conducted three random intercept random slope models with each level 2 control variable. Those models did not explain additional variance, and are, thus, not in the manuscript.
[8] We report 95% confidence intervals as suggested by Bosco et al. (2015). Tables with all confidence intervals can be obtained from the authors.

We find a significant interaction effect (ß = 0.35, $p < 0.05$, CI [0.05, 0.64]). We graphed this interaction effect in Figure 2a: Employability perceptions are significantly higher when internal and controllable failure attributions are combined (simple slope: ß = 0.84, $p<0.01$). Hence, we find support for H4. Finally, we hypothesized that the employability perception was higher if former female entrepreneurs attributed the failure to internal factors (H5a), to controllable factors (H5b), or to a combination of both internal and controllable factors (H5c). Here, our data suggest an interaction effect of the entrepreneurs' gender on the relationship between internal failure attributions and the employability perception (ß = -1.20, $p < 0.001$, CI [-1.52, -0.88]), on the relationship between controllable failure attributions and the employability perception (ß = -1.16, $p < 0.001$, CI [-1.49, -0.83]), and also the combination of both and the employability perception (ß = -8.05, $p < 0.001$, CI [-9.14, -6.96]). We graphed those relationships in Figure 2b-d: The positive main effect of internal failure attributions is only significant if the former entrepreneur is female (simple slope: ß = 1.27, $p < 0.01$), however remains insignificant when the former entrepreneur is male (simple slope: ß = 0.07, $p = 0.56$). Toward the controllability interaction (Fig. 2c), the positive main effect of controllable failure attributions is significant and positive for former female entrepreneurs (simple slope: ß = 0.78, $p < 0.01$) and significant and negative for former male entrepreneurs (simple slope: ß = -0.38, $p < 0.01$). Toward the three-way interaction (Fig 2d), we find a significant interaction for the locus of causality, which is positive when internal failure attributions were combined with controllable failure attributions by former female entrepreneurs (simple slope: ß = 3.45, $p < 0.01$) and negative when internal failure attributions were combined with controllable failure attributions by former male entrepreneurs (simple slope: ß = -1.77, $p < 0.01$). Hence, we find empirical support for H5 that employability perceptions are higher when former female entrepreneurs employed person-centered failure attributions.

Robustness check

For a more thorough picture of our results, we followed recent suggestions on control variables (Bernerth & Aguinis, 2016). Therefore, we added recruiting experience as two-way and three-way interactions to our hypothesized effects but found no significant relationships. Next, we tested if the self-employment status of our participants significantly influenced our findings. Again, two- and three-way interactions remained insignificant. Finally, we tested if the gender of our participants significantly influenced our gender hypothesis (H5). However, we find no evidence to support a recruiter's gender bias toward male or female applicants' attributions.

TABLE 3
Results of the multi-level analysis for all models

	Model 1		Model 2		Model 3a		Model 3b		Model 3c		Model 3d	
Variable	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	4.82***	0.08	4.82***	0.08	4.82***	0.08	4.82***	0.08	4.82***	0.08	4.82***	0.08
Level 2 Controls												
Gender recruiter	0.07	0.17	0.07	0.17	0.07	0.17	0.07	0.17	0.07	0.17	0.07	0.17
Experience recruiter	-0.01	0.02	-0.01	0.02	-0.01	0.02	-0.01	0.02	-0.01	0.02	-0.01	0.02
Part-time entrepreneur	-0.05	0.24	-0.05	0.24	-0.05	0.24	-0.05	0.24	-0.05	0.24	-0.05	0.24
Level 1 Variables												
Internal failure attribution			0.67***	0.09	0.67***	0.09	0.67***	0.09	0.67***	0.09	0.67***	0.09
Controllable failure attribution			0.20*	0.1	0.20*	0.10	0.20*	0.10	0.20*	0.10	0.20*	0.10
Stable failure attribution			-2.01***	0.14	-2.01***	0.14	-2.01***	0.14	-2.01***	0.14	-2.01***	0.14
Gender f. entrepreneur			-0.06	0.07	-0.07	0.06	-0.07	0.06	-0.07	0.06	-0.07	0.06
Level 1 Interactions												
Internal * Controllable					0.35*	0.15					0.35*	0.15
Internal * Gender f. entrepreneur							-1.20***	0.16			-1.20***	0.16
Controllable * Gender f. entrepreneur									-1.16***	0.17	-1.16***	0.17
Internal * Controllable * Gender f. entrepreneur											-8.05***	0.56
Variance components												
Residual variance	4.77		3.47		3.45		3.37		3.37		3.26	
Intercept variance (L1)	0.70		0.86		0.86		0.88		0.88		0.89	

Note: 1504 decisions in n = 188; † p < 0.1; * p < .05; ** p < .01; *** p < .001. ICC (Null-model) = 0.13.
Maximum-likelihood estimations; Random intercept fixed slope models only.
Gender recruiter: 0= Female; 1= Male; Part-time entrepreneur: 0= No part-time entrepreneur, 1= Part-time entrepreneur; Gender f. (former) entrepreneur: 0= Female; 1= Male

FIGURE 2
Plots and simple slopes of interaction effects

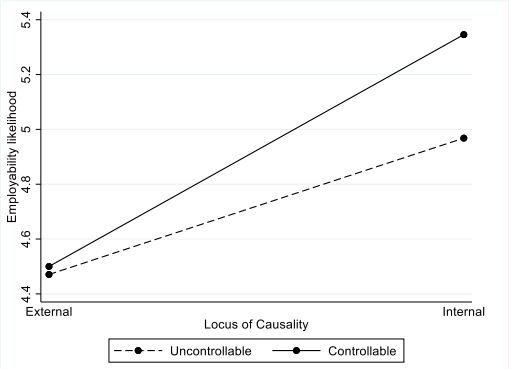


Figure 2a. The effect of locus of causality on the employability likelihood when controllability varies. Simple slope for locus of causality is 0.84 ($p<0.01$) when failure was controllable and is 0.50 ($p<0.01$) when failure was uncontrollable.

Slope difference test is significant ($p<0.05$).

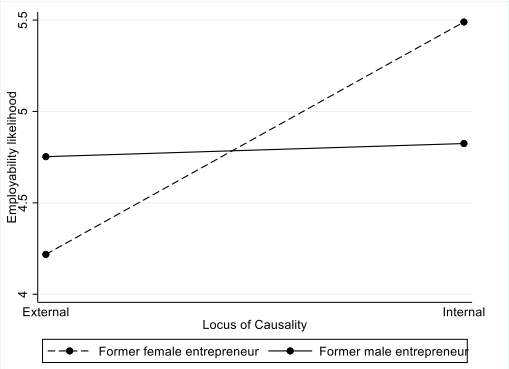


Figure 2b. The effect of locus of causality on the employability likelihood when the gender of the former entrepreneur varies. Simple slope for locus of causality is 1.27 ($p<0.01$) when former entrepreneur is female and is 0.07 ($p=0.56$) when the former entrepreneur is male.

Slope difference test is significant ($p<0.01$).

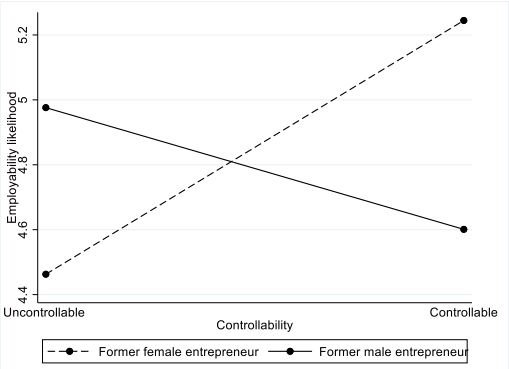


Figure 2c. The effect of controllability on the employability likelihood when the gender varies. Simple slope for controllability is 0.78 ($p<0.01$) when the former entrepreneur is female and is -0.38 ($p<0.01$) when the former entrepreneur is male.

Slope difference test is significant ($p<0.01$).

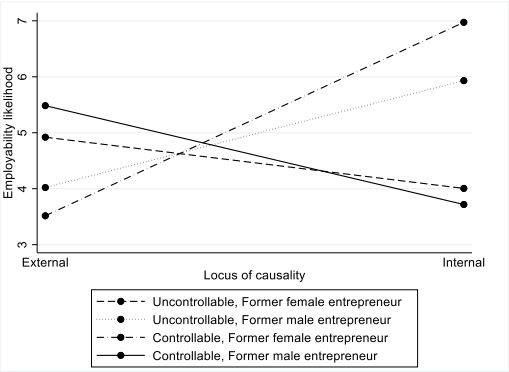


Figure 2d. The effect of locus of causality on the employability likelihood when both controllability and the gender vary. The simple slopes for the locus of causality is:

-0.91 ($p<0.01$) for females with internal and uncontrollable failure attributions
1.91 ($p<0.01$) for males with internal and uncontrollable failure attributions
3.45 ($p<0.01$) for females with internal and controllable failure attributions
-1.77 ($p<0.01$) for males with internal and controllable failure attributions

Differences tests are significant for all pairs of slopes ($p<0.01$).

DISCUSSION

The current study adds to the literature of failure attributions within the entrepreneurial context (Cardon et al., 2011; Kibler et al., 2017; Shepherd & Haynie, 2011) and aims to advance our understanding of which failure attribution has positive implications for failed entrepreneurs entering into paid employment. Drawing on attribution theory (Heider, 1958; Weiner, 1985), we emphasized that recruiters had higher employability perceptions when former entrepreneurs engaged in person-centered failure attributions. We adopted a multi-level perspective and presented study participants with a series of failure attribution combinations. In general, our findings suggest that a mastery-strategy (Cardon & McGrath, 1999), which consists of internal failure attributions (lack of skill), controllable failure attributions (lack of effort), or a combination of both, are more effective than distancing themselves from failure (economic situation of customers). Differentiating between male and female former entrepreneurs helps us to draw a more precise picture of the effect of failure attributions showing that internal and controllable failure attributions are more efficient for former female entrepreneurs and less efficient for former male entrepreneurs. Next, we will interpret and complement our results with our additional qualitative data and outline how our findings contribute to theory advancement.

We advance our current understanding of the effectiveness of failure attributions in the context of entrepreneurship (Cardon et al., 2011; Kibler et al., 2017; Shepherd & Haynie, 2011) and recruitment and selection (Silvester, 1997; Silvester et al., 2002) and thus offer important research for our understanding of entrepreneurs in the transition to paid employment (e.g., Luzzi & Sasson, 2016; Mahieu et al., 2019). Past research demonstrated that external and uncontrollable factors were “more likely to maintain professional legitimacy in the eyes of the public” (Kibler et al., 2017). Such distance-taking attributions seem beneficial toward a general audience because they are socially appropriate and strengthen legitimacy (Bitektine, 2011). Yet, such distancing from failure also indicates a potential

disadvantage because learning opportunities from external and uncontrollable factors are low (Shepherd & Patzelt, 2015; Yamakawa et al., 2015). With our study, we emphasize that when entrepreneurs aim to engage in a long-term and future-oriented relationship, it is especially the unstable failure attributions (the expectation that failure is unlikely to reoccur) and the person-centered attributions that are beneficial because they are associated with learning (Yamakawa et al., 2015), faster recovery from failure (Ucbasaran et al., 2013) and expanding effort in a similar situation (Cardon & McGrath, 1999). We theorized that recruiters have pre-defined causal schemas about failure attributions that drive their employability perceptions. Drawing on our additional qualitative data, we identify several essential factors that could explain why recruiters' employability perceptions were higher when entrepreneurs presented person-centered failure attributions: 44 participants mentioned that learning from failure was important to them, and 29 participants directly pointed toward the responsibility attributions for the failure. For example, a recruiter said that "for me, it was important that the candidates took responsibility for the failure and signaled that they had learned from the mistakes made. To shift the responsibility entirely to external circumstances, I feel in such a function rather negative." Additionally, 22 participants mentioned that it was important to them that applicants reflected on failure. For example, a participant mentioned: "The self-reflection and the authenticity of the candidates were especially important to me. Can they take responsibility, or are they blaming others for their failure?" Our findings indicate that recruiters have rather voluntaristic causal schemas (Khelil, 2016) about failed entrepreneurs, which implies that entrepreneurs are better off taking full responsibility for business failure. Thus, they should attribute the failure to a lack of skill and effort than denying responsibility through referencing the economic situation of customers or a tough economic situation.

As our gender analyses reveal that the person-centered failure attributions seem only effective for former female entrepreneurs and may even harm male entrepreneurs (e.g., controllable failure attributions), we make a second contribution by advancing attribution

theory (Heider, 1958; Weiner, 1985) with adding gender-specific theory (Eagly & Karau, 2002). Hence, we additionally extend the literature on female entrepreneurship (e.g., de Bruin et al., 2006, 2007; Hughes et al., 2012; Justo et al., 2015). Research on attribution theory proposes that entrepreneurs are especially prone to a self-serving bias (Rogoff et al., 2004). With our research, we provide evidence of how such an attributional tendency affects the decision-making of external stakeholders (i.e., recruiters) and, more importantly, highlight that such an attributional tendency is especially harmful to a failed female entrepreneurs. We theorize that recruiters have gender-specific beliefs when evaluating failure attributions of former entrepreneurs. Interestingly, only one recruiter mentioned the gender manipulation in our post-hoc questionnaire: "I tried to pay attention to details in the choice of words […]. I consciously tried to blank out whether the candidate was female or male, so I did not read any names, just the text". This points in the direction that recruiters have underlying role-based expectations about applicants, which are loaded with stereotypes about gender-specific business failure (Fiske & Taylor, 1991). Eagly and Karau (2002) theorized that men are more likely to be associated with being assertive and ambitious. Thus, admitting mistakes, especially to a lack of effort, contradicts recruiters' expectations about males' failure attributions, which implies lower employability perceptions. Our three-way interaction analysis implies that it is more favorable for former female entrepreneurs to apply failure attributions that combine internal and controllable failure attributions. On the other hand, we find empirical support that such a combination of failure attributions is especially harmful to former male entrepreneurs. However, it is not the combination of uncontrollable and external failure attributions that is beneficial for former male entrepreneurs but a mix of either internal and uncontrollable or external and controllable failure attributions. Here, one recruiter mentioned that "an applicant looks more authentic if he also admits mistakes. […]. Therefore, candidates are declined if they blame […] only others." Thus, our results indicate that failed entrepreneurs need to confess a lack of skill or effort (or both when they are female) when

they combine failure attributions. This reasoning follows research supporting the voluntaristic school of thought that entrepreneurs are the key decision-makers and thus the fundamental cause for business failure (Cardon et al., 2011; Khelil, 2016; Mellahi & Wilkinson, 2004).

Practical implications

Following our theoretical contributions, our results also have practical implications for failed entrepreneurs seeking employment. Generally, we emphasize that failed entrepreneurs should openly reflect on their failure and highlight that such failure is unlikely to reoccur in similar situations in the future. Additionally, we also have gender-specific advice: For former female entrepreneurs, we recommend them to highlight their learnings on how to improve their personal skills and effort to overcome barriers and obstacles in similar situations. On the other hand, we suggest that former male entrepreneurs use failure attributions that combine both person-related and situation-related criteria. For example, they could reflect on their experiences on how they should have invested more effort to find solutions for those customers with difficulties paying their bills.

Limitation and further research

Even though we draw a comprehensive theoretical and empirical picture of our research question, our study is not without limitations, which should guide other researchers in further research. First, research has acknowledged the relationship between national culture and entrepreneurship (e.g., Hayton et al., 2002). Indeed, data from the Global Entrepreneurship Monitor indicate that national culture in Germany impedes entrepreneurial activity and entrepreneurial failure is stigmatized (Sternberg et al., 2018). Thus, our focus on recruiters in Germany offers a fruitful opportunity to study entrepreneurial failure. However, we admit that our findings may not be fully generalizable to cultures that are more open to failure. Thus, we call for more cross-country research to explain cultural differences.

Second, we aimed to predict the underlying relationships between failure attributions and the employability likelihood. We theorized and empirically tested those relationships with

a conjoint experiment. However, we offer no empirical information on how failure attributions lead to positive decisions. Therefore, we suggest further research to apply empirical designs (e.g., vignette studies) to probe more deeply into the underlying causal relationships for a more holistic picture of the entrepreneurship-employability relationship.

Third, even though our selection of level 1 variables was theory-based (Weiner, 1985) and have been shown to be important (e.g., Kibler et al., 2017; Mantere et al., 2013), we recognize that there are additional variables (e.g., level 2 variables) that could moderate the effects of failure attributions. Here, the research could take two different perspectives: On one hand, further studies could focus on variables concerning the former entrepreneur such as their impression management tactics (Shepherd & Haynie, 2011), or concerning the former entrepreneur's business such as the liability of the newness principle (Wiklund et al., 2010). On the other side, future research could focus on variables concerning the employer and investigate organizational variables such as their entrepreneurial orientation (Covin & Slevin, 1991) or error management culture (Frese & Keith, 2015).

CONCLUSION

Past research emphasized that individuals perceived others' failure more positive when the causes for the failure were ascribed to external and uncontrontrollable factors. Drawing on attribution theory, our metric conjoint study offers evidence that recruiters have higher employability perceptions when former entrepreneurs (especially females) adopt person-centered attributions (e.g., ascribing failure to internal causes) to overcome past failure. Therefore, our research highlights an essential boundary condition of our current understanding of failure perceptions. When a long-term and future-oriented relationship is at stake, internal, controllable, and the combination of both causes are more effective to overcome the aftermath of failure.

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APPENDIX

Figure A1 – Sample of failure attribution combination used in the conjoint study

Recruiter: Could you please tell me about a situation in which you professionally failed?

Ms. Hofmann: I have been running my own company for several years. This does not exist anymore and I had to dismiss all of my 10 employees.

Recruiter: Could you please explain to me how this failure came about?

Ms. Hofmann: I misjudged the costs. At some point, these ran out of round and I could not cover them with the revenue. I take responsibility as an entrepreneur.

Recruiter: Could you substantiate this?

Ms. Hofmann: In retrospect, it was mainly homemade circumstances. I should have dealt more with the cost calculation and **invested more time here myself**.

Recruiter: Do you think that you will come into similar situations in the future?

Ms. Hofmann: Such **mistakes will not happen** to me **again** in comparable situations in the future.

CHAPTER 5: TEST-RETEST RELIABILITY IN METRIC CONJOINT EXPERIMENTS - IMPORTANT REQUIREMENT OR OVERRATED NUISANCE?

ABSTRACT

Metric conjoint studies are popular in the entrepreneurship domain to tap into the decision-making processes of individuals. Within conjoint studies, test-retest reliabilities have been deemed an important marker for the methodological quality of a study, usually referring (quite unreflectingly) to a reliability threshold of r = 0.70. However, a peculiarity of conjoint experiments is the statistical power, an aspect that is usually not considered by popular reliability thresholds. Accordingly, the sensitivity of conjoint results upon varying test-retest reliabilities remains questionable. Based on a comprehensive review of metric conjoint studies published in the entrepreneurship literature, we conduct two sets of simulations to address this issue. We analyze how various study characteristics and respondent behaviors affect test-retest-reliabilities. Further, we investigate how test-retest reliabilities affect regression outcomes of conjoint studies under different conjoint specifications. Our simulations highlight a more nuanced perspective toward test-retest reliabilities for metric conjoint designs. Finally, best practice recommendations are offered.

Keywords: Within-subject designs, metric conjoint analysis, test-retest reliability, validity

Research Paper 4 is co-authored by Dr. Jens Schueler and Prof. Dr. Mathias Baum

INTRODUCTION

Metric conjoint experiments are a popular research method in the entrepreneurship literature and enable researchers to take strides toward establishing causal relationships in complex decision-making processes and by that advance predictive theory building (Aiman-Smith et al., 2002; Grégoire et al., 2019; Lohrke et al., 2010; Maula & Stam, 2020; Shepherd & Zacharakis, 2018). In conjoint experiments, participants have to respond to a range of decision-making scenarios that vary along theoretically derived attribute combinations. These responses can then be statistically deconstructed to reveal the underlying decision-making structures (Green & Srinivasan, 1978; Shepherd & Zacharakis, 1999).[9]

Despite these advantages, conjoint experiments can be a strain to participants, which depends on the number and complexity of the decision task resulting in participants' fatigue, waning motivation, and ultimately, careless responses (DeSimone, 2015). To safeguard one's study against such inconsistencies, researchers are routinely recommended to use "internal validation methods" (Lohrke et al., 2010, p. 23) by employing the so-called test-retest reliability as a necessary condition for the validity of the experiment (Aiman-Smith et al., 2002; Green & Srinivasan, 1978, 1990; Karren & Barringer, 2002; Lohrke et al., 2010; Shepherd & Zacharakis, 1999, 2018; Zhu et al., 2021). For example, Zhu et al. (2021) recently noted that "the validity of conclusions from policy-capturing studies cannot be accepted uncritically without demonstrating that policy-capturing judgments are stable over time" (p.2). Nevertheless, we lack robust evidence on this assumption whether test-retest reliabilities are applicable validity markers for metric conjoint experiments. Consequently, using an arbitrary test statistic to evaluate test-retest reliability in conjoint studies may lead to an ungrounded inference of a study's validity.

[9] For example, past research investigated how various aspects of angel- and crowdfunded firms affected venture capitalists' decisions (Drover et al., 2017), how factors of moral disengagement affected entrepreneurs' evaluations of opportunities that are harmful to the environment (Shepherd et al., 2013), or, how variations in recruitment activities in young firms related to their perceived employer attractiveness in start-ups (Moser et al., 2017).

Using arbitrary cutoff points such as the common reliability threshold of r = 0.7 exacerbates this problem. While there are several reviews with guidelines on the adequate number of replications (Aiman-Smith et al., 2002), suggestions on the importance of reporting test-retest reliabilities (Zhu et al., 2021), and general "rules of thumb" (Karren & Barringer, 2002), these insights are often not substantiated (Lance et al., 2006).

The prevalent reliability threshold of r = 0.7 draws back on a misinterpretation of Nunnally's seminal work and is an urban legend at best (Greco et al., 2018; Lance et al., 2006; Nunnally, 1978; Schmidt & Hunter, 1996). Current research addressed this issue by providing benchmark thresholds for coefficient alphas of common constructs of the management literature (Greco et al., 2018). However, such benchmarks may fall short for within-subject designs as metric conjoint experiments rely on test-retest reliabilities (Zhu et al., 2021). Furthermore, the reliability metric in conjoint experiments indicates the temporal stability of the dependent variable and not the ability to correctly measure an independent variable construct (Aiman-Smith et al., 2002; Greco et al., 2018; Karren & Barringer, 2002). A peculiarity of conjoint experiments is the replication of decision-profiles, which is likely to improve the statistical power and standard errors, an aspect that is usually not considered by popular reliability thresholds (Cooksey, 1996; Howell, 1992). Hence, while the test-retest reliability thresholds can make or break any metric conjoint study, the applicability of common reliability thresholds and specific reliabilities relate to relevant study outcomes is still unclear and may create a false sense of validity.

Thus, to help researchers have greater confidence in the robustness of their research findings, the purpose of the present study is to better understand if test-retest reliabilities are a robust quality marker for within-subject designs such as metric conjoint experiments. To achieve this, we do two things. First, we conduct a systematic literature review of published metric conjoint studies to map out common research design aspects, the range of reported test-retest reliabilities, and uncover potential publication trends. Second, drawing from this review

and discussing key study characteristics, we perform two Monte Carlo simulations. The first simulation assesses how central study characteristics influence test-retest reliabilities and the second simulation then considers how various reliabilities relate to regression outcomes. We conclude with a comprehensive discussion of key considerations and offer guidelines to enhance the rigor of metric conjoint experiments in the field of entrepreneurship and other disciplines.

RELIABILITY IN CONJOINT EXPERIMENTS

Metric conjoint experiments

Metric conjoint experiments have their origins in the marketing domain (e.g., Green & Srinivasan, 1978) and are widely used in the entrepreneurship literature for over two decades to investigate complex decision-making (e.g., Lohrke et al., 2010; Shepherd & Zacharakis, 1999, 2018). An essential feature of conjoint experiments is that they allow researchers to employ multi-level regression techniques to analyze level 1, level 2, and even cross-level effects. More importantly, conjoint experiments do not rely on passive observations or cross-sectional designs, allowing scholars to move well beyond the limitations of associational research (Aguinis & Bradley, 2015; Anderson et al., 2019; Antonakis et al., 2010; Shepherd & Zacharakis, 2018). To deconstruct decision structures, the decision context is held constant across profiles and variations in the dependent variables (usually a single item measure assuming an interval or ratio scale) result from the theory-driven attributes (Green & Srinivasan, 1978; Shepherd & Zacharakis, 1999, 2018).

When designing conjoint studies, researchers must first determine the number of critical attributes affecting respondent decision-making (Lohrke et al., 2010). Further, researchers must decide on the necessity to reduce the number of cards because a combination of each attribute level may result in too many conjoint cards. An orthogonal fractional design (Hahn & Shapiro, 1966) reduces the number of combinations (five attributes: full factorial

design = 32 cards; fractional design = 16 cards). A third important decision relates to the number of replications of the original conjoint cards for test-retest reliabilities. Here, Shepherd and Zacharakis (2018) suggest a full replication but several studies employed only partial replication (e.g., 25% of the original cards (Drover et al., 2017)). Taken together, metric conjoint approaches afford researchers to infer the significance of the attributes considered and their relative importance towards the captured decision. As the dependent variable is a single-item measure and the independent variables are determined by design, researchers need a criterion to assess the reliability of their study's findings. In that regard, past research suggested a test-retest reliability of $r = 0.7$ as a minimum validity condition to meet to ensure the quality of a given study (Carmines & Zeller, 1979; Karren & Barringer, 2002).

Test-retest reliabilities

Cronbach (1947) defined the retest reliability of a test score as the score variation of an individual across successive independent repetitions. Hence, the reliability of a test score is likely to suffer from transient and random response errors (Schmidt & Hunter, 1999). The former occurs if the feelings and moods of respondents change between measurement occasions at different points in time, for example, if an experiment is repeated after several hours or days. The latter can manifest during an experiment due to a lack of attention, erratic decision-making, and ambiguous situations (Mitchell et al., 2011). Considering that a conjoint study captures both the original response and its replication within the same experimental occasion, random response errors are likely to be the predominant reliability threat. In contrast, transient errors play more of a subordinate role. In other, more simple words, test-retest reliabilities indicate the instability of responses during the conjoint experiment (Aiman-Smith et al., 2002; Cooksey, 1996; Karren & Barringer, 2002; Zhu et al., 2021). In metric conjoint studies, this instability may occur because participants do not fully understand the

explanations used to describe the task, attributes, or attribute values. Further, instability can originate in meaningless attribute combinations.

The psychometrics literature has dealt with reliability thresholds ad nauseam, and reviews suggest that r = 0.70 is the by far most frequently employed threshold (Cho & Kim, 2015; Peterson, 1994). However, this cutoff is predicated upon an incorrect citation of Nunnally's seminal work (Lance et al., 2006; Nunnally, 1978). Nunnally (1978) emphasized that reliability thresholds must always be context-specific, with applied settings requiring thresholds up to 0.90 to rule out measurement error to a satisfactory degree. Therefore, a cutoff of r = 0.7 might be too low of a bar to pass. For metric conjoint experiments however, some researchers claim that the routine practice of including both responses in the analysis controls for response variations thereby random response errors are somewhat mitigated (Hauswald et al., 2016; Monsen et al., 2010; Shepherd et al., 2013; Shepherd et al., 2019). Consequently, in the context of metric conjoint experiments, a test-retest reliability threshold of r = 0.7 could either be too low or too high.

Systematic Review: Study characteristics and reliability in metric conjoint experiments

We conducted a systematic literature review to take stock of common research design choices and corresponding test-retest reliabilities among metric conjoint experiments published in the broader management literature. Our comprehensive search procedure was completed in August 2021 and yielded 847 potentially relevant studies. The search and selection procedure are depicted in Figure 1. We applied the following inclusion/exclusion criteria on this initial study-set: a) We excluded all non-empirical studies; b) We excluded all studies that do not employ a metric conjoint approach; c) All studies that do not report a test-retest reliability were excluded. On completion, our screening procedure yielded 36 studies relevant studies from which we extracted several key characteristics such as the number of attributes, number of replications, the total number of profiles, the sample size, and the

reported test-retest reliabilities. A comprehensive list of these studies, together with the extracted information, is presented in Table 1.

FIGURE 1
Description of steps used to find journals and articles for literature review

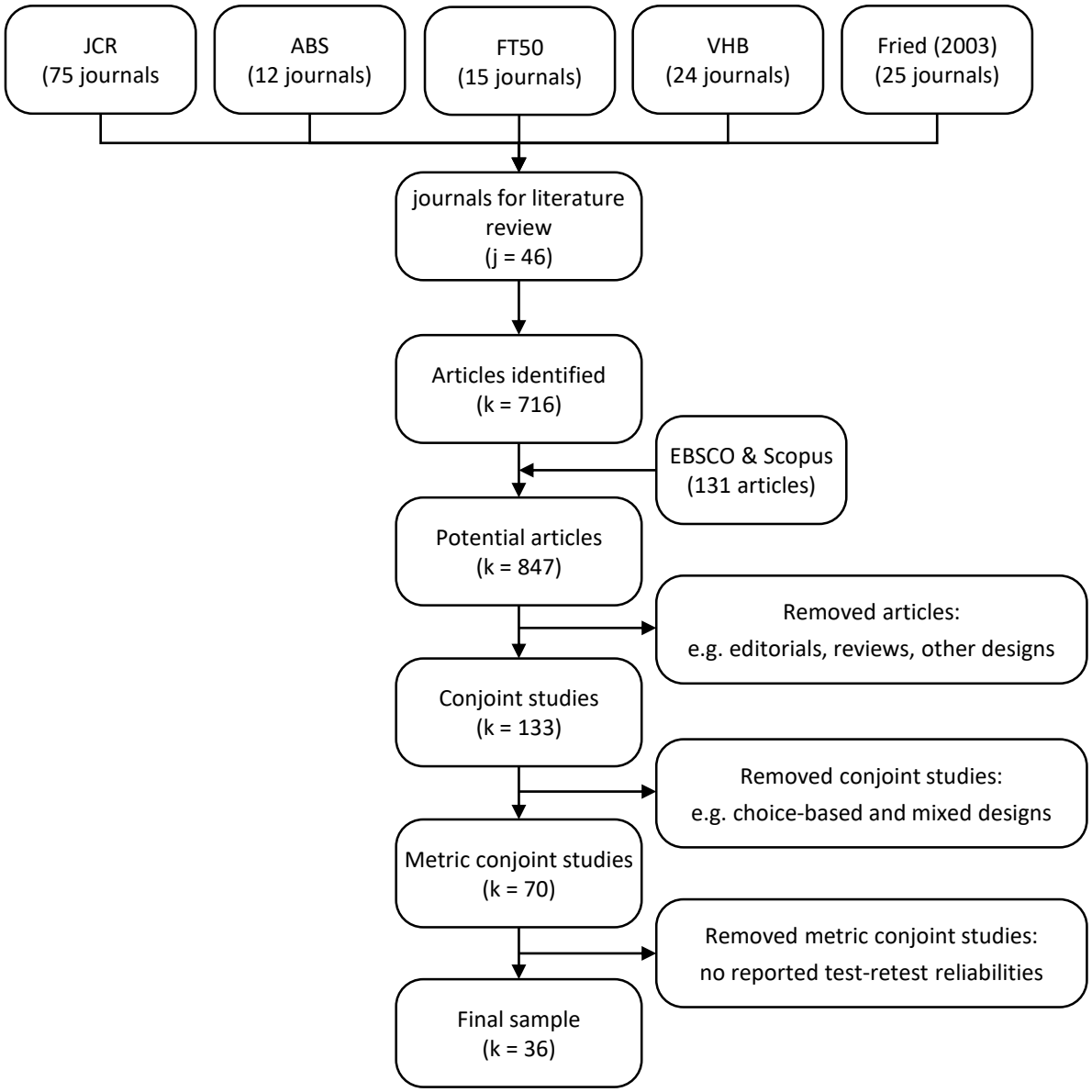


TABLE 1
Metric conjoint studies found in the literature review

	First author	Jahr	Journal	N	Attributes	Profiles (possible)	Profiles (reduced)	Profiles (replications)	Profiles (practice)	Experimental conditions	Profiles (presented)	DV	r
1	Priem	1992	SMJ	33	3	8	8	8	0	1	16	100	0.93
2	Shepherd	1999	MS	66	8	256	16	16	1	1	39	11	0.69
3	Shepherd	2000	ETP	59	3	8	4	4	1	2	17	11	0.65
4	Shepherd	2000	JBV	64	8	256	16	16	1	1	39	11	0.62
5	Shepherd	2002	JBV	66	8	256	16	16	1	1	39	11	0.62
6	Shepherd	2003	JBV	66	8	256	16	16	0	1	32	11	0.65
7	Shepherd	2003	JSBM	51	4	16	8	8	1	1	17	11	0.83
8	Choi	2004	JOM	55	7	128	16	16	1	1	33	7	0.82
9	Choi	2005	JOM	163	6	64	16	16	1	1	33	7	0.81
10	McMullen	2006	JMS	54	5	32	16	16	1	1	33	11	0.70
11	Bruns	2008	ETP	114	8	256	16	16	0	1	32	9	0.77
12	DeTienne	2008	JBV	89	7	128	16	16	1	1	33	11	0.77
13	Patzelt	2008	JMS	93	5	32	16	16	1	1	33	7	0.84
14	Patzelt	2009	ETP	98	6	64	16	16	1	1	33	7	0.82
15	Haynie	2009	JMS	73	5	32	16	16	1	1	33	11	0.79
16	Monsen	2010	ETP	61	5	32	16	16	0	1	32	7	0.73
17	Mitchell	2010	JBV	121	4	8	8	8	1	1	17	9	0.84
18	Dawson	2011	JBV	41	7	128	16	16	1	1	33	7	0.81
19	Murnieks	2011	JMS	60	3	8	8	8	0	1	16	7	0.78
20	Haynie	2012	ETP	73	5	32	16	16	1	1	33	11	0.79
21	Shepherd	2013	AMJ	83	3	8	4	4	1	3	25	11	0.87
22	Holland	2013	ETP	100	4	16	8	8	0	2	32	9	0.72
23	Hsu	2014	VC	85	5	32	16	16	1	1	33	11	0.87

TABLE 1 (CONTINUED)

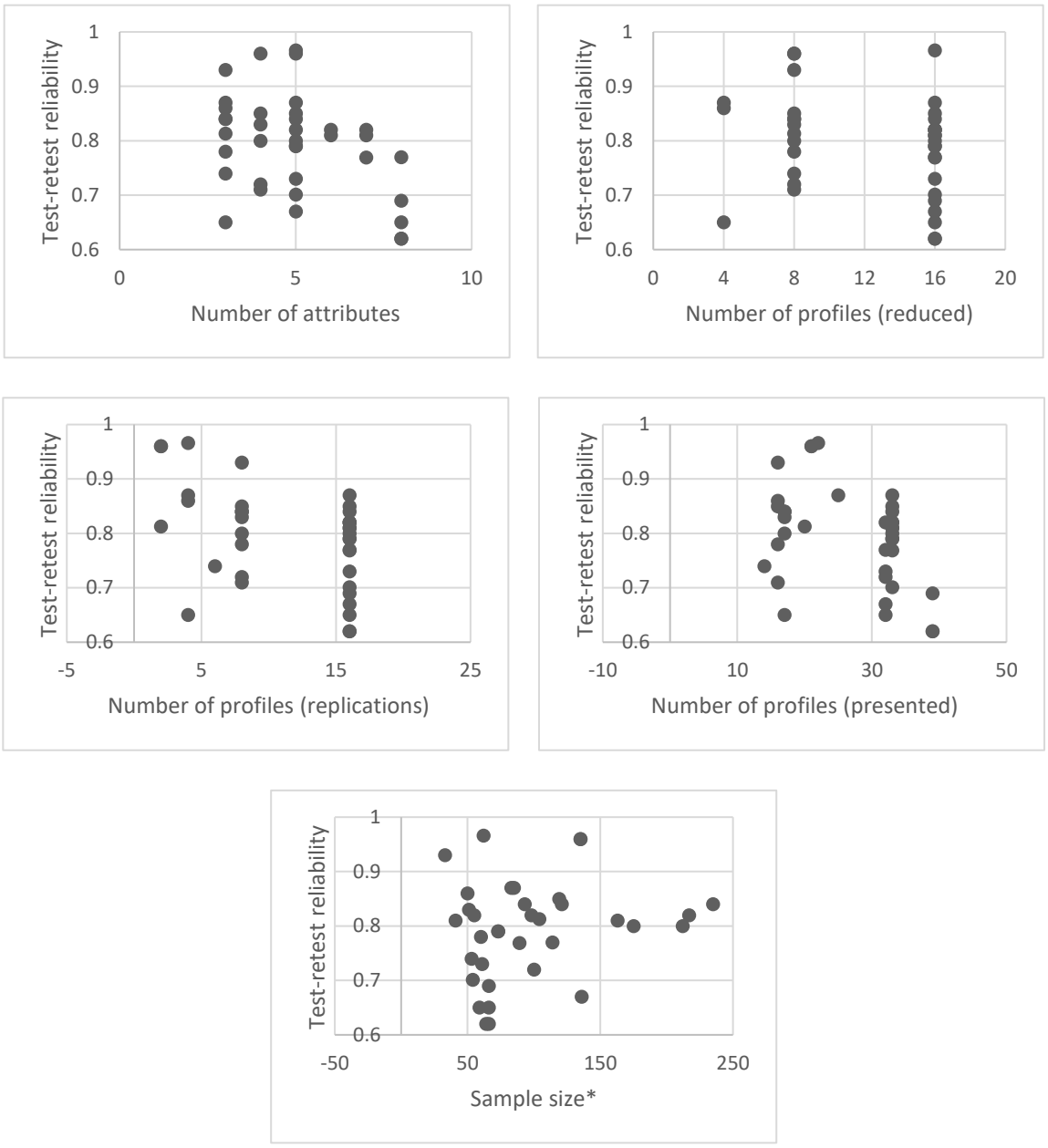
	First author	Jahr	Journal	N	Attributes	Profiles (possible)	Profiles (reduced)	Profiles (replications)	Profiles (practice)	Experimental conditions	Profiles (presented)	DV	r
24	Holland	2015	ISBJ	135	4	32	8	2	1	2	21	9	0.96
25	Shepherd	2015	JMS	212	5	32	16	16	1	1	33	7	0.80
26	Behrens	2016	ETP	217	5	32	16	16	0	1	32	7	0.82
27	Domurath	2016	ETP	136	5	32	16	16	0	1	32	7	0.67
28	Hauswald	2009	ETP	175	4	16	8	8	1	1	17	7	0.80
29	Murnieks	2016	JBV	53	3	8	8	6	0	1	14	7	0.74
30	Drover	2017	ETP	104	3	8	8	2	0	2	20	7	0.81
31	Kibler	2017	JBV	601	4	16	8	8	0	2	16	7	0.71
32	Moser	2017	JBV	307	5	32	16	16	1	1	33	7	0.85
33	Warnick	2018	JBV	62	5	32	16	4	2	1	22	7	0.97
34	Shepherd	2019	JOM	235	3	8	8	8	1	1	17	7	0.84
35	Fu	2019	SEJ	50	3	8	4	4	0	2	16	100	0.86
36	Allmendinger	2019	IJIM	119	4	16	8	8	0	1	16	7	0.85

Note. Journals: AMJ = Academy of Management Journal; ISBJ = International Small Business Journal; ETP = Entrepreneurship Theory & Practice; SMJ = Strategic Management Journal; JOM = Journal of Management; JBV = Journal of Business Venturing; SEJ = Strategic Entrepreneurship Journal; JMS = Journal of Management Studies; JSBM Journal of Small Business Management; IJIM = International Journal of Innovation Management; MS = Management Science; VC = Venture Capital; ISBJ = International Small Business ournal; N = Sample size; Attributes = Number of attributes for each decision profile; Profiles (possible) = Number of overall possible profile combinations; Profiles (reduced) = Number of original decision profiles presented in the study; Profiles (replications) = Number of replicated profiles; Profiles (practice) = Number of practice profiles employed to get study participants familiar with the study; Experimental conditions = Number of experimental conditions; Profiles (presented) = Number of overall decision profiles presented to study participants; DV = Type of rating scale of dependent variable; r = Test-retest reliability.

The average test-retest reliability across all studies is r = 0.79 with a standard deviation of 0.09, similar to Zhu et al. (2021), who reported a mean r = 0.78 for policy-capturing designs. Worth mentioning is that 6 of the 36 studies reported a test-retest reliability below the 0.70 threshold, but with no reliability lower than 0.62. This observation suggests that the popular cutoff value seems to be of some importance in the publication process. Considering that the complexity of the research design is likely to affect test-retest reliabilities, Figure 2 shows the number of attributes, profiles, replications, and the sample sizes relative to the reported reliabilities (Aiman-Smith et al., 2002; Karren & Barringer, 2002; Matell & Jacoby, 1971). Here we observe that most metric conjoint studies employ designs with three to six attributes (with some exceptions) and thus follow common recommendations (Shepherd & Zacharakis, 2018). As researchers may reduce the completion time of the conjoint experiment because of participants' fatigue and difficult-to-reach target groups, they usually apply orthogonal fractional designs to reduce the number of conjoint cards or forego a full replication of the conjoint cards. Applying a fractional design holds two advantages. First, the set of profiles resembles a subset of all attribute level combinations to ensure that correlations between attributes are, per design, zero, which averts multicollinearity (Hahn & Shapiro, 1966). Second, it reduces the total number of profiles participants have to answer and thus lowers strain (Aiman-Smith et al., 2002). Accordingly, we find that most studies employ a fractional design (83%) and present eight or 16 decision profiles, employ a full replication of the profiles (89%), or present only a reduced set of replications. Last, none of the published studies draw on sample sizes with less than 50 respondents.

While our brief review is informative in revealing common design choices in metric conjoint studies, the results are too heterogeneous to infer which study characteristics influences test-retest reliabilities and, in turn, how specific reliabilities might relate to regression outcomes. However, this information provides a valuable starting point regarding the parameter choices for the simulation approach.

FIGURE 2
Results literatur review



Note. * Two studies with N > 250 were removed for better readability

Relevant study characteristics in metric conjoint experiments

Simulation studies require transparency about the underlying assumptions and models (Davis et al., 2007). Therefore, we now explain the contingencies of both simulation studies. First, we want to begin with the more apparent considerations in designing a metric conjoint simulation and then focus on the more subtle aspects. The most straightforward choice is the

number of attributes presented on a conjoint decision profile and the percentage of profiles to be replicated. Drawing from our review, we will model a scenario with 3, 4, 5, and 6 attributes and consider replications ranging from 25%, 50%, 75%, to 100% of all presented profiles. Regarding the number of profiles presented vs. the number of possible profiles, we adopt the practice of employing an orthogonal design, resulting in four original profiles for three conjoint attributes, eight profiles for the four attributes, 16 profiles for five, and six attributes. Thus, the overall length of the experiment depends on the attribute choice and the number of replications. The critical point to consider here is that the number of conjoint profiles presented is likely to cause increased fatigue throughout the questionnaire, diminishing the motivation of respondents to answer carefully (Bowling et al., 2020; Graham & Cable, 2001; Karren & Barringer, 2002). This form of response error is common in conjoint experiments and increases the discrepancy between the original response and its replication the further apart both are in the questionnaire (for a review, see Hess et al. (2012)). Caussade et al. (2005) observed that respondent fatigue tends to set in after the 10^{th} decision profile and causes slight variations across responses. Drawing on their findings, we assume a fatigue coefficient of 0.05 standard deviations that sets in after the 10^{th} profile. Here, we consider two different growth modes: a) a linear growth with each additional profile presented, or b) an exponential growth. The fatigue coefficient is used as an additional source of variance in estimating the replication value relative to the original response. Another factor of the response error is concerned with the overall complexity of the decision situation. It is also tied to the potential deviation between the original response and its replication. The reasoning is that more attributes result in more complex decision scenarios, putting more strain on respondents because they have to process more information, making it more likely to fall back to simplified response heuristics, leading to higher error variances (Caussade et al., 2005). We assume a baseline complexity value of 0.5 standard deviations for the 3-attribute case, which increases with each additional attribute considered by a) 0.25 standard deviations

or b) 0.5 standard deviations. Again, this variation is factored in as additional variance in the estimation of the replication profiles. The final straightforward option to be chosen is the sample size and following the recommendations of Shepherd and Zacharakis (2018), we consider sample sizes ranging from 50 to 200 respondents.

Second, the first consideration among the more subtle options is the relative importance of attributes towards the decision outcome. The valence of an attribute refers to its relative favorability and is reflected in its regression weight (Kam & Meyer, 2015; Shepherd & Zacharakis, 2018; Tay & Drasgow, 2012). In a conjoint context, all attributes are not necessarily equally important, but some attributes are likely to have more or less impact on decision-making than others. To account for various constellations, we consider a scenario with a) an equal valence among attributes, b) a high-low distribution, and c) a more mixed approach (Table 2). The next issue pertains to the response style or response tendencies of participants that are relatively stable across time and content (Cronbach, 1950; van Herk et al., 2004). In our simulations, we draw on insights from the marketing domain and assume two styles on a 9-point Likert type scale, one with a nuanced positive acquiescence if an attribute is present (1) and a weak disacquiescence if an attribute is not present (0) (van Rosmalen et al., 2010, p. 167) (Table 3A). We used the weights as described in Table 2 to compute the response styles on the individual level in table 3B. In the following, we will briefly use the one conjoint card of the high-low valence distribution to explain how we computed the response patterns by including the valence of attributes: The high-low distribution has the weights of 0.68 (strong attribute), 0.17 (weak attribute), 0.17 (weak attribute) as presented in Table 2. Now, for the third card of the three-attribute case (attribute 1 = 1, attribute 2 = 0, attribute 3 = 1), this results in the following response probabilities for the first three Likert values: 1 = 1.65% (0.6 * 0.67 + 6.6 * 0.17 + 0.6 * 0.17); 2 = 3.01% (0.5 * 0.67 + 15.3 * 0.17 + 0.5 * 0.17); 3 = 3.84% (0.7 * 0.67 + 21 * 0.17 + 0.7 * 0.17) of all respondents. The last issue that needs to be considered is a matter of response quality or more precisely if the

profiles presented work as intended. If the decision situation is unambiguous, responses will align with the expected response style for the given attribute combination. This resembles the best case. However, if the decision situation is ambiguous, then the responses are more likely to reflect a uniform distribution on the 9-point scale. For this worst case, we take a uniform distribution as a basis, which varies randomly between 5 and 15 percent of total responses per Likert value and, in sum, adds up to 100%. In addition to that, we also define an average case that draws on the mean of the best and worst case. Next, we draw on this profile-level response quality and shift it to the level of the study. For a "good" study, we assume that 70% of all original profiles reflect the best, 20% the average, and only 10% the worst case. For a "mediocre" study, we assume a 50% / 30% / 20% distribution and for a "bad" study a 30% / 40% / 30% split. While poorly designed studies are likely to be rejected in the review process, we investigate how such design characteristics affect test-retest reliabilities and relevant regression outcomes (e.g., Dwan et al., 2008; Kepes et al., 2012). The final decision we need to make is the range of test-retest reliabilities for the second simulation. Here, we pick reliabilities ranging from r = 0.40 up to r = 0.90. All parameters discussed and their respective operationalization are summarized in Table 4. Accounting for all these aspects and their range of possible values results in 4.032 unique parameter combinations in our first simulation and 672 combinations in the second simulation.

TABLE 2
Overview of the valence of the attributes

Valence = Equal							
3 Attributes	Attribute	Att1	Att2	Att3			
	Valence (Weight)	equal	equal	equal			
4 Attributes	Attribute	Att1	Att2	Att3	Att4		
	Valence (Weight	equal	equal	equal	equal		
5 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	
	Valence (Weight)	equal	equal	equal	equal	equal	
6 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	Att6
	Valence (Weight)	equal	equal	equal	equal	equal	equal
Valence = High / Low							
3 Attributes	Attribute	Att1	Att2	Att3			
	Valence (Weight)	Strong (0.67)	Weak (0.17)	Weak (0.17)			
4 Attributes	Attribute	Att1	Att2	Att3	Att4		
	Valence (Weight)	Strong (0.57)	Weak (0.14)	Weak (0.14)	Weak (0.14)		
5 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	
	Valence (Weight)	Strong (0.5)	Weak (0.13)	Weak (0.13)	Weak (0.13)	Weak (0.13)	
6 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	Att6
	Valence	Strong (0.44)	Weak (0.11)	Weak (0.11)	Weak (0.11)	Weak (0.11)	Weak (0.11)
Valence=mixed							
3 Attributes	Attribute	Att1	Att2	Att3			
	Valence (Weight)	Strong (0.57)	Medium (0.28)	Weak (0.14)			
4 Attributes	Attribute	Att1	Att2	Att3	Att4		
	Valence (Weight)	Strong (0.37)	Strong (0.37)	Medium (0.18)	Weak (0.09)		
5 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	
	Valence (Weight)	Strong (0.31)	Strong (0.31)	Medium (0.15)	Medium (0.15)	Weak (0.07)	
6 Attributes	Attribute	Att1	Att2	Att3	Att4	Att5	Att6
	Valence (Weight)	Strong (0.29)	Strong (0.29)	Medium (0.14)	Medium (0.14)	Weak (0.07)	Weak (0.07)

Note. Att. = Attribute. Weights are in parentheses and are rounded to two decimal points, and are used to calculate the response patterns as shown in Table 3. The weight "medium" is always 50% of the weight "strong", and the weight "weak" is 50% of the weight "medium".

TABLE 3A
The original response style patterns on the individual level

Segment	Attribute value	Likert 1	Likert 2	Likert 3	Likert 4	Likert 5	Likert 6	Likert 7	Likert 8	Likert 9
Moderate acquiescence	1	0.6	0.5	0.7	0.7	2.2	4.2	12	32.5	46.7
Weak disacquiescence	0	6.6	15.3	19.3	21	21.4	6.7	5.2	2.2	1.4

Note. Response style segments from van Rosmalen et al. (2010). Numbers are the observed proportions (in %) of respondents in each response style segment.

TABLE 3B
The weighted response patterns on the individual levels for the three attribute cases

Valence=equal												
Att.	Equal	Equal	Equal	Likert 1	Likert 2	Likert 3	Likert 4	Likert 5	Likert 6	Likert 7	Likert 8	Likert 9
3	0	0	0	6.70	15.40	19.40	21.10	21.50	6.80	5.30	2.30	1.50
3	1	0	0	4.70	10.47	13.20	14.23	15.00	5.87	7.54	12.40	16.60
3	1	1	0	2.63	5.43	6.90	7.47	8.60	5.03	9.73	22.50	31.70
3	1	1	1	0.55	0.50	0.70	0.70	2.20	4.20	12.00	32.50	46.65
Valence = High/ Low												
Att.	strong	weak	weak									
Weight	0.67	0.17	0.17	Likert 1	Likert 2	Likert 3	Likert 4	Likert 5	Likert 6	Likert 7	Likert 8	Likert 9
3	0	0	0	6.68	15.46	19.30	21.05	21.55	6.78	5.29	2.39	1.50
3	0	1	1	4.69	10.44	13.17	14.30	15.06	5.95	7.55	12.37	16.48
3	1	0	1	1.65	3.01	3.84	4.12	5.44	4.63	10.84	27.38	39.10
3	1	1	0	1.65	3.01	3.84	4.12	5.44	4.66	10.86	27.38	39.05
Valence = Mixed												
Att.	strong	medium	weak									
Weight	0.57	0.29	0.14	Likert 1	Likert 2	Likert 3	Likert 4	Likert 5	Likert 6	Likert 7	Likert 8	Likert 9
3	0	0	0	6.68	15.41	19.40	21.05	21.50	6.83	5.34	2.29	1.50
3	0	1	1	4.12	9.03	11.40	12.37	13.24	5.71	8.19	15.15	20.78
3	1	0	1	2.31	4.82	6.10	6.58	7.67	5.00	10.07	23.78	33.67
3	1	1	0	1.45	2.70	3.45	3.69	4.93	4.55	11.00	28.10	40.13

Note. Att. = Attribute. All weights and response patterns are rounded to two decimal places. Likert 1 = very low; Likert 9 = very high. The weighted response patterns for the four-six attribute cases are available upon request.

TABLE 4
Parameters for both simulations

Parameters	Values	Simulations	Description
Valence	Equal High/low Mixed	Simulation 1	The valence of the attribute refers to its relative favorability and is reflected in its regression weight. Equal valence emphasizes that each attribute is equally important. See Table 3B for an exemplar.
Response style	Moderate acquiescence Weak acquiescence	Simulations 1 & 2	As response styles are relatively stable across time and content (e.g., van Herk et al., 2004), we draw on two response styles of a 9-point Likert scale taken from van Rosmalen et al. (2010, p.167) for the attribute values. See Table 3A.
Study quality	Good (70% (best), 20% (average), 10% (worst)) Medium 50%, 30%, 20% Bad (30%, 40%, 30%)	Simulation 1	As poorly design studies are likely to be rejected, we still investigate how the conjoint quality (e.g., if attributes work as intended) affects test-retest reliability and regression outcomes. For the worst case, we take a uniform distribution as a basis, which varies randomly between 5 and 15 percent of total responses per Likert value
Number of attributes	3 – 6 attributes	Simulations 1 & 2	Three to six attributes are common for conjoint studies (see. Literature review)
Number of replications	25% of profiles 50% of profiles 75% of profiles 100% of profiles	Simulations 1 & 2	Replicating conjoint profiles is necessary to calculate the test-retest reliability. Recent studies use only a limited replication to shorten the conjoint study (see. Literature review)
Baseline complexity SD	0.5	Simulation 1	Baseline complexity for the 3-attribute case
Complexity SD	SD = 0.25 / SD = 0.5	Simulation 1	The baseline complexity SD increases by 0.25 SD or 0.5 SD for each additional attribute. Therefore, we account for increased mental effort for each additional attribute
Fatigue mode	Linear / Exponential	Simulation 1	As the length of the conjoint experiment influences the response quality, we account for the fatigue by adding 0.05 SD after the 10^{th} profile: Linear: Increase of 0.05 SD for each additional profile Exponential: Increase of 0.05 SD for 11^{th} profile, 0.06 SD for the 12^{th} profile, 0.07 SD for the 13^{th} profile.
Fatigue value SD	0.05	Simulation 1	
Sample size	50 – 200 in steps of 25	Simulations 1 & 2	Shepherd and Zacharakis (2018) recommend sample sizes within this range
Test-retest reliability	0.4 – 0.9 in steps of 0.1	Simulation 2	

SIMULATIONS

We created two Monte Carlo simulations to a) assess how specific study characteristics affect test-retest reliabilities and b) how a given test-retest reliability relates to relevant regression outcomes. All analyses were performed with R (4.0.5), and all code and data used in our simulations are available upon request.

Simulation 1: Test-Retest Reliabilities

First, based on the chosen number of attributes and valence option, all original profiles and their respective response distributions are read from the input data set. Then, the best, average, and worst-case response distributions are computed for each card. Next, based on the desired study quality, the corresponding number of best, average, and worst-case profiles are randomly selected from all available profiles. Now, profiles are randomly selected for replication according to the desired number of replications. The order of both original and replication profiles is randomized so that all original profiles are randomized first and then followed by a randomized order of replication profiles. The next step considers the relative position of each original profile within the fictional questionnaire and adjusts its baseline response frequency distribution in accordance with the computed variance coefficient. The variance coefficient adds the corresponding fatigue and complexity value to the standard deviation of the respective baseline response probabilities and estimates an adjusted probability set. These adjusted probabilities are then used to sample 9-point Likert data for all original profiles, a common scale in metric conjoint experiments (Bruns et al., 2008; Mitchell et al., 2010; Holland et al., 2013). Next, to compute the response profiles, we shift to the level of the individual respondent. Here, we sample a normal distribution with 1.000 draws around the original response value, with a standard deviation consisting of the respective fatigue value, baseline complexity, and attribute complexity. Then, according to the resulting probability distribution of likely responses, we randomly draw a replication response value. Now, shifting back to the study level, we compute the test-retest reliability, which is the

average correlation between all original profiles and their replication. Thus, we filter out all non-replicated profiles and compute the average among all profile-replication correlations and corresponding standard deviations. This procedure is repeated a thousand times for each of the 4.032 parameter combinations.

Simulation 2: Regression Outcomes

The second simulation follows the procedure of the first one up to the point where the replication values are estimated. At this stage, only the chosen test-retest reliability is considered in the estimation of the replication values so that the simulated replication profile has exactly this specified correlation with the original profile. Moreover, several parameters of Simulation 1 are captured by the test-retest reliability in a metric conjoint study (e.g., study quality, complexity, fatigue (Table 4)). Therefore, these parameters are not in Simulation 2. Further, we only simulated the valence = mixed case to keep the simulation efficient. This data set is then used to fit a simple linear regression model with robust standard errors. We then extract regression coefficients, p-values, standard errors, and model fit indicators. This procedure is repeated a thousand times for each of the 672 parameter combinations.

RESULTS

Simulation 1: Test-Retest Reliabilities

The first simulation examines how the study characteristics affect test-retest reliabilities in metric conjoint studies. Specifically, we analyze the study quality, study complexity, number of attributes and replications, as well as several valence and response styles, participants' fatigue, and sample size. Supporting recent meta-analytical findings (Zhu et al., 2021), results indicate that test-retest reliabilities are relatively robust toward study characteristics and respondent behavior when the experimental design contains three or four attributes. We report and interpret the results in Figures 3-8 for the valence = mixed and study

quality = good cases. We conducted all analyses also with the other specifications. Results are robust and available upon request.

Figures 3-5 display the mean surface plot of the test-retest reliability as a function of the sample size and the number of attributes (Figure 3: Complexity SD = 0.25, Fatigue = linear; Figure 4: Complexity SD = 0.50, Fatigue = linear; Figure 5: Complexity SD = 0.50, Fatigue = exponential) with a) 25%, b) 50%, c) 75% and d) 100% of the profile replications. The advantage of such plots is the possibility of graphing two variables related to the test-retest reliability. A lighter color is associated with higher test-retest reliabilities and a darker color with lower reliabilities. As expected, the color of the plots becomes darker with an increase in attributes in all three figures. Furthermore, the test-retest reliability is comparatively stable across sample sizes. To gain further insights into the underlying contingencies, we also interpret the box plots in Figures 6-8 to obtain a more detailed picture of the reliability distributions for each attribute and replication case (for n = 100; boxplots are similar for other sample sizes and are available upon request). Figure 6 shows the relationship between the number of attributes and test-retest reliability for a) 25%, b) 50%, c) 75% and d) 100% of the profile replications (Complexity SD = 0.25, Fatigue = linear). Median test-retest reliabilities are well above r = 0.7 but decrease with each additional attribute and more replications. Figure 7 displays a similar boxplot of the same function but with a Complexity SD of 0.50 and linear fatigue. The complexity factor deflates test-retest reliabilities, especially in the five and six attributes case with more impact when replications increase. Hence, the complexity of the conjoint design becomes an issue for further considerations in the design stage when researchers need 20 or more cards for their analyses (in a fractional orthogonal design, five attributes require 16 cards (Hahn & Shapiro, 1966) + 25% of replicates (four cards)). Finally, Figure 8 further imposes an exponential fatigue mode to the test-retest reliability function. The results suggest that only the three and four attribute cases are robust to an exponential fatigue mode as such experimental designs require fewer conjoint cards.

With four and five attributes, however, the test-retest reliability significantly drops. Hence, complexity and participant fatigue are crucial factors for conjoint designs with more than four attributes.

Taken together, we investigated in this first simulation how several methodological and respondent-level antecedents affected test-retest reliabilities. The study quality, the valence of the attributes, and sample sizes are relatively unrelated to test-retest reliabilities (the corresponding plots are available upon request). Results suggest that the complexity of the conjoint design and participants' fatigue are essential issues in metric conjoint studies with five or six attributes. We urge researchers to take countermeasures in the design stage when test-retest reliabilities are at stake (e.g., pre-testing attribute combinations and describing attribute values with enough detail to reduce complexity (we provide further advice in the best-practice section)). In the second simulation, we further address if the test-retest reliability is an appropriate metric to infer validity and, additionally, if common reliability thresholds are appropriate for within-subject experiments such as metric conjoint experiments.

FIGURE 3
Results Simulation 1: Mean surface plots (Complexity SD = .25, Fatigue = linear)

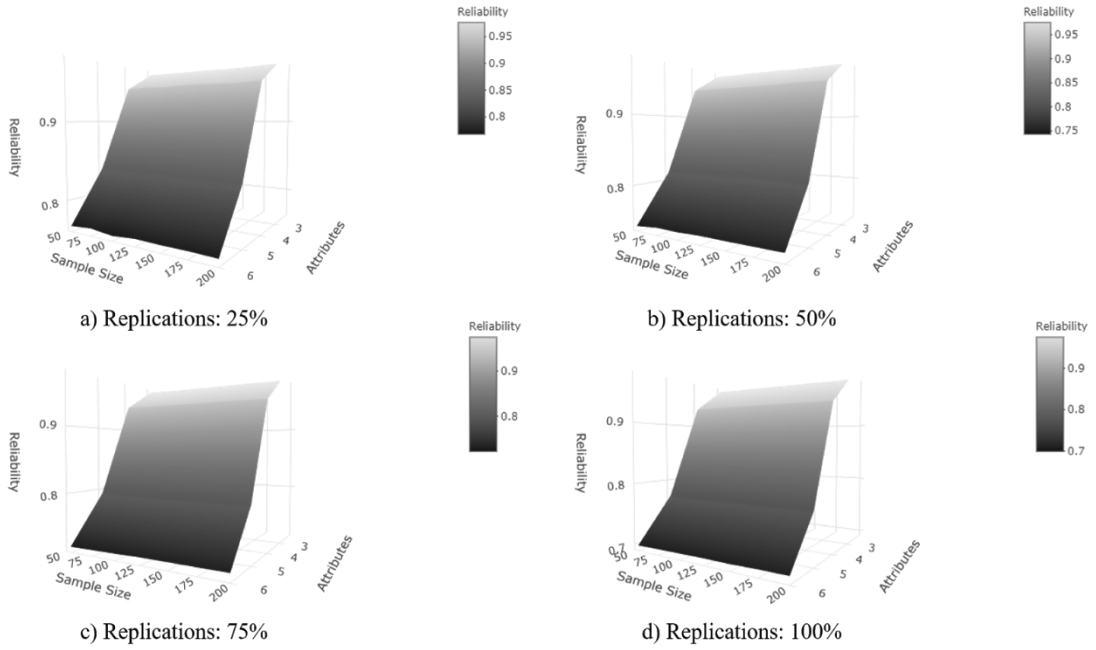


FIGURE 4
Results Simulation 1: Mean surface plots (Complexity SD = .50, Fatigue = linear)

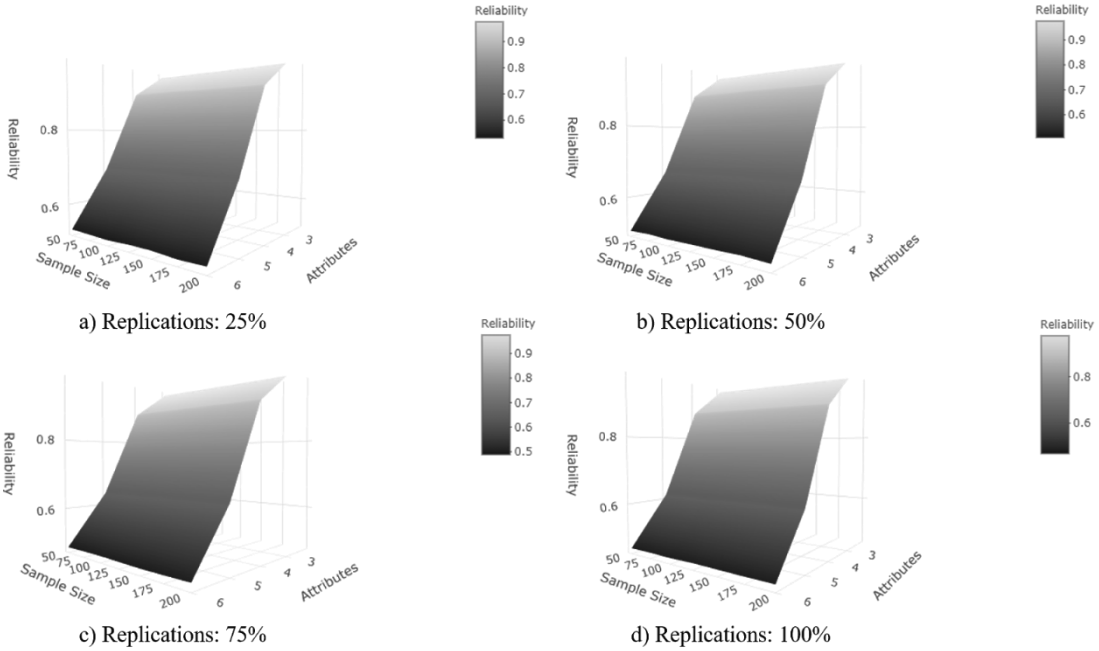


FIGURE 5
Results Simulation 1: Mean surface plots (Complexity SD = .50, Fatigue = linear)

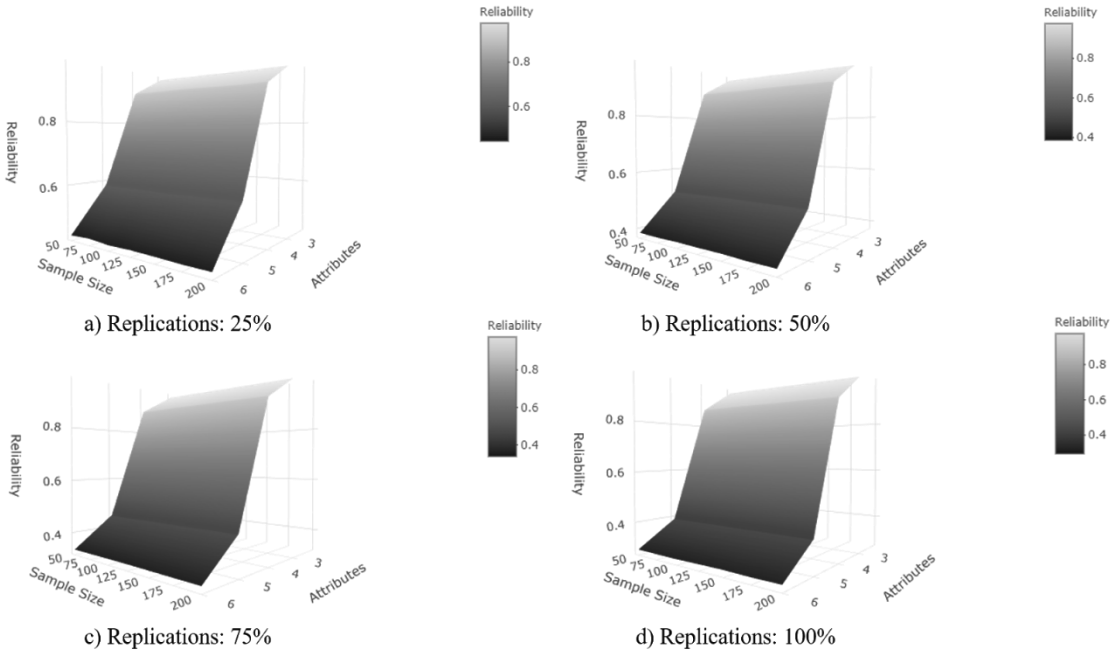


FIGURE 6
Results Simulation 1: Boxplot (Complexity SD = .25, Fatigue = linear, n = 100)

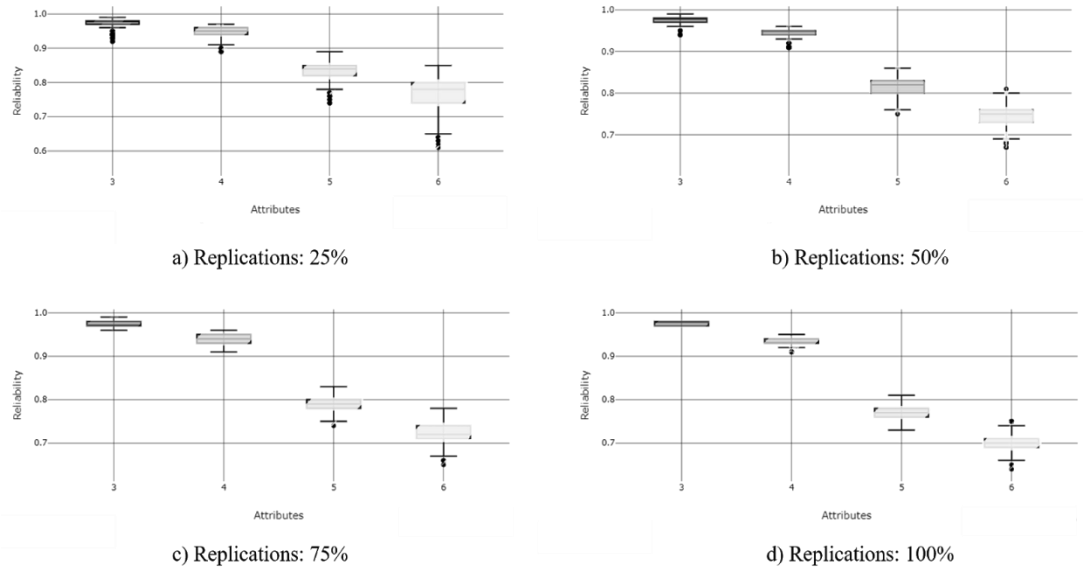
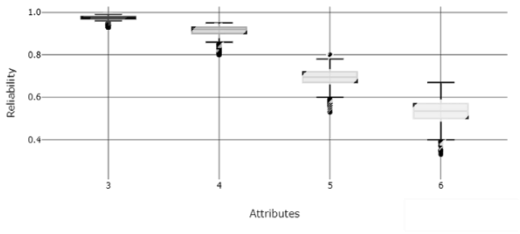
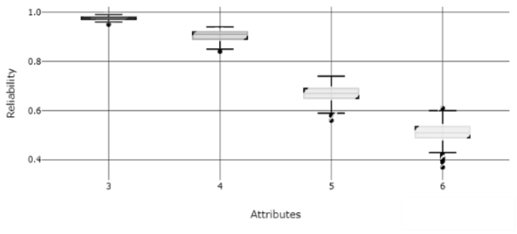


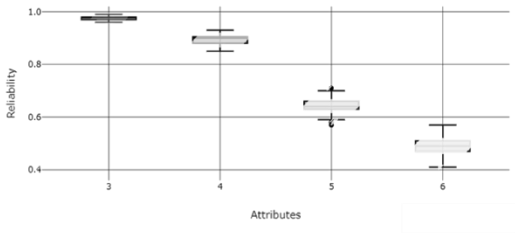
FIGURE 7
Results Simulation 1: Boxplot (Complexity SD = .50, Fatigue = linear, n = 100)



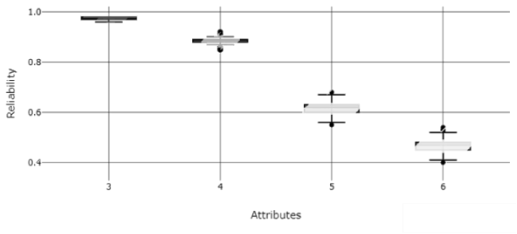
a) Replications: 25%



b) Replications: 50%

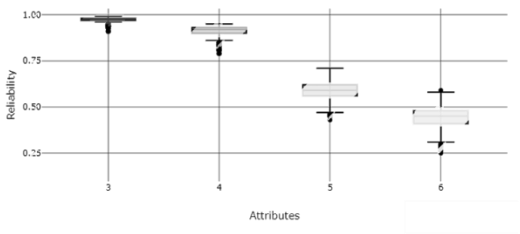


c) Replications: 75%

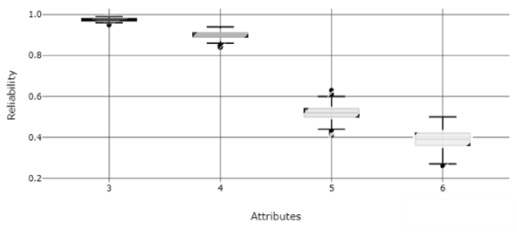


d) Replications: 100%

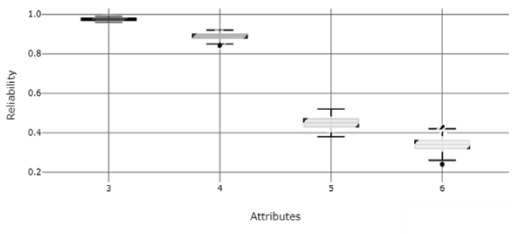
FIGURE 8
Results Simulation 1: Boxplot (Complexity SD = .50, Fatigue = exp., n = 100)



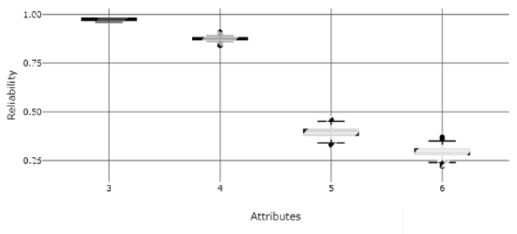
a) Replications: 25%



b) Replications: 50%



c) Replications: 75%



d) Replications: 100%

Simulation 2: Regression Outcomes

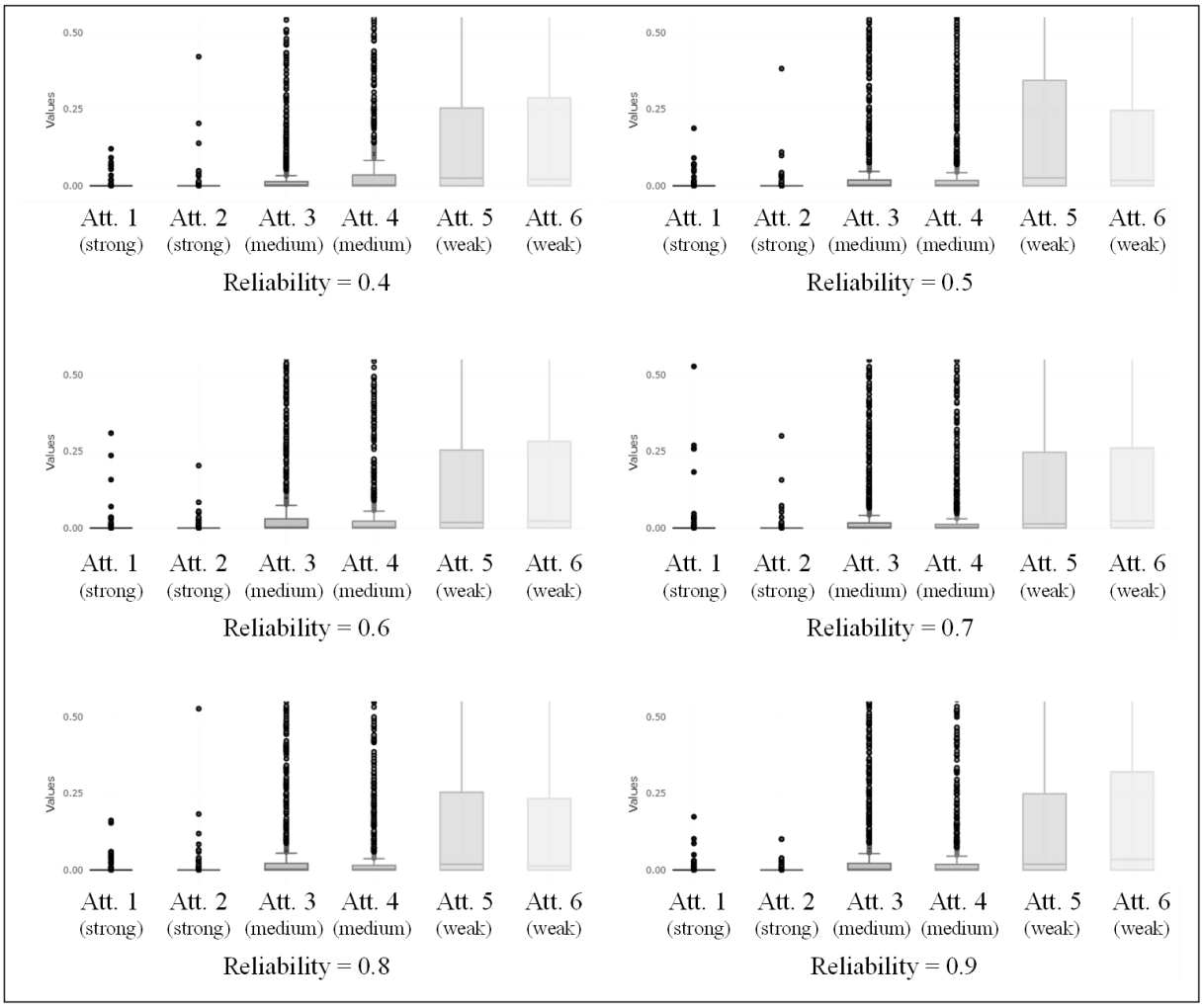
This simulation investigates more directly if researchers can relax or tighten their use of test-retest reliabilities as internal validity metric in metric conjoint experiments. Figure 9 presents the box plots for the p-value estimations for the six attributes case (n = 100) across the replications (A: Replications = 25 %; B: Replications = 50 %; C: Replications = 75 %; D: Replications = 100 %). We decided on the n = 100 case because it is a common level 2 sample size for metric conjoint designs (Drover et al., 2017; Holland & Shepherd, 2013; Patzelt & Shepherd, 2009). Moreover, results are robust across sample sizes (especially for the smaller sample sizes (e.g., n = 50); results are available upon request). Figure 9 demonstrates that p-values are relatively stable across the test-retest reliability specifications: For the strong attributes (Attributes 1-2), p-values are consistently significant ($p<0.01$). For the medium-strong attributes (Attributes 3-4), the p-value significance is analogous to the strong attributes. For the weak attributes (Attributes 5-6), the p-values are continuously insignificant ($p>0.05$).

These results do not predicate the role of the test-retest reliability yet. Thus, we report the mean p-values in Table 5 (A: Replications = 25%; B: Replications = 50%; C: Replications = 75%; D: Replications = 100%). As we repeated each parameter combination a thousand times in the simulation, this table also presents the percentage of p-values below $p < 0.05$ and $p < 0.01$. For example, Table 5a (Replications = 25%) shows that the mean p-value of Attribute 1 in the four attributes and r = 0.4 condition is p = 0.01 with 98% of all estimated p-values below the 0.05 threshold. The mean p-value of Attribute 4 in the same condition is p = 0.18, with only 48 % of the p-values below the 0.05 threshold. Therefore, Attribute 1, the strong attribute, is highly significant, whereas Attribute 4 (weak attribute) remains insignificant. If test-retest reliability was a superior metric in estimating the validity of the results, we would expect a shift in the mean p-values and the percentage of significant results as the test-retest reliability increases. However, we fail to do so. For example, the mean p-

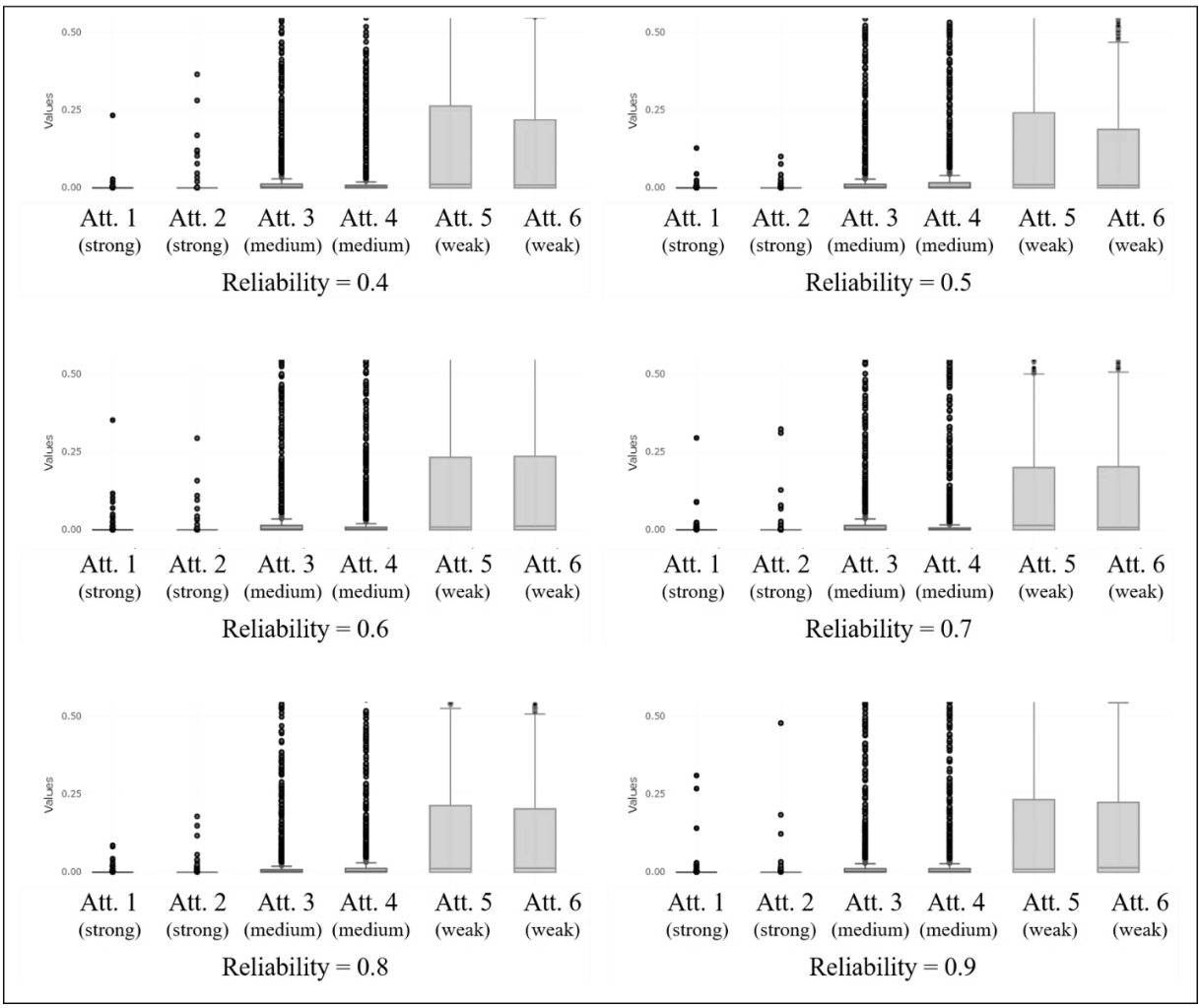
value of Attribute 1 in the same condition ($r = 0.9$) is $p < 0.01$ with 98% of p-values below the 0.05 threshold. Similarly, the mean p-value of Attribute 4 is $p = 0.18$, and 55% of the p-values fall below the 0.05 threshold. This picture is consistent with the 0.01 threshold (We conducted the same analyses with the regression coefficients and found no impact of the test-retest reliability). Taken together, our results emphasize that regression outcomes, at least the betas and p-values are relatively stable across test-retest variations. In other words, we find no evidence that the chances of Type-1 and Type-2 errors increase when the test-retest reliability is below the threshold of 0.7.

FIGURE 9
Results Simulation 2: Box plots of p-value distributions by test-retest reliabilities

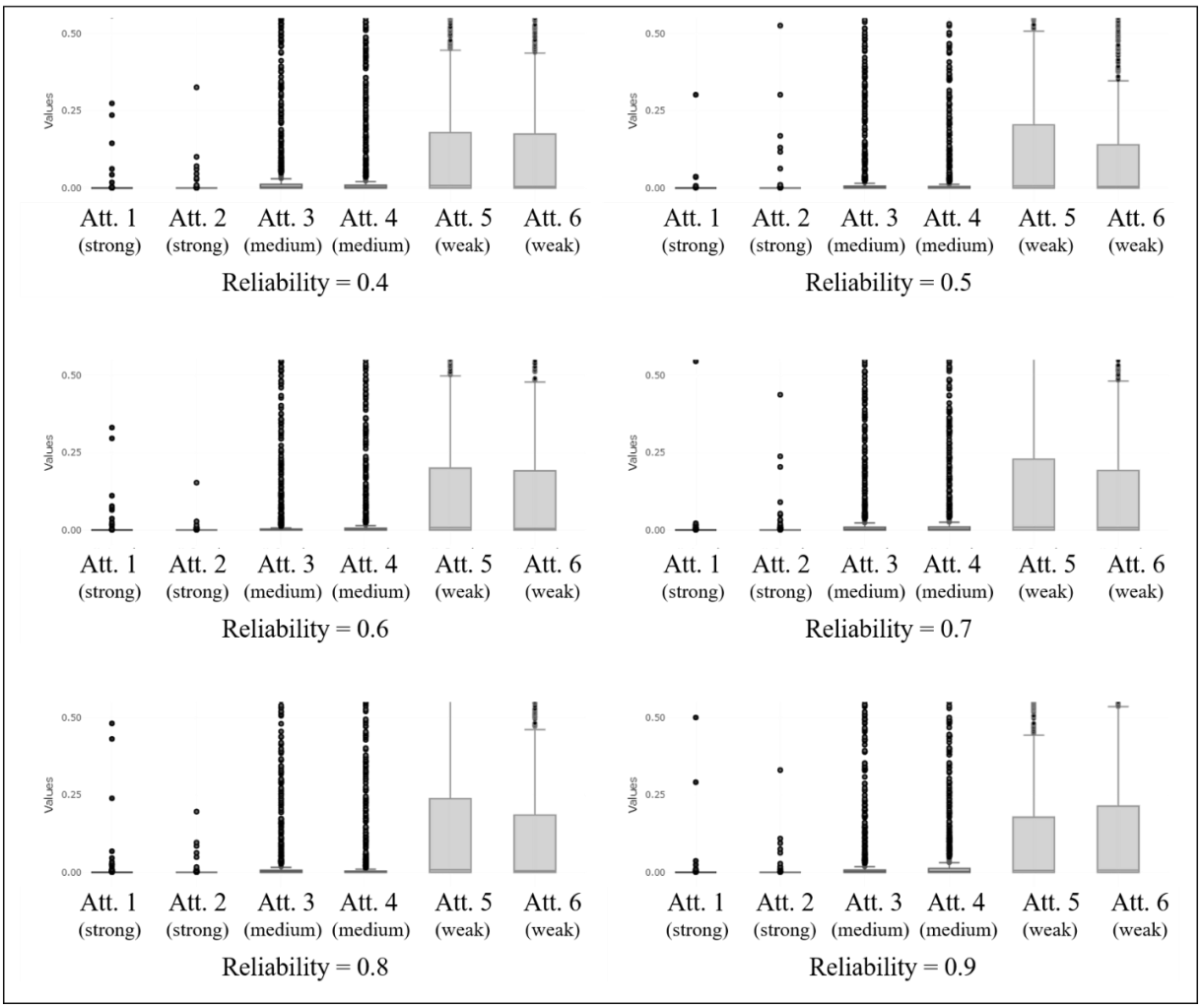
A: Replications = 25%



B: Replications = 50%



C: Replications = 75%



D: Replications = 75%

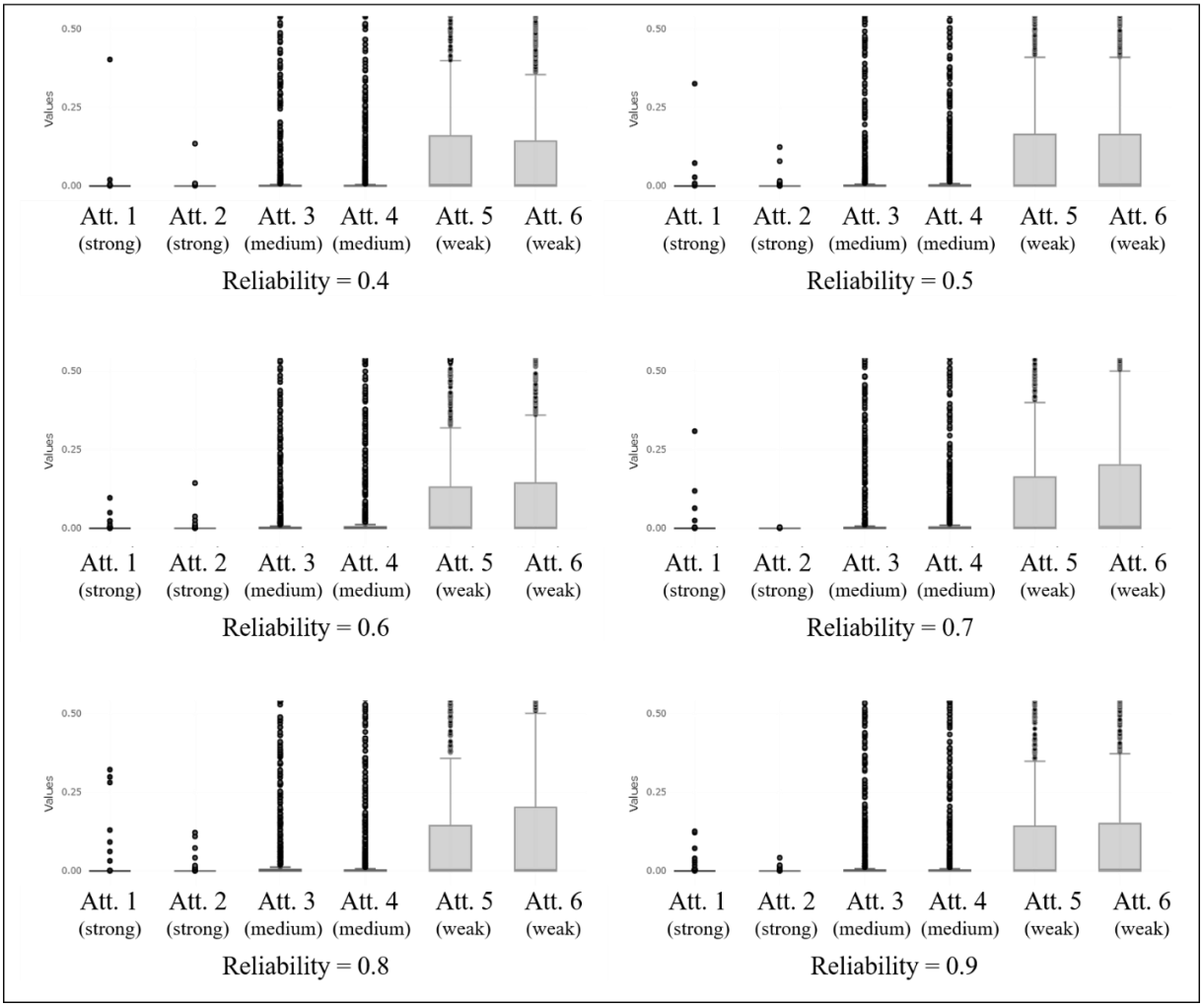


TABLE 5
Results of Simulation 2 (Mean values and percent of p-values below 0.05 and 0.01 by test-retest reliabilities)

A: Replications = 25%

3 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9		
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	90	83	0.00	90	83	0.00	90	83	0.00	92.00	84.00	0.00	90	83	0.00	92	84
3	0.22	48	36	0.21	50	38	0.20	50	39	0.20	51.00	38.00	0.20	50	38	0.20	51	39

4 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9		
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.01	98	96	0.01	98	96	0.01	98	96	0.01	98	96	0.01	98	97	0.00	98	97
2	0.01	98	96	0.01	97	95	0.01	98	96	0.01	98	96	0.01	98	95	0.00	97	95
3	0.11	72	63	0.11	72	65	0.11	72	64	0.13	69	61	0.10	75	66	0.10	74	65
4	0.18	57	45	0.19	56	46	0.20	55	44	0.18	55	44	0.20	56	45	0.19	55	45

5 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9		
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	99	0.00	100	100	0.00	100	99	0.00	100	99	0.00	100	99	0.00	100	100
2	0.00	100	99	0.00	100	99	0.00	100	99	0.00	100	99	0.00	99	99	0.00	100	99
3	0.08	80	72	0.07	82	76	0.07	81	74	0.07	83	75	0.08	82	74	0.06	84	77
4	0.07	82	75	0.07	84	76	0.07	82	74	0.06	83	75	0.07	82	75	0.06	84	77
5	0.16	61	51	0.16	61	50	0.15	64	53	0.16	61	50	0.15	64	53	0.15	62	52

6 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9		
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	99	99	0.00	99	99	0.00	100	99	0.00	100	99	0.00	100	98	0.00	100	99
2	0.00	100	99	0.00	100	99	0.00	100	98	0.00	100	99	0.00	100	98	0.00	99	98
3	0.07	81	74	0.08	80	72	0.07	78	71	0.07	80	72	0.08	78	71	0.09	79	71
4	0.09	77	69	0.08	80	73	0.08	80	70	0.07	82	74	0.08	80	73	0.08	81	74
5	0.18	56	44	0.19	56	43	0.17	57	46	0.18	59	48	0.17	58	45	0.17	58	47
6	0.17	58	45	0.17	59	46	0.19	56	45	0.18	56	44	0.20	52	42	0.17	59	49

B: Replications = 50%

3 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	94	89	0.00	93	87	0.00	94	87	0.00	92	85	0.00	91	85	0.00	92	87
3	0.20	50	38	0.19	52	40	0.22	48	37	0.21	51	41	0.20	54	42	0.18	54	42

4 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.01	98	96	0.01	98	97	0.01	98	96	0.01	98	97	0.00	98	97	0.01	98	96
2	0.01	98	96	0.01	98	96	0.01	98	96	0.01	97	95	0.00	98	95	0.01	98	96
3	0.11	74	66	0.12	74	66	0.10	76	69	0.10	76	69	0.10	75	67	0.11	72	64
4	0.17	59	49	0.17	58	48	0.19	56	46	0.18	56	46	0.18	58	47	0.17	59	47

5 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	99
2	0.00	100	99	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
3	0.07	84	78	0.05	86	81	0.06	85	78	0.06	84	79	0.06	85	78	0.06	84	76
4	0.06	86	78	0.06	84	78	0.06	85	78	0.07	83	77	0.06	85	79	0.07	84	79
5	0.14	66	56	0.13	69	60	0.14	65	55	0.14	66	57	0.13	66	57	0.14	65	56

6 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	98	0.00	100	99	0.00	100	99	0.00	100	99
2	0.00	99	99	0.00	100	99	0.00	100	99	0.00	99	99	0.00	100	99	0.00	100	99
3	0.08	80	74	0.07	82	74	0.07	82	73	0.07	83	74	0.07	83	76	0.07	82	74
4	0.07	83	76	0.08	79	73	0.07	81	76	0.07	83	77	0.07	82	74	0.07	82	75
5	0.17	60	50	0.17	61	50	0.17	60	51	0.16	60	49	0.16	62	50	0.17	60	50
6	0.17	61	51	0.15	64	52	0.17	60	49	0.16	62	52	0.16	61	48	0.16	60	48

C: Replications = 75%

3 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	94	88	0.00	95	90	0.00	96	91	0.00	95	90	0.00	94	89	0.00	93	87
3	0.17	57	46	0.16	57	44	0.18	55	44	0.20	53	43	0.19	55	44	0.18	57	46

4 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	99	98	0.00	100	99	0.00	99	98	0.00	98	97	0.00	98	97	0.01	98	97
2	0.00	99	98	0.00	99	98	0.00	98	97	0.00	98	97	0.00	98	96	0.01	98	97
3	0.09	78	71	0.09	78	70	0.08	78	72	0.10	76	68	0.09	77	69	0.09	78	71
4	0.16	63	52	0.15	61	50	0.17	62	52	0.17	62	50	0.16	60	51	0.17	59	49

5 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
3	0.05	85	79	0.05	86	81	0.05	88	82	0.06	85	80	0.06	84	78	0.05	86	81
4	0.05	88	83	0.05	85	80	0.05	86	80	0.07	83	78	0.05	87	81	0.07	82	76
5	0.12	70	59	0.13	68	59	0.13	67	57	0.14	66	57	0.14	67	57	0.13	68	60

6 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	99	0.00	100	100	0.00	100	99	0.00	100	99	0.00	100	100
2	0.00	100	100	0.00	100	99	0.00	99	99	0.00	100	99	0.00	100	99	0.00	100	99
3	0.06	83	77	0.07	82	74	0.07	82	77	0.08	82	75	0.07	84	77	0.07	83	76
4	0.07	84	78	0.07	82	76	0.07	84	78	0.07	82	75	0.06	84	77	0.07	82	74
5	0.15	64	54	0.16	64	51	0.15	64	53	0.16	60	51	0.16	60	52	0.15	65	54
6	0.16	62	51	0.15	63	53	0.14	66	55	0.15	62	51	0.15	64	54	0.16	62	52

D: Replications = 100%

3 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	96	92	0.00	96	92	0.00	95	92	0.00	95	90	0.00	94	90	0.00	95	90
3	0.17	58	45	0.16	63	51	0.16	58	49	0.17	60	47	0.17	59	47	0.18	59	48

4 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	99	0.00	99	99	0.00	99	99	0.00	100	99	0.00	99	98	0.00	99	98
2	0.00	100	99	0.00	99	99	0.00	99	99	0.00	99	98	0.00	99	98	0.00	99	99
3	0.09	78	71	0.09	80	73	0.10	77	70	0.08	79	72	0.08	78	72	0.08	79	73
4	0.13	67	56	0.15	64	54	0.14	63	55	0.15	66	54	0.15	64	53	0.16	61	52

5 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
2	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100
3	0.05	89	84	0.05	88	83	0.06	85	80	0.06	86	81	0.05	88	83	0.05	86	79
4	0.05	88	83	0.05	86	82	0.06	85	80	0.05	86	81	0.05	85	80	0.05	87	81
5	0.12	69	60	0.12	69	60	0.13	68	59	0.12	70	62	0.12	72	64	0.12	70	62

6 Attributes

	r = 0.4			r = 0.5			r = 0.6			r = 0.7			r = 0.8			r = 0.9	
Att.	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01	p	% .05	% .01
1	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	99	99	0.00	100	99
2	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	100	0.00	100	99	0.00	100	100
3	0.07	86	81	0.06	84	79	0.06	86	79	0.06	86	80	0.06	83	78	0.07	84	78
4	0.05	86	81	0.06	84	78	0.07	84	78	0.05	85	79	0.07	84	79	0.06	84	79
5	0.14	66	55	0.14	66	56	0.14	66	55	0.14	66	57	0.15	64	55	0.13	67	58
6	0.14	67	56	0.15	63	54	0.14	65	57	0.16	63	53	0.15	64	55	0.14	66	54

DISCUSSION

Metric conjoint analyses have gained increased popularity to capture study participants' decisions within the broad entrepreneurship literature. However, past reviews (Aiman-Smith et al., 2002; Karren & Barringer, 2002; Lohrke et al., 2010; Shepherd & Zacharakis, 2018; Zhu et al., 2021) have constantly urged researchers to report test-retest reliabilities as "internal validation methods" (Lohrke et al., 2010, p. 23) and cautioned researchers against interpreting regression outcomes from unstable decisions (Zhu et al., 2021). Such suggestions are usually adopted from the psychometrics literature (Cho & Kim, 2015; Cronbach, 1950; Cronbach, 1951; Peterson, 1994; Schmidt & Hunter, 1999) but may lead to an ungrounded inference of a study's validity, especially for within-subject designs such as metric conjoint experiments.

The study aimed to better understand the test-retest reliability as a validity metric for metric conjoint experiments. Therefore, we had a two-folded approach: First, we conducted a systematic literature review of published metric conjoint studies in the entrepreneurship domain to overview the current methodological approaches. Second, we conducted a set of simulation studies in which the first simulation addressed how methodological and respondent-level factors affected test-retest reliabilities. The second simulation further addressed whether the test-retest reliability is a robust metric to infer a metric conjoint study's quality and whether strictly adhering to the commonly applied reliability threshold of 0.70 further exacerbates this potentially false sense of validity.

In broad strokes, we find that the complexity of the conjoint study and the corresponding participant fatigue require consideration when more than four attributes are at stake (Simulation 1). Here, our best-practice recommendation may facilitate decisions about the conjoint design (Table 6). Interestingly, we find no evidence that the valence of the attributes and the sample size are related to test-retest reliabilities. Accordingly, we cannot provide any further recommendations on these methodological issues. Further, results from

Simulation 2 emphasize that the regression coefficients and the p-values remain relatively stable across several specifications of the test-retest reliability. Accordingly, the risk of making a Type-1 or Type-2 error does not increase with a drop in test-retest reliabilities. Test-retest reliabilities are fallacious indicators for validity and may create a deceptive trust in regression outcomes. Thus, we challenge the current understanding that test-retest reliabilities and the commonly accepted reliability threshold of 0.70 is a requirement for the validity of metric conjoint experiments (Aiman-Smith et al., 2002; Hinkin, 1998; Karren & Barringer, 2002; Lohrke et al., 2010; Zhu et al., 2021). Our simulations demonstrate that persisting rigidly onto the reliability threshold is insufficient for within-subject designs with many data points on the individual level. Several studies report test-retest reliabilities below this threshold (e.g., Domurath & Patzelt, 2016), which may further question the appropriateness of such a fixed threshold.

As low test-retest reliabilities do not affect regression estimates of within-subject experiments as low internal consistency measures may do (e.g., Greco et al., 2018; Hinkin, 1998), we offer alternative solutions to ensure the validity of such experiments. Our suggestions substantiate the general guidelines for validating experimental designs (Grégoire et al., 2019) by developing conjoint-specific recommendations for inferring validity more precisely (Table 6). Additionally, we integrate recommendations from other within-subject experimental types (e.g., on choice-based conjoint or policy-capturing approaches) to better connect the entrepreneurship domain with the marketing and psychology literature. In our view, both literatures have a long history with within-subject experiments and provide validation suggestions. For example, Leigh et al. (1984) emphasized using additional holdout cards, which can be applied to test the regression model's predictions. Carson et al. (1994) suggested that no-choice options could enhance the realism of a conjoint study and could offer bored participants an easy way out. More recently, Ellickson and colleagues (2019) suggested combining conjoint data with actual choice data. Such an approach is easier to

implement in the marketing domain (e.g., consumer behavior). However, if entrepreneurship researchers can generate actual choice data post-hoc (e.g., real funding decisions of venture capitalists), this would undoubtedly demonstrate the validity of the conjoint experiment. More laborious approaches are the combination of research methods. Here, Scholz et al. (2010) advocated using eye-tracking methods to verify the attribute importance. As eye-tracking is relatively expensive, we believe that such approaches are more suitable for pre-testing attributes. Taken together, these recommendations aim to encourage and facilitate the use of metric conjoint designs in entrepreneurship research. Furthermore, this guide can help journal editors and reviewers to infer the validity of a conjoint experiment better, even if the test-retest reliability falls below the threshold of 0.70.

TABLE 6
Best Practice recommendations for ensuring validity in metric conjoint analyses

Pre-experiment recommendations		
Recommendation	**How-to**	**Further readings**
Attribute structure	Salience: Identify the theory-related attributes for the decision. Demonstrate that attributes matter. Pre-test: Practitioners (representing the sample) and academic experts familiar with the theory. Present a list of attributes (Ranking of importance). Attributes should be uncorrelated in the real world. The choice for more than four attributes needs careful consideration as complexity and fatigue increase. Level of agreement for attribute inclusion: Any attribute with a high agreement and a SD lower than 1.5 to include	Sethuraman et al., 2005 Rotundo & Sackett, 2002
Attribute levels	Clarity: Attribute levels must reflect reasonable, realistic, and salient values. Avoid unlikely cue combinations. Pre-test: Practitioners (representing the sample)	Karren & Barringer, 2002
Attribute combinations	Logic: Attribute combinations must represent real-world situations of respondents. Avoid implausible combinations. Reduce complexity with five or more attributes. Pre-test: Practitioners (representing the sample).	Carson et al., 1994
Instructions	Instructions must be theory-consistent and appropriate for the research context. The more concrete the explanations, the more interpretable the results. Yet, complexity can be serious with five or more attributes. Pre-test: Doctoral students / practitioners.	Viswesvaran & Barrick, 1992
No-choice option	Bored participants and participants feeling uncomfortable with the attribute combination have an easy way out (exclude those from the analyses as the results might be biased). May increase the realism of the study.	Carson et al., 1994 Gunasti & Ross, 2009 Risselada et al., 2018
Include holdouts	Include additional holdout cards in the experiment. These cards are excluded in the regression analyses and are used for correlations between the model's predictions and actual ratings on holdout cards	Leigh et al., 1984
Practice profiles	Generate practice profiles to familiarize participants with the task.	
Bogus profile	Generate one or two bogus conjoint cards (e.g., please cross option "4" here).	Meade & Craig, 2012
Evaluate conjoint study	Evaluate participants' thoughts about the conjoint experiment. For example: "I need more information to make a good decision", "The attributes were sufficient for a decision ", "These attributes matter for this type of decision"	Shepherd et al., 2019

TABLE 6 (CONTINUED)

Post-experiment recommendations		
Recommendation	**How-to**	**Further readings**
Fatigue/boredom effects	Compare individuals' marginal choice frequencies for choice tasks in different sections of the experiment	Carson et al., 1994
Test-retest reliability (Between-person)	Report test-retest reliability as a metric for the stability of responses across participants (nomothetic). No indicator for the validity of regression coefficients	Simulation studies
Test-retest reliability (Within-person)	Report test-retest reliability as a metric for the stability of responses across conjoint profiles (idiographic). No indicator for the validity of regression coefficients	Zhu et al., 2021
Pseudo R^2	Compare pseudo R^2 values with other research	
Root likelihood / Percent certainty	Compute the geometric mean of the predicted (log)-likelihood for the attributes participants used	Orme, 2016 Barwitz, 2020

General recommendations		
Recommendation	**How-to**	**Further readings**
New sample	Conduct the conjoint experiment with a second, independent sample (e.g., independence of sampling strategy)	
Multi-method approach	Combination of conjoint data with actual choices: Hybrid estimation approach by combining conjoint data with real data (e.g., consumer panel)	Ellickson et al., 2019
Combine research methods	Eye-tracking: Verify the attribute importance; which attributes (levels) are primarily screened; check respondent fatigue (As eye-tracking is expensive for researchers, this approach could be used in a pre-test)	Scholz et al., 2010
Replicate findings	Replicate findings to demonstrate robustness (e.g., with secondary data or other experimental designs)	

Limitations, and further research. Even though we can draw a comprehensive empirical picture of the importance of test-retest reliabilities in metric conjoint experiments, this study is not without limitations indicating avenues for further research. First, even though we conducted a literature review and had several discussions within the research team and other expert researchers, we do not claim that our list of parameters is complete. Furthermore, the simulations depend on assumptions of the parameter values, of which some were simplified for the analyses (e.g., complexity or fatigue). We obtained these values from empirical research and cherished transparency, but our findings should be interpreted with care. Nevertheless, simulation models help address theoretical questions (Davis et al., 2009), especially when insights would require data difficult or impossible to obtain (Welter & Kim, 2018). Second, our results indicate that test-retest reliabilities play no significant role in parameter estimations from within-subject experiments. Especially in Simulation 2, we investigated how variations in reliability affected direct regression outcomes of the conjoint attributes (level1). However, conjoint experiments usually include interaction effects (specified as level 1 or cross-level interactions) which warrants further research. Finally, our simulations rely on a 9-point Likert scale, a scale regularly used in metric conjoint experiments. We chose a 9-point Likert scale for our simulations because such scales are regularly used in metric conjoint experiments. However, several conjoint studies also apply other Likert-type scales such as 7-point scales, impacting our simulation results. With a 7-point scale, the potential response style variance is per se smaller. Therefore, we expect test-retest reliabilities to be larger and regression coefficients more likely to be significant (decreasing the standard error) on such scales. Future research should further explore these assumptions. Nevertheless, we believe that our approach is defensible. As the random error is likely to decrease on scales with fewer options, our approach demonstrates a conservative test of the issue of test-retest reliabilities in metric conjoint experiments.

CONCLUSION

In this study, we adopted a methodological perspective. We investigated the appropriateness of the test-retest reliability as a substantive metric to infer an experiment's validity (e.g., metric conjoint experiment). Drawing on a literature review, we conducted two simulation studies to analyze the antecedents of the test-retest reliability and the outcomes from varying such reliabilities. We find that complexity and participants' fatigue need careful considerations when employing more than four attributes. Further, we find that regression outcomes (betas and p-values) are relatively stable across several test-retest reliabilities. Therefore, we provided several recommendations for entrepreneurship researchers to ensure the validity of their metric conjoint experiments.

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CHAPTER 6: CONCLUSION

Entrepreneurship is not a final destination (Burton et al., 2016) but rather a "bridge between different career opportunities" (Merida & Rocha, 2021, p.1). Almost 64% of individuals persist in entrepreneurship no longer than five years (Kaiser & Malchow-Møller, 2011) and turn to other career opportunities such as paid employment (e.g., Goebel et al., 2019). The corresponding literature on employment implications for former entrepreneurs develops predominantly on the macro-economic level with large-scale administrative data. Research has revealed either pay cuts (e.g., Mahieu et al., 2019) or wage premiums (e.g., Luzzi & Sasson, 2016) for former entrepreneurs compared to their non-entrepreneurial counterparts. However, this literature naturally aims at those former entrepreneurs with a "successful" transition from entrepreneurship into paid employment. For such a "successful" transition, entrepreneurs require positive evaluations by employment gatekeepers to advance in the selection process. However, pre-hire research on employers' perceptions of those job candidates is rare (e.g., Bothelo & Chang, 2019; Koellinger et al., 2015) and theoretical (Marshall, 2016). Furthermore, it is not intuitively clear if and under which conditions former entrepreneurs are preferred job candidates and the empirical mechanisms explaining such effects remain currently in the dark.

Therefore, this cumulative dissertation contributes to understand former entrepreneurs' pre-hire employment implications by zooming into employers' subjective evaluations of former entrepreneurs' employability. With extensive experimental research designs, representative samples, and comprehensive multi-level analyses, this dissertation helps the entrepreneurial career literature to move forward by establishing robust causal relationships about the employability of former entrepreneurs within a recruitment and selection context. Accordingly, three research projects were conducted to investigate the employers' perceptions of former entrepreneurs. A fourth research project was more

methodological in nature and analyzed a recurring reliability issue of the first three research projects.

Research paper 1 (Chapter 2), *"Employability perceptions of former entrepreneurs"* (co-authored by Prof. Dr. Matthias Baum), draws on categorization theories (Derous & Ryan, 2019; Kulik et al., 2007) and takes a cognitive and pre-hire perspective on the employability of former entrepreneurs. This research paper contributes to the burgeoning literature of entrepreneurial careers (e.g., Burton et al., 2016). It develops and tests a theory about employability perceptions of former entrepreneurs within a recruitment and selection context. Furthermore, this research recognizes the heterogeneity in employers' perceptions of former entrepreneurs by accounting for several job-related contingencies (Derous & Ryan, 2019). Hence, the theory extends the current understanding of employment implications for former entrepreneurs above and beyond more objective criteria (e.g., industry experience (Hyytinen & Rouvinen, 2008). Finally, this research disentangles the different theoretical mechanisms explaining employability perceptions of former entrepreneurs specified in positive and negative stereotypes (Marshall, 2016) and an inherent uncertainty (Mahieu et al., 2019; Merida & Rocha, 2021).

In broad strokes, this research paper theorizes that employers are attuned to category-based cues, such as being a former entrepreneur, in the recruitment and selection stage to form overall impressions of applicants (Derous & Ryan, 2019; Kulik et al., 2007; Zarate & Smith, 1990). Such categorization facilitates positive and negative stereotypes about the employability of former entrepreneurs making the evaluation process easier and faster (Hilton & Hippel, 1996). Alternatively, the categorization induces uncertainty about former entrepreneurs because established schemas are incompatible with the recruitment situation (Kagan, 1972). Furthermore, this research theorizes on several contingencies under which the entrepreneurship category changes its impact on the overall evaluation of the former

entrepreneur. Those contingencies situate within the target position (personnel responsibility), the applicant (past failure), and the employer (similarity).

Two empirical studies provide broad support for the theorizing. Study 1 (a vignette study with 375 recruiters) substantiates the three separate mechanisms empirically. Results reveal that employability perceptions are mediated by the positive and negative stereotypes employers possess about former entrepreneurs. However, the predominant mediation path encompasses employers' inherent uncertainty about former entrepreneurs resulting in the overall negative perceptions of former entrepreneurs. The second study ((a metric conjoint experiment with two independent samples – recruiters (n = 129) and executives (n = 123)) provides evidence for the contingencies in place when evaluating former entrepreneurs. The findings imply that recruiters and non-owner executives have negative perceptions of former entrepreneurs compared to other applicants with explicitly no entrepreneurial background. However, the entrepreneurship category has "neutral" employment implications (compared to their non-entrepreneurial counterparts) if the job opening comes with personnel responsibility, if the entrepreneur has failure in the vita, or if employers are more similar to the entrepreneur. Taken together, this chapter develops a pre-hire theory on the employability of former entrepreneurs and clarifies how future employers perceive the characteristic of being a former entrepreneur.

Research paper 2 (Chapter 3), *"Hard to tame" or "born leader": The role of employability stereotypes about former entrepreneurs"* (co-authored by Prof. Dr. Matthias Baum), investigates employability stereotypes more directly. Grounded in the knowledge activation framework (Higgins, 1996), this research develops a framework of recruiters' employability stereotypes about former entrepreneurs. Drawing on the results of an experimental priming experiment with 278 recruiters, this research suggests that the general employability perceptions of former entrepreneurs are primarily negative. Moreover, the multi-level analyses demonstrated that the stereotype-induced priming was essential to

explain variations in employability perceptions. Hence, this research contributes to the employability debate of former entrepreneurs by developing an employability framework of former entrepreneurs. Findings suggest that recruiters' negative stereotypes outweigh the positive stereotypes about former entrepreneurs.

Moreover, the research obtains qualitative data from the priming task, which is categorized to explore employers' positive and negative stereotypes about former entrepreneurs. The categorization of stereotypes follows a performance model from the psychology literature (Bartram, 2005) and centers on employers' perceptions of former entrepreneurs' ability, personality, and motivation to succeed in paid employment. Accordingly, this research transfers this performance model (Bartram, 2005) to the entrepreneurial domain. Finally, the current research does not only uncover the stereotypes about former entrepreneurs but also demonstrates which of them drive employability evaluations. Intensive post-hoc analyses reveal six negative stereotype factors, which were important to explain recruiters' negative perceptions of entrepreneurs (e.g., difficulties in accepting instructions). Moreover, our analyses identify four stereotype factors that compensate for the general negative effect (e.g., good people management). Notably, there are no stereotypes under which former entrepreneurs are perceived as an advantage over other applicants with no such background. Taken together, this chapter extends the stereotyping perspective about former entrepreneurs (Marshall, 2016) with a model of workplace performance (Bartram, 2005) and sound empirical evidence.

Research paper 3 (Chapter 4), *"Blaming yourself rather than the circumstance! Entrepreneurial failure stereotypes in job interviews"* (co-authored by Prof. Dr. Matthias Baum), contributes to the entrepreneurial failure literature (e.g., Cardon et al., 2011) and the literature on entrepreneurial careers (e.g., Burton et al., 2005). As failure represents a salient milestone for those individuals who experienced entrepreneurial failure (e.g., Kibler et al., 2017), recruiters search for the causes of the failure (Wong & Weiner, 1981). Specifically,

they examine who was involved, whether the failure was under the entrepreneurs' volitional control, and whether the failure is likely to reoccur (Weiner, 1985). Accordingly, this research paper investigates recruiters' perceptions of a series of failure attribution combinations to advance the understanding of which failure attributions have positive implications for entrepreneurs with failure in their vita. Currently, the distance-taking attributions are considered as more adequate to overcome the aftermath of failure (Kibler et al, 2017) because such attributions strengthen legitimacy (Bitektine, 2011). Drawing on a metric conjoint exerpiment with 188 recruiters, this research provides strong evidence that person-centered failure attributions results (e.g., lack of skill or lack of effort) are more effective than failure attributions external to the applicant. These findings imply an essential boundary condition of prior research: In situations where individuals aim to engage in a long-term and future-oriented relationship, person-centered attributions outweigh the distancing attributions because they are associated with learning (Yamakawa et al., 2015), faster recovery from failure (Ucbasaran et al., 2013), and an expanding amount of effort in similar situations (Cardon & McGrath, 1999). Additionally, this research paper contributes to the literature of female entrepreneurship: Female leadership scholars (Eagly & Diekman, 2005; Eagly & Karau, 2002) theorized that individuals have cognitive schemas which contain agentic attributes for males (an assertive and self-sufficient tendency) and communal attributes for females (a kind and sensitive tendency). The results of the cross-level interaction analyses indicate that recruiters adopt such cognitive schemas when evaluating failure attributions of former entrepreneurs. For example, admitting mistakes due to lack of effort (controllable ascriptions) was evaluated more positively when the former entrepreneur was female but was rather harmful when the entrepreneur was male. Hence, the entrepreneurs' gender depicts a significant moderator when evaluating the failure of former entrepreneurs. Taken together, this chapter illuminates the role of entrepreneurial failure attributions when recruiters have employability concerns and engage in questions about the entrepreneur's failure within

employment interview

Research paper 4 (Chapter 5), *"Test-retest reliability in metric conjoint experiments. Important requirement or overrated nuisance?"* (co-authored by Dr. Jens Schueler and Prof. Dr. Matthias Baum), adopts a methodological perspective. The test-retest reliability has been deemed an internal validation method to estimate a metric conjoint study's validity (Aiman-Smith et al., 2002; Karren & Barringer, 2002; Lohrke et al., 2010; Sheperd & Zacharakis, 1999, 2018; Zhu et al., 2002). However, we lack empirical evidence whether the test-retest reliability of such within-subject experiments is a robust validity metric or if the test-retest reliability is an arbitrary test statistic and validity estimations being ungrounded. Moreover, the current reliability threshold of r = 0.70 is a superficial cutoff point because it relies on a misinterpretation of Nunnaly's seminal work (Lance et al., 2006; Nunnally, 1978). Thus, while the test-retest reliability threshold can make or break any metric conjoint study, the applicability of such a threshold is still unclear and may create a false sense of validity.

The importance of the test-retest reliability in metric conjoint experiments is analyzed with a literature review and Monte-Carlo simulations. Results emphasize that the complexity and participants' fatigue need careful considerations when employing more than four conjoint attributes. Further, regression outcomes are relatively stable across several test-retest reliabilities, which urges future research to go without this metric to infer a study's validity. Finally, several recommendations are offered to ensure the validity of a metric conjoint experiment. Taken together, this research helps researchers, journal editors, and reviewers to better understand the true meaning of test-retest reliability and what this can do and what it cannot.

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