

Parents' performance in entrepreneurship as a “double-edged sword” for the intergenerational transmission of entrepreneurship

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Abstract We investigate how perceived parents' performance in entrepreneurship (PPE) affects the entrepreneurial

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career intentions of offspring. We argue that while perceived PPE enhances offspring's perceived entrepreneurial desirability and feasibility because of exposure mechanisms, it inhibits the translation of both desirability and feasibility perceptions into entrepreneurial career intentions due to upward social comparison mechanisms. Thus, perceived PPE acts as a double-edged sword for the intergenerational transmission of entrepreneurship. Our predictions are tested and confirmed on a sample of 21,895 individuals from 33 countries. This study advances the literature on intergenerational transmission of entrepreneurship by providing a foundation for understanding the social psychological conditions necessary for such transmission to occur.

Keywords Intergenerational transmission of entrepreneurship · Parents' performance in entrepreneurship · Entrepreneurial career intention · Social comparison theory · Perceived desirability · Perceived feasibility

JEL classification L26 · M13 · C12 · D01 · J13 · J62

1 Introduction

Intergenerational transmission of entrepreneurship from parents to children has interested scholars for many decades. Central to this research is how entrepreneurial career intentions and behaviors are transmitted across generations (Laspita, Breugst, Heblich and Patzelt 2012), with a specific focus on the parent-offspring link (Aldrich and Kim 2007; Carr and Sequeira 2007; Sørensen 2007).

However, although numerous different theoretical mechanisms (Aldrich and Kim 2007; Laspita et al. 2012) support a “well-accepted concept of positive self-employed parental influence on offspring’s propensity to transition to self-employment” (Mungai and Velamuri 2011, p. 346), accumulated empirical evidence remains mixed (Johnson, Parker and Wijbenga 2006). In fact, some studies have found that having entrepreneurial parents does not affect offspring’s entrepreneurial career intentions or behaviors (Kim, Aldrich and Keister 2006; Kolvereid and Isaksen 2006; Kuckertz and Wagner 2010). Others have even found a negative relationship (Zhang, Duysters and Cloodt 2014). Moreover, children of entrepreneurial families often do not intend to take over their parents’ businesses (Zellweger, Sieger and Halter 2011). Such evidence has led researchers to acknowledge “considerable variance” in the effect of parents’ entrepreneurship on their children’s intent to engage in entrepreneurial careers (Chlosta, Patzelt, Klein and Dormann 2012, p. 122).

A possible explanation for these inconclusive findings may be the existence of important contingencies that regulate the parent-offspring entrepreneurship relationship. Mungai and Velamuri (2011), for instance, found that parental *failure* in self-employment decreases intergenerational transmission of entrepreneurship. However, the study presented two important limitations. First, it used objective measures of parents’ entrepreneurial performance (e.g., financial indicators), which raise the question of whether intergenerational transmission of entrepreneurship is primarily affected by the transfer of financial capital or by social psychological (e.g., role model) mechanisms (Sørensen 2007). Second, it is not clear how parents’ success in entrepreneurship as perceived by offspring affects important social psychological antecedents of entrepreneurial career intentions.

To address these important gaps, we draw on the entrepreneurial intention literature (Shapero and Sokol

1982; Krueger, Reilly and Carsrud 2000)¹ and argue that perceived parents’ performance in entrepreneurship (PPE) enhances offspring’s perceptions of the desirability and feasibility of starting an entrepreneurial career. Further, we also argue that as perceived entrepreneurial desirability and feasibility increase, offspring are likely to use social standards to evaluate their attitudes and skills because objective (non-social) standards are often unavailable in entrepreneurship. Thus, offspring engage in social comparison, which influences their entrepreneurial intentions by affecting their general motivation to achieve the “desired” objectives (Buunk and Gibbons 2007). We suggest that perceived well-performing entrepreneurial parents may produce negative self-evaluations and feelings of dissatisfaction and deprivation in offspring due to children’s perceptions of not being as motivated or capable as their parents (Collins 1996; Gibson 2004). This, in turn, would weaken the positive perceived desirability-intention and perceived feasibility-intention relationships. By contrast, perceived poor-performing entrepreneurial parents may encourage self-improvement in offspring as they may perceive their parents’ status as attainable and feel that they can eventually become more successful than their parents. This, in turn, would strengthen the positive perceived desirability-intention and perceived feasibility-intention relationships. Combining these arguments, we suggest that perceived PPE acts as a “double-edged sword”: while it enhances offspring’s perceived desirability and feasibility, it also weakens the generally positive desirability-intention and feasibility-intention relationships.

We find support for our predictions in a large sample of university students from 33 countries. In doing so, our paper provides several contributions to the literature on intergenerational transmission of entrepreneurship. Specifically, our work advances the discussion on the extent to which and under what conditions parents’ entrepreneurship makes offspring more (or less) prone to becoming entrepreneurs themselves (Laspita et al. 2012). Our findings move the theoretical debate beyond the traditional “black and white” question of whether exposure to parents’ entrepreneurship influences offspring’s entrepreneurship (Zapkau, Schwens and Kabst 2017) and toward a finer-grained discussion on how the social mechanisms related to perceived PPE regulate the relationship between parents’ and offspring’s entrepreneurship (BarNir, Watson and Hutchins 2011; Chlosta et al. 2012).

¹ The entrepreneurial intention literature is commonly based on the entrepreneurial event model. The basic claim of this model is that entrepreneurial intentions are a function of the perceived desirability and perceived feasibility of entrepreneurship. Since its formulation, the model has been widely tested and confirmed in numerous studies (Peterman and Kennedy 2003). In addition, the theory of planned behavior (Ajzen 1991), another commonly applied theoretical framework in the entrepreneurial intentions context, also sees desirability and feasibility perceptions as key antecedents to entrepreneurial intentions (see Schlaegel & Koenig 2014 for a recent meta-analysis on entrepreneurial intentions).

2 Theoretical foundations

2.1 Entrepreneurial parents as a source of entrepreneurship

The family constitutes an important basis for the development of offspring's career choice intentions and behaviors (cf. Jodl, Michael, Malanchuk, Eccles and Sameroff 2001; Bryant, Zvonkovic and Reynolds 2006), and parents are the family members that are most likely to influence their offspring's career choices (Schulenberg, Vondracek and Crouter 1984). Similarly, entrepreneurship research often views entrepreneurial parents as a source of entrepreneurship that fosters their offspring's entrepreneurial career intentions and behaviors (Laspita et al. 2012; Lindquist, Sol and Van Praag 2015).

Research on the intergenerational transmission of entrepreneurship has proposed numerous theoretical mechanisms to support the positive link between parents' and offspring's entrepreneurship (Aldrich and Kim 2007). Some authors have argued that the transmission of entrepreneurial behavior from parents to offspring occurs through genetic inheritance (Nicolaou, Shane, Cherkas and Spector 2008; Koellinger, van der Loos, Groenen, Thurik, Rivadeneira, van Rooij, Uitterlinden and Hofman 2010). Others have proposed that entrepreneurial parents directly boost entrepreneurship in their offspring by providing human, social, and financial capital (Aldrich, Renzulli and Langton 1998; Dunn and Holtz-Eakin 2000). Research has also argued that offspring acquire values, knowledge, and skills in entrepreneurship via exposure to their entrepreneurial parents (Dyer and Handler 1994; Wyrwich 2015), who often act as entrepreneurial role models for their children (Chlosta et al. 2012; Hoffmann, Junge and Malchow-Møller 2015).

While there is a general theoretical consensus on the positive link between parents' and offspring's entrepreneurship (Mungai and Velamuri 2011; Hoffmann et al. 2015), empirical evidence remains mixed and often equivocal. Studies such as Henley (2007), Kolvereid and Isaksen (2006), Franco, Haase, and Lautenschlaeger (2010), and Kuckertz and Wagner (2010) find a non-significant relationship between parents' and offspring's entrepreneurship in samples from the USA, Norway, Russia, Germany, and Portugal. Zhang et al. (2014) even find strong evidence for a negative relationship. Finally, Zellweger et al. (2011) report that children of entrepreneurial families with a high level of internal

locus of control prefer organizational employment to entrepreneurial careers.

Two possible explanations may be advanced to account for such mixed findings. First, it is not just the presence of entrepreneurial parents but also how their "performance is perceived that influences the offspring's intentions to follow the same career" (Mungai and Velamuri 2011, p. 338). Second, there might be some important intermediary social mechanisms through which parental entrepreneurship affects offspring's career intentions (Johnson et al. 2006). The entrepreneurial intention literature already suggests that exogenous personal or situational factors, such as parents' entrepreneurship or their perceived performance, usually have an indirect influence on intention, typically through one's perceptions of the desirability and feasibility of becoming an entrepreneur (Krueger et al. 2000). Moreover, the translation of desirability and feasibility perceptions into intention is often subject to social comparison mechanisms (Collins 1996), an aspect that has been largely underemphasized in the literature on occupational inheritance of entrepreneurship.

In the following section, we introduce perceived desirability and feasibility as antecedents of entrepreneurial career intentions, which we subsequently theorize on from a social comparison perspective. We then summarize the central aspects of social comparison theory and relate it to entrepreneurial career intentions.

2.2 Perceived desirability and feasibility as determinants of entrepreneurial career intention

A strong tradition has theorized that entrepreneurship is an intentionally planned behavior (Shapero and Sokol 1982; Krueger et al. 2000; Schlaegel and Koenig 2014). As suggested by Thompson (2009, p. 674), "individuals with entrepreneurial intent may be distinguished from those who merely have an entrepreneurial disposition by the facts of their having, first, given some degree of conscious consideration to the possibility of themselves starting a new business at some stage in the future, and then, second, having not rejected such a possibility." Empirically, existing studies have established a strong and stable causal association between entrepreneurial intentions and subsequent behavior (e.g., Kautonen, van Gelderen and Fink 2015; Van Gelderen, Kautonen and Fink 2015; Edelman, Manolova, Shirokova and Tsukanova 2016).

The existing literature defines entrepreneurial career intentions as related to starting an entrepreneurial career, such as creating a new firm or taking over an existing firm (Laspita et al. 2012). Such intentions primarily stem from perceptions of the desirability and feasibility of entrepreneurship as a “credible” career choice (Krueger 1993; Fitzsimmons and Douglas 2011; Minola, Criaco and Obschonka 2016). Perceived desirability and feasibility are regarded as necessary and sufficient conditions for intentions (Shapero and Sokol 1982). Perceived desirability is the degree to which one finds the prospect of becoming an entrepreneur to be attractive; “it reflects one’s affect toward entrepreneurship” (Krueger 1993, p. 8) and depends on an individual’s values, which in turn stem from her or his social and cultural environment (Shapero and Sokol 1982). Perceived feasibility is an individual’s perceived ability to execute a target behavior—that is, perceived self-efficacy or the degree to which an individual feels capable of becoming an entrepreneur (Krueger et al. 2000). A recent meta-analysis validated perceived desirability and perceived feasibility as the main drivers of entrepreneurial intentions (Schlaegel and Koenig 2014).

The translation of desirability and feasibility into intentions is, however, often subject to social comparison mechanisms (Collins 1996). This aspect has been largely underemphasized in the literature on occupational inheritance of entrepreneurship, even though social comparison is a central aspect of many motivational theories in social psychology (Bandura and Jourden 1991). In the following sections, we briefly review the central aspects of social comparison theory and integrate the role of upward and downward social comparison in the desirability-intention and feasibility-intention relationships to contextualize how social comparison dynamics derived from perceived PPE may affect offspring’s translation of desirability and feasibility perceptions into entrepreneurial career intentions.

2.3 Social comparison theory

A central tenet of social psychology is that individuals seek to make stable and accurate appraisals of themselves (Festinger 1954). They do this by evaluating their attitudes, opinions, abilities, and performance using objective and non-social standards. If objective information is unavailable, individuals tend to compare themselves to others who are similar to them—so-called referents (Festinger 1954; Wood 1989). This process is known as social

comparison. Social comparison with referents helps individuals to evaluate their attitudes and abilities, which in turn affects the stability and subjective accuracy of self-appraisals. Individuals tend to select referents for comparison based on their own goals, level of personal or situational involvement, motivation, and information-processing capacity (Buunk and Gibbons 2007; Samuel, Bergman and Hupka-Brunner 2013).

Festinger’s (1954) well-known notion of “upward drive” spurred a large number of studies examining the motivation behind and outcomes of upward social comparison (see Buunk and Gibbons 2007 for a review). Upward social comparison occurs when individuals—seeking to improve their situation—compare themselves to people who are *better off* in terms of the dimensions of interest. Upward comparison is typically associated with self-improvement motives because it helps individuals to learn from those who are more skilled and successful (Festinger 1954; Miller and Suls 1977; Buunk and Gibbons 2007). However, individuals may also respond in a variety of defensive ways when confronted with someone that they perceive as being better off. Upward social comparison can negatively influence mood when an individual’s state is perceived to be inferior to the target’s state (called a contrast effect) because lowered self-evaluations tend to covary with negative affect (Collins 1996). Wheeler (1966), for instance, argued that under conditions of explicit comparison with much superior others in, for example, career settings, upward social comparison can be ego deflating and can produce negative self-evaluations and feelings of dissatisfaction, deprivation, and anger; and thereby impede individual achievements (Molleman, Nauta and Buunk 2007).

Social comparison theory has also been extended to include downward comparison dynamics (Buunk and Gibbons 2007). This perspective suggests that individuals who are threatened on a particular dimension prefer to socially compare with others who are thought to be worse off in the same dimension (Hakmiller 1966). Comparing oneself to someone who is inferior, that is, making downward comparisons, is often associated with the self-enhancement motive (Wood and Taylor 1991). As such, downward social comparison theory has been widely applied in populations facing different types of threats, such as serious behavioral problems like eating disorders and smoking (Buunk and Gibbons 2007).

2.4 Social comparison and entrepreneurial career intention

According to Festinger's (1954) original theory, individuals' ultimate perception of a course of action, such as pursuing an entrepreneurial career, is based on an innate need for stable and accurate appraisals of themselves. Important for our theorizing, this need for self-appraisal is contingent on the existence of perceptions of goal attractiveness and one's potential to achieve the goal at hand (Collins 1996). In the case of entrepreneurial career intentions, perceptions of goal attractiveness and one's potential to achieve such goal are respectively represented by offspring's perceptions of the desirability and feasibility of becoming an entrepreneur. As desirability and feasibility increase, offspring will strive to evaluate their entrepreneurship-related attitudes, opinions, abilities, and performance, ideally using objective standards, before an actual entrepreneurial career intention forms. Objective standards for comparison are, however, difficult to find in the context of entrepreneurship since the option of becoming an entrepreneur cannot be easily and objectively evaluated a priori (Amit, Glosten and Muller 1993). For this reason, social comparison with referents becomes important (Buunk and Gibbons 2007; BarNir et al. 2011).

In the context of entrepreneurship, Bosma et al. (2012) proposed that potential entrepreneurs seek role models who occupy a more desirable position, which is required for role identification, and who possess the qualifications required for a teaching function. When influential role models such as parents are also entrepreneurs, they are likely to be chosen as social comparison referents by their offspring for two main reasons. First, in their parental role model, offspring usually see an image of their own potential future or of what they can achieve in the future (Gibson 2003). Second, parents are accessible referents for offspring. While theory proposes that the availability of social referents in general, and role models in particular, is determined by both situational and personal factors, research also agrees that "some role models will be imposed by the environment; that is, the individual may have little choice over who their parents...are" (Gibson 2004, p. 142). Thus, as offspring's considerations of undertaking an entrepreneurial career manifest through

their increased perceived entrepreneurial desirability and feasibility, they will tend to evaluate their abilities, motives, skills, and possible actions with respect to those of their entrepreneurial parents (BarNir et al. 2011; Zellweger et al. 2011).²

In this study, we focus on upward—rather than downward—social comparison dynamics between children and their entrepreneurial parents for two main reasons. First, regardless of the PPE (or their offspring's relative perceptions of it), the parents still managed to found and run their own firm with its own challenges, efforts, and risks. As such, these parents have already proven to be better off compared to their offspring, who are still in the beginning of their careers. Second, compared to upward social comparison, downward social comparison seems less plausible in the context of entrepreneurship since downward comparison is associated with adverse situations in which people seek self-enhancement, such as eating disorders or smoking (see Buunk and Gibbon 2007 for some examples). Entrepreneurship and venture creation—the contexts of action investigated in our study—do not resemble such situations. Accordingly, we predict that as both desirability and feasibility perceptions toward entrepreneurship increase, offspring will engage in upward social comparison with their entrepreneurial parents.

The outcomes of social comparison processes are, however, likely to depend on the "gap" between one's attitudes, opinions, abilities, and performance and his/her perceptions about the referent's characteristics. Boyd and Vozikis (1994, p. 69), for instance, claim that "an individual estimates the relevant skills and behavior used by a role model in performing a task [and] approximates the extent to which those skills are similar to his or her own"; based on these considerations, he or she would (or not) undertake the behavior under assessment. Thus, PPE as perceived by their offspring is likely to affect the outcomes of social comparison processes.

² Offspring without entrepreneurial parents, in contrast, should find it more challenging to easily identify accessible, similar, and better-off entrepreneurs. In this case, less-accessible or less-relevant entrepreneurial referents may be chosen, such as schoolmates or university peers (Gibson and Lawrence 2010; Kacperczyk 2013) or neighborhood peers (Giannetti and Simonov 2009; Andersson and Larsson 2014; Guiso, Pistaferri and Schivardi 2015). These are all individuals with whom offspring have less personal involvement (Gibson 2004). The resulting evaluation is likely to be less precise relative to situations in which the offspring's parents are entrepreneurs (Festinger 1954).

3 Hypothesis development

3.1 Perceived parents' performance in entrepreneurship and perceived desirability and feasibility

Our baseline argument is that perceived PPE will have a positive effect on offspring's perceived desirability and feasibility of an entrepreneurial career. On a general level, having successful entrepreneurial parents may facilitate the development of an individual's entrepreneurial mindset through characteristic adaptations due to the interaction with his/her context, such as with entrepreneurial parents (Obschonka and Silbereisen 2012). On a more specific level, the social psychology literature suggests that parents' social position exposes children to experiences and normative expectations that have a lasting impact on children's subsequent career choices (Kohn et al. 1986). More explicitly, entrepreneurship researchers claim that "exposure to and familiarity with self-employment in the family of origin may raise [...] the perceived viability of self-employment as a career option" (Sørensen 2007, p. 85). We expect this impact to be even more pronounced when parents are successful entrepreneurs compared to when they are not.

Referring to perceived desirability of entrepreneurship, childrearing practices and exposure to entrepreneurship tend to influence the values and attitudes of entrepreneurs' offspring such that entrepreneurship appears to be a desirable and attractive career option (Kuratko and Hodgetts 1995). By observing their parents (and often assisting them), offspring internalize their parents' work behaviors as values and norms for their own future careers (Carr and Sequeira 2007). When offspring are exposed to successful parental entrepreneurship and when they observe their successful parents' work behaviors, it is very likely that they will perceive becoming an entrepreneur themselves as very desirable and attractive because the positive outcomes of being an entrepreneur are more visible. Observing and assisting successful parents, for instance via unpaid family labor, will lead them to place a higher value on entrepreneurship than other types of occupations (Hout 1989). As a consequence, an entrepreneurial career appears more attractive, which leads to stronger desirability perceptions (Aldrich et al. 1998). Moreover, by serving as role models (Chlosta et al. 2012), entrepreneurial parents generally provide their offspring with an understanding of entrepreneurship as a career and help them to see entrepreneurship as "a realistic alternative to

conventional employment" (Carroll and Mosakowski 1987, p. 576). When parents are successful entrepreneurs, offspring will view entrepreneurship not only as realistic but also as a very attractive career path. Thus, when offspring perceive their PPE to be strong, they will be more likely to internalize positive values and norms toward entrepreneurship and to see the benefits of entrepreneurship; consequently, they will regard entrepreneurship as a very desirable career option.

By contrast, when offspring perceive that their PPE is weak, their internalized values and norms of entrepreneurship will be less positive (Mungai and Velamuri 2011), and the related benefits harder to see; thus, they will perceive an entrepreneurial career less desirable. These arguments lead us to propose that perceived PPE is positively related to desirability perceptions of entrepreneurship. Formally stated:

Hypothesis 1: Perceived parents' performance in entrepreneurship is positively related to offspring's perceived entrepreneurial desirability.

Referring to perceived feasibility, we note that prior research has "emphasized the consequences of exposure to parental self-employment during childhood and adolescence for the development of [...] broad portfolio of skills relevant to self-employment" (Sørensen 2007, p. 90). Bandura (1997) identified several factors that influence the development of self-efficacy beliefs; among them are vicarious experience and enactive mastery. Vicarious experience assumes that skills can be acquired by merely observing individuals performing a certain task. Enactive mastery, instead, assumes that skills can be acquired by performing a certain task. Existing studies argue that exposure to entrepreneurial parents increases the likelihood that offspring will gain both vicarious experience and enactive mastery (Carroll and Mosakowski 1987; BarNir et al. 2011). These factors, however, should depend on the levels of perceived PPE. More specifically, we argue that when children observe their successful entrepreneurial parents, the acquired skills will be of (perceived) higher value compared to observing non-successful entrepreneurial parents. As a consequence, offspring's perceived feasibility will be stronger when parents are perceived as successful entrepreneurs than when they are not. Similarly, when parents are successful entrepreneurs, offspring will be more interested and willing to work in their businesses than when parents are perceived as less successful. This

increases the probability of acquiring skills in the first place, and in addition, the acquired skills will be of higher value, and feasibility perceptions will ultimately be stronger.

Finally, entrepreneurial parents usually tend to prefer childrearing practices that emphasize self-control and independence (Aldrich et al. 1998). Such practices may convey skills and abilities to offspring that may make them feel more prepared to undertake an entrepreneurial journey. These dynamics are even more evident when parents are successful entrepreneurs because they are actually succeeding in self-control and independence.

Taken together, when perceived PPE is strong, offspring will be more likely to be exposed to positive vicarious experience and to undertake enactive mastery from their parents; these experiences should convey perceived entrepreneurial skills of higher quality. Offspring with high-performing entrepreneurial parents are also more likely to exhibit more self-control and independence, which in turn should enhance their perceived feasibility of pursuing an entrepreneurial career. Thus:

Hypothesis 2: Perceived parents' performance in entrepreneurship is positively related to offspring's perceived entrepreneurial feasibility.

As mentioned previously, there is widespread agreement in the literature that perceived entrepreneurial desirability and feasibility are the main antecedents of entrepreneurial career intentions (Shapero and Sokol 1982; Krueger et al. 2000; Schlaegel and Koenig 2014). In the following section, we argue that the degree to which perceived desirability and feasibility enhance actual entrepreneurial career intentions is contingent on perceived PPE and the related social comparison dynamics.

3.2 Perceived parents' performance in entrepreneurship, perceived desirability and feasibility, and entrepreneurial career intention

Section 2.4. proposes that offspring with perceived desirability and feasibility toward entrepreneurship engage in upward social comparison with their entrepreneurial parents. The outcomes of such comparison, in turn, will determine the strength of their entrepreneurial career intentions. We contend that the outcomes of social comparison are likely to vary, *ceteris paribus*, depending on offspring's perceived PPE. At similar levels of

perceived desirability and feasibility toward entrepreneurship, offspring may experience different outcomes after comparing themselves with their parents depending on their perceived PPE. Consequently, this will lead to different strengths in how perceived desirability and feasibility relate to entrepreneurial career intentions.

When PPE is perceived as high, offspring are more likely to experience feelings of inferiority after comparison (Wheeler 1966; Collins 1996). This is because when they compare their own motives, abilities, and skills to those of their successful parents, they may perceive their motives and competencies to be inferior. Put differently, offspring may believe that their parents have stronger and better motivations and are better skilled and qualified. For instance, individuals who are exposed to successful parents' entrepreneurship have been documented to be at risk of feeling that they may not succeed in emulating their parents (Birley 1986). As a result, offspring's perceptions of entrepreneurial desirability and feasibility may be transformed into lower entrepreneurial career intentions as they may perceive their parents' level of entrepreneurial success as unattainable. In other words, offspring may find it desirable and feasible to become an entrepreneur, but after engaging in upward social comparison with their entrepreneurially successful parents, the translation of these desirability and feasibility perceptions into intentions will be less likely.

When offspring perceive their PPE as low, however, this is more likely to lead offspring to have a positive view of the attribute under assessment, i.e., becoming an entrepreneur, resulting in an interest in achievement or self-improvement and learning (Molleman et al. 2007; McGinn and Milkman 2013). Offspring who exhibit strong entrepreneurial desirability and feasibility perceptions and engage in upward social comparison with parents who are believed to be not very successful entrepreneurs will be more willing to set developmental goals, which increases the likelihood that they take on the challenge of entrepreneurial engagement (Loasby 2007). As such, when PPE is perceived as weak, the translation of offspring's desirability and feasibility perceptions into entrepreneurial career intentions will be enhanced.

In summary, if offspring perceive their parents to be successful entrepreneurs, social comparison dynamics are more likely to lead to negative outcomes, such as feelings of inferiority and negative self-evaluations, hindering the conversion of desirability and feasibility perceptions into entrepreneurial career intentions. By contrast, if offspring perceive their parents to be unsuccessful, social comparison

dynamics are more likely to lead to positive outcomes, such as achievement, self-improvement, and learning, facilitating the conversion of desirability and feasibility perceptions into entrepreneurial career intentions. Taken together, this logic suggests that the positive relationships between offspring's desirability and feasibility perceptions and entrepreneurial career intentions become weaker as offspring's perceptions of their PPE increase. Formally stated, we propose the following:

Hypothesis 3: Perceived parents' performance in entrepreneurship attenuates the positive relationship between offspring's perceived entrepreneurial desirability and their entrepreneurial career intention.

Hypothesis 4: Perceived parents' performance in entrepreneurship attenuates the positive relationship between offspring's perceived entrepreneurial feasibility and their entrepreneurial career intention.

Figure 1 provides an illustration of our proposed model.

4 Method

4.1 The sample

To test our theoretical model, we used the 2013/2014 dataset from the GUESSS project.³ At GUESSS, a team of senior scholars developed an online survey⁴ and

³ Global University Entrepreneurial Spirit Students' Survey (GUESSS) investigates students' career-choice intentions across the globe. See www.guesssurvey.org. GUESSS data have recently been used to study students' entrepreneurial intentions (e.g., Zellweger et al. 2011; Laspita et al. 2012). The countries covered in the 2013/2014 survey are Argentina, Australia, Austria, Belgium, Brazil, Canada, Colombia, Denmark, England, Estonia, Finland, France, Germany, Greece, Hungary, Israel, Italy, Japan, Liechtenstein, Luxembourg, Malaysia, Mexico, the Netherlands, Nigeria, Poland, Portugal, Romania, Russia, Scotland, Singapore, Slovenia, Spain, Switzerland, and the USA.

⁴ All researchers involved were fluent in English and German and were assisted by an additional bilingual native speaker. Following a strict back-translation procedure, German and French versions of the survey (with the aid of two bilingual native speakers who were not involved in survey development) were developed. Some GUESSS country teams translated the English survey into their own preferred languages using the same back-translation procedure. The translated surveys were reviewed by the core GUESSS team and were examined for categorical and functional equivalence.

distributed corresponding email invitations to research teams in 34 countries beginning in autumn 2013. These research teams then forwarded the invitations to students at more than 750 universities worldwide. This approach resulted in the collection of 109,026 responses until spring 2014.⁵ For our study, we only included students who had entrepreneurial parents and responses with no missing values for our variables of interest. This reduced the sample to 21,895 cases in 33 countries.⁶ A student sample is appropriate to test our theoretical model for several reasons: students are likely to (a) face an important career choice after the conclusion of their studies (Dohse and Walter 2012; Bae, Qian, Miao and Fiet 2014), (b) use non-objective standards to evaluate their options to choose entrepreneurship as a career choice (Krueger et al. 2000), and (c) consider entrepreneurial parents as role models and use them as referents for social comparison dynamics (Aldrich et al. 1998; Hout and Rosen 1999).

4.2 Variables

Dependent variable To assess *entrepreneurial career intention*, students were asked in which occupation they intended to work 5 years after completing their studies (Zellweger et al. 2011; Dohse and Walter 2012; Laspita et al. 2012). This question reflects future intentions and is consistent with the existing definition of entrepreneurial intentions (Krueger et al. 2000). The 5-year time frame was chosen because students typically work elsewhere before they become entrepreneurs (Peterman and Kennedy 2003). Following Laspita et al. (2012), we coded entrepreneurial career intention as 0 if students indicated that they preferred a non-entrepreneurial career option, such as being an employee, working in academia, or working in the public sector. We consider these types of occupations to be unrelated to engaging in entrepreneurial activities. If students indicated that they wanted to pursue an entrepreneurial career, including working in their own firm

⁵ GUESSS reports a response rate of 5.5%, which is very likely to be an underestimation (Sieger, Fueglistaller and Zellweger 2014) because not all universities that participated in GUESSS 2013/2014 may have invited all of their students to participate. Unfortunately, reliable estimates are not available for all universities.

⁶ We removed Nigeria from our sample as it contained only one respondent.

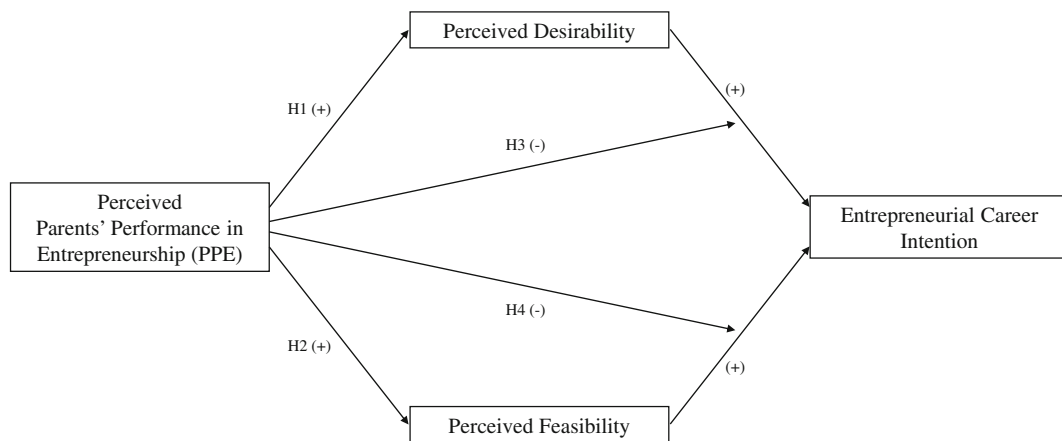


Fig. 1 Conceptual model

or taking over an existing business, we coded the variable as 1.

Independent variables We assessed *perceived parents' performance in entrepreneurship* (PPE) using a five-item score. If parents were either self-employed or the majority owners of a firm, the GUESSS survey asked students to rate the performance of their parents' firm relative to its competitors with reference to five dimensions, i.e., sales growth, market share growth, profit growth, job creation, and innovativeness (1 = worse; 7 = better; $\alpha = 0.88$). We calculated the total perceived PPE score by taking the average of the five items. Such a measure is more detailed and appropriate than (a) single-item dichotomous measures representing parents' success or failure in entrepreneurship and (b) objective measures of parents' success in entrepreneurship (Mungai and Velamuri 2011).

To obtain a measure of *perceived desirability*, we followed Liñán and Chen (2009) five-item scale. The items were as follows: "Being an entrepreneur implies more advantages than disadvantages to me"; "A career as entrepreneur is attractive for me"; "If I had the opportunity and resources, I would become an entrepreneur"; "Being an entrepreneur would entail great satisfactions for me"; and "Among various options, I would rather become an entrepreneur" (1 = strongly disagree; 7 = strongly agree; $\alpha = 0.94$). We calculated the total perceived desirability score by taking the average of the five items.

For *perceived feasibility*, we used a four-item scale from Souitaris et al. (2007). These items were as

follows: "For me, being self-employed would be very easy"; "If I wanted to, I could easily pursue a career as self-employed"; "As self-employed, I would have complete control over the situation"; and "If I become self-employed, my chances of success would be very high" (1 = strongly disagree; 7 = strongly agree; $\alpha = 0.88$). We calculated the total perceived feasibility score by taking the average of the four items.

Control variables We controlled for students' gender (0 = male; 1 = female) (Wilson, Kickul and Marlino 2007) and age (Minola et al. 2016). In addition, we controlled for students' study level with the dummy variable *master* (postgraduate level). Because students' entrepreneurial career intentions might differ across educational specializations (Souitaris et al. 2007), we controlled for field of study with two dummy variables: one for the *business and economics* field and one for *engineering*. As entrepreneurship education is related to entrepreneurial intention (Bae et al. 2014), we controlled for entrepreneurship education using one dummy variable capturing whether students were studying in an *entrepreneurship program*. In the theory section of this study, we argue that offspring select their entrepreneurial parents as referents. However, other peers who enjoy social proximity with the students may act as alternative referents (Giannetti and Simonov 2009; Guiso et al. 2015). While we were not able to replicate our model using peers' performance in entrepreneurship because of data availability, i.e., a lack of information about the entrepreneurial performance of such individuals, we still accounted for it by adding an additional control variable, i.e.,

Table 1 Means, standard deviations, and correlations

	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10
1. Entrepreneurial career intention	0.485	0.500	0	1										
2. Perceived parents' perf. in entrepr. (PPE)	4.181	1.296	1	7	0.110									
3. Perceived desirability	4.699	1.634	1	7	0.540	0.171								
4. Perceived feasibility	4.405	1.349	1	7	0.320	0.240	0.548							
5. Gender	0.581	0.493	0	1	-0.078	0.018	-0.125	-0.077						
6. Age	22.725	3.482	17	40	-0.070	-0.093	-0.033	-0.039	-0.05					
7. Master	0.191	0.393	0	1	-0.043	-0.055	-0.056	-0.039	0.006	0.287				
8. Business	0.262	0.44	0	1	0.111	0.055	0.145	0.077	-0.005	-0.023	0.013			
9. Engineering	0.162	0.368	0	1	0.043	-0.025	0.056	0.002	-0.231	-0.001	-0.014	-0.262		
10. Entrepreneurship education	0.081	0.273	0	1	0.109	0.057	0.143	0.138	-0.013	-0.029	0.038	0.191	-0.075	
11. Entrepreneurial peers	0.482	0.500	0	1	0.087	0.088	0.138	0.148	-0.062	0.141	0.020	0.045	-0.004	0.050

$N = 21,895$. Correlations with values of $|0.014|$ or greater are significant at $p < 0.05$

entrepreneurial peers, which measures whether the individual has close friends who are self-employed and/or majority shareholders of a private company⁷ (0 otherwise). Finally, we used *country dummies* to control for country-level differences.

Means, standard deviations, and correlations are presented in Table 1. All correlations are below 0.60, indicating no apparent shared variance (Hair, Black, Babin, Anderson and Tatham 2006). Table 2 presents the description of our sample by country and focuses on our key research variables.

4.3 Data quality tests

We performed several tests to verify the overall quality of our data.⁸ First, we performed a confirmatory factor analysis with all variables used in our study (cf. Podsakoff, MacKenzie, Lee and Podsakoff 2003) and found that this data structure fits the data well ($\chi^2(199) = 10,919.426$, $p < 0.001$; CFI = 0.95, RMSEA = 0.05). The results of a factor structure in which we collapsed all items into one factor were significantly worse ($\chi^2(209) = 90,766.18$, $p < 0.001$, CFI = 0.55, RMSEA = 0.15; difference in $\chi^2 = 79,846.754$, difference in $df = 10$, $p < 0.001$), a further signal that our measures are empirically distinguishable and that common method bias is not a serious threat. Second,

we applied the unmeasured latent factor method approach (Podsakoff et al. 2003), which allows all self-reported items to load both on their theoretical constructs and on an uncorrelated method factor. The addition of this factor to our initial five-factor structure described earlier did not improve the fit of the measurement model significantly (difference in $\chi^2 = 20.954$, difference in $df = 22$; $p > 0.05$; CFI = 0.95; RMSEA = 0.05; variance of the unmeasured latent factor = 0.129). Furthermore, all of the factor loadings of the measurement model remained significant.

We note that the respondents were assured strict confidentiality, reducing the tendency to provide socially desirable answers. Variables were spread over the comprehensive survey instrument, which reduced the probability of social desirability if respondents anticipated the research questions and adapted their answers accordingly (Podsakoff et al. 2003). Social desirability has also been found to have a negligible impact on the relationship between intention and cognitive antecedents (Armitage and Conner 1999).

⁸ We refrained from testing for potential non-response bias by comparing early and late respondents. Due to the data collection procedure at GUESSS, which involved different starting and closing dates for countries and universities, it was impossible to identify early and late respondents.

⁷ We thank an anonymous reviewer for this suggestion.

Table 2 Description of focal variables by country

Country	<i>N</i>	Entrepreneurial career intention	Perceived desirability	Perceived feasibility	Perceived PPE
Switzerland	1,782	0.342	4.128	4.018	3.797
Liechtenstein	50	0.620	4.248	5.172	4.550
Germany	1,992	0.342	4.000	4.090	3.911
Austria	765	0.356	4.196	4.001	4.070
France	70	0.514	4.537	4.566	4.036
Belgium	91	0.604	4.185	4.754	3.981
Finland	135	0.348	3.938	4.311	3.850
Hungary	1,488	0.579	4.245	4.813	5.046
Australia	139	0.568	4.722	4.970	4.056
Singapore	1,046	0.442	4.196	4.889	4.063
Mexico	212	0.873	4.697	6.021	5.483
Estonia	268	0.534	4.057	4.915	3.973
Luxemburg	19	0.474	4.958	4.105	3.961
Greece	88	0.420	4.077	4.641	4.099
Portugal	45	0.511	3.591	4.947	4.661
Netherlands	2,204	0.448	4.308	4.325	4.356
England	148	0.459	4.430	4.866	4.078
Romania	26	0.577	3.892	5.177	4.731
Russia	765	0.728	4.638	5.327	4.743
Japan	118	0.339	3.663	4.063	3.691
Argentina	43	0.884	4.274	5.874	4.622
Brazil	3,550	0.452	4.329	4.946	4.530
Canada	158	0.525	4.625	4.989	4.309
Colombia	160	0.663	4.435	5.386	4.659
Denmark	168	0.256	4.227	3.737	4.052
Israel	149	0.362	4.306	4.262	4.490
Italy	1,471	0.617	3.847	5.013	4.375
Poland	2,183	0.613	4.225	5.106	5.081
Scotland	60	0.383	4.240	4.117	3.546
Slovenia	144	0.542	4.325	4.781	4.313
Spain	1,998	0.483	3.749	4.809	4.345
Malaysia	304	0.510	4.714	5.466	4.765
USA	56	0.429	4.607	4.871	4.330
Sum/mean	21,895	0.509	4.261	4.767	4.320

5 Analysis and results

Table 3 shows our results. In model 1, we estimate the direct effect of perceived PPE and of our control variables on perceived desirability. The linear regression results show that PPE positively and significantly affects offspring' perceived desirability of an entrepreneurial

career (coef. 0.186, $p < 0.001$), such that a one-unit increase in the perceived PPE variable results in an increase of 0.186 in perceived desirability. In model 2, we estimate the direct effect of perceived PPE and of our control variables on perceived feasibility. The linear regression results show that perceived PPE positively and significantly affects offspring's perceived feasibility

Table 3 Regression results

	Perceived desirability	Perceived feasibility	Entrepreneurial career intention	
	Model 1	Model 2	Model 3	Model 4
Constant	3.108*** (0.092)	2.802*** (0.075)	-5.310*** (0.275)	-4.808*** (0.253)
Gender	0.003 (0.003)	-0.203*** (0.018)	-0.078* (0.035)	-0.080* (0.035)
Age	-0.349*** (0.021)	0.001 (0.003)	-0.031*** (0.005)	-0.031*** (0.005)
Master	-0.154*** (0.028)	-0.092*** (0.023)	-0.158*** (0.046)	-0.159*** (0.046)
Business	0.482*** (0.025)	0.171*** (0.021)	0.235*** (0.041)	0.233*** (0.041)
Engineering	0.256*** (0.031)	0.073** (0.025)	0.245*** (0.049)	0.243*** (0.049)
Entrepreneurship education	0.462*** (0.040)	0.292*** (0.033)	0.098 (0.065)	0.099 (0.065)
Entrepreneurial peers	0.285*** (0.021)	0.268*** (0.017)	0.090** (0.034)	0.093** (0.034)
Perceived parents' perf. in entrepr. (PPE)	0.186*** (0.008)	0.225*** (0.007)	0.338*** (0.054)	0.219*** (0.049)
Perceived desirability			1.134*** (0.047)	0.878*** (0.015)
Perceived feasibility			0.024 (0.016)	0.198*** (0.046)
Perceived desirability × perceived PPE			-0.061*** (0.010)	
Perceived feasibility × perceived PPE				-0.042*** (0.010)
Country dummies	Included	Included	Included	Included
<i>N</i>	21,895	21,895	21,895	21,895

Beta coefficients reported. Unstandardized values of the variables were used

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

of an entrepreneurial career (coef. 0.225, $p < 0.001$), such that a one-unit increase in the perceived PPE variable results in an increase of 0.225 in perceived feasibility. Model 3, instead, shows the effect of the interaction between perceived desirability and perceived PPE on entrepreneurial career intention. The logistic regression results show a negative and significant interaction effect (coef. = -0.061, $p < 0.001$). Finally, model 4 shows the effect of the interaction between perceived feasibility and perceived PPE on entrepreneurial career intention. The logistic regression results show a negative

and significant interaction effect (coef. = -0.042, $p < 0.001$).

We use the estimated logit coefficients to predict the marginal effect of perceived desirability and feasibility on the probability of entrepreneurial career intentions at all values of perceived PPE on the scale from 1 to 7 and at the mean values of other explanatory variables. Model 3 shows a negative interaction between perceived desirability and perceived PPE on entrepreneurial career intention. We found that when perceived PPE is low (1), a one-unit increase of the perceived desirability

Table 4 Bootstrapping results for test of conditional indirect effects of perceived desirability and feasibility on entrepreneurial career intention at different levels of perceived PPE

	Perceived PPE	Conditional indirect effect	SE	95% CI	
				Lower	Upper
Perceived desirability	1.589 (−2SD)	0.193	0.011	0.17146	0.21438
	2.885 (−1SD)	0.178	0.009	0.16040	0.19536
	4.181 (Mean)	0.163	0.008	0.14787	0.17882
	5.478 (+1SD)	0.148	0.008	0.13386	0.16453
	6.774 (+2SD)	0.134	0.009	0.11765	0.15170
Perceived feasibility	1.589 (−2SD)	0.029	0.008	0.01392	0.04400
	2.885 (−1SD)	0.017	0.005	0.00761	0.02692
	4.181 (Mean)	0.005	0.004	−0.00182	0.01208
	5.478 (+1SD)	−0.007	0.005	−0.01653	0.00137
	6.774 (+2SD)	−0.019	0.007	−0.03274	−0.00595

Results are based on 1,000 bootstrap samples

variable increases the probability of entrepreneurial career intention by 26.1%. By contrast, when perceived PPE is high (7), a one-unit increase of the perceived desirability variable increases the probability of entrepreneurial career intention by 17.6%. Figure 4 in Appendix 1 graphically displays this marginal effect. These results show that perceived PPE attenuates the positive relationship between offspring's perceived entrepreneurial desirability and their entrepreneurial career intentions.

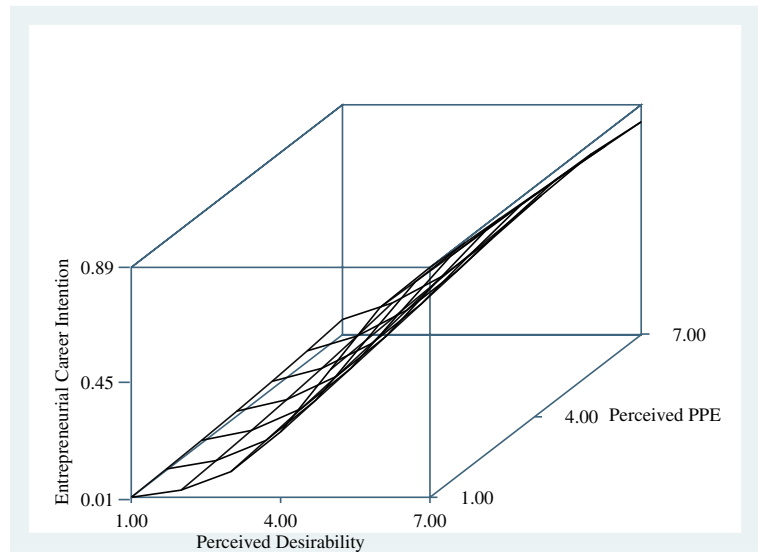
Model 4 shows a negative interaction between perceived feasibility and perceived PPE on entrepreneurial career intention. We found that when perceived PPE is low (1), a one-unit increase of the perceived feasibility variable increases the probability of entrepreneurial career intention by 3.8%. By contrast, when the perceived PPE is high (7), a one-unit increase of the perceived feasibility variable decreases the probability of entrepreneurial career intention by 2.4% (see Fig. 5 in Appendix 1). Again, these results show that perceived PPE attenuates the positive relationship between offspring's perceived entrepreneurial feasibility and their entrepreneurial career intentions.

Following recent recommendations related to testing moderated mediation models, we used the bootstrapping procedure of Preacher et al. (2007). We thus quantified the indirect effects of parents' performance on the desirability-intention and feasibility-intention relationships at very low (−2SD), low (−1SD), mean, high

(+1SD), and very high (+2SD) levels of perceived PPE (Preacher, Rucker, and Hayes 2007). Table 4 presents the indirect effects at different values of perceived PPE and provides 95% confidence level intervals for these effects. For perceived desirability, none of the confidence intervals contain zero. Thus, we can conclude that the indirect effect is statistically significant ($p < 0.05$) at very low, low, mean, high, and very high values of the moderator. Furthermore, we can observe that the effect of perceived desirability on offspring's entrepreneurial career intention is weaker at high compared to low levels of perceived PPE, as the coefficient decreases from 0.193 (very low perceived PPE) to 0.134 (very high perceived PPE). These results further support hypothesis 3. Similarly, we observe that the effect of perceived feasibility on offspring's entrepreneurial career intention decreases from 0.029 for offspring with very low perceived PPE to −0.019 for offspring with very high perceived PPE. These results also support hypothesis 4.

The moderating effects are plotted using Stata's *margins* procedure. Figure 2 displays the perceived desirability-intention relationship moderated by perceived PPE. The figure shows that the relationship between offspring's perceived desirability and entrepreneurial career intention is positive for all values of the moderating variable. However, for high values of perceived desirability, as perceived PPE increases, entrepreneurial career intentions decrease. These results

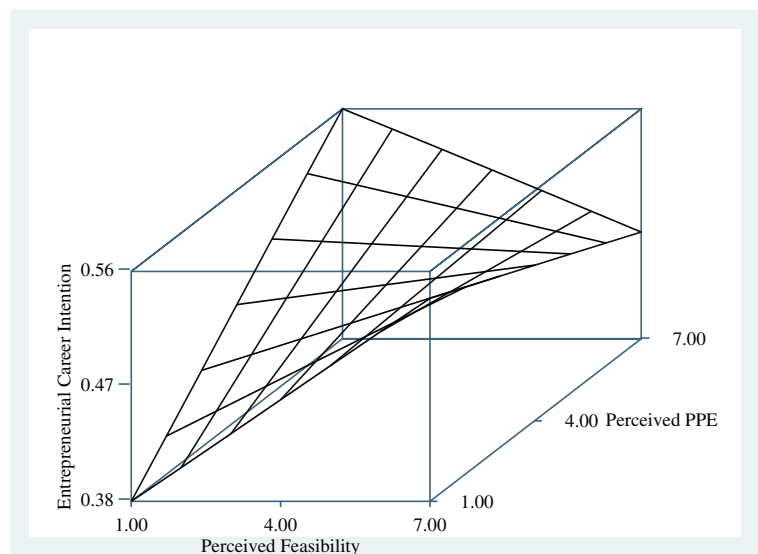
Fig. 2 Interaction of perceived desirability and perceived parents' performance in entrepreneurship on entrepreneurial career intention



corroborate our theoretical reasoning. Further, we perform a slope difference test to check whether the slopes are significantly different. The test results show that the relationship between perceived desirability and entrepreneurial career intention is significantly different for low and high values of perceived PPE (coef. = -0.030 , $p < 0.001$ for $\pm 1SD$; coef. = -0.059 , $p < 0.001$ for $\pm 2SD$).

In Fig. 3, we plot the perceived feasibility-intention relationship moderated by perceived PPE. Figure 3 shows that for high values of perceived feasibility, as perceived PPE increases, entrepreneurial career intentions decrease, corroborating our theoretical predictions.

Fig. 3 Interaction of perceived feasibility and perceived parents' performance in entrepreneurship on entrepreneurial career intention



Moreover, Fig. 3 shows that the relationship between perceived feasibility and offspring's entrepreneurial career intention is positive from low to medium levels of perceived PPE, whereas this relationship becomes negative from medium to high values of the moderating variable. Finally, we perform a slope difference test to check whether the slopes are significantly different. The test results show that the relationship between perceived feasibility and entrepreneurial career intention is significantly different for low and high values of perceived PPE (coef. = -0.025 , $p < 0.001$ for $\pm 1SD$; coef. = -0.049 , $p < 0.001$ for $\pm 2SD$).

5.1 Robustness checks

To mitigate potential issues related to effect sizes, we followed Hoetker (2007), who suggested that one should “calculate the effect for several sets of theoretically interesting and empirically relevant values of the variables, rather than trying to calculate an aggregate value for the entire sample” (p. 335). Therefore, we reran the analyses on a subsample based on geographical clusters, i.e., a European subsample.⁹ The main results remained stable (see Table 5 in the Appendix 2).

One could argue that the underlying social comparison mechanisms proposed in this study may differ between individuals who intend to create a new business and those who intend to take over an existing one, both of whom we have included in our “entrepreneurial career choice” measure following Laspita et al. (2012). To assess this, we excluded those students who had indicated that they want to take over an existing business. Such a test also eliminates any additional effects that may run through the financial channel, i.e., the idea that children of self-employed parents may be more likely to become self-employed themselves simply because they inherit the family business or inherit wealth to acquire a business (Hoffmann et al. 2015). Again, excluding individuals with *taking-over* intentions from our initial sample did not change the results significantly (see Table 6 in the Appendix 2).

Perceived PPE might affect offspring's entrepreneurial career intention via the transfer of social and financial resources. To assess this possibility, we conducted two separate tests. First, in a subsample of nascent entrepreneurs with and without entrepreneurial parents ($N = 4506$ and $N = 7819$, respectively), we found only a marginal difference in the correlation between a GUESSS measure that captures parents' willingness to provide financial and social resources and children's perceived desirability (0.06 for children of entrepreneurs and 0.01 for children of non-entrepreneurs) and perceived feasibility (0.13 for children of entrepreneurs and 0.10 for children of non-entrepreneurs). Second, we attempted to indirectly correct for the potential likelihood that individuals with very high-performing entrepreneurial parents in our sample may have

higher perceived desirability and feasibility due to the willingness of parents to provide resources. Our indirect correction was conducted by randomly subtracting 0.11¹⁰ from the perceived desirability score and 0.29¹¹ from the perceived feasibility score from every second person whose parents were judged as being very successful entrepreneurs (5 or higher on the seven-point Likert scale). This correction was based on the idea that if the ratio of parental support is the same in the overall sample as in the subgroup of nascent entrepreneurs, the influence of this type of support on children's perceived desirability and feasibility would be, on average, slightly higher. When subtracting 0.11 from the perceived desirability and 0.29 from the perceived feasibility score from every second randomly selected person with high-performing entrepreneurial parents in our sample, the overall findings in Table 3 remained stable.¹² These results are in line with previous studies showing that there is little evidence that children of entrepreneurs enter self-employment because they have privileged access to financial, social, or human capital (Aldrich et al. 1998; Sørensen 2007).

Finally, to show the link between intentions and actual behavior in our data, we conducted a robustness test exploiting available longitudinal

⁹ Austria, Belgium, Denmark, England, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Liechtenstein, Luxembourg, the Netherlands, Poland, Portugal, Romania, Russia, Scotland, Slovenia, Spain, and Switzerland.

¹⁰ We calculated the mean of perceived desirability across groups of parents' provided resources in the sub-sample of nascent entrepreneurs with high-performing entrepreneurial parents. We found that individuals with high-performing entrepreneurial parents and with provision of resources from parents have slightly higher perceived desirability (mean = 5.97) than the control group, i.e., individuals with high-performing entrepreneurial parents and without provision of resources from parents (mean = 5.86). One may argue that this is due to the willingness of high-performing entrepreneurial parents to provide resources to their offspring. Randomly subtracting 0.11 from the perceived desirability score from every second person with high-performing entrepreneurial parents is intended to correct for the difference in means described earlier.

¹¹ We calculated the mean of perceived feasibility across groups of parents' provided resources in the sub-sample of nascent entrepreneurs with high-performing entrepreneurial parents. We found that individuals with high-performing entrepreneurial parents and with provision of resources from parents have slightly higher perceived feasibility (mean = 5.44) than the control group, i.e., individuals with high-performing entrepreneurial parents and without provision of resources from parents (mean = 5.16). One may argue that this is due to the willingness of high-performing entrepreneurial parents to provide resources to their offspring. Randomly subtracting 0.29 from the perceived feasibility score from every second person with high-performing entrepreneurial parents is intended to correct for the difference in means described earlier.

¹² Results are available from the authors upon request.

information. The GUESSS dataset includes a number of respondents who answered the survey both in 2013 and in 2016 ($N = 1383$), of whom 395 have a family entrepreneurship background. Of these, 135 exhibited entrepreneurial intentions at time 1 (2013), and 59 of these exhibited entrepreneurial behavior at time 2 (2016), corresponding to 43.7%. We consider this a quite high number as the time span between time 1 and time 2 was only approximately 2 years. The correlation between entrepreneurial career intentions and behavior is $p = 0.390$ ($p < 0.01$). A supplementary logistic regression analysis including control variables for age, gender, levels of study, and field of study shows that entrepreneurial intentions are a strong predictor of entrepreneurial behavior (odds ratio = 7.86; $z = 5.57$; $p < 0.001$). As a whole, our robustness tests provide strong support for our theoretical model and our empirical findings.

6 Discussion

Despite abundant research on the intergenerational transmission of entrepreneurship, a clear answer to the question of how parental entrepreneurship relates to offspring's entrepreneurship has not been found. Our study attempts to address this gap by using two promising elements: first, perceived PPE as an important yet understudied dimension of the intergenerational transmission of entrepreneurship (through its effect on both perceived desirability and feasibility) and, second, social comparison as a theory that allows theorizing on the underlying mechanisms of the parents' performance-offspring's entrepreneurial intention relationship. Our analysis of a sample of 21,895 individuals from 33 countries revealed that while perceived PPE enhances offspring's perceived entrepreneurial desirability and feasibility—for instance because of exposure mechanisms—it inhibits the translation of both desirability and feasibility perceptions into entrepreneurial career intention. We argue that the negative moderation effects occur due to upward social comparison between offspring and their parents. Thus, perceived PPE serves as a double-edged sword for the intergenerational transmission of entrepreneurship. The *negative outcomes* of social comparison seem to be particularly relevant for high values of perceived desirability and feasibility (see Figs. 2

and 3). These results support our theorizing that social comparison mechanisms come into play when individuals are considering entrepreneurship as a highly desirable or feasible career option.

Our findings are valuable contributions to the literature on intergenerational transmission of entrepreneurship. First, our paper advances the theoretical discussion beyond the question of whether parents' entrepreneurship affects their offspring's entrepreneurship and toward a more nuanced perspective that centers on the social psychological mechanisms activated by offspring's perceptions of their PPE. Building on social comparison theory, we discuss and empirically scrutinize how perceived PPE interacts with desirability and feasibility perceptions to affect offspring's entrepreneurial career intentions. Whether children of entrepreneurs are really more likely to become entrepreneurs themselves depends on their perceived desirability and feasibility toward entrepreneurship and on their perceptions of PPE. These novel insights may help clarify and explain inconclusive findings in the existing literature, thereby providing guidance for future research.

Second, our paper expands the existing body of knowledge on the theoretical mechanisms linking parents' and offspring's entrepreneurship (Aldrich et al. 1998; Mungai and Velamuri 2011; Laspita et al. 2012) by highlighting social comparison as an important social mechanism. Our integration of social comparison dynamics into the research on intergenerational transmission of entrepreneurship allowed us to theoretically disentangle the different effects of parents' entrepreneurship, perceived desirability, and perceived feasibility on offspring's entrepreneurial career intentions.

Third, we significantly extend relevant, yet surprisingly scarce, research on the influence of parents' entrepreneurial performance on offspring's entrepreneurial intentions. Mungai and Velamuri (2011) found that male offspring whose parents have been successful in self-employment are more likely to transition into entrepreneurship. While we propose and confirm a positive relationship between perceived PPE and offspring's desirability and feasibility perceptions, our study suggests that offspring's perceived PPE may inhibit their entrepreneurial career intention through its interaction with one's perceived entrepreneurial desirability and

feasibility. Introducing perceived entrepreneurial desirability, feasibility, and upward social comparison mechanisms in our theorizing helped clarify the different effects of parents' entrepreneurial success on offspring's entrepreneurship. Moreover, our study advances research by heeding Mungai and Velamuri's (2011) call for studies measuring "offspring's perceptions of parental performance" (p. 340) to explore the social psychological mechanisms related to entrepreneurial intentions. Because the same level of absolute performance may be perceived differently, individuals' perceptions of their parents' entrepreneurial performance are essential for assessing the social comparison dynamics involved in the intergenerational transmission of entrepreneurship.

Our study also advances the application of social comparison theory in entrepreneurship research, heeding calls from entrepreneurship scholars as well as psychologists that "social comparison theory has not made its way into entrepreneurship research" (Shaver 2010, p. 378). The integration of social comparison theory into models of career intentions in general and entrepreneurial career intentions in particular heeds calls in social comparison research to pay greater attention to the specific social context and target group of social comparison dynamics—in this case, those between parents and children (Mussweiler and Strack 2000). These findings are valuable for social comparison scholars at large and social comparison research in entrepreneurship in particular because, to date, little research has explicitly embraced the social comparison perspective to refine intention-based career models in entrepreneurship (BarNir et al. 2011; Zellweger et al. 2011; Samuel et al. 2013). Applying social comparison theory to explain the formation of entrepreneurial intent among offspring of entrepreneurs addresses recent calls in the social comparison literature to investigate social comparison dynamics in settings in which social cognition and access to role models are important (Mussweiler and Strack 2000; BarNir et al. 2011). Our findings are consistent with social comparison models that seek contingencies in the dynamics of upward social comparison—that is, whether comparison with successful "near ones" enhances progress toward the latter's state (e.g., Aspinwall and Taylor 1993).

Lastly, we advance the literature on entrepreneurial intentions. Previous research has largely attended to the direct relationship between parents' entrepreneurship and entrepreneurial career intentions (e.g., BarNir et al. 2011; Laspita et al. 2012) or has only examined the effect of parents' entrepreneurship on the theoretical antecedents (e.g., perceived desirability and feasibility) of entrepreneurial career intentions (Carr and Sequeira 2007; Zapkau, Schwens, Steinmetz and Kabst 2015). We advance this research by theorizing and empirically demonstrating that perceptions of PPE affect the theoretical antecedents of intentions, i.e., desirability and feasibility perceptions, and that they change the magnitude of the desirability-intention and feasibility-intention relationships.

6.1 Limitations and future research

Our study also comes with limitations, several of which offer additional avenues for research. First, our data are cross-sectional, which prevents inferences related to the causality of our proposed relationships. However, our theoretical considerations and previous empirical findings from intention-based models of entrepreneurship suggest that causality may exist as we expect it (Krueger et al. 2000; Schlaegel and Koenig 2014). Moreover, we have established a solid link between entrepreneurial career intentions and entrepreneurial behavior in our robustness check with longitudinal GUESS data, which further confirms our predictions. Nevertheless, more research that relies on data that allows all relationships in our model to be assessed in a longitudinal way would be valuable.

Second, our application of social comparison theory is limited because, similar to many other empirical studies on social comparison in entrepreneurship and management, we do not directly measure such dynamics (e.g., Cooper and Artz 1995; Rowley, Greve, Rao, Baum and Shipilov 2005; Roels and Su 2013). This common shortcoming is driven by data limitations when using social comparison in non-experimental studies. This calls for further empirical research with explicit measurement instruments for social comparison dynamics. In general, our theoretical reasoning and results seem to speak in favor of the existence of social comparison that is robust to alternative interpretations.

Third, and partially related to the earlier point, we acknowledge that alternative explanations for our negative interaction effects might exist. For instance, as also indicated in Figs. 2 and 3, perceived parental success seems to be able to compensate for low levels of perceived desirability and feasibility. Put differently, offspring who see their parents as successful entrepreneurs might be more likely to develop entrepreneurial intentions even if they do not perceive entrepreneurship to be very desirable or feasible. By contrast, if parents are perceived to perform poorly, offspring must have strong motivations that it is desirable or feasible for them to become entrepreneurs to develop entrepreneurial intentions. Such dynamics speak in favor of a compensating effect beyond social comparison mechanisms such that when parents are very successful entrepreneurs, the effects of desirability and feasibility perceptions on entrepreneurial career intentions are weakened because other mechanisms beyond social comparison are at work. Clearly, more research in this direction is necessary. On a more general level, also referring to the main effects of perceived PPE on desirability and feasibility perceptions, one could argue that an alternative mechanism might be resource provision by successful entrepreneurial parents. However, our robustness tests indicated that this does not seem to have a relevant effect, in line with previous studies showing that there is little evidence to suggest that the children of entrepreneurs enter self-employment because they have privileged access to financial or social capital (Aldrich et al. 1998; Sørensen 2007).

Finally, future research would benefit from primary data to study the extent to which entrepreneurial parents are chosen as referents by entrepreneurial students. Existing literature on comparison group salience (Samuel et al. 2013) and role models (BarNir et al. 2011; Chlosta et al. 2012; Lindquist, Sol, Van Praag and Vladasel 2016) suggests that entrepreneurial parents should be the first key candidates for social comparison. However, we cannot exclude the possibility that respondents may also rely on other relatives or individuals as referents, such as university peers or neighborhood peers (Andersson and Larsson 2014; Guiso et al. 2015), which clearly deserves further research.

On a general level, we encourage other scholars to delve even deeper into the multifaceted relationship between parents' and offspring's entrepreneurship. The roles of perceived PPE and social comparison dynamics need to be explored in even greater depth, for instance, by investigating these aspects in a slightly different conceptual setting, such as in the theory of planned behavior (Ajzen 1991). In addition, the potential three-way interaction among perceptions of desirability, feasibility, and perceived PPE could be assessed. Drawing on expectancy theory and regulatory focus theory, Fitzsimmons and Douglas (2011) have found perceptions of desirability and feasibility to interact; it may thus be valuable, although conceptually challenging, to combine social comparison theory, expectancy theory, and regulatory focus theory to further investigate a three-way interaction. Finally, a promising future line of research is to extend our study by including the role of different personality dimensions. For instance, one could investigate how the entrepreneurial personality system (Obschonka and Stuetzer 2017) and perceived PPE interact in predicting desirability and feasibility perceptions or how these interactions may affect the relationships between desirability/feasibility perceptions and entrepreneurial career intentions, respectively.

7 Conclusion

The intergenerational transmission of entrepreneurship from parents to children is a central topic in entrepreneurship research. Our paper contributes to this research stream by providing a novel angle, showing that while perceived PPE enhances offspring's desirability and feasibility to become entrepreneurs, it also inhibits the translation of both desirability and feasibility perceptions into entrepreneurial career intention because of upward social comparison dynamics between children and their parents.

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Appendix 1

Fig. 4 The marginal effect of perceived desirability on entrepreneurial career intention by perceived parents' performance in entrepreneurship

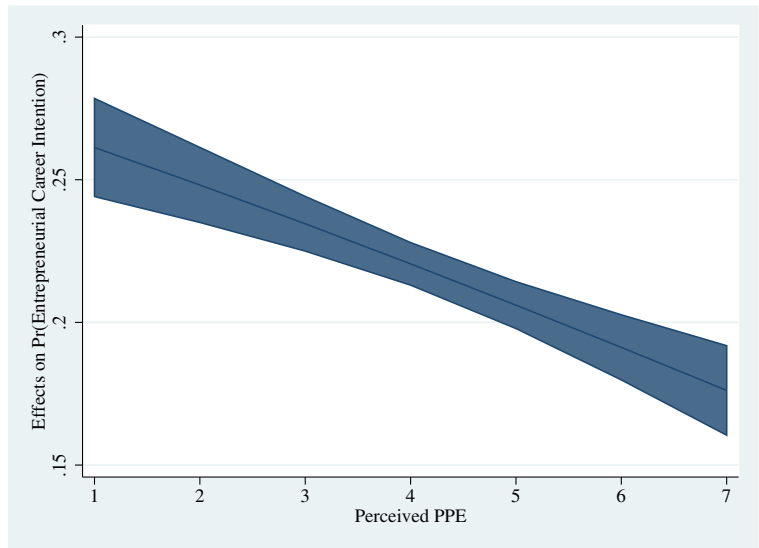
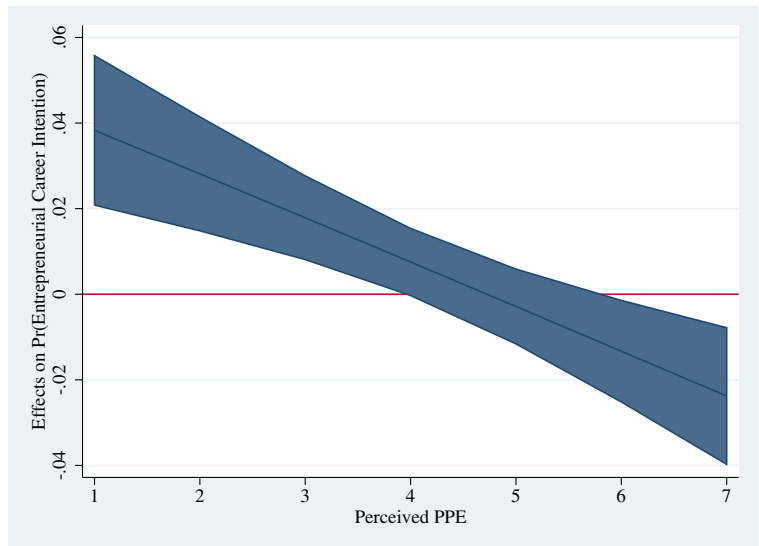


Fig. 5 The marginal effect of perceived feasibility on entrepreneurial career intention by perceived parents' performance in entrepreneurship



Appendix 2

Table 5 Perceived parents' performance in entrepreneurship, perceived desirability, perceived feasibility, and entrepreneurial career intention (Europe subsample)

	Perceived desirability		Perceived feasibility		Entrepreneurial career intention	
	Model 1	Model 2	Model 3	Model 4		
Constant	3.321*** (0.111)	3.062*** (0.089)	-5.451*** (0.328)	-5.321*** (0.310)		
Gender	-0.373*** (0.025)	-0.218*** (0.020)	-0.015 (0.042)	-0.016 (0.042)		
Age	-0.005 (0.004)	-0.008* (0.003)	-0.028*** (0.007)	-0.028*** (0.007)		
Master	-0.121*** (0.030)	-0.080*** (0.024)	-0.153** (0.050)	-0.154** (0.050)		
Business	0.491*** (0.029)	0.177*** (0.023)	0.160*** (0.048)	0.157** (0.048)		
Engineering	0.255*** (0.038)	0.106*** (0.030)	0.224*** (0.062)	0.223*** (0.062)		
Entrepreneurship education	0.474*** (0.046)	0.315*** (0.037)	0.122 (0.076)	0.124 (0.076)		
Entrepreneurial peers	0.283*** (0.024)	0.271*** (0.019)	0.072† (0.040)	0.074† (0.040)		
Perceived parents' perf. in entrepr. (PPE)	0.185*** (0.009)	0.213*** (0.008)	0.288*** (0.065)	0.258*** (0.060)		
Perceived desirability			1.113*** (0.056)	0.910*** (0.018)		
Perceived feasibility			0.061** (0.020)	0.254*** (0.056)		
Perceived desirability × Perceived PPE			-0.050*** (0.013)			
Perceived feasibility × perceived PPE				-0.047*** (0.013)		
Country dummies	Included	Included	Included	Included		
<i>N</i>	15,960	15,960	15,960	15,960		

Beta coefficients reported. Unstandardized values of the variables were used

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 6 Perceived parents' performance in entrepreneurship, perceived desirability, perceived feasibility, and entrepreneurial career intention (excluding students with "take over an existing business" intention)

	Perceived desirability		Perceived feasibility		Entrepreneurial career intention	
	Model 1	Model 2	Model 3	Model 4		
Constant	3.065*** (0.095)	2.768*** (0.077)	-5.709*** (0.299)	-5.287*** (0.267)		
Gender	-0.343*** (0.022)	-0.198*** (0.018)	-0.058 (0.036)	-0.060† (0.036)		
Age	0.004 (0.003)	0.002 (0.003)	-0.027*** (0.005)	-0.027*** (0.005)		
Master	-0.150*** (0.029)	-0.091*** (0.024)	-0.178*** (0.049)	-0.179*** (0.049)		
Business	0.487*** (0.026)	0.163*** (0.022)	0.152*** (0.043)	0.150*** (0.043)		
Engineering	0.260*** (0.032)	0.079** (0.026)	0.244*** (0.051)	0.243*** (0.051)		
Entrepreneurship education	0.479*** (0.042)	0.287*** (0.034)	0.076 (0.067)	0.076 (0.067)		
Entrepreneurial peers	0.293*** (0.022)	0.274*** (0.018)	0.095** (0.036)	0.098** (0.036)		
Perceived parents' perf. in entrepr.(PPE)	0.179*** (0.008)	0.219*** (0.007)	0.300*** (0.060)	0.199*** (0.051)		
Perceived desirability			1.211*** (0.051)	0.957*** (0.017)		
Perceived feasibility			0.009 (0.017)	0.203*** (0.048)		
Perceived desirability × perceived PPE			-0.061*** (0.011)			
Perceived feasibility × perceived PPE					-0.047*** (0.011)	
Country dummies	Included	Included	Included	Included		
N	20,551	20,551	20,551	20,551		

Beta coefficients reported. Unstandardized values of the variables were used

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

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References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
 Aldrich, H. E., & Kim, P. H. (2007). A life course perspective on occupational inheritance: self-employed parents and their

- children. In M. Ruef & M. Lounsbury (Eds.), *Research in the sociology of organizations*. Bingley: Emerald Group Publishing.
- Aldrich, H. E., Renzulli, L. A., & Langton, N. (1998). Passing on privilege: resources provided by self-employed parents to their self-employed children. In K. Leicht (Ed.), *Research in social stratification and mobility*. Greenwich: JAI Press.
- Amit, R., Glosten, L., & Muller, E. (1993). Challenges to theory development in entrepreneurship research. *Journal of Management Studies*, 30(5), 815–834.
- Andersson, M., & Larsson, J. P. (2014). Local entrepreneurship clusters in cities. *Journal of Economic Geography*, 16(1), 39–66.
- Armitage, C. J., & Conner, M. (1999). The theory of planned behaviour: assessment of predictive validity and 'perceived control'. *British Journal of Social Psychology*, 38(1), 35–54.
- Aspinwall, L. G., & Taylor, S. E. (1993). Effects of social comparison direction, threat, and self-esteem on affect, self-evaluation, and expected success. *Journal of Personality and Social Psychology*, 64(5), 708–722.
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: a meta-analytic review. *Entrepreneurship Theory and Practice*, 38(2), 217–254.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W.H. Freeman & Co..
- Bandura, A., & Jourden, F. J. (1991). Self-regulatory mechanisms governing the impact of social comparison on complex decision making. *Journal of Personality and Social Psychology*, 60(6), 941–951.
- BarNir, A., Watson, W. E., & Hutchins, H. M. (2011). Mediation and moderated mediation in the relationship among role models, self-efficacy, entrepreneurial career intention, and gender. *Journal of Applied Social Psychology*, 41(2), 270–297.
- Birley, S. (1986). Succession in the family firm: the inheritor's view. *Journal of Small Business Management*, 24(3), 36–43.
- Bosma, N., Hessels, J., Schutjens, V., Van Praag, M., & Verheul, I. (2012). Entrepreneurship and role models. *Journal of Economic Psychology*, 33(2), 410–424.
- Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63–78.
- Bryant, B. K., Zvonkovic, A. M., & Reynolds, P. (2006). Parenting in relation to child and adolescent vocational development. *Journal of Vocational Behavior*, 69(1), 149–175.
- Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: the end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, 102(1), 3–21.
- Carr, J. C., & Sequeira, J. M. (2007). Prior family business exposure as intergenerational influence and entrepreneurial intent: a theory of planned behavior approach. *Journal of Business Research*, 60(10), 1090–1098.
- Carroll, G. R., & Mosakowski, E. (1987). The career dynamics of self employment. *Administrative Science Quarterly*, 32(4), 570–589.
- Chlosta, S., Patzelt, H., Klein, S. B., & Dormann, C. (2012). Parental role models and the decision to become self-employed: the moderating effect of personality. *Small Business Economics*, 38(1), 121–138.
- Collins, R. L. (1996). For better or worse: the impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119(1), 51–69.
- Cooper, A. C., & Artz, K. W. (1995). Determinants of satisfaction for entrepreneurs. *Journal of Business Venturing*, 10(6), 439–457.
- Dohse, D., & Walter, S. G. (2012). Knowledge context and entrepreneurial intentions among students. *Small Business Economics*, 39(4), 877–895.
- Dunn, T., & Holtz-Eakin, D. (2000). Financial capital, human capital, and the transition to self-employment: evidence from intergenerational links. *Journal of Labor Economics*, 18(2), 287–305.
- Dyer, W. G., & Handler, W. (1994). Entrepreneurship and family business: exploring the connections. *Entrepreneurship Theory and Practice*, 19(1), 71–84.
- Edelman, L. F., Manolova, T., Shirokova, G., & Tsukanova, T. (2016). The impact of family support on young entrepreneurs' start-up activities. *Journal of Business Venturing*, 31(4), 428–448.
- Festinger, L. (1954). A theory of social comparison processes. *Human relations*, 7(2), 117–140.
- Fitzsimmons, J. R., & Douglas, E. J. (2011). Interaction between feasibility and desirability in the formation of entrepreneurial intentions. *Journal of Business Venturing*, 26(4), 431–440.
- Franco, M., Haase, H., & Lautenschlaeger, A. (2010). Students' entrepreneurial intentions: an inter-regional comparison. *Education + Training*, 52(4), 260–275.
- Giannetti, M., & Simonov, A. (2009). Social interactions and entrepreneurial activity. *Journal of Economics & Management Strategy*, 18(3), 665–709.
- Gibson, D. E. (2003). Developing the professional self-concept: role model construals in early, middle, and late career stages. *Organization Science*, 14(5), 591–610.
- Gibson, D. E. (2004). Role models in career development: new directions for theory and research. *Journal of Vocational Behavior*, 65(1), 134–156.
- Gibson, D. E., & Lawrence, B. S. (2010). Women's and men's career referents: how gender composition and comparison level shape career expectations. *Organization Science*, 21(6), 1159–1175.
- Guiso, L., Pistaferri, L., & Schivardi, F. (2015). Learning entrepreneurship from other entrepreneurs? National Bureau of Economic Research.
- Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. Upper Saddle River: Prentice Hall.
- Hakmiller, K. L. (1966). Threat as a determinant of downward comparison. *Journal of Experimental Social Psychology*, 1, 32–39.
- Henley, A. (2007). Entrepreneurial aspiration and transition into self-employment: evidence from British longitudinal data. *Entrepreneurship and Regional Development*, 19(3), 253–280.
- Hoetker, G. (2007). The use of logit and probit models in strategic management research: critical issues. *Strategic Management Journal*, 28(4), 331–343.
- Hoffmann, A., Junge, M., & Malchow-Møller, N. (2015). Running in the family: parental role models in entrepreneurship. *Small Business Economics*, 44(1), 79–104.

- Hout, M. (1989). *Following in father's footsteps: social mobility in Ireland*. Harvard University Press.
- Hout, M., & Rosen, H.S. (1999). Self-employment, family background, and race. National Bureau of Economic Research.
- Jodl, K. M., Michael, A., Malanchuk, O., Eccles, J. S., & Sameroff, A. (2001). Parents' roles in shaping early adolescents' occupational aspirations. *Child Development, 72*(4), 1247–1266.
- Johnson, P. S., Parker, S. C., & Wijbenga, F. (2006). Nascent entrepreneurship research: achievements and opportunities. *Small Business Economics, 27*(1), 1–4.
- Kacperczyk, A. J. (2013). Social influence and entrepreneurship: the effect of university peers on entrepreneurial entry. *Organization Science, 24*(3), 664–683.
- Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice, 39*(3), 655–674.
- Kim, P. H., Aldrich, H. E., & Keister, L. A. (2006). Access (not) denied: the impact of financial, human, and cultural capital on entrepreneurial entry in the United States. *Small Business Economics, 27*(1), 5–22.
- Koellinger, P. D., van der Loos, M., Groenen, P. J. F., Thurik, A. R., Rivadeneira, F., van Rooij, F. J. A., Uitterlinden, A. G., & Hofman, A. (2010). Genome-wide association studies in economics and entrepreneurship research: promises and limitations. *Small Business Economics, 35*(1), 1–18.
- Kohn, M. L., Slomczynski, K. M., & Schoenbach, C. (1986). Social stratification and the transmission of values in the family: cross-national assessment. *Sociological Forum, 1*(1), 73–102.
- Kolvreid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing, 21*(6), 866–885.
- Krueger, N. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship Theory and Practice, 18*(1), 5–21.
- Krueger, N., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5–6), 411–432.
- Kuckertz, A., & Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions—investigating the role of business experience. *Journal of Business Venturing, 25*(5), 524–539.
- Kuratko, D. F., & Hodgetts, R. M. (1995). *Entrepreneurship: a contemporary approach*. Chicago: The Dryden Press.
- Laspita, S., Breugst, N., Hebllich, S., & Patzelt, H. (2012). Intergenerational transmission of entrepreneurial intentions. *Journal of Business Venturing, 27*(4), 414–435.
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice, 33*(3), 593–617.
- Lindquist, M. J., Sol, J., & Van Praag, M. (2015). Why do entrepreneurial parents have entrepreneurial children? *Journal of Labor Economics, 33*(2), 269–296.
- Lindquist, M.J., Sol, J., Van Praag, M., & Vladasel, T. (2016). On the origins of entrepreneurship: evidence from sibling correlations.
- Loasby, B. J. (2007). A cognitive perspective on entrepreneurship and the firm. *Journal of Management Studies, 44*(7), 1078–1106.
- McGinn, K. L., & Milkman, K. L. (2013). Looking up and looking out: career mobility effects of demographic similarity among professionals. *Organization Science, 24*(4), 1041–1060.
- Miller, R. L., & Suls, J. (1977). Helping, self-attribution, and the size of an initial request. *The Journal of Social Psychology, 103*(2), 203–208.
- Minola, T., Criaco, G., & Obschonka, M. (2016). Age, culture, and self-employment motivation. *Small Business Economics, 46*(2), 187–213.
- Molleman, E., Nauta, A., & Buunk, B. P. (2007). Social comparison-based thoughts in groups: their associations with interpersonal trust and learning outcomes. *Journal of Applied Social Psychology, 37*(6), 1163–1180.
- Mungai, E. M. E., & Velamuri, S. R. (2011). Parental entrepreneurial role model influence on male offspring: is it always positive and when does it occur? *Entrepreneurship Theory and Practice, 35*(2), 337–357.
- Mussweiler, T., & Strack, F. (2000). Consequences of social comparison. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison*. US: Springer.
- Nicolaou, N., Shane, S., Cherkas, L., & Spector, T. D. (2008). The influence of sensation seeking in the heritability of entrepreneurship. *Strategic Entrepreneurship Journal, 2*(1), 7–21.
- Obschonka, M., & Silbereisen, R. K. (2012). Entrepreneurship from a developmental science perspective. *International Journal of Developmental Science, 6*(3), 107–115.
- Obschonka, M., & Stuetzer, M. (2017). Integrating psychological approaches to entrepreneurship: the Entrepreneurial Personality System (EPS). *Small Business Economics, 1*–29.
- Peterman, N. E., & Kennedy, J. (2003). Enterprise education: influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice, 28*(2), 129–144.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*(1), 185–227.
- Roels, G., & Su, X. (2013). Optimal design of social comparison effects: setting reference groups and reference points. *Management Science, 60*(3), 606–627.
- Rowley, T. J., Greve, H. R., Rao, H., Baum, J. A. C., & Shipilov, A. V. (2005). Time to break up: social and instrumental antecedents of firm, exits from exchange cliques. *Academy of Management Journal, 48*(3), 499–520.
- Samuel, R., Bergman, M., & Hupka-Brunner, S. (2013). The interplay between educational achievement, occupational success, and well-being. *Social Indicators Research, 111*(1), 75–96.
- Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice, 38*(2), 291–332.
- Schulenberg, J. E., Vondracek, F. W., & Crouter, A. C. (1984). The influence of the family on vocational development. *Journal of Marriage and the Family, 46*(1), 129–143.
- Shaper, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. In C. A. Kent, D. L. Sexton, & K. E. Vesper

- (Eds.), *The encyclopedia of entrepreneurship*. Englewood Cliffs: Prentice-Hall.
- Shaver, K. G. (2010). The social psychology of entrepreneurial behavior. In Z. J. Acs & D. Audretsch (Eds.), *Handbook of entrepreneurship research*. New York: Springer.
- Sieger, P., Fueglistaller, U., & Zellweger, T. (2014). *Student entrepreneurship across the globe: a look at intentions and activities*. KMU-HSG: St. Gallen.
- Sørensen, J. B. (2007). Closure vs. exposure: mechanisms in the intergenerational transmission of self-employment. In M. Ruef & M. Lounsbury (Eds.), *Research in the sociology of organizations*. New York: Elsevier/JAI.
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566–591.
- Thompson, E. R. (2009). Individual entrepreneurial intent: construct clarification and development of an internationally reliable metric. *Entrepreneurship Theory and Practice*, 33(3), 669–694.
- Van Gelderen, M., Kautonen, T., & Fink, M. (2015). From entrepreneurial intentions to actions: self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing*, 30(5), 655–673.
- Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, 1(1), 27–31.
- Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. *Entrepreneurship Theory and Practice*, 31(3), 387–406.
- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106(2), 231–248.
- Wood, J. V., & Taylor, K. L. (1991). Serving self-relevant goals through social comparison. In J. Suls & T. A. Wills (Eds.), *Social comparison: contemporary theory and research*. Hillsdale: Lawrence Erlbaum Associates.
- Wyrwich, M. (2015). Entrepreneurship and the intergenerational transmission of values. *Small Business Economics*, 45(1), 191–213.
- Zapkau, F. B., Schwens, C., & Kabst, R. (2017). The role of prior entrepreneurial exposure in the entrepreneurial process: a review and future research implications. *Journal of Small Business Management*, 55(1), 56–86.
- Zapkau, F. B., Schwens, C., Steinmetz, H., & Kabst, R. (2015). Disentangling the effect of prior entrepreneurial exposure on entrepreneurial intention. *Journal of Business Research*, 68(3), 639–653.
- Zellweger, T., Sieger, P., & Halter, F. (2011). Should I stay or should I go? Career choice intentions of students with family business background. *Journal of Business Venturing*, 26(5), 521–536.
- Zhang, Y., Duysters, G., & Cloudt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, 10(3), 623–641.