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ORIGINAL PAPER

Staged entrepreneurship: the formation of hybrid and spawning entrepreneurial intentions

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Abstract

Most individuals find their way into entrepreneurship through combinations of self-employment and paid employment. However, prior research on entrepreneurial intentions has overlooked intended career transitions. Drawing on social cognitive career theory, we argue that, against the background of personal and environmental factors, individuals form career intentions that involve the combination of and transition between paid employment and self-employment. Such *staged entrepreneurial intentions* include the delay of entrepreneurial entry by intermediate stages of paid employment (i.e., *spawning entrepreneurial intentions*) or immediate entrepreneurial entry in parallel combination with paid employment at established organizations (i.e., *hybrid entrepreneurial intentions*). We test these theoretical ideas based on a survey involving 1003 individuals prior to career entry. The results indicate that individuals proactively align their envisioned career stages according to expected socio-cognitive enablers and barriers (i.e., their entrepreneurial self-efficacy, personal attitudes to entrepreneurship, subjective norms, and socioeconomic status). Notably, we find that individuals with lower levels of perceived social support for an entrepreneurial career more likely intend to combine their existing entrepreneurial activities with a conventional career at an established organization. Furthermore, individuals from lower socioeconomic status backgrounds as well as women are more likely to delay entrepreneurial entry by starting their professional careers in paid employment. The study's primary contribution is the introduction of a novel perspective on entrepreneurial intentions based on individuals' intended career transitions.

Keywords Entrepreneurial intention · Entrepreneurial careers · Hybrid entrepreneurship · Spawning entrepreneurship · Social cognitive career theory

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1 Introduction

When and why do individuals enter entrepreneurship? The study of entrepreneurial intentions has improved the understanding of the environmental and personal conditions of individuals that influence their general intention to engage in entrepreneurship (Bird 1988; Boyd and Vozikis 1994; Krueger et al. 2000; Michl et al. 2012; Schlaegel and Koenig 2014; Shapero and Sokol 1982) and turn entrepreneurial intentions into actions (Edelman et al. 2016; Gielnik et al. 2014; Kautonen et al. 2015; Kibler et al. 2014; Meoli et al. 2020; Van Gelderen et al. 2015). More recently, literature integrating social cognitive career theory (SCCT) and entrepreneurial intentions has advanced our understanding of the interplay of support from social environments (such as entrepreneurial models among peers: Meoli et al. 2020), exposure to cultural environments (Pidduck et al. 2020) and cognitive factors (such as entrepreneurial self-efficacy: Lanero et al. 2016; Ligouri et al. 2018; Santos and Liguori 2019) on the formation of entrepreneurial career interests and the certainty of the decision to pursue an entrepreneurial career (Pérez-López et al. 2019).

However, while this stream of literature focuses on explaining entrepreneurial entry, it does not sufficiently consider that individuals' careers develop along multiple stages. A dichotomous view of factors explaining why individuals intend to become either *entrepreneurs* or *employees* fails to consider boundaries of entrepreneurial career paths being blurred. Careers involve various stages of entering, exiting, and combining self-employment with paid employment (Burton et al. 2016; Carroll and Mosakowski 1987), and the trajectory of individuals' multiple career stages informs their entrepreneurial behavior (Burke et al. 2008; Engel et al. 2017). Most entrepreneurs either spawn from employment at established organizations (Elfenbein et al. 2010) or combine salaried work with self-employment activity before they become fully self-employed (Folta et al. 2010). Recently, hybrid entrepreneurship research—research on individuals' parallel combination of paid employment and self-employment—has made substantive progress in explaining the conditions under which individuals are more likely to favor hybrid situations (Block and Landgraf 2016; Pollack et al. 2019; Raffiee and Feng 2014). Furthermore, the transitional career viewpoint on entrepreneurship yields new perspectives regarding the conditions under which established organizations spawn entrepreneurs, that is, when individuals leave their employers to create their own ventures (Burton et al. 2016; Dobrev and Barnett 2005; Sørensen and Sharkey 2014). Whereas these studies have increased our understanding of career paths involving actual transitions between paid employment and self-employment and have painted a more fine-grained picture of the types of entrepreneurial career entry, they remain silent on individuals forming entrepreneurial intentions that involve multiple stages in their careers.

While entrepreneurial intentions involve a general vision of embarking on an entrepreneurial career *in the future*, timing in the entrepreneurial intention concept is ambiguous, and less is known about how individuals envision *the temporal flow of stages* in their career paths.[1] Nevertheless, career scholars note that individuals are increasingly transitioning both psychologically and physically between different jobs and career paths (Arthur and Rousseau 1996; Arthur et al. 2005; Sullivan 1999; Sullivan and Arthur 2006). Moreover, integrative frameworks, such as hybrid careers, consider an ever-rising dynamic in the working world of individuals, which leads to their combining career paths (Granrose and Baccili 2006; Sullivan and Baruch 2009; Tams and Arthur 2010). The paucity of recent work on the formation of entrepreneurial career paths that involve transitions between different forms of employment is surprising. Against the background of the importance of research on entrepreneurial intentions to the academic field, an extension toward a staged view of entrepreneurial intentions seems promising.

The arguments outlined above impel the present study to examine the formation of staged entrepreneurial intentions; that is, career plans involving different career stages before or after embarking on entrepreneurship. More specifically, we aim to answer the research question of how individuals' cognitive and environmental factors influence the formation of hybrid or spawning entrepreneurial intentions. The main argument is that individuals align their intentions to delay entrepreneurial entry or to combine self-employment with paid employment in anticipation of career paths with a better fit to their past, current, and future socio-cognitive factors. The seminal work of Bandura (1986) means that individuals' agency in terms of influencing the outcomes of their career behavior is at the center of SCCT (Lent et al. 1994, 2000). Accordingly, individuals envision barriers and enablers in career processes and constantly adapt their intended career paths to manage career processes to achieve their aspirations (Lent and Brown 2013).

We test our theoretical arguments based on a representative survey of 1003 individuals in higher education institutions in Germany who are currently in their career-life period of exploring potential career paths and forming respective career plans. By applying multinomial logistic regression analysis, the study analyzes socio-cognitive factors that explain why some individuals prefer hybrid or spawning entrepreneurial intentions. The findings indicate that individuals form staged entrepreneurial intentions based on the fit of their personal and environmental circumstances and the characteristics of envisioned career paths. That said, one of the particular results implies that most individuals intend to delay entrepreneurial entry, a tendency that is enhanced for those individuals from lower socioeconomic status backgrounds.

The study contributes to entrepreneurship research in the following ways. First, the study extends the dichotomous view of entrepreneurial intentions by introducing staged entrepreneurial intentions; it shifts the perspective from general entrepreneurial intentions to the formation of career plans, which involves establishing multiple

[1] We are grateful to an anonymous reviewer for this remark. The future dimension is inherently related to the concept of entrepreneurial intentions, as established measures such as "I have the firm intention to start a firm *someday,"* "I am determined to create a firm *in the future*" (Liñán and Chen 2009), or "I intend to set up a company *in the future"* (Thompson 2009) indicate.

stages along an entrepreneurial career trajectory. Second, the study extends prior literature on staged entrepreneurship by highlighting the role of staged career plans explaining transitions and combinations between self-employment and paid employment. While these transitions (such as hybrid and spawning entrepreneurship) have mainly been explained by dynamics in individual and organizational environments, our study provides a perspective that encompasses higher levels of individual agency as individuals form a priori transition intentions. Third, we contribute to SCCT research within entrepreneurship by highlighting the theory's underexplored potential to explain the formation of entrepreneurial career interests before career entry. Accordingly, we derive a set of questions on which further research might be based. For instance, given the ambiguity of time in the entrepreneurial intention concept, further research might revisit the entrepreneurial intention–action gap to examine whether delayed entrepreneurial entry might be planned in some instances, as well as when individuals deviate from or stick to their original entrepreneurial career plans.

2 Theory

2.1 Staged entrepreneurship

Early research on the reasons why individuals intend to embark on an entrepreneurial career made important strides to understand the general phenomenon of entrepreneurship (Bird 1988). The prominent models of entrepreneurial intentions integrating Ajzen's theory of planned behavior (Boyd and Vozikis 1994) or Shapero's model of the entrepreneurial event (Shapero and Sokol 1982) offer socio-cognitive explanations of why individuals become entrepreneurs and take entrepreneurial action (Krueger et al. 2000). Over time, this prominent stream of research continuously extracts nuanced findings on when, how, and why individuals formulate entrepreneurial intentions (Schlaegel and Koenig 2014) and under which boundary conditions these intentions turn into entrepreneurial behavior (Edelman et al. 2016; Gielnik et al. 2014; Kautonen et al. 2015; Kibler et al. 2014; Meoli et al. 2020; Van Gelderen et al. 2015).

Nevertheless, by focusing on entrepreneurial behavior as the intended outcome, this stream of research might overlook the overall picture of individuals' career formation and revision. That oversight can arise because entrepreneurship might not be *the final destination*; instead, instances of self-employment might rather be a period, sequence, or *stage* complemented by and combined with other forms of employment (Burton et al. 2016). Research does suggest individuals often enter self-employment after periods of paid employment, exit self-employment, and re-enter at different points in time (Carroll and Mosakowski 1987). That said, individuals more or less purposefully transition between and combine sequences of entrepreneurship with other career stages that involve paid employment (Burke et al. 2008; Engel et al. 2017). Accordingly, examining different stages of paid- and self-employment, as well as their interaction, might further explain entrepreneurial careers. Given that individuals' different career stages influence each other, the consideration of

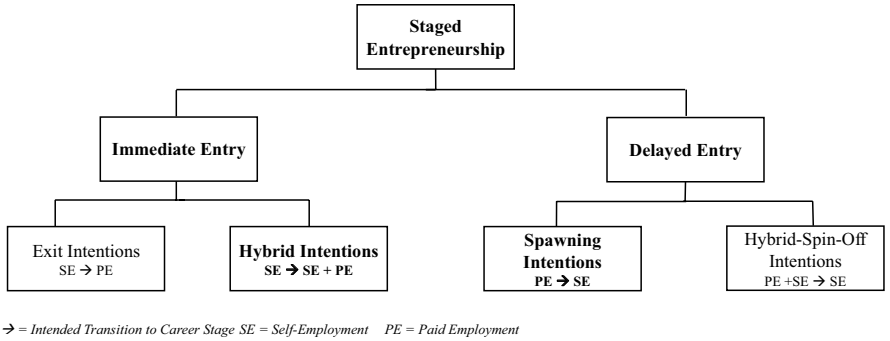

Fig. 1 Staged entrepreneurship

individuals' career paths involving multiple career stages should improve our understanding of entrepreneurial intentions and behavior.

While most prior research retrospectively makes sense of individuals' career stages, the core argument of our study is based on another stance. Drawing on SCCT (Lent and Brown 2013; Lent et al. 1994, 2000), we argue that some individuals purposefully envision their entrepreneurial career paths involving multiple career stages before and after entrepreneurial entry—a phenomenon we call *staged entrepreneurship*. Accordingly, we define individuals' staged intentions as follows:

Definition 1: *Staged entrepreneurial intentions* are individuals' entrepreneurial career plans that involve configurations of entering, combining and delaying entrepreneurship.

To this end, the importance of time and timing in entrepreneurial intentions becomes apparent. While most entrepreneurial intentions' literature addresses entering into entrepreneurship as something that will happen at some point in the future (Liñán and Chen 2009), this study differentiates between intentions of *immediate* and *delayed entrepreneurial entry* that involve time-bound transitions or combinations of career stages.

Specifically, the remainder of the paper focuses on two specific forms of staged entrepreneurship that involve combinations and sequences of paid- and self-employment: *hybrid* and *spawning* entrepreneurship. Hybrid entrepreneurship involves individuals immediately entering entrepreneurship through a parallel combination of paid and self-employment (Folta et al. 2010; Raffiee and Feng 2014). In spawning entrepreneurship, individuals delay their entrepreneurial entry by intending to become self-employed after a period of paid employment—retrospectively understood as individuals conducting spin-off activities in established organizations (Agarwal et al. 2004; Chatterji 2009; Garrett et al. 2017). Figure 1 summarizes different forms of staged entrepreneurship. After introducing the concepts of hybrid and spawning entrepreneurship, we turn to SCCT to help explain the formation of staged entrepreneurial intentions.

2.2 Hybrid entrepreneurship

Folta et al. (2010, p. 254) coined the term *hybrid entrepreneurs* to describe "individuals who engage in self-employment activity while simultaneously holding a primary job in wage work," leading to further research on how and when individuals combine different career paths. The research stream that followed Folta et al.'s (2010) seminal article has only recently gained traction, with most articles on the topic being published after 2016.[2]

Overall, almost all the published articles conclude that hybrid entrepreneurship represents an important part of the overall study of entrepreneurial activities (Table 1). However, hybrid entrepreneurship differs from the dichotomous perspective on self-employment, which remains dominant in the extant literature. More specifically, the reasons why individuals immediately embark on entrepreneurship full time or follow a hybrid route differ (Folta et al. 2010; Schulz et al. 2016). For instance, individuals are more likely to remain in hybrid entrepreneurship when the costs in terms of switching to and the uncertainty around full-time self-employment are high (Folta et al. 2010). Furthermore, risk-averse and self-conscious individuals are more likely to prefer hybrid to full-time entrepreneurship (Raffiee and Feng 2014). While hybrid entrepreneurship can offer a means to supplement a low salary (Block and Landgraf 2016), other studies report that the choice of hybrid entrepreneurship is not exclusively motivated by financial constraints (Folta et al. 2010). There is increasing evidence that some groups of individuals entering hybrid entrepreneurship are driven more by opportunity than necessity. That is, higher levels of human capital make entry into hybrid entrepreneurship more likely (Folta et al. 2010; Schulz et al. 2016) and self-employment activities—initially conducted as a second job—are likely to yield more income than the paid employment (Schulz et al. 2017). In addition, entry into hybrid entrepreneurship is related to passion (Ferreira et al. 2019; Nordström et al. 2016; Thorgren et al. 2014), which corresponds to the view of hybrid entrepreneurs as individuals who form their identity around self-employment activities and, therefore, also accept the associated greater workload (Burmeister-Lamp et al. 2012). Consequently, entrepreneurial persistence in hybrid entrepreneurship is not self-propelling and requires high levels of entrepreneurial self-efficacy (Pollack et al. 2019).

Although hybrid entrepreneurship differs from full-time self-employment, it is endogenously connected to it because the former significantly increases the likelihood of entering the latter (Folta et al. 2010). Furthermore, the gestation period during which individuals combine their paid employment with self-employment

[2] In order to provide an overview of the extant literature in the relatively new research stream on hybrid entrepreneurship, we conducted a systematic literature review (Booth et al. 2005; Tranfield et al. 2003). We used the *Scopus* database and retrieved all articles corresponding to the search string "hybrid entrep*" in titles, abstracts, and keywords. The initial search yielded 30 results. Excluding articles not published in international peer-reviewed journals, as well as articles dealing with hybrid enterprises (i.e., combining ecological and economic goals), led to a final list of 17 articles. We summarized our review in Table 1. The literature review gave us the confidence to meaningfully embed our study in the extant literature.

Table 1 Systematic literature review on hybrid entrepreneurship

Authors	Year	Dependent variable	Independent variable	Sample	Findings
Kurczewska A., Mackiewicz M., Doryń W., Wawrzyniak D	2020	Hybrid entry	Skills, knowledge, and experience	800 pure and 800 hybrid entrepreneurs in Poland	The likelihood of hybrid entrepreneurship entry increases with management experience and decreases with higher levels of education and self-efficacy
Pollack J.M., Carr J.C., Michaelis T.L., Marshall D.R	2019	Persistence in hybrid entrepreneurship	Self-efficacy	28 nascent entrepreneurs in the USA observed over 20 weeks	Higher levels of entrepreneurial self-efficacy lead to higher rates of persistence among hybrid entrepreneurs
Ferreira C.C., Lord Ferguson S., Pitt L.F	2019	Hybrid entrepreneurship, transition into full-time self-employment	Passion, product demand	–	Hybrid entrepreneurship to create enough demand for a transition to full-time entrepreneurship. Passion might also limit the growth potential of hybrid entrepreneurs
Bögenhold D	2019	Self-employment	–	–	Entrepreneurship research needs to consider heterogeneity in forms of employment (especially self-employment and hybrid forms of employment)
Dzomonda O., Fatoki O	2018	Hybrid entry	Desire to supplement income, non-monetary benefits	83 staff members	The main motivations for hybrid entry are the desire to supplement income and non-monetary benefits

Table 1 (continued)

Authors	Year	Dependent variable	Independent variable	Sample	Findings
Schulz M., Urbig D., Procher V	2017	Earnings in the second job	Hybrid entrepreneurs vs. paid employees	47,820 employees (aged 18–65) between 1991 and 2008	A second job in self-employment vs. paid employment increases the chances of higher earnings in the second vs. the main job
Bögenhold D., Klinglmair R., Kandutsch F	2017	Income streams, working hours, workplace, education	Human capital	116 hybrid one-person enterprises in Austria	Human capital leads to higher income from paid work and shorter working hours
Bögenhold D., Klinglmair A	2016	Hybrid vs. full-time entrepreneurs	Socio-demographic characteristics	626 one-person enterprises in Austria	Hybrid solo-entrepreneurs vs. non-hybrids are more educated and more likely to work from home and focus on regional customers. The major income stream for hybrid solo-entrepreneurs is paid work
Meoli M., Vismara S	2016	Full-time vs. hybrid entrepreneurship	Supportive university environment	559 academic spin-offs from 85 Italian universities, 1999–2013	Inadequate university support leads to higher probabilities of academic spin-offs, i.e., the transition to full and independent entrepreneurship

Table 1 (continued)

Authors	Year	Dependent variable	Independent variable	Sample	Findings
Thorgren S., Sirén C., Nordström C., Wincent J	2016	The transition from hybrid to full-time entrepreneurship	Age	256 Swedish venture owners	Younger and older hybrid entrepreneurs are more likely to transition from hybrid entrepreneurship to full-time self-employment
Schulz M., Urbig D., Procher V	2016	Hybrid, full time, or not being an entrepreneur	Policy reform (one-stop-shops)	212,523 Mexicans tracked from 2009 through 2014	Well-educated hybrid entrepreneurs are most responsive to deregulation reforms, that is, more highly educated people are stimulated by deregulation reforms and enter hybrid entrepreneurship
Nordström C., Sirén C.A., Thorgren S., Wincent J	2016	Passion for entrepreneurship	Tenure and team involvement	262 Swedish hybrid entrepreneurs	Teams increase passion for hybrid entrepreneurs whereas higher tenure predicts lower levels of passion. The latter effect is moderated by team involvement
Block J.H., Landgraf A	2016	The transition from hybrid to full-time entrepreneurship	Financial and non-financial motives	481 part-time entrepreneurs from Germany	The need to supplement wage income and a desire for social recognition predicts lingering in hybrid entrepreneurship, whereas independence and self-realization drive transitions into full-time entrepreneurship
Thorgren S., Nordström C., Wincent J	2014	Hybrid entry	Passion	262 Swedish entrepreneurs	Passion for self-employment is the main motive for individuals entering hybrid entrepreneurship

Table 1 (continued)

Authors	Year	Dependent variable	Independent variable	Sample	Findings
Raffiee J., Feng J	2014	Hybrid entry, firm survival	Risk-aversion, Self-evaluation, hybrid entrepreneurship	A representative sample of 12,686 individuals in the USA	Individuals entering full self-employment from hybrid entrepreneurship show higher survival rates compared to those directly entering full self-employment
Burmeister-Lamp K., Lévesque M., Schade C	2012	Time allocation	Financial risks and returns	25 nascent entrepreneurs and 29 undergraduate students	A regulatory focus explains entrepreneurs' time allocations. A promotion focus drives entrepreneurs to allocate more time to the startup if an additional unit of time yields more risk
Folta T.B., Delmar F., Wennberg K	2010	Entry into self-employment vs. hybrid entry	Switching costs, uncertainty, human capital	Men in Sweden between the ages of 25 and 50 tracked from 1994 to 2002	Hybrid entrepreneurship (HE) is different from self-employment. Switching costs, uncertainty, and human capital drive HE. Finally, HE increases the probability of entry into self-employment

activities (i.e., hybrid entrepreneurship) increases the likelihood of survival as a full-time entrepreneur (Raffiee and Feng 2014). This lends further weight to research investigating why and, specifically, when individuals transition from hybrid entrepreneurship into full-time self-employment (Thorgren et al. 2016). Suggested triggers include striving for independence and self-realization (Block and Landgraf 2016) and being in a non-supportive employment environment (Meoli and Vismara 2016). From a career perspective, the literature on hybrid entrepreneurship states that becoming self-employed after a phase of hybrid entrepreneurship can improve the chances of survival of the venture established (Folta et al. 2010; Raffiee and Feng 2014).

Yet, this literature stream has less focused on what drives the formation of hybrid career path intentions in the first place. Based on reviewing the current literature on hybrid entrepreneurship and our definition of staged entrepreneurial intentions, we arrive at the following definition:

Definition 2: *Hybrid entrepreneurial intentions* are characterized by individuals' career plans to combine paid and self-employment in parallel by entering paid employment in addition to self-employment or vice versa.

Some successful entrepreneurs leave paid employment and directly become self-employed, without prior hybrid entrepreneurship phases. We explore such staged entrepreneurial career paths in the next section.

2.3 Spawning entrepreneurship

Most entrepreneurial careers start at established organizations (Sørensen and Fassiotto 2011). The "process whereby an existing firm gives birth to a new firm set up by one or more employees departed from the existing firm" is considered to be *entrepreneurial spawning* (Habib et al. 2013, p. 2790). Spawning entrepreneurs often rely on expertise gained and/or the technology developed in the course of previous employment (Campbell et al. 2012). In practice, the phenomenon is more likely to occur in knowledge-intensive industries when new ventures established by former employees—so-called spin-outs—emerge (Agarwal et al. 2004; Brettel et al. 2013; Chatterji 2009; Howard et al. 2019). That said, literature on entrepreneurial spawning references prior work on individuals who start businesses that spin-off from industry incumbents and academic institutions (Garvin et al. 1983; Locket and Wright 2005; Rasmussen et al. 2011). Yet, established organizations not only provide the means for spin-offs but also enable individuals to gain seniority before moving into entrepreneurship. For instance, individuals acquire professional experiences through workplace peers (Nanda and Sørensen 2010) and meet opportunity structures in established organizations (Sørensen 2007) that spur their transitions from paid- to self-employment. As such, these transitions are an outcome of a *mobility process* in which appropriate organization–person constellations drive individuals pursuit of entrepreneurial opportunities (Sørensen and Sharkey 2014).

In their recent meta-analysis of 28 articles on entrepreneurial spawning,[3] Garrett et al. (2017) investigate predictors of why individuals transition from paid employment to self-employment, finding (1) personal characteristics, such as education, and (2) parent-firm characteristics, such as firm performance, to be relevant factors driving entrepreneurial spawning.

Searching for such motivations at the individual level, Dobrev and Barnett (2005) indicate that various organizational developments could lead to disaffected employees seeking to build their identity by founding their own ventures. This form of employee detachment also occurs when high-performing individuals come to believe that their skills are more fruitfully applied in their own ventures than in the established organizations they work for (Campbell et al. 2012; Ghio et al. 2015). In line with the knowledge spillover theory (Acs et al. 2013) and the jack-of-all-trades perspective (Lazear 2004), the more exclusive and diverse the knowledge is that individuals collect during their paid employment phase, the more likely they are to commercialize their knowledge through a spawning entrepreneurial transition (Garrett et al. 2017).

Reviewing the firm characteristics that favor entrepreneurial spawning, Elfenbein et al. (2010) suggest that spawning is more likely to occur in small firms due to, inter alia, the opportunities they have to specifically develop human capital relevant to entrepreneurial activities. Furthermore, the more entrepreneurial opportunities, such as potential innovations, there are in an established organization, the more likely the employees are to leave that organization and become self-employed (Habib et al. 2013). This is especially true when such entrepreneurial opportunities remain unexploited within the established organization itself, which can encourage employees to exploit them beyond its confines (Andersson et al. 2012). Inefficient practices in established organizations, such as bureaucracy in state enterprises, provide a fertile ground for capable employees to leave and explore alternatives through entrepreneurial activity (Tan and Tan 2017).

While the stream of literature on transitions from paid to self-employment primarily focuses on how social environments in established organizations and individual-organization constellations spur entrepreneurial entry, less is known about when and why individuals intend to enter paid employment as intermediate career stage prior to entrepreneurial entry. In line with an agentic perspective on individuals' career development, we expect individuals to anticipate the abovementioned benefits of working for an established organization for subsequent entrepreneurial entry. Based on our definition of staged entrepreneurial intentions and the review on transitions from paid to self-employment, we arrive at the following definition:

[3] Our search for additional articles on entrepreneurial spawning was conducted in the *Scopus* database by, looking for articles published after Garrett et al.'s (2017) meta review. Using the "entrep* spawn*" AND "spawn* entrep*" search terms, we identified four further articles, although only one corresponded to the definition of entrepreneurial spawning employed in the present study (i.e., Tan and Tan 2017).

Definition 3: *Spawning entrepreneurial intentions* are characterized by individuals' career plans to enter an intermediate stage of paid employment in order to subsequently enter entrepreneurship.

It is important to note that the intention to enter an established organization and delay entrepreneurial entry might include those individuals who want to capitalize on an already existing venture idea at a later point in time as well as those individuals without an existing venture idea that aim to identify (organization-related or unrelated) entrepreneurial opportunities in a career stage of paid employment.

In sum, prior research on staged entrepreneurial career paths, such as hybrid and spawning entrepreneurship, has investigated various predictors of actual career transitions after entry. However, it remains unclear how individuals proactively form entrepreneurial career path intentions. To this end, we integrate our theoretical arguments and prior work on hybrid and spawning entrepreneurship to develop the current study's hypotheses.

2.4 A socio-cognitive career path perspective on entrepreneurial intentions

Social cognitive career theory explains how personality and environment reciprocally affect the career trajectories of individuals over time (Lent et al. 1994). While the cognitive functioning of individuals (e.g., their self-efficacy) drives agentic career developments, environmental constraints or support can either inhibit or enhance career ambitions (Lent and Brown 2013; Lent et al. 2000). Prior research on SCCT and entrepreneurship highlights how social environments influence the formation of entrepreneurial career interests and their subsequent exploitation (Hechavarria et al. 2012; Liguori et al. 2018). For instance, investigating entrepreneurial activities in the Italian student population, Meoli et al. (2020) suggest that relevant others (such as family and peers), as well as organizational and environmental influences (e.g., the supportiveness of the university environment), can explain students entering into entrepreneurship after graduation.

However, a central theme in SCCT is human agency in managing individual careers. Accordingly, a core aspect is the human ability to envision scenarios of the future and align respective goals and activities with them. In their seminal article on the role of social environments on career development, Lent et al. (2000, p. 44) coined the term "process expectations," that is, "the sorts of supports and barriers that people envision encountering while in the process of pursuing a particular course of action" (ibid.). Career adaptability in this sense is not only an adaptive response to change (Savickas 1997) but also a proactive alignment of career plans against the background of current and future expected circumstances in a process of self-reflection and career management (Lent and Brown 2013). In other words, when individuals formulate their career intentions, they proactively imagine the respective path, such as "*I want to be a… and here is how I plan to get there"* (Lent and Brown 2013, p. 560). That said, the intentions to embark on different steps in a career path depend on individual process

expectations. That is, individuals consider personal and environmental factors when on the path to an aspired career outcome and align steps accordingly to proactively adapt to it (Lent et al. 2000; Lent and Brown 2013).

While we expect proactive entrepreneurial career path intentions (i.e., the anticipation of the most suitable career paths against the background of an individual's socio-cognitive factors) to be relevant across all stages of a career, their proactive formation takes place at the exploration stage of individuals' career development (e.g., in the transition from school to work; see, Lent and Brown 2013, p. 560). After individuals enter the workplace, they adjust their initial expectations to their actual job experiences and react accordingly (Cable et al. 2000; Popovich and Wanous 1982). Consequently, when initial job experiences do not match individuals' expectations in specific organizations, those individuals are likely to abandon the career paths they had foreseen (Cable and Judge 1996). The situation was expressed by Lent and Brown (2013, p. 560) when they stated that individuals are constantly "revising or stabilizing vocational goals and plans—*I am a… and want to be a… and here is how I plan to get (or stay) there…*". That re-evaluation process starts soon after entering the job market and can continue until their retirement. The arguments presented above lead the authors to refine their focus to theorize about the formation stage of entrepreneurial career path intentions.

Summarizing the arguments above and transferring them to our proposed perspective on career paths, we suggest that an examination of the formation of entrepreneurial intentions benefits from embedding it in individual career path intentions. Accordingly, we argue that individuals in moments of agency and self-reflection envision barriers and enablers in their career process and proactively adjust to them by (re)aligning their entrepreneurial career plans. To this end, we propose that transitions between paid employment and self-employment (Garrett et al. 2017) and combinations of the two (Folta et al. 2010), as well as generally longer gestation periods for entrepreneurial entry, are only partly due to situational responses and reactive adaptability. Instead, we suggest that individuals form intentions to transition to entrepreneurship and combine entrepreneurial activities with paid employment based on their expected social environment and cognition.

To this end, SCCT differentiates between *proximal* and *distal antecedents* of adaptive career behaviors (Lent and Brown 2013). Proximal antecedents are cognitive-personal and environmental factors that change in the face of other situational factors. Distal antecedents represent individuals' non-malleable *initial social addresses* (Lent and Brown 2013). For instance, self-efficacy directly influences individuals' career behavior but is at the same time subject to environmental conditions that can impede or strengthen individuals' self-efficacy (Bandura 1997). Distal antecedents such as individuals' social class origins or gender, however, indirectly affect their career behavior through cultural learning influencing expected career processes and outcomes (Lent and Brown 2013). That said, the following hypotheses draw on SCCT to argue how proximal and distal personal and environmental factors together shape the formation of staged entrepreneurial intentions.

3 Hypotheses

3.1 Proximal antecedents of staged entrepreneurial intentions

3.1.1 Attitudes to entrepreneurship and staged entrepreneurship

While the relationship between favorable attitudes to the outcomes of a behavior and individuals' intentions is well established (Boyd and Vozikis 1994; Krueger et al. 2000), SCCT implies that attitudes also influence career plans in terms of possible career aspirations. More specifically, Lent and Brown state that when individuals " … anticipate neutral or negative outcomes, people may avoid or procrastinate at performing particular behaviors, put less effort into them, or give up relatively quickly when obstacles are encountered" (Lent and Brown 2013, p. 562). Accordingly, we assume that the formation of a delayed entrepreneurial entry intention (i.e., a spawning entrepreneurial career path) is more likely for those individuals with less positive attitudes to entrepreneurship.

More broadly, SCCT proposes that individual interests constitute a central driver in the formation of career goals and actual behaviors, which can also withstand unfavorable contexts (Lent et al. 1994). Attitudes, in this sense, represent the extent to which individuals perceive entrepreneurial behavior as favorable (Carr and Sequeira 2007). Similarly, the underlying belief in the attitudes to entrepreneurship "…links the behavior to a certain outcome, or to some other attribute such as the cost incurred by performing the behavior" (Ajzen 1991, p. 191). In other words, individuals form career interests that are aligned with their expected outcomes (Lent et al. 2000). However, since "adolescents and adults facing complex life decisions, such as career-related choices, typically realize that long-term payoffs may entail short-term sacrifices," they also form career path intentions in a way that reflects a willingness to bear short-term costs (Lent et al. 2000).

A hybrid entrepreneurship career path is flanked by time allocation dilemmas concerning salaried work and self-employment activities (Burmeister-Lamp et al. 2012). Consequently, hybrid entrepreneurs' private lives suffer in terms of losing leisure and family time (Kimmel and Smith Conway 2001). Positive attitudes surrounding a self-employment activity or its expected outcomes might compensate for temporal shortcomings and foster entry into hybrid entrepreneurship (Thorgren et al. 2014, 2016). Consequently, we expect that the stronger the perception that becoming an entrepreneur is a favorable option, the more likely individuals are to take on challenging steps, such as the accepting double burden of salaried work and self-employment, that is, hybrid entrepreneurship.

Concurrently, spawning entrepreneurial career paths enable individuals to build human capital that is relevant for entrepreneurship and to use it by commercializing opportunities either within or outside an established organization (Rasmussen et al. 2011; Sørensen and Sharkey 2014). This means that individuals can delay their decisions to enter into entrepreneurship to a later point in time without experiencing many switching costs with regard to either decision. As a

result, this might be more appropriate for those individuals who are less confident that an entrepreneurial career is for them and are perhaps wary of gauging opportunity costs. Hence, a less pronounced attitude to entrepreneurship might foment a spawning versus a hybrid entrepreneurial intention. Therefore, our first hypothesis is as follows:

H1 Individuals with more positive entrepreneurial attitudes are less likely to intend to pursue a spawning entrepreneurial career path in comparison to a hybrid entrepreneurial career path.

3.1.2 Self-efficacy and staged entrepreneurship

As outlined above and established in the literature, a perceived lack of competence regarding a behavior hampers intention formation and subsequent behavior (Bandura 1986). We argue that a lack of self-efficacy also affects specific stages in a career plan by delaying entry, owing to individuals perceiving themselves to be less competent at relevant behaviors (Lent and Brown 2013).

Self-efficacy beliefs are central to human agency (Bandura 1986, 1997). This means that individuals base their behavioral decisions on whether they feel capable of acting upon task-related challenges (Bandura 1989). Consequently, according to SCCT, self-efficacy beliefs influence career choices through their influence on outcome expectations, interests, goals, and actions (Lent et al. 1994, 2000). Higher levels of entrepreneurial self-efficacy might, therefore, foster a belief in the ability to achieve favorable outcomes despite the double burden of salaried work and nascent self-employment activities involved in hybrid entrepreneurship.

Prior studies show that those with higher levels of entrepreneurial self-efficacy are more likely to persist in mastering hybrid careers (Pollack et al. 2019), which demands skills such as the effective time management (Burmeister-Lamp et al. 2012). Consequently, we argue that the more individuals perceive that they are able to control forthcoming entrepreneurial challenges, the more likely they are to perceive that they can master additional tasks, such as having a second career in addition alongside being self-employed.

At the same time, research on spawning entrepreneurship specifically highlights the opportunity present in established organizations to acquire relevant entrepreneurial skills and knowledge (Garrett et al. 2017). The human capital acquired at a parent firm can serve as a base for the transition of individuals into self-employment (Agarwal et al. 2004). Adapting to career developments implies self-reflection around which individual stages advance the desired outcome (Lent and Brown 2013). Therefore, we argue that individuals with lower levels of entrepreneurial self-efficacy belief are more likely to delay their entrepreneurial entry, and hence show higher levels of spawning entrepreneurial intentions to first build the necessary competences. Hence, our second hypothesis is as follows:

H2 Individuals with higher perceived levels of entrepreneurial self-efficacy are less likely to intend to pursue a spawning entrepreneurial career path in comparison to a hybrid entrepreneurial career path.

3.1.3 Subjective norms and staged entrepreneurship

Prior literature indicates that positive subjective norms on the part of relevant others—with respect to a form of specific behavior—foster the formation of intentions relating to that behavior. Accordingly, the perceived support of relevant others increases the likelihood that individuals will turn their entrepreneurial intention into a decision to become self-employed (Kacperczyk 2013; Meoli et al. 2020). However, prior studies also note inconclusive and nonsignificant findings with regard to the effects of subjective norms on entrepreneurial intentions (Krueger et al. 2000; Liñán and Chen 2009; Sieger and Monsen 2015). Instead of focusing on these general behavioral intentions, the current study aims to understand how perceived subjective norms predict intentions to combine paid and self-employment and the transition between the two. Specifically, in our contextualization of hybrid entrepreneurial intentions, individuals intend to enter paid employment additionally to their existing entrepreneurial activity. We argue that such an intention of complementing self-employment with paid employment is among other factors a consequence of relevant others' less positive expectations of a standalone entrepreneurial career.

More broadly, SCCT highlights social contextual influences on the career preferences of individuals (Lent et al. 1994, 2000). It indicates that "the wishes of influential others may hold sway over the individual's own personal career preferences" (Lent et al. 2000). This is especially true when contextual factors, such as the approval of relevant others and an individual's interests, collide, causing individuals to struggle to make career choices (Lent et al. 2000). In the absence of social support from relevant others, for example, family members, friends, and colleagues, individuals tend to enter paid employment at an established organization while undertaking their self-employment activity as a side job. Block and Landgraf (2016) confirm that assessment in finding that striving for social recognition encourages individuals to remain in a hybrid entrepreneurship state instead of transitioning into full-time self-employment. In economically thriving countries like Germany, self-employment careers are perceived to be less favorable (Amorós and Bosma 2014) increasing the attractiveness of hybrid entrepreneurship career paths (Block and Landgraf 2016). Accordingly, we argue that hybrid entrepreneurship (adding paid employment to self-employment) might be an adequate path intention for those individuals who anticipate little social support for becoming an entrepreneur and who need to balance their entrepreneurial aspirations and others' expectations. Concurrently, relevant others' support for entrepreneurship encompasses higher expectations for entrepreneurial success that are

more likely to be met after preparing for entrepreneurial activity in stages while within an established organization. Thus, our third hypothesis is as follows:

H3 Individuals with more positive subjective norms toward entrepreneurship are more likely to intend to pursue a spawning entrepreneurial career path than a hybrid entrepreneurial career path.

3.2 Distal antecedents and staged entrepreneurial intentions

3.2.1 Socioeconomic status and staged entrepreneurship

Distal personal and contextual factors are starting points of social learning that affect the formation of subsequent career intentions. Individuals experience reactions based on their *social addresses* (i.e., gender, educational background, socioeconomic status background) and learn to adjust subsequent behavior to adapt to them (Lent and Brown 2013; Lent et al. 1994, 2000). We argue that socioeconomic status influences the formation of entrepreneurial career path intentions because an individual coming from a lower socioeconomic background is more likely than others to initially seek the greater financial stability of a spawning entrepreneurial career path.

According to SCCT, environmental barriers (or support) affect decisions regarding specific choice goals (Lent et al. 2000). Lent et al. (1994, p. 88) previously stated that "socioeconomic conditions, such as extreme poverty, can powerfully affect career choice options." Socioeconomic status backgrounds—individuals' initial "forms of objective resources," such as their family's *income*, *wealth*, *educational attainment*, and *occupational prestige* (Loignon and Woehr 2018, p. 65)—play a major role in vocational behavior research, which aims to explain the intentions and behaviors of individuals with respect to their career paths (Diemer and Ali 2009; Eshelman and Rottinghaus 2015; Flores et al. 2017; Thompson and Subich 2006). Such research shows that, for example, parents transmit their socioeconomic status in parent-adolescent relationships (Thompson et al. 2018) and that college students' awareness of their socioeconomic status is a driving force of their career intentions and behaviors (Muzika et al. 2019).

Socioeconomic status backgrounds limit or broaden career opportunities by continuously shaping individuals' perceptions of environments. More specifically, Lent et al. (2000, p. 41) state that process expectations—that is, individuals' expected barriers to a possible career path—stem from "barriers they have personally experienced, those they have learned about vicariously, and beliefs about whether they could cope successfully with these hurdles." However, socioeconomic status barriers encountered might not only affect the career choice itself but also the anticipated path to an aspired to career. Accordingly, distal social addresses "convey continuous, proximal information about which goals are deemed socially or culturally normative and which actions are likely to be supported or discouraged by the environment" (Lent and Brown 2013). In this sense, we argue that socioeconomic status

backgrounds shape entrepreneurial career plans, especially in the transition from school to work and when individuals have not yet transitioned to socio-economically more beneficial environments (Martin and Côté 2019). Furthermore, in line with SCCT (Lent and Brown 2013), there are cognitive imprints of socioeconomic backgrounds acquired through social learning that form subsequent decision-making even after individuals climb up the social ladder (Kish-Gephart and Campbell 2015).

While hybrid entrepreneurship involves greater uncertainty and risk concerning the anticipated venture gestation period (Folta et al. 2010; Schulz et al. 2017) and attracts individuals endowed with enhanced human capital (Schulz et al. 2016), spawning entrepreneurship offers individuals an opportunity to transition culturally, socially and financially to higher status positions before entrepreneurial entry. Lower levels of families' intergenerational transfer of social, financial and human capital increases venture gestation periods and the hazards of survival for self-made entrepreneurs (Blumberg and Pfann 2016).

Given that entrepreneurship is a career choice that inherently involves delayed financial gratification—as exemplified by a new venture having an average gestation period of 68 months (Liao and Welsch 2008)—and salaried employment promising higher initial earnings (Berkhout et al. 2016; Hamilton 2000), we argue that delaying entrepreneurial entry through staged entrepreneurship encompassing entrepreneurial spawning in established organizations enables those individuals with less supportive family backgrounds to catch up by building relevant entrepreneurial capital (Elfenbein et al. 2010). Consequently, our fourth hypothesis is as follows:

H4 Individuals with higher socioeconomic status backgrounds are less likely to intend to pursue a spawning entrepreneurial career path than a hybrid entrepreneurial career path.

4 Materials and methods

4.1 Data collection

To test the hypothesized relationships, data were gathered from individuals who were at a sensitive point in their lives in terms of forming career intentions— the career exploration stage before starting their first jobs (Lent and Brown 2013). In collaboration with a private panel provider, German students were invited to participate in an online survey developed and administered by the authors at the beginning of 2019. The data collection targeted obtaining a representative sample of the general student population in Germany. A total of 1,224 students from public and private higher education institutions in all German federal states and who were involved in various fields of study completed the questionnaire and were financially compensated for their participation. The authors implemented checks into the survey software to ensure participants filled out the survey once and only

Table 2 Descriptive statistics on the sample

	N	%		N	%
Federal State			Institution funding		
North-Rhine Westphalia	280	27.9	Public	890	88.7
Bavaria	123	12.3	Private	68	6.8
Baden-Wuerttemberg	111	11.1	Other	45	4.5
Hesse	91	9.1	Gender		
Lower Saxony	90	9.0	Male	412	41.1
Berlin	67	6.7	Female	591	58.9
Rhineland-Palatinate	40	4.0	Study progress		
Saxony	50	5.0	Bachelor's	688	68.6
Hamburg	26	3.7	Master's	181	18.0
Schleswig–Holstein	28	2.8	Other (PhD/MBA)	134	13.4
Saxony-Anhalt	24	2.4	Field of study groups		
Thuringia	21	2.1	Agricultural and food sciences	30	3.0
Brandenburg	13	1.3	Humanities	144	14.4
Mecklenburg Western Pomerania	15	1.5	Medicine and health science	66	6.6
Bremen	13	1.3	Engineering sciences	161	16.1
Saarland	11	1.1	Art	34	3.4
Type of institution			Mathematics, natural sciences	156	15.6
University	636	63.4	Law, business, and social sciences	295	29.4
University of applied sciences	367	36.6	Sport sciences	19	1.9
			Other	98	9.8

if they possessed the requisite characteristics (participants needed to be currently enrolled at a German higher education institution). Based on a quality index that assessed the time that participants took to answer each question in comparison to other survey respondents, 121 cases that had low response quality were removed from the initial sample, leading to a final sample of 1,003 participants. Table 2 lists the descriptive statistics of the sample. Participants were on average 24.5 years old, 59% were women, and all subject groups were represented, with the majority of the student respondents studying law, business, and social sciences (29.4%), engineering sciences (16.1%), mathematics, and natural sciences (15.6%), and humanities (14.4%). Furthermore, the federal states of North-Rhine Westphalia (27.9%), Bavaria (12.3%), and Baden-Wuerttemberg (11.1%) together represented more than half of the student population. Most students were taking bachelor's degrees (68.6%) at public institutions (88.7%), which are more often universities (64.4%) than universities of applied sciences (36.6%). The sample is largely representative of the general population of German higher education students (DeStatis 2019).

Table 3 Means, standard deviations (SDs), Cronbach's alphas (CAs), and correlations

Variable	Mean	SD	CA	1	2	3	4	5	6	7	8	9	10	11
1. Hybrid intentions	0.091	0.287	–	1										
2. Spawning intentions	0.159	0.365	–	− 0.137**	1									
3. Abstain	0.698	0.459	–	− 0.480**	− 0.660**	1								
4. Gender	0.589	0.492	–	− 0.103**	0.046	0.051	1							
5. Age	24.455	4.376	–	0.017	− 0.089**	0.029	0.011	1						
6. Migration background	0.224	0.417	–	0.071*	0.087**	− 0.115**	0.012	− 0.013	1					
7. End of studies	2.520	1.107	–	0.008	0.112**	− 0.089**	− 0.105**	− 0.331**	− 0.024	1				
8. Entrepreneurial attitude	3.693	1.542	0.922	0.314**	0.237**	− 0.496**	− 0.150**	− 0.053	0.145**	0.075*	1			
9. Entrepreneurial self-efficacy	4.257	1.129	0.863	0.252**	0.172**	− 0.351**	− 0.047	− 0.088**	0.134**	0.051	0.566**	1		
10. Subjective norms	5.068	1.066	0.751	0.079*	0.182**	− 0.203**	0.010	− 0.071*	0.121**	− 0.019	0.337**	0.371**	1	
11. Socioeconomic status	0.000	0.736	–	0.088**	− 0.018	− 0.048	− 0.083**	− 0.060	− 0.114**	0.079*	0.028	0.088**	0.031	1

*Correlation is significant at the 0.05 level (2-tailed). Pearson product-moment correlation coefficients, point-biserial correlation coefficients where appropriate. N = 1003

**Correlation is significant at the 0.01 level (2-tailed)

***Correlation is significant at the 0.001 level (2-tailed)

4.2 Measures

The construct items were translated from English to German and were checked using back-translation by a researcher uninvolved in the study to avoid potential translation bias (Brislin 1970). All items were measured using a 7-point Likert scale, and the constructs were built through a mean computation of the respective items. Table 3 shows the means, standard deviations (SDs), Cronbach's alphas, and correlations of all the included variables. Concerning the reliability of the measures, their Cronbach's alpha values were solid and higher than 0.75 for all constructs, indicating construct reliability.

The multicategory dependent variable, *staged entrepreneurial intention*, was coded as *1 = hybrid entrepreneurial career path* if students intended to enter salaried employment after their studies while currently undertaking entrepreneurial activities to build their own businesses. More specifically, these students mentioned that they were either already self-employed or currently working on becoming self-employed and that they intended to enter paid employment after their studies.[4] As a result of combining their self-employment activities with the intention to enter salaried employment, we classified those students as intending to enter a hybrid entrepreneurship career path. If students reported delayed entrepreneurial intentions, that is, they intended to initiate an entrepreneurial career five years after the completion of their studies, but in the meantime intended to take salaried employment, they were coded as *2 = spawning entrepreneurial career path*. Their staged entrepreneurial intention to transition from salaried to self-employment is in line with prior literature on individuals' entrepreneurial spawning and spin-off activities where established organizations represent the springboard to individuals' self-employment (Agarwal et al. 2004; Garrett et al. 2017; Howard et al. 2019). While most prior literature remains vague about the time dimension of individuals' entrepreneurial intentions (Liñán and Chen 2009), several studies in the student context use a time distance of five years after the completion of studies to measure the intention of embarking on an entrepreneurial career (Sieger and Monsen 2015; Sieger et al. 2016; Zellweger et al. 2011). The five-year timeframe was explained by Sieger and Monsen: "The reason for using the five-year time frame is that company founders often work elsewhere before they start their own business." (Sieger and Monsen 2015, p. 9). A five-year period also represents a realistic time span for students who are in the formation stage of their career plans to foresee (Popovich and Wanous 1982).

Those who did not intend to be entrepreneurially active at any point in the future were coded as *0 = abstainers*. We excluded those students who either intended to enter self-employment directly upon completion of their studies (n = 28) or who did not know what career path they wanted to follow (if they did not belong to the *abstainer* group [n = 25]). Figure 2 illustrates the different career paths elicited.

[4] We tested our hypotheses with both nascent and active entrepreneurs who intended to enter salaried employment directly after their studies in the main models and with only nascent entrepreneurs who intended to enter salaried employment directly after their studies in our robustness checks.

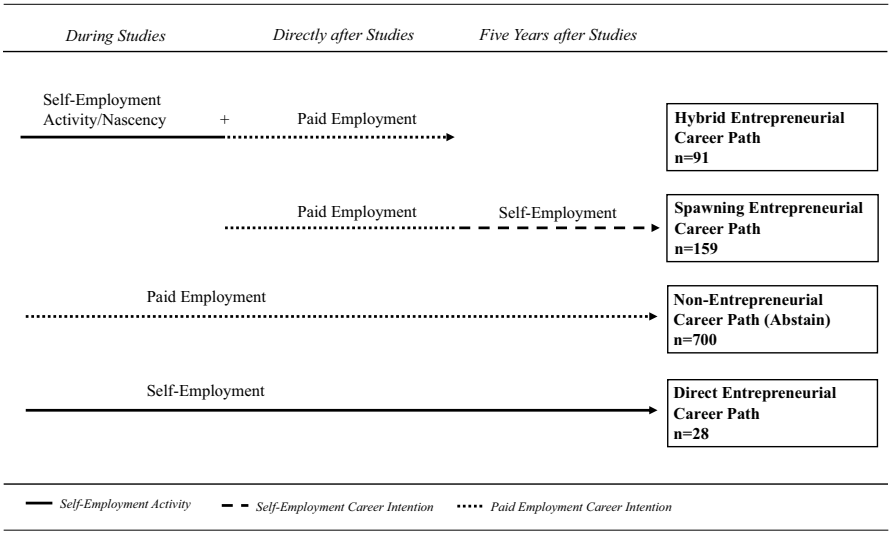

Fig. 2 Visualization of staged entrepreneurial intentions differing between hybrid and spawning career paths

Descriptive statistics show that of the 1,003 students in our sample, 9.07% chose a hybrid entrepreneurial career path, in that they intended to enter paid employment upon completing their studies despite being self-employed or in the process of becoming self-employed; 15.85% chose a spawning entrepreneurial career path by not attempting to become self-employed because they intended to enter paid employment directly after their studies and only become self-employed five years after completing their studies. A total of 69.79% of the students were not entrepreneurially active during their studies and were not planning to enter self-employment either directly or five years after completing their studies. Only 2.8% of the students in our sample did not intend to enter paid employment but instead planned to directly take the self-employment career path upon study completion. These findings are in line with other studies on German students' entrepreneurial activity after graduation (Sieger et al. 2016).

Consistent with other hybrid entrepreneurship studies (Folta et al. 2010), we chose a multinomial over an ordinal regression approach to study intended career entry. Applying an ordered variable approach would mean, for instance, that a *hybrid entrepreneurial intention* would be of a higher order and is more desirable than, for example, a *spawning entrepreneurial intention*. However, as we hypothesized above, intention regarding entrepreneurial career paths strongly depends on both individuals and contexts, making neither of the paths more or less suitable. Accordingly, we did not analyze our hypotheses using an ordinal regression approach in which one career path is "necessarily better than the other" (e.g., see Honig and Hopp 2019, p. 32). Instead, we adopted a multinomial logit model in which dependent variable categories include equivalent career path choices for individuals. By running and comparing probit and logit models (see Appendix B), we assessed the independence

of the irrelevant alternatives (IIA) assumption and checked for violations of that independence in the categories of our multinomial variable *staged entrepreneurship* (Hausman and McFadden 1984). The results of both models were in line with the core hypotheses in our multinomial logit model. Hence, we assumed that the IIA holds and continued the analysis using our multinomial logit regression model.

Referencing the cross-culturally validated items by Liñán and Chen (2009), the current study used five items to measure *personal attitudes to entrepreneurship*, as well as three items to capture *subjective norms* regarding the perception that family, friends, and fellow students approve of an entrepreneurial career. *Entrepreneurial self-efficacy* was measured using seven items concerning perceived competence in terms of dealing with the relevant stages of the entrepreneurial process (Kickul et al. 2009; Liñán 2008; Zhao et al. 2005).

Furthermore, to measure *socioeconomic status backgrounds*, we relied on one of the most established measures: capturing the family income, educational background, and job status information (Adler et al. 2000; Côté 2011). Since prior literature indicates that the highest socioeconomic status indicators in a family represent its socioeconomic status (Davis and Robinson 1988), we asked respondents to provide information on the job status and educational background of both parents and included the highest manifestation of each respondent's father or mother in our measure. In line with the procedure suggested by Adler et al. (2000), we standardized those measures and integrated them into one socioeconomic status variable using mean computation. The items of our latent variables are listed in detail in Appendix A.

Control variables applied included: *gender* measured as a dichotomous variable (1 = female; 0 = male) because previous studies show that men are more likely to demonstrate entrepreneurial intention (Haus et al. 2013); *age* measured in years because attitudes to entrepreneurship might change with age, particularly during the transition to adulthood (Obschonka 2016); *migration background* to reflect findings that show that migrants demonstrate greater levels of entrepreneurial activity under certain circumstances (Baycan-Levent and Nijkamp 2009); *time to completion of studies* measured in years because career path intentions might principally be formed during the final education stage; and *fields of study* as subject groups to take into account differences between disciplines (Sieger and Monsen 2015; Zellweger et al. 2011).

Table 4 indicates the characteristics of those individuals who formed different staged entrepreneurial intentions. Spawning entrepreneurial career paths attracted more women, whereas hybrid career paths corresponded with higher socioeconomic status backgrounds. The means of our hypothesized latent variables also differed during the subsample analysis.

We conducted confirmatory factor analysis using all the latent variables in our model, resulting in an acceptable model fit ($X^2 = 835{,}532$; df = 87; GFI = 0.89; TLI = 0.90; CFI = 0.91; RMSEA = 0.093). All factor loadings were above 0.5, and factor intercorrelations were below 0.65, providing support for the convergent and discriminant validity of our factors.

Since we drew on both our independent and dependent variables in the same survey, we focused on testing for common method variance, despite following the

Table 4 Means of independent variables by type of staged entrepreneurial intentions

	Hybrid (1)		Spawning (2)		Abstain (3)		Difference between (1) and (2) in (4)
	Mean	SD	Mean	SD	Mean	SD	Sig
Gender	0.429	0.498	0.642	0.481	0.606	0.489	***
Age	24.692	5.420	23.560	4.229	24.539	4.067	†
Migration background	0.319	0.469	0.308	0.463	0.193	0.395	
End of studies	2.550	1.025	2.805	1.082	2.456	1.110	†
Entrepreneurial attitude	5.226	1.213	4.533	1.295	3.190	1.359	***
Entrepreneurial self-efficacy	5.155	1.048	4.704	0.909	3.996	1.086	***
Subjective norms	5.333	1.117	5.514	0.976	4.925	1.025	
Socioeconomic status	0.204	0.706	− 0.031	0.760	− 0.023	0.729	*
Agricultural and food sciences	0.066	0.250	0.025	0.157	0.029	0.167	
Humanities	0.121	0.328	0.082	0.275	0.161	0.368	
Medicine and health science	0.066	0.250	0.088	0.284	0.061	0.240	
Engineering sciences	0.187	0.392	0.233	0.424	0.143	0.350	
Art	0.055	0.229	0.031	0.175	0.027	0.163	
Mathematics, natural sciences	0.165	0.373	0.094	0.293	0.169	0.375	
Law, business, and social sciences	0.253	0.437	0.327	0.471	0.289	0.453	
Sport sciences	0.055	0.229	0.006	0.079	0.019	0.135	*
Observations	91		159		700		

To compute the significance of mean differences we applied an independent sample t-test

SD standard deviation

*p < 0.05

**p < 0.01

***p < 0.001

† < 0.1

recommendations of Podsakoff et al. (2003) to mitigate the risk of common method variance at the survey design stage. The research design ensured that participants remained anonymous by using a third-party recruitment agent, which should have decreased social desirability bias. Furthermore, the independent and dependent variables were positioned in different parts of the survey using varying question types, thus reducing the likelihood of answer patterns. This means that, while the independent variables drew on levels of agreement (using Likert-type scales), the dependent variable was dichotomous because participants could either affirm or reject the related questions. Accordingly, we were confident the relationship between the independent and dependent variables was not significantly biased due to common method variance even before the post hoc tests.

Applying the single-factor method (Podsakoff et al. 2003), we forced all items of our three latent variables to load on to only one factor, which showed that only 43.17% of the variance could be explained by a single factor. In addition, the

Table 5 Multinomial logit model (abstain, hybrid, spawning path intentions)

	Hybrid vs. Abstain			Spawning vs. Abstain			Spawning vs. Hybrid		
	B	Sig	S.E	B	Sig	S.E	B	Sig	S.E
Intercept	− 9.004	0.000	1.438	− 6.241	0.000	1.063	2.763	0.082	1.591
Control variables									
Gender	− 0.286		0.277	0.476	*	0.215	0.762	**	0.306
Age	0.034		0.030	− 0.012		0.026	− 0.046		0.035
Migration background	0.402		0.291	0.322		0.221	− 0.080		0.313
End of studies	− 0.030		0.130	0.252	**	0.096	0.282	*	0.141
Hypothesized main effects									
Entrepreneurial attitude	1.020	***	0.134	0.566	***	0.086	− 0.454	***	0.141
Entrepreneurial self-efficacy	0.564	***	0.172	0.169		0.115	− 0.395	*	0.185
Subjective norms	− 0.306	*	0.144	0.240	*	0.109	0.546	***	0.161
Socioeconomic status	0.446	*	0.189	− 0.01		0.136	− 0.456	*	0.204
Field of study dummy variables									
Agricultural and food sciences	1.235		0.855	− 0.677		0.656	− 1.912	*	0.956
Humanities	0.922		0.742	− 0.578		0.425	− 1.500	†	0.791
Medicine and health science	0.742		0.814	0.233		0.451	− 0.509		0.841
Engineering sciences	1.036		0.720	0.343		0.375	− 0.694		0.741
Art	1.826	*	0.898	0.187		0.622	− 1.639	†	0.942
Mathematics, natural sciences	0.972		0.726	− 0.597		0.416	− 1.569	*	0.772
Law, business, and social sciences	0.510		0.698	− 0.216		0.342	− 0.726		0.717
Sport sciences	1.664	†	0.962	− 1.483		1.118	− 3.147	*	1.324
Model fit									
Nagelkerke (pseudo R-square)	0.370								

S.E. standard errors

*p < 0.05

**p < 0.01

***p < 0.001

† < 0.1

model fit in the single-factor solution dropped significantly to an inadequate level ($X^2 = 33{,}049$; df = 91; GFI = 0.65; TLI = 0.62; CFI = 0.67; RMSEA = 0.179), indicating that common method variance was of little relevance for the data (Malhotra et al. 2006).

5 Results

To test our hypothesized relationships, we analyzed our multinomial logit model. The results, including coefficient strengths and significance levels, are presented in Table 5. Prior to analyzing our hypotheses on spawning versus hybrid entrepreneurial intentions, we displayed baseline models for spawning and hybrid entrepreneurial career paths where the reference category was abstaining from entrepreneurship. The model fit of Nagelkerke's pseudo R^2 shows that 37% of the dependent categories in the final model can be explained by the independent variables.

When comparing staged entrepreneurial career paths and abstaining from entrepreneurship, we find that entrepreneurial attitude ($b = 1.020$, $p < 0.001$) and self-efficacy ($b = 0.564$, $p < 0.001$) positively influence a hybrid entrepreneurial intention, whereas more positive subjective norms decrease the likelihood of individuals intending to add a main job as a salaried employee to their self-employment activities ($b = -0.306$, $p < 0.05$). In addition, the higher the socioeconomic status background, the more likely an individual is to take a hybrid entrepreneurial career path as against abstaining from entrepreneurship ($b = 0.446$, $p < 0.05$). Furthermore, spawning entrepreneurial career paths are more likely for individuals who have more positive entrepreneurial attitudes ($b = 0.566$, $p < 0.001$) and subjective norms ($b = 0.240$, $p < 0.05$).

With respect to our control variables, women were more than twice as likely to choose a spawning over a hybrid entrepreneurial career path ($b = 0.726$, $p < 0.05$) ($Exp(B) = 2.143$). Furthermore, the more time remaining until individuals complete their education, the more likely they are to think about a spawning rather than a hybrid entrepreneurial career path ($b = 0.282$, $p < 0.05$).

We now turn to our hypothesized relationships regarding cognitive and environmental variables that predict staged entrepreneurship in terms of hybrid and spawning entrepreneurial intentions. Our first hypothesis (H1) states that the stronger the attitude to entrepreneurship as a favored goal, the less likely individuals are to embark on a spawning entrepreneurship path as compared to a hybrid career path. Our results ($b = -0.454$, $p < 0.001$) strongly support H1. Individuals who have a one-unit increase in attitude to entrepreneurship are 36.5% more likely to choose a hybrid rather than a spawning entrepreneurial career path ($Exp(B) = 0.635$).

The second hypothesis (H2), which suggests that a higher level of self-efficacy among entrepreneurs negatively influences the likelihood of their forming a spawning rather than a hybrid entrepreneurial intention, is supported by our analysis ($b = -0.395$, $p < 0.05$). A one-unit increase in the self-efficacy of individuals increases the likelihood of them choosing a hybrid rather than a spawning career path by 32.6% ($Exp(B) = 0.674$).

The third hypothesis (H3) suggests that more positive subjective norms positively influence the likelihood of individuals choosing a spawning entrepreneurial career path over a hybrid one. The analysis of our multinomial logit model strongly supports H3 by showing the positive effect of subjective norms on a spawning entrepreneurial intention ($b = 0.546$, $p < 0.001$). More specifically, individuals who have a one-unit increase in their subjective norms regarding entrepreneurship are 1.7

times more likely to choose a spawning over a hybrid entrepreneurial career path (Exp(B) = 1.727).

Finally, the fourth hypothesis (H4) of this study suggesting a higher socioeconomic status background decreases the likelihood of forming an intention to pursue a spawning rather than a hybrid entrepreneurial career path is supported by the findings of our multinomial logit model ($b = -0.456$, $p < 0.05$).

6 Robustness checks

To ensure we could be confident of our results, we tested for several alternative explanations. First, we tested whether the results of our model held if we changed the categories of our multinomial dependent variable. There are concerns about whether active entrepreneurs entering paid employment might intend to quit their self-employment activity after graduation. Consequently, we specifically tested whether including only nascent student entrepreneurs (those currently trying to become self-employed) in our hybrid category produced a different outcome. Our checks show that the hypothesized effects (H1–H4) remain equally significant, whereas only the socioeconomic status background effect reduces slightly in significance.

Additionally, omitting non-staged (i.e., direct) entrepreneurial career paths could raise concerns regarding biased results. We therefore checked how the effects changed when adding a fourth category called *direct self-employment*, which encompasses students intending to become self-employed directly after graduating. The hypothesized effects on spawning versus hybrid entrepreneurial career paths hold (entrepreneurial attitude: $b = -0.440$, $p < 0.01$; entrepreneurial self-efficacy: $b = -0.419$; $p < 0.05$; subjective norms: $b = 0.517$, $p < 0.001$; socioeconomic status background: $b = -0.440$; $p < 0.05$). However, due to the small subsample of students intending to follow a direct entrepreneurial career path (28 out of 1003 students[5]), we omitted this category in our final model to avoid bias in our multinomial logit model.

To further check the robustness of our results, we tested for a model in which we investigated the effects of entrepreneurial intention (Liñán and Chen 2009) on staged entrepreneurial intentions. The results indicate that higher levels of entrepreneurial intention are more likely to predict a hybrid rather than a spawning entrepreneurial intention ($b = 0.538$, $p < 0.001$). When controlling for the entrepreneurial intentions of individuals, the positive effect of socioeconomic status background on hybrid versus spawning entrepreneurial career paths remains significant ($b = -0.564$, $p < 0.01$).

Finally, an alternative mechanism predicting future entrepreneurial intentions is prior exposure to entrepreneurship (Krueger et al. 2000). Whereas individuals in the

[5] A nationwide study, conducted in Germany in 2016 at 39 higher education institutions and among 15,984 students, found that two percent of students intended to become self-employed directly after their studies, while 17 percent intended to become self-employed five years after graduation. This corresponds to the results we see in our data (Sieger et al. 2016).

hybrid entrepreneurship category by definition already have some entrepreneurial experience, those individuals showing delayed entrepreneurial intentions (i.e., via spawning entrepreneurship) might build their intentions on prior experience. Descriptive analysis shows that approximately 20% of the individuals in the *spawning entrepreneurial intentions* category reported prior entrepreneurial experience. Adding entrepreneurial experiences as a dichotomous variable revealed that entrepreneurial experience is not a significant predictor of a spawning entrepreneurial path intention ($b = 0.060$, $p > 0.1$; abstain as reference category) and the remaining results hold. Furthermore, excluding individuals that fit into the *spawning entrepreneurial intentions and prior entrepreneurial experience* category did not change any of our hypothesized relationships in our final model on spawning versus hybrid entrepreneurial intentions.

7 Discussion

This study is guided by the research question of how individuals' cognitive and environmental factors influence the formation of hybrid or spawning entrepreneurial intentions. By applying an agentic view of individuals' career management, we argue that individuals envision how environmental and personal factors play out in the career process and align their intended paths accordingly. We focus on how individuals form intentions regarding entrepreneurial career paths before embarking on their career. Specifically, we explore the personal and contextual antecedents for career plans that involve transitioning from paid employment to self-employment (i.e., spawning entrepreneurship) and combining paid employment and self-employment (i.e., hybrid entrepreneurship). Drawing on a largely representative dataset of individuals at higher education institutions in Germany surveyed before the start of their careers, we find that individuals negotiate their intentions to transition between paid- and self-employment in the future in alignment with their currently perceived personal and environmental factors (i.e., their personal attitudes to entrepreneurship, perceived self-efficacy, subjective norms, and socioeconomic status backgrounds). The findings thereby offer several contributions to theory and practice.

First, the study's main contribution lies in shifting the perspective from a dichotomous understanding of entrepreneurial intentions (i.e., employee or entrepreneur) to a career perspective that involves multiple stages and timing.[6] To this end, staged entrepreneurial intentions correspond to, but at the same time differ from, general entrepreneurial intentions (Boyd and Vozikis 1994; Krueger et al. 2000; Schlaegel and Koenig 2014). For instance, we argue that ambivalent attitudes to entrepreneurship might lead to delayed entrepreneurial intentions that allow individuals to integrate an intermediate step (in our context: a stage of paid employment) which can

[6] Our results indicate that individuals are most likely to form entrepreneurial intentions that include transitional career pathways. Out of a largely representative sample of the German student population, 24.9 percent intended to take either hybrid or spawning entrepreneurial career paths, whereas only 2.8 percent intended to embark on a direct path to entrepreneurship.

confirm the desirability of an entrepreneurial career. As such not immediately turning intentions into action represents a rational choice that allows some people (e.g., those from lower socioeconomic backgrounds) to collect beneficial resources and identify opportunities in another career stage (Sørensen and Sharkey 2014). That said, our study offers a lens through which to study entrepreneurial intentions that considers timing and sequences in career plans as an inherent part of the formation of behavioral intentions. Accordingly, this study connects to literature that highlights the role of temporality on the theory of entrepreneurial intentions and behavior (Gielnik et al. 2014; Tumasjan et al. 2013). Being more precise on time frames and underlying career plans should prompt a reconsideration of the ambiguity in researchers' implicit assumptions of temporality in entrepreneurial intentions and enhance the potential to integrate existing studies.[7]

Second, drawing on SCCT (Lent et al. 1994, 2000), we extend the emerging stream of staged entrepreneurship (i.e., research on hybrid and spawning entrepreneurship (Folta et al. 2010; Garrett et al. 2017; Raffiee and Feng 2014) by adding an agentic career path perspective. While prior literature on hybrid and spawning entrepreneurship almost exclusively focuses on how individual and organizational contexts (e.g., non-supportive organizational environments: Meoli and Vismara 2016) influence career transition responses, our study provides a perspective that ascribes individuals higher levels of agency as they proactively plan transitions into and out of entrepreneurship. By utilizing SCCT's model of career self-management, this study presents individuals' entrepreneurial career development as intentional (Lent and Brown 2013). That said, this study contrasts a view of the combination and sequence of salaried employment and self-employment that is rooted in the adaptation to situational factors (e.g., bridging financial shortfalls: Block and Landgraf 2016) with a view that is based on forethought (e.g., envisioning barriers and enablers in career development). While actual career transitions are likely to be based on a combination of the two perspectives, this study reminds observers of the possibility that individuals transitioning into and out of entrepreneurship (e.g., spin-offs in academia: see Rasmussen et al. 2011; and incumbent firms: see Agarwal et al. 2004) might follow an individual career plan characterized by intended career stages and destinations.

Third, our study contributes to SCCT research on entrepreneurship by highlighting the theory's potential to explain the formation, revision, and evolution of entrepreneurial career paths. The literature utilizing SCCT has made large strides toward understanding the personal and contextual factors influencing entrepreneurial intentions and behaviors (Liguori et al. 2018; Meoli et al. 2020). Career management studies referencing the findings of this study might extend the focus from the factors influencing the interest in an entrepreneurial career (see Pérez-López et al. 2019) to which measures (i.e., career stages and transitions) individuals intend to take to get

[7] While most research implicitly considers entrepreneurial intentions as a non-time-specific intention to act *someday* or *in the future* (Liñán and Chen 2009), some studies consider entrepreneurial intentions as the intention to act in five years (e.g., Sieger and Monsen. 2015) while others understand entrepreneurial intentions as intending to turn self-employed within a year (e.g., Meoli et al. 2020).

there (Lent and Brown 2013). To this end, integrating the concept of staged entrepreneurship would enable SCCT scholars to better understand individuals' adaptive behaviors involving salaried employment (e.g., delaying entrepreneurial entry via spawning entrepreneurship: Chatterji 2009) which seem counterintuitive if only regarded through the lens of individuals' career destinations and make sense when considering a staged perspective.

8 Limitations and further research

First, our study measured staged entrepreneurial intentions but can offer no information on whether individuals turn their plans into reality. Hence, a promising direction in our view would be to revisit the entrepreneurial intention–action gap from a career path perspective. While prior literature has almost exclusively focused on how contextual and personal variables predict failing to turn entrepreneurial intentions into action (Kibler et al. 2014; Meoli et al. 2020; Van Gelderen et al. 2015), a career path perspective might address questions related to (1) *whether delays in entrepreneurial entry* (and hence staged entrepreneurial careers involving paid employment) *are planned*, (2) *when and why individuals deviate from their initial career plans*, and (3) *how career plan revisions correspond to individuals' overall levels of entrepreneurial intention over time*.

Given that results here show that people from lower socioeconomic status backgrounds are more likely to form intentions that involve delaying their entry into entrepreneurship, it remains unclear whether new working environments (i.e., in a spawning entrepreneurial career) lead to them sticking to or deviating from their initial entrepreneurial career plans (Cable and Judge 1996; Cable et al. 2000; Zhao 2013). While prior literature states that socioeconomic status factors are of utmost importance to career decisions (Diemer and Ali 2009; Eshelman and Rottinghaus 2015; Flores et al. 2017) but ultimately do not prevent individuals from entering entrepreneurship (Kim et al. 2006; Schoon and Duckworth 2012), further research could explore if socioeconomic status influences *how* (i.e., through which career paths) instead of *if* individuals enter entrepreneurial careers.

Second, our study limits the scope of analysis to the context of individuals from higher education institutions that are about to enter a professional career after the completion of their studies. This perspective is theoretically interesting since it is a unique setting for the formation of initial career plans: "*I want to be a … and here is how I plan to get there …*" (Lent and Brown 2013, p. 560). Nevertheless, future research on SCCT might observe individuals' career development *after* embarking on a career (e.g., see Cable and Judge 1996), and explain which personal and contextual factors inform the *revision* and *stabilization* of staged entrepreneurial intentions (such as entering hybrid entrepreneurship from salaried employment). Specifically, against the background of prior work on individuals' entrepreneurial career decidedness (Pérez-López et al. 2019), studies might explore the strength of staged entrepreneurial intentions as antecedents for actual entrepreneurial career development. Furthermore, while our students' context focused on staged entrepreneurship involving the combination of and transition from paid employment to self-employment, future

research might study staged intentions that involve career paths within which individuals intend to exit self-employment and transition to paid employment (Boeker and Karichalil 2002).

Third, the findings of our study on the effect of gender on staged entrepreneurial intentions bring to light a relationship we have not focused on conceptually in this study but might further contribute to understanding the role of gender in entrepreneurial career decisions. According to our results, women are more than twice as likely to have delayed entrepreneurial intentions (i.e., to favor a spawning entrepreneurship path via paid employment). Potential explanations might involve either a tendency to accumulate further resources and knowledge in paid employment, which might reflect that women are more cautious about the feasibility of an immediate entry into entrepreneurship (Wilson et al. 2007) or that the time-consuming combination of self-employment and paid employment is not a particularly attractive entrepreneurial career path for women. Exploring the mechanism behind delayed entrepreneurial intentions might therefore be an interesting research avenue to follow.

9 Conclusion

The boundaries of entrepreneurial career paths are blurred. Individuals combine, transition between and exit career stages of paid- and self-employment. Yet, the traditional view on entrepreneurial intentions is dichotomous and puts emphasis on why individuals become either entrepreneurs or employees. In our study, we introduce the concept of staged entrepreneurial intentions. That is, individuals' career plans that involve configurations of entering, combining and delaying entrepreneurship. The findings of our empirical analysis among individuals prior to career entry suggest that individuals proactively manage their entrepreneurial career paths. They form staged entrepreneurial intentions that involve the combination of and transition between career stages of self- and paid employment. One of the main findings of our study is that individuals tend to delay entrepreneurial entry by preferring an intermediate career stage of employment in established organizations. Individuals with lower socioeconomic status backgrounds and women seem more likely to prefer such a career path. We hope that, by placing a focus on the heterogeneity of entrepreneurial career paths in our study, entrepreneurship researchers and educators increasingly acknowledge and support career plans that involve vision and agency in the combination of and transition between different career stages.

Appendix A

Items of the related constructs applied in the study

	Constructs	Scale	References
1	Entrepreneurial attitude (*Please indicate your level of agreement with the following statements)*	7-point Likert	(Liñán and Chen 2009)
1.a-	Being an entrepreneur offers more advantages than disadvantages to me		
1.b-	A career as an entrepreneur is attractive for me		
1.c-	If I had the opportunity and resources, I'd like to start a firm		
1.d-	Being an entrepreneur would entail great satisfaction for me		
1.e-	Among various options, I would rather be an entrepreneur		
2	Subjective norms *(If you decided to create a firm, would people in your close environment approve of that decision?)*	*1 = total disapproval to 7 = total approval*	(Liñán and Chen 2009)
2.a-	Your close family		
2.b-	Your friends		
2.c-	Your fellow students		
3	Entrepreneurial self-efficacy (*Please indicate your level of competence in performing the following tasks)*	*1 = very low competence to 7 = very high competence*	(Zhao et al. 2005)
3.a-	Successfully identifying new business opportunities		(Zhao et al. 2005)
3.b-	Creating new products (or services)		
3.c-	Thinking creatively		(Zhao et al. 2005)
3.d-	Commercializing an idea or new development		(Zhao et al. 2005)
3.e-	Leadership and communication skills		(Liñán 2008)
3.f-	Networking skills and making professional contacts		(Liñán 2008)
3.g-	Managing a small business		(Kickul et al. 2009)
4	Socioeconomic status—Parents' education *(Which of the following categories most appropriately describe your mother's/father's level of education?)*	Ordinal	(Adler et al. 2000)
4.a-	Lower than a high school graduate		
4.b-	High school graduate, general education diploma, or college qualification		
4.c-	College graduate or higher		

	Constructs	Scale	References
4	Socioeconomic status—Parents' job status *(Which of the following categories most appropriately describe your mother's/ father's jobs?)*	Ordinal	(Adler et al. 2000)
4.d-	Blue-collar or service		
4.e-	Clerical or self-employed		
4.f-	Professional or managerial		
4	Socioeconomic status —Family income *(How high do you estimate your family's annual income was during your childhood?)*	Ordinal	(Adler et al. 2000)
4.g-	€ 0–20,000		
4.h-	€ 20,001–40,000		
4.i-	€ 40,001–60,000		
4.j-	€ 60,001–80,000		
4.k-	€ 80,001–100,000		
4.l-	€ 100,001–120,000		
4.m-	€ 120,001–140,000		
4.n-	€ 140,001–160,000		
4.o-	> € 160,000		

Appendix B

Comparison of the hypothesized effects in the logit and probit models

	Probit model				Logit model				Probit model		Logit model	
	Hybrid vs Abstain		Spawning vs Abstain		Hybrid vs Abstain		Spawning vs Abstain		Spawning vs Hybrid		Spawning vs Hybrid	
	B	Sig	B	Sig	B	Sig	B	Sig	B	Sig	B	Sig
(Intercept)	− 4.504	0.000	− 3.735	0.000	− 8.670	0.000	− 6.684	0.000	1.707	0.074	2.986	0.068
Gender	− 0.132	0.386	0.245	0.045	− 0.250	0.379	0.434	0.047	0.493	0.012	0.877	0.009
Age	0.013	0.442	− 0.003	0.814	0.033	0.280	− 0.005	0.865	− 0.018	0.390	− 0.032	0.352
Migration background	0.271	0.104	0.156	0.235	0.556	0.062	0.310	0.172	0.060	0.775	0.065	0.853
End of studies	0.002	0.978	0.129	0.019	0.017	0.899	0.238	0.016	0.185	0.050	0.314	0.050
Entrepreneurial attitude	0.550	0.000	0.323	0.000	1.013	0.000	0.570	0.000	− 0.313	0.001	− 0.545	0.001
Entrepreneurial self-efficacy	0.235	0.011	0.124	0.056	0.455	0.009	0.201	0.085	− 0.263	0.044	− 0.453	0.042
Subjective norms	− 0.158	0.045	0.143	0.017	− 0.301	0.038	0.274	0.012	0.322	0.004	0.568	0.004
Socioeconomic status	0.179	0.084	0.013	0.865	0.341	0.082	0.008	0.952	− 0.272	0.035	− 0.465	0.041
Agricultural and food sciences	0.609	0.173	− 0.435	0.232	1.155	0.193	− 0.760	0.255	− 1.435	0.016	− 2.466	0.016
Humanities	0.523	0.175	− 0.403	0.089	1.079	0.171	− 0.671	0.120	− 0.796	0.086	− 1.433	0.081

	Probit model				Logit model				Probit model		Logit model	
	Hybrid vs Abstain		Spawning vs Abstain		Hybrid vs Abstain		Spawning vs Abstain		Spawning vs Hybrid		Spawning vs Hybrid	
Medicine and health science	0.270	0.538	0.123	0.632	0.622	0.473	0.254	0.580	− 0.573	0.256	− 1.006	0.257
Engineering sciences	0.413	0.276	0.205	0.335	0.871	0.255	0.371	0.326	− 0.466	0.287	− 0.827	0.288
Art	1.026	0.038	0.093	0.796	1.914	0.046	0.244	0.700	− 1.001	0.075	− 1.665	0.093
Mathematics, natural sciences	0.501	0.182	− 0.362	0.115	0.948	0.217	− 0.635	0.133	− 1.069	0.018	− 1.849	0.022
Law, business, and social sciences	0.234	0.524	− 0.120	0.535	0.585	0.434	− 0.181	0.602	− 0.395	0.339	− 0.720	0.330
Sport sciences	0.964	0.060	− 1.074	0.103	1.941	0.046	− 1.780	0.128	− 1.744	0.019	− 3.107	0.024

Effects of the binary logit and probit models and the significance levels. Two-tailed significance tests.

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Declarations

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