

Age, culture, and self-employment motivation

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Abstract To study the interplay between age and culture as driver of self-employment motivation, we examine cross-sectional age differences (young to late adulthood) in self-employment desirability and feasibility beliefs across different cultures. We utilize individual-level data from the 2012 Flash Eurobarometer survey collected in 21 countries (total $N = 13,963$ individuals) and culture-level data from the GLOBE project. Our results from multi-level regression analyses show similar curvilinear lifespan patterns in both desirability and feasibility beliefs, with a peak in young adulthood and a strong decline toward late adulthood. This general pattern of age differences in these motivational factors, however, differs significantly across cultural dimensions of uncertainty avoidance,

institutional collectivism and performance orientation. Notwithstanding the limitations of cross-sectional data, the present results indicate that individual factors motivating self-employment are systematically intertwined with, and embedded in, *both* age and culture. Implications for theory and practice are discussed.

Keywords Age · Entrepreneurship · Culture · Self-employment motivation · Life-span

JEL Classifications M13 · L26 · J24

1 Introduction

The study of individuals' age has gained momentum in the entrepreneurship scholarly debate. Age has been indicated as one of the most important determinants of entrepreneurship in individuals (Lévesque and Minniti 2006; Parker 2009), and existing research has developed a growing interest in studying age differences in individuals' career decisions (Kooij et al. 2011), including self-employed work (Lévesque and Minniti 2006; Parker 2009). Macro-changes in the environment suggest that self-employment as a possible career choice is now available to a broader spectrum of the adult population. On one hand, societies are exposed to massive demographic changes with a very prominent growth in the proportion of older people (e.g., 55 years and older) in the workforce (Kautonen et al. 2014; Heim 2015). As a consequence, the pool of

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potential entrepreneurs among this group is constantly supposed to grow (Kautonen et al. 2010).¹ Experts stress that future societies will rely more heavily on the productivity and work motivation of older people (Kanfer and Ackerman 2004), including their entrepreneurial agency, and have called for the introduction of tailored policy intervention (Kibler et al. 2015; Curran and Blackburn 2001). On the other hand, several European countries such as Spain and Italy face high youth unemployment rates (Bruno et al. 2014). Policymakers deem the promotion of entrepreneurship and self-employment a useful tool to “fight” youth unemployment (Minola et al. 2014).

While research has mostly focused on the link between age and self-employment status (vs. employed work), mainly proposing and finding an inverted U-shaped relationship (Curran and Blackburn 2001; Lévesque and Minniti 2006; Bönte et al. 2009), two important shortcomings exist in the literature. First, prior studies have focused on self-employment actions, refraining from assessing age differences in self-employment motivational characteristics, i.e., the action’s antecedents. Studying how age relates to self-employment motivation is informative because motivational aspects represent the central antecedents of intentions and actions (Krueger et al. 2000; Schjoedt et al. 2014; Kautonen et al. 2015). In fact, studies on individual and entrepreneurial cognition, including motivational factors (Shane et al. 2003), help in explaining how individuals evaluate opportunities (Mitchell and Shepherd 2010; Mitchell et al. 2000) and how they form intentions for developing and pursuing these ideas (Dimov 2007; Wood et al. 2012). In this sense, self-employment motivations are important predictors of a broad set of career decisions, including both entry and exit from self-employment, but also of further entrepreneurial outcomes, such as growth and success (Rauch and Frese 2007; Carsrud and Brännback 2014). Thus

¹ While the pool of potential ‘third-age’ entrepreneurs is increasing, this, however, does not necessarily mean that the share of older individuals engaging in self-employment is increasing everywhere. A recent study of US near-retirees (55–64 years old) shows a declining trend in self-employment between 1994 and 2012 (Heim 2015). The decline is found to be driven by an increase in the exit rate to wage and salary employment, a decline in the rate of self-employment among new entrants into this age cohort, and an increase in the share of these new entrants. The author also finds that health insurance coverage and after-tax prices of health insurance are significantly associated with these three rates.

from a policy perspective, it may become easier (and more effective) to design interventions to tailor self-employment motivation, which would ultimately lead to action, rather than targeting directly actions and behaviors. Second, prior studies tend to overlook cultural heterogeneity in the age–entrepreneurship relationship. This is surprising given that entrepreneurship differs across macro-cultural conditions (e.g., Liñán and Chen 2009; Autio et al. 2013) and culture is an established contingency in psychological motivation research (e.g., McCrae et al. 1999).

The present study attempts to address the above-mentioned gaps in the literature by studying age patterns in self-employment motivation, with a special focus on cross-cultural differences. More specifically, we ask the following research questions. *First*, do central motivational factors behind self-employment show a similar, characteristic developmental trend across the lifespan? *Second*, does such a developmental trend differ across cultures in a systematic way? We propose a developmental-contextual lifespan perspective (Baltes et al. 1999) and rely on a sample of over 13,000 potential entrepreneurs from 21 countries to explore the interplay between age and culture in the lifespan patterns in self-employment motivation. Despite the exploratory nature of our research, our results deliver a picture widely consistent with existing theories and findings from lifespan and entrepreneurship research.

This study offers the following contributions. First, it proposes a novel approach for the study of self-employment motivations in individuals by focusing on lifespan psychology. On the one hand, by studying motivation we offer a rather “foundational” view that represents a springboard to better understand “when and why” people engage in a broad set of entrepreneurship decisions and behaviors. On the other hand, previous studies comparing self-employed and employed people in different age groups have mainly focused on aspects such as personality traits (Caliendo et al. 2014), gender (Verheul et al. 2012), labor market status, or entrepreneurship-related characteristics of different age cohorts, such as near-retirees (Heim 2015), third-age individuals (Kautonen et al. 2010), and young entrepreneurs (Minola et al. 2014). Our study instead proposes a lifespan psychology perspective that focuses on the actual self-employment motivation across the different age groups in adulthood. Another contribution of our

work lies at the intersection of entrepreneurship and a developmental-contextual perspective. Our study emphasizes that both intrinsic, i.e., age, and environmental factors, i.e., culture, together drive and shape self-employment motivation (cf. Shane et al. 2003). Our data indicate that a normative timetable does exist for self-employment motivation across the lifespan. This timetable pattern is, however, only partially universal across cultures as it seems to be influenced by prevalent cultural practices.

2 Literature overview and theoretical framework

Self-employment motivation generically refers to “what activates a person, what makes the individual choose one behavior over another, and why do different people respond differently to the same motivational stimuli” in an entrepreneurial setting (Carsrud and Brännback 2011: 11). In particular, self-employment motivation has been related to the degree to which individuals value entrepreneurial behavior and find the prospect of becoming an entrepreneur to be attractive, i.e., *desirability beliefs*, and the degree to which individuals think they can successfully perform entrepreneurial behavior as target behavior, i.e., *feasibility beliefs* (Krueger 1993; Krueger et al. 2000). Together they work as fundamental motivational factors that transform attitude and perceptions of control, respectively, into entrepreneurial intention (Schlaegel and Koenig 2014). Desirability and feasibility beliefs figure prominently in self-employment motivation models such as Shapero and Sokol (1982) entrepreneurial event model. Another example is Ajzen (1991) theory of planned behavior applied to self-employment motivation (Obschonka et al. 2010; Schlaegel and Koenig 2014; Kautonen et al. 2015), where desirability beliefs are framed as attitudes and feasibility beliefs as control and self-efficacy beliefs (Krueger et al. 2000). Both models, the entrepreneurial event model and the theory of planned behavior, deem desirability and feasibility beliefs as core elements through which background motivational factors (e.g., personality factors such as risk-taking, goal orientation, motives, career-stage-specific factors) affect entrepreneurship (e.g., Goethner et al. 2012).

By definition, feasibility and desirability beliefs are regarded as motivators to perform and solve entrepreneurial tasks and to “stay on track” when barriers and

challenges emerge, which is common along the whole entrepreneurial process, both during nascent start-up or the post-start-up phase (Mitchell et al. 2002). Moreover, such motivational factors are also instrumental in achieving entrepreneurial success. For example, feasibility beliefs, such as entrepreneurial self-efficacy and locus of control, are among those motivational individual factors that show the strongest effects on entrepreneurial success (Rauch and Frese 2007) and self-employment entry and exit decision (Caliendo et al. 2014). It is, thus, accurate to conclude that desirability and feasibility beliefs stand at the “heart of entrepreneurship,” with important effects from the earlier to the later stages in the entrepreneurial process.

2.1 Is there a general trend in age differences in desirability and feasibility beliefs regarding self-employment?

As indicated by lifespan psychology (Baltes et al. 2006), performance-related motivational factors (e.g., control beliefs or attitudes regarding challenging goals) are not constant across the lifespan but show normative lifespan patterns. This is likely to also apply to the specific case of self-employment motivation; notwithstanding the relevance of this question, very few works have initiated a scholarly dialog around it (Krueger 2007).

We argue that self-employment motivation is intertwined with, and in part an expression of, the person’s general psychosocial development. This general development is a lifelong process from birth to late adulthood (Baltes 1987; Baltes et al. 2006) and follows certain normative timetables and developmental trends within biological and social potentials and constraints across the lifespan (Lerner 2006). In his theorizing about the drivers behind entrepreneurial thinking, Krueger (2007) stressed the relevance of such a developmental lifespan perspective on entrepreneurial desirability and feasibility beliefs. He deemed such beliefs to be embedded in and shaped by the individual’s normative developmental trends. In other words, it is likely that systematic, normative age differences in self-employment motivation in the general population exist.

But what exactly would such a normative lifespan curve in self-employment motivation look like? Given the scarcity of research on age differences in core

motivational factors in the context of entrepreneurship and self-employment, we draw on the literature and empirical findings on normative lifespan trends of background motivational factors that are relevant for work motivation (Kooij et al. 2011), and show a conceptual link to entrepreneurship. By means of this literature, we then infer our expectations on the shape of the lifespan curves of desirability and feasibility beliefs regarding self-employment.

It is widely acknowledged that relevant motivational background factors that show a conceptual link to self-employment in entrepreneurship research are the person's: (a) personality traits, (b) general belief systems, (c) dealing with uncertainty, risk, proactivity, and challenging goals, (d) generativity, and (e) seeking self-determination (e.g., self-employment is an opportunity to enjoy higher levels of job autonomy and self-determination at work) (see Benz and Frey 2008). Interestingly, these background factors show a remarkably similar lifespan pattern with an increase in young adulthood, a peak in middle adulthood and a strong decline toward late adulthood. This may account for a similar lifespan trend in the core motivational factors behind self-employment (desirability and feasibility beliefs). This would be consistent with lifespan career theory (Super 1980) and the research on age differences in actual entrepreneurial behavior (Gielnik et al. 2012). In the following, we refer to the existing body of research on age differences on these background motivational factors together with lifespan career theory (Super 1980).

First, we consider research on general self-esteem and self-efficacy. The average lifespan curve of self-esteem in the general population shows a steady increase in young and middle adulthood with a peak in late middle adulthood and then a steady decrease in late adulthood (Orth et al. 2010; Robins et al. 2001). Self-confidence and optimism are often mentioned as personal characteristics that are relevant for entrepreneurship and self-employment, because one actually needs to have "the guts" to trust oneself to become an entrepreneur and to succeed (Simon et al. 2000).

Second, we draw on research on age differences in control beliefs. Here, lifespan control theory (Heckhausen and Schulz 1995) states that the individual's capacities for the use of control strategies that target the active controlling of the environment and its risks, and of one's own destiny (primary control), should

increase early in life and then peak in late early and early middle adulthood, and then decline in later ages because secondary control, that is the dealing with losses and biological and social constraints of psychological development, becomes more and more important. In other words, people might feel most capable of controlling their own destiny when they mature into independent adults and do not yet face the biological and social constraints of human development and agency that come along with an increase in years, particularly in late adulthood. Clearly, entrepreneurship and the motivation for self-employment can be regarded as forms of human agency that require primary control due to their proactive and challenging nature (Rauch and Frese 2007). Such control striving is, for example, stressed as a central motivational factor behind effectuation principles (Read et al. 2010). Hence, one can assume the inner self-employment motivation system to show a similar lifespan trend to the primary control research.

Third, we draw on research on goal orientation, motives, and risk-taking over the lifespan. Research in developmental psychology indicates that goal orientation with regard to opportunities for personal growth (e.g., improvement of one's own situation or the achievement of something new) follows a certain developmental timetable. Research on individuals' general goal orientation across the lifespan with regard to personal growth shows that people tend to orient their life decisions toward personal growth in middle adulthood, whereas personal growth plays a less prominent role in young adulthood and late adulthood. Specifically, studies found that, on average, growth-oriented goals regarding all kinds of life topics are most common in middle-aged adults, and less common in younger adults and older adults (Ebner et al. 2006). Whereas the growth goals seem to be the dominant goal orientation in young and middle-aged adults, maintenance and prevention of loss goals become much more important in older adults. In late adulthood, instead of growth goals, the focus on existing close relationships and the sense of the remaining lifetime become dominant life topics (Carstensen 2006). Furthermore, meta-analyses found that work-related growth and extrinsic motives are less likely in late adulthood than in earlier developmental stages (Kooij et al. 2011). Regarding preferences for risk, research indicates that older adults are often more risk-averse than younger adults,

particularly when the actual risk involved in a certain task or decision is not made explicit, and if only incomplete information about the actual risk is given (see Rolison et al. 2012). One central characteristic of self-employment and entrepreneurship is that often the risk involved cannot be fully (and correctly) estimated, particularly in early phases of the entrepreneurial process. Entrepreneurship and self-employment as an arena of personal growth (e.g., due to own agency, work autonomy and self-determination, and challenging tasks) (Obschonka et al. 2015) and relatively inexplicit risk (Kan and Tsai 2006) might thus be least valued in late adulthood. Instead, it might be mostly valued in middle adulthood, where a growth-oriented life orientation might drive both attitudes and control beliefs that favor and support personal growth.

Fourth, further indications of a characteristic form of the lifespan curve of self-employment motivation come from lifespan career research. Super (1980) lifespan model of career development postulates a normative timetable of career development from birth to late adulthood. Regarding adulthood, it defines young adulthood as the period of exploration and establishment, middle adulthood as the period of growth and maintenance, and then later stages as a period of decline. These “overall themes” of career development guide occupational interests, attitudes, goals, ambitions, and achievements. Since middle adulthood is the phase of both personal growth and establishment, entrepreneurship and self-employment might fit this developmental phase best, particularly with regard to related work motivation such as the motivation to engage and start entrepreneurial activities in one’s career.

Finally, Erikson (1980) stage model of psychological development over the lifespan deems generativity the omnipresent life topic in the phase of middle adulthood. Some entrepreneurship scholars use the terms “firm birth,” “gestation,” and “nurturing one’s own business” when describing the venture creation process and the involvement of the founder (Reynolds and Miller 1992), and starting a business might be a response to this generativity life topic that is salient in middle adulthood.

Taking these theoretical and empirical arguments together, we have good reason to assume that a general age-graded normative trend in desirability and feasibility regarding self-employment exists, following a

general curvilinear trend with a peak in early–mid-adulthood.

2.2 Lifespan and self-employment motivation across cultures

Individual normative development is embedded in the wider cultural context and thus in population-wide shared values, practices and norms which influence human motivation (Baltes et al. 2006; Bronfenbrenner 1986). This relies on the recent “call for finer grained studies and inductive research in different contexts to determine the traits profiles of potential entrepreneurs in different cultures” (Mueller and Thomas 2001: 69). Hence, it is important to clarify, for example, whether age and culture show a characteristic interplay in the developmental trends in self-employment motivation. Such a developmental-contextual perspective is a predominant approach in lifespan psychology and sociology, e.g., in the scientific investigation of cognitive development over the lifespan (see Baltes et al. 2006) and of human agency over the lifespan (see Elder 1994). Moreover, such cross-cultural perspective has been helping to reveal important insights in the study of human motivation and cognitions (McCrae et al. 1999; Donnellan and Lucas 2008). Applied to the case of self-employment motivation, the cross-cultural perspective can be valuable to address our second research question: Do the age-related changes in self-employment motivation depend on culture? If so, how?

Age changes in motivation may be ascribed to intrinsic (biologically originated and universal) developmental processes, or to contextual influences that vary across cultures, or both (Cohler 1985). Recent cross-country entrepreneurship research has looked at universal patterns of entrepreneurial endeavor across the lifespan (Campopiano et al. 2016; Kautonen et al. 2014; Gielnik et al. 2012). This is supported by the view that entrepreneurship is to a considerable extent a result of genetic inheritance (Nicolaou et al. 2008); hence, entrepreneurship’s development over the lifespan has a biological origin that is universally recognizable (Shane and Nicolaou 2015). The arguments we have developed so far, specifically for self-employment motivations, are in line with this research.

However, to such universalistic approaches several scholars have opposed the environmental perspective, which suggests different and specific developmental

patterns based on historical and cultural trends (Wyrwich 2013), and linked with cultural features such as childrearing (Lasпита et al. 2012) and cultural dimensions (Lafuente and Vaillant 2013). It has been argued that “[a] more balanced analysis would emphasize the complex interaction between culture and developmental psychology” (Gould 1999: 597). Although there is as yet no validated theory that offers a systematic link between cultural values and lifespan cognitive development (McCrae et al. 1999), cross-cultural comparisons are very instructive to the *universal* versus *environmental* debate. In particular, cultural practices measured by usual conducts and institutional practices and norms, as actually perceived by the individuals (e.g., House et al. 2004), might represent suitable examples of pervasive contextual influences that affect the development of self-employment motivation (Autio et al. 2013).

Hence, it is reasonable to assume that lifespan patterns in self-employment motivation might not be universal across cultures, but that cultural differences get manifested in different lifespan curves across cultures. A large body of literature from cross-cultural psychology indicates that these cultural differences affect human motivation and its interplay with age (Gould 1999; Park et al. 1999). To clarify such interplay, lifespan literature comes to our aid; in particular, it suggests several mechanisms through which the various age-graded normative influences, which form motivational aspects, are shaped by the cultural context (Baltes et al. 2006). A few examples are offered illustratively.

First, Park and colleagues (Park and Huang 2010; Park et al. 1999) have offered a description of two ways culture can shape cognitive functions and motivational changes across the lifespan. On the one hand, some basic “hardware of mind,” such as memory or processing speed, declines consistently, so that differences that might be visible across cultures for young individuals are then attenuated with age. For example, (Hedden et al. 2002) found a “culture \times age” interaction so that younger sample Chinese participants were superior to American ones in processing speed, while over the lifespan, culture could influence less, so that no such difference was found in older individuals. This indicates that for certain tasks, basic cognitive functions have increasing requirements with age, and culture may not suffice to support in this task. In this example, since

processing speed is a correlate of opportunity recognition and exploitation (Baron and Ward 2004), we might expect young adults in cultures such as Chinese to show higher proficiencies and stronger motivations for entrepreneurship than in other cultures. On the other hand, there are instead other functions that are strongly subject to cultural influence along the whole lifespan and Park and colleagues’ model suggests that living longer in a given culture is likely to facilitate or hinder members of that culture in performing related tasks. Specifically, individuals “attune and elaborate” (Heine et al. 1999; Zhang et al. 2014) their self-perception according to their cultural backgrounds. For example, You et al. (2009) showed that high optimism was displayed more in older than in younger individuals in the American sample, while the opposite was true in the Hong Kong Chinese sample. This is because Americans emphasize optimism while Chinese people do not. Research has shown that optimism is relevant for entrepreneurship (Cooper et al. 1988; Simon et al. 2000) as it affects entrepreneurial self-efficacy; following these arguments, it is likely that young individuals in optimistic cultures such as South-East Asian or Scandinavian (Hofstede and Hofstede 2001) will display high self-employment motivation. Conversely we might expect this to be true for the elderly in cultures such as Russian or South European.

Second, societal support for an entrepreneurial career in youth is highly cross-culturally variable. Practices such as childrearing, parenting and role modeling do affect young individuals’ vocational development and career choice (Gibson 2004), including entrepreneurship and self-employment (Van Auken et al. 2006; Lafuente and Vaillant 2013). Besides, literature also offers evidence for significant cross-cultural differences in parenting practices (Wong 2005), socialization processes (Mueller et al. 2002) and role models (Hisrich 1990). Hence, there should exist significant cross-cultural differences with respect to entrepreneurship supportiveness during adolescence and early adulthood (Mueller and Thomas 2001). In fact, for instance, research has shown that socialization processes of young adults in masculine cultures make them more psychologically predisposed toward entrepreneurship than their peers in feminine cultures (Mueller et al. 2002).

Third, culture might affect the association between age and self-employment motivation via societal preferences and desirability biases toward youth rather

than aging. Only certain cultures are known to worship youth: for example, since the early 1960s, subjective age research regularly tracks age denial attitude among adult Americans or Northern Europeans (Barak et al. 2001); on the contrary, in Far East or Mediterranean cultures one more likely venerates and respects ancestors and elders, so that efforts to remain ageless (e.g., through surgery and heavy use of cosmetics), and age denial do not appear as so self-evident (Mosquera et al. 2002). In this latter context, elderly people should benefit from a higher socioeconomic status, and receive more support and respect. Thus, older people's entrepreneurial engagement may be seen as more legitimate and desirable. The overall societal (and institutional) support, in turn, may enhance skills development and resource acquisition, so making entrepreneurship also more feasible at that age.

Fourth, individuals in each culture learn to be more culturally appropriate as they grow older. This process is known as "cultural learning" (Vygotsky 1962) in the human development literature. Cultural differences in aging can, therefore, occur when people from different contexts learn different ways to fit cultural expectations of their environment. We thus expect that there will be higher self-employment motivation for people at older ages, for example, in high-uncertainty avoidance cultures that are more favorable toward entrepreneurship (Autio et al. 2013), where entrepreneurship may be seen more as culturally appropriate.

Taken together, these arguments indicate that it is unlikely that lifespan patterns are always exactly the same (universal) across cultures. We rather expect cross-cultural differences in prevalent cultural practices to co-determine population-level age trends in self-employment motivation. Our study thus explores and quantifies whether and how prevalent cultural practices might actually affect population-level age trends in self-employment motivation.

3 Methods

There are several methods of studying lifespan trends in motivational variables. Ideally, one would follow the same persons across their life-course with repeated age-adequate measures of the variables of interest to analyze the lifespan patterns in these variables (under consideration of cohort, age, and period effects). Such a long-term longitudinal data set delivering longitudinal information on self-employment motivation (from

preferable representative samples) was, however, not available for the present analysis. Since this is a common problem in psychological lifespan research, many lifespan researchers apply an alternative method. This alternative method analyzes cross-sectional age differences in the variables of interest by drawing from large, representative samples of the study population (Srivastava et al. 2003; Mayr et al. 2012). This method is well established in developmental research (Lucas and Donnellan 2009).

As said, the central limitation of this cross-sectional design is that it cannot disentangle cohort effects and age-related change (Schaie 1965). Hence, these studies, strictly speaking, should not be over-interpreted as ultimate evidence for developmental trends and effects within the life-course of individuals. However, two arguments mitigate such concern for this type of studies. First, such cross-sectional studies yield valuable information on systematic age differences in cognitions and motivations that is consistent with developmental theories and extant research (Srivastava et al. 2003); when cross-sectional and longitudinal studies agree in their results, it can be argued that development (the common effect between the two designs) is the cause of such results. For this reason, studies in lifespan development psychology commonly consider different designs jointly (Srivastava et al. 2003; Mayr et al. 2012; Lucas and Donnellan 2009) to rule out cohort effects, e.g., in personality studies (see Terracciano et al. 2005). Second, because cohort effects tend to vary with culture, studying whether the patterns of age differences are the same or different across cultures can help to partially isolate developmental changes from culture-related cohort effects (McCrae et al. 1999). To the degree that similar patterns of age changes emerge in different cultural settings, the variety in historical development reinforces the case for understanding them as intrinsic maturational processes.

3.1 The data

The databases used for this research are the 2012 Flash Eurobarometer survey² and the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project. The Flash Eurobarometer survey's main aim is to

² A report showing main findings of the survey is available at http://ec.europa.eu/public_opinion/flash/fl_354_en.pdf.

examine entrepreneurship and entrepreneurial mindsets in people. The survey also examines the motivation, choices, experiences, and obstacles linked to self-employment. It originally contained information on 42,080 individuals from 40 different countries. Each national sample is representative of the working-age population. Previous versions of this data set have been recently used in entrepreneurship research (e.g., Block et al. 2013; Verheul et al. 2012). The Flash Eurobarometer survey provides several advantages to studying cross-sectional and national age differences between individuals. First, it is representative of the working-age population, which assures variability in the age of respondents. Second, it provides variability in the culture-related dimensions as it includes individuals who belong to 40 different countries, which are differently related to virtually all major cultural dimensions. Third, the data collection has been undertaken in the same period for all the respondents, avoiding potential secular trends effects among observations (Srivastava et al. 2003).

The GLOBE project was used to assess cross-cultural differences in the age-desirability beliefs and feasibility relationship. GLOBE is a multi-phase, multi-method research program that focuses on culture and leadership. The GLOBE data collected in the mid-1990s from 17,000 middle managers from 931 organizations in 62 countries yielded nine distinct cultural dimensions: in-group collectivism, institutional collectivism, humane orientation, assertiveness, performance orientation, power distance, uncertainty avoidance, gender egalitarianism, and future orientation (House et al. 2004). The GLOBE dimensions have been applied in subsequent cross-cultural research in various fields, such as psychology (e.g., Zhao and Seibert 2006), ethics (e.g., Alas 2006), and innovation research (e.g., Taylor and Wilson 2012). The GLOBE study distinguishes between cultural *practices* and cultural *values*. It measures cultural practices with “as is” statements and cultural values with “as should be” statements (House et al. 2004). Following Autio et al. (2013), we used cultural practice measures rather than value measures. Perceptions of cultural practice reflect how cultural norms are embodied in behaviors, policies, and actual prescriptions (Segall et al. 1998), while values indicate expectations individuals have toward collective behaviors. Besides, cultural practices are external, observable, and detached from individual influence (Sapienza et al. 2006); therefore, they are

considered better predictors of entrepreneurial behavior than cultural values (Autio et al. 2013). They are also best suited for individual-level studies such as ours, in which individuals are seen as proactive, self-reflecting, and self-regulating, and behave in response to their social context (Rauch and Frese 2007).

3.2 Sampling procedure

In our sample, data on self-employment motivations are available for a population of potential entrepreneurs, i.e., individuals who are not yet engaged in self-employment. Given our research goal and the policy valence of the phenomenon we study, it is interesting to focus on potential entrepreneurs as the seedbed for future entrepreneurial potential. In addition, although such individuals may have a preexisting preparedness to accept self-employment opportunities (i.e., “potential”), the potential for self-employment is still latent and is causally and temporally prior to intentions (Shapiro and Sokol 1982; Krueger et al. 2000) and decision to act (Krueger et al. 2000). This approach is appropriate given our focus on motivation; it is also in line with those empirical studies that focused on the determinants of entrepreneurial feasibility and desirability beliefs in individuals (e.g., Krueger et al. 2000; Fitzsimmons and Douglas 2011). Consequently, we (a) removed from the sample 10,736 individuals who were already entrepreneurs or had decided to start act as such,³ (b) restricted the sample to working-age individuals between 18 and 64 years (cf. Kautonen et al. 2015), dropping 9726 observations. Finally, we removed observations with missing values for the variables used in our models. Most of the missing values are generated when matching individual-level observations with country data. Indeed, for some of the countries presented in the 2012 Flash Eurobarometer survey there are no available scores for cultural dimensions provided by the GLOBE project. Our final sample is country-representative and consists of 13,963 individuals nested in 21 countries.⁴

³ This choice has also been driven by the design of the survey; indeed, measures of both desirability beliefs and feasibility were assessed in individuals who were not entrepreneurs or were taking steps to become such.

⁴ Denmark, Germany, Greece, Spain, Finland, France, Ireland, Italy, Netherlands, Austria, Portugal, Sweden, Hungary, Poland, Slovenia, Turkey, Switzerland, Brazil, Japan, United States, South Korea.

3.3 Measures

3.3.1 *Dependent variables*

Desirability beliefs reflect a person's "intrinsic interest in entrepreneurship" (Krueger and Brazeal 1994: 96) or "one's affect toward entrepreneurship" (Krueger 1993: 8). In this study, desirability beliefs were assessed through the question, "Personally, how desirable is it for you to become self-employed within the next 5 years?" (see Krueger et al. 2000; Zampetakis 2008), with responses on a four-point Likert scale (1 = very undesirable, 4 = very desirable). *Feasibility beliefs* reflect instead an individual's perceived ability to execute a target behavior—that is, perceived self-efficacy or the degree to which the individual feels capable of starting a business (Krueger et al. 2000). In this study, feasibility beliefs were assessed through the question, "Regardless of whether you would like to become self-employed, how feasible would it be for you to become self-employed within the next 5 years?" (1 = very unfeasible, 4 = very feasible) (see Iakovleva and Kolvereid 2008; Kickul and Krueger 2004).

3.3.2 *Independent variable*

Individuals' *age* has been measured by the age of the respondents. Although some studies prefer to measure age in cohorts, others consider it as a limitation, since—especially in cross-culture analyses—it provides a less detailed understanding of which age bands affect entrepreneurial beliefs (see Kautonen et al. 2010). Based on this, age was used as a continuum. Moreover, the quadratic term of age (age squared) is included to test for the curvilinear effects.

3.3.3 *Moderating variables*

Many different dimensions of culture can influence entrepreneurship directly or indirectly. Focusing on the cultural dimensions as identified by the GLOBE study, Autio et al. (2013) anticipate the societal cultural practices of societal *institutional collectivism (IC)*, *uncertainty avoidance (UA)*, and *performance orientation (PO)* to be particularly salient influences, because they resonate and shape many

of the factors commonly ascribed to self-employment motivation.

IC practices matter, as entrepreneurship is fundamentally an individual-level endeavor; therefore, IC practices affect legitimacy and resource mobilization for entrepreneurship in a society (Oyserman et al. 2002). As a consequence, factors such as self-esteem, self-efficacy control, risk-taking and individual goal definition, and their lifespan patterns, will be affected by IC, as will their lifespan effects on motivation for self-employment. Entrepreneurship is also described by words such as proactivity and competitiveness. As resources and personal commitment are needed before entrepreneurship can yield any type of return, the risk-taking aspect of entrepreneurship is crucial (Kan and Tsai 2006). Individuals' risk taking and its lifespan patterns will be severely influenced by UA. Finally, since PO influences societal incentives and rewards for performance, competition, and innovation pursuing, it will likely affect an individual's position toward professional goals and career strategy, including entrepreneurship and self-employment (Rauch and Frese 2007). Abundant research on entrepreneurship has considered the direct effect of IC, UA, and PO on the entrepreneurial process. For the above reasons, we believe that in addition to the direct effect, the indirect effect of these cultural practices is also important, so that age-related changes of individuals' perception over the lifespan regarding entrepreneurship and self-employment will likely interact with IC, PO and UA practices; given the exploratory nature of our work, and following Autio et al. (2013), we advance that these three dimensions represent an initial set of sufficiently parsimonious and theoretically consistent moderators for our analysis.

3.3.4 *Control variables*

We control for individual-level variables and country-level variables as such exogenous factors are believed to affect feasibility beliefs and desirability (Drennan et al. 2005; Krueger et al. 2000). First, we control for *gender* as women may differ from men regarding their feasibility beliefs and desirability to start a new business (Verheul et al. 2012). Second, we control for the presence of *self-employed parent(s)* as they are believed to affect both feasibility beliefs and desirability (Drennan et al. 2005). Individuals' education

and experience are key control factors in this study. Indeed, many studies have used individuals' age as a proxy for human capital (see Coleman 2007) and more generally, experience (see Littunen and Virtanen 2009). Thus, if we control our model for both education and experience, we overcome the eventual problem of having age as proxy of education or experience. Educational background is assessed through two binary variables. Following Kautonen et al. (2014), generic *education* was measured by a binary variable coded 1 if the respondent has left full-time education aged 20 or older, otherwise 0. We controlled for individuals' *entrepreneurial education* coded 1 if the respondent has ever taken part in any course or activity about entrepreneurship while attending school or college, otherwise 0. We also controlled for *entrepreneurial experience*, coded 1 if in the past the respondent has started a business or taken over an existing one, otherwise 0. Working background is assessed with two binary variables. *Professional* is coded 1 if individual's current job is professional/office employee, otherwise 0. *Manual worker* instead is coded 1 if individual's current job is manual worker, otherwise 0 (cf. Kautonen et al. 2014).

As economic, financial, and demographic macro-factors are likely to affect our dependent variables, we incorporated three control variables at the country level: GDP, old-age dependency ratio, and unemployment rate. The country-level control variables were computed using a wide range of secondary data and were included based on prior use in cross-national studies. Macro-economic data were drawn from the OECD, World Bank, and EUROSTAT data sets. Macro-economic data such as a country's *GDP* have historically been used as measures of the institutional characteristics of a country in regard to economic structure and economic development (Barro 1989) as well as labor market characteristics (Nickell 1997). Moreover, *old-age dependency ratio*, the ratio between the total number of elderly persons of an age when they are generally economically inactive (aged 65 and over) and the number of persons of working age (from 15 to 64), acknowledges differences in the demographic structure among countries and has often been used in economic research (Fougère and Mérette 1999; An and Jeon 2006). Finally, we controlled for a country *unemployment rate*. Following Kreiser et al. (2010), a 5-year average ending with the year of data collection (2012) for each

country was computed for GDP, old-age dependency ratio, and unemployment rate.⁵

Table 1 describes the variables used in this research. Means, standard deviations, and Pearson correlations are instead shown in Table 2.

3.4 Model specification

In order to test for cross-sectional age differences in self-employment motivation and interaction cultural effects, analytical techniques are needed that accurately account for individual- and group-level effects of such behaviors (Peterson et al. 2012; Sieger and Minola forthcoming). Multi-level research design presents important theoretical and empirical advantages (see Autio et al. 2013 for a thorough discussion). Our sample thus consists on two levels: individual-level observations (level 1) nested within countries (level 2). As a result, a multi-level mixed effects regression model (Raudenbush and Yang 1998) was used to estimate the effect of age on feasibility beliefs and desirability to start a new business.

4 Results

Standardized coefficients from the final models are illustrated in Tables 3 and 4, and predicted scores from these regression equations for the two motivational dimensions are plotted in Fig. 1. First, we tested models of the data that allow curvilinear age differences in the magnitude of age coefficients, using regressions with quadratic age, and then we tested for culture interaction terms. In both tables, control variables at the individual level were first entered (Model 1). In Model 2 we added age country-level control variables, and in Model 3 we added the cultural dimensions. The linear effect of age was entered in Model 4, while its quadratic term was entered in Model 5. Table 3, in particular, presents the results of regressing age, cultural dimensions and their interaction on desirability beliefs. Results show that age is significantly related to desirability beliefs ($\beta = -0.427$, $p < 0.001$ for age; $\beta = -0.151$, $p < 0.001$ for age squared). This suggests a negative and curvilinear relationship between age and desirability

⁵ In the case some year was missing, the average was calculated for the remaining years.

Table 1 Description of variables

Variable	Description
<i>Individual-level variables</i>	
Perceived desirability	“Personally, how desirable is for you to become self-employed within the next 5 years?” Four-point Likert scale variable where 1 very undesirable, 2 somewhat undesirable, 3 somewhat desirable, and 4 very desirable
Perceived feasibility	“Regardless of whether or not you would like to become self-employed, how feasible is would it be for you to become self-employed within the next 5 years?” Four-point Likert scale variable where 1 very unfeasible, 2 somewhat unfeasible, 3 somewhat feasible, and 4 very feasible
Gender	Binary variable with value 0 if respondent is male, 1 if female
Education	Binary variable with value 1 if the respondent has left fulltime education aged 20 or older
Entrepreneurial education	Binary variable with value 1 if the respondent has ever taken part in any course or activity about entrepreneurship while attending school or college
Entrepreneurial experience	Binary variable with value 1 if the if respondent has ever started or took over a business
Self-employed parents	Binary variable with value 1 if the mother, father, or both are or have been self-employed and 0 if neither of the parents is or has been self-employed
Professional	Binary variable with value 1 if respondent’s current job is professional/office employee
Manual worker	Binary variable with value 1 if respondent’s current job is manual worker, 0 if otherwise
Age	Age of the respondent in years (linear and squared, standardized)
<i>Country-level variables</i>	
GDP	Gross domestic product, value, market prices/(10*e ¹²). Source: OECD
Old age dependency ratio	Ratio between the total number of elderly persons of an age when they are generally economically inactive (aged 65 and over) and the number of persons of working age (from 15 to 64). Source: Eurostat (European countries), World Bank (Brazil), OECD (USA and Asian countries)
Unemployment rate	Percentage of unemployed individuals among the working population. Source: OECD (European countries)
Institutional collectivism	The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action. Source: GLOBE
Performance orientation	The extent to which a community encourages and rewards innovation, high standards, excellence, and performance improvement. Source: GLOBE
Uncertainty avoidance	The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate the unpredictability of future events. Source: GLOBE

beliefs. Models 6–11 explore the moderating effect of age and the cultural dimensions on desirability beliefs. We looked for both linear and curvilinear interactions effects to check which model fits the data best.

Table 4 then presents the results of regressing age, cultural dimensions, and their interaction on feasibility beliefs. Results show that age is significantly related to feasibility beliefs ($\beta = -0.454$, $p < 0.001$ for age; $\beta = -0.164$, $p < 0.001$ for age squared). This suggests a negative and curvilinear relationship between age and feasibility beliefs. Models 5–11 explore the moderating effect of age and the cultural dimensions on feasibility beliefs. Again, we looked for both linear and curvilinear interactions effects to check which

model fits the data best. Tables 3 and 4 support the arguments that culture moderates the relationship between age and self-employment motivations. The discussion of such results is presented in the next section.

In order to assess the nature of the curvilinear relationship between age and self-employment motivation, we run several tests. More specifically, as our theoretical predictions and empirical results speak in favor of curvilinear relationship, such tests serve to check the robustness around such a type of relationship between the independent and dependent variables. First, we draw on the tests of Lind and Mehlum (2010) to further assess the validity of the curvilinear

Table 2 Descriptive statistics and correlation matrix

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	VIF	
1. Age	42.862	13.286																	
2. Desirability	2.144	1.067	-0.26																
3. Feasibility	2.119	1.065	-0.21	0.47															1.04
4. Gender	0.579	0.494	0.07	-0.10	-0.13														1.15
5. Education	0.472	0.499	0.07	-0.03	0.12	-0.01													1.05
6. Entrepreneurial education	0.266	0.442	-0.10	0.08	0.16	-0.05	0.12												1.07
7. Entrepreneurial experience	0.144	0.351	0.18	0.07	0.11	-0.07	0.04	0.08											1.04
8. Self-employed parents	0.295	0.456	-0.02	0.08	0.06	0.02	0.03	0.02	0.05										1.27
9. Professional	0.509	0.500	-0.02	-0.04	0.09	-0.07	0.27	0.07	0.01	-0.00									1.23
10. Manual worker	0.103	0.304	-0.02	-0.00	0.02	-0.11	-0.06	-0.02	-0.01	-0.02	-0.35								3.31
11. GDP	82.798	267.480	-0.14	0.06	-0.01	-0.04	0.08	-0.06	-0.00	0.14	-0.03	0.03							1.69
12. Old age dependency ratio	23.132	6.252	0.14	-0.19	-0.08	0.01	0.05	-0.02	-0.05	-0.09	0.05	0.05	-0.14						1.78
13. Unemployment rate	8.515	3.795	-0.02	0.04	-0.09	0.03	-0.08	-0.01	0.03	-0.02	-0.06	-0.06	-0.37	0.02					2.66
14. Institutional collectivism	4.288	0.506	0.01	-0.07	0.07	-0.05	0.18	0.00	-0.02	0.06	0.00	0.16	0.53	-0.02	-0.52				2.63
15. Performance orientation	4.102	0.412	0.04	-0.05	0.07	-0.03	0.10	-0.00	0.00	0.06	0.13	-0.05	0.25	-0.18	-0.53	0.42			4.46
16. Uncertainty avoidance	4.248	0.664	0.15	-0.18	0.07	-0.01	0.08	0.05	-0.04	-0.01	0.09	0.11	-0.27	0.35	-0.39	0.38	0.52		4.46

$N = 13,963$. Correlations with values of |0.02| or greater are significant at $p < 0.05$

Table 3 Effects of age and cultural dimensions on perceived desirability

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
<i>Intercept</i>	2.170*** (0.072)	2.640*** (0.241)	2.778*** (0.227)	2.577*** (0.203)	2.709*** (0.203)	2.704*** (0.201)	2.703*** (0.201)	2.712*** (0.201)	2.711*** (0.201)	2.698*** (0.202)	2.700*** (0.202)
Gender	-0.214*** (0.018)	-0.214*** (0.018)	-0.214*** (0.018)	-0.181*** (0.017)	-0.193*** (0.017)	-0.192*** (0.017)	-0.192*** (0.017)	-0.193*** (0.017)	-0.193*** (0.017)	-0.194*** (0.017)	-0.194*** (0.017)
Education	-0.029 (0.019)	-0.029 (0.019)	-0.028 (0.019)	0.013 (0.018)	-0.007 (0.018)	-0.012 (0.018)	-0.014 (0.018)	-0.011 (0.018)	-0.012 (0.018)	-0.009 (0.018)	-0.009 (0.018)
Entrepreneurial education	0.226*** (0.020)	0.226*** (0.020)	0.225*** (0.020)	0.151*** (0.019)	0.162*** (0.019)	0.162*** (0.019)	0.162*** (0.019)	0.160*** (0.019)	0.160*** (0.019)	0.162*** (0.019)	0.162*** (0.019)
Entrepreneurial experience	0.140*** (0.025)	0.140*** (0.025)	0.139*** (0.025)	0.269*** (0.025)	0.261*** (0.024)	0.261*** (0.024)	0.261*** (0.024)	0.261*** (0.024)	0.261*** (0.024)	0.262*** (0.024)	0.262*** (0.024)
Self-employed parents	0.112*** (0.019)	0.111*** (0.019)	0.112*** (0.019)	0.118*** (0.019)	0.122*** (0.019)	0.119*** (0.019)	0.118*** (0.019)	0.121*** (0.019)	0.121*** (0.019)	0.121*** (0.019)	0.121*** (0.019)
Professional	-0.055*** (0.019)	-0.055*** (0.019)	-0.055*** (0.019)	-0.089*** (0.019)	-0.148*** (0.020)	-0.155*** (0.020)	-0.154*** (0.020)	-0.148*** (0.020)	-0.147*** (0.020)	-0.150*** (0.020)	-0.151*** (0.020)
Manual worker	0.037 (0.032)	0.037 (0.032)	0.038 (0.032)	-0.002 (0.031)	-0.067* (0.032)	-0.071* (0.032)	-0.071* (0.032)	-0.070* (0.032)	-0.069* (0.032)	-0.066* (0.032)	-0.067* (0.032)
GDP	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Old age dependency ratio	-0.029*** (0.008)	-0.029*** (0.008)	-0.026*** (0.008)	-0.021*** (0.007)	-0.021*** (0.007)	-0.020*** (0.007)	-0.020*** (0.007)	-0.021*** (0.007)	-0.021*** (0.007)	-0.020*** (0.007)	-0.020*** (0.007)
Unemployment rate	0.022 (0.015)	0.022 (0.015)	-0.003 (0.015)	-0.005 (0.014)	-0.006 (0.014)	-0.006 (0.013)	-0.006 (0.013)	-0.006 (0.013)	-0.006 (0.013)	-0.006 (0.013)	-0.006 (0.013)
Institutional collectivism			-0.093 (0.061)	-0.072 (0.055)	-0.067 (0.054)	-0.054 (0.054)	-0.046 (0.054)	-0.066 (0.054)	-0.066 (0.054)	-0.065 (0.054)	-0.065 (0.054)
Performance orientation			-0.042 (0.068)	-0.030 (0.061)	-0.031 (0.060)	-0.027 (0.060)	-0.027 (0.060)	-0.022 (0.060)	-0.014 (0.060)	-0.028 (0.060)	-0.028 (0.060)
Uncertainty avoidance			-0.060 (0.089)	-0.061 (0.079)	-0.059 (0.079)	-0.060 (0.078)	-0.059 (0.078)	-0.056 (0.078)	-0.055 (0.078)	-0.057 (0.079)	-0.065 (0.079)
Age			-0.317*** (0.012)	-0.317*** (0.012)	-0.427*** (0.017)	-0.427*** (0.017)	-0.427*** (0.017)	-0.428*** (0.017)	-0.428*** (0.017)	-0.431*** (0.017)	-0.433*** (0.018)
Age × age			-0.151*** (0.017)	-0.157*** (0.017)	-0.151*** (0.017)	-0.157*** (0.017)	-0.159*** (0.017)	-0.152*** (0.017)	-0.152*** (0.017)	-0.156*** (0.018)	-0.156*** (0.018)
Age × institutional collectivism			0.063*** (0.011)	0.063*** (0.011)	0.050*** (0.015)	0.063*** (0.011)	0.050*** (0.015)	0.063*** (0.011)	0.050*** (0.015)	0.063*** (0.011)	0.050*** (0.015)

Table 3 continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Age × age × institutional collectivism						-0.019 (0.015)					
Age × performance orientation								0.047*** (0.011)	0.033* (0.016)		
Age × age × performance orientation									-0.020 (0.016)		
Age × uncertainty avoidance										0.028* (0.012)	0.041* (0.016)
Age × age × uncertainty avoidance											0.019 (0.016)
<i>Random-effects parameters</i>											
Number of observations	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963
Number of countries	21	21	21	21	21	21	21	21	21	21	21
Variance of random intercept	0.317 (0.050)	0.234 (0.037)	0.194 (0.031)	0.173 (0.028)	0.172 (0.028)	0.170 (0.028)	0.170 (0.028)	0.170 (0.028)	0.170 (0.028)	0.170 (0.028)	0.170 (0.028)
<i>Model fit statistics</i>											
Chi-square (χ^2)	398.82	416.20	433.15	1,176.54	1,258.25	1,295.82	1,297.48	1,278.21	1,279.92	1,264.58	1,266.21
Log likelihood	-19,935.77	-19,929.49	-19,925.66	-19,577.41	-19,539.96	-19,523.13	-19,522.34	-19,531.17	-19,530.35	-19,537.19	-19,536.47
AIC ^a	39,891.53	39,884.97	39,883.31	39,188.83	39,115.93	39,084.26	39,084.68	39,100.35	39,100.7	39,112.39	39,112.95
LR test versus linear regression χ^2 ^b	1114.71***	618.85***	429.53***	358.31***	358.56***	353.36***	353.74***	350.98***	351.90***	356.36***	355.82***
LR test of model fit: χ^2 ^c (null model in parentheses)	-	12.56** (vs. 1)	7.66† (vs. 2)	696.49*** (vs. 3)	74.90*** (vs. 4)	805.05*** (vs. 3)	1.57 (vs. 6)	788.97*** (vs. 3)	1.65 (vs. 8)	776.92*** (vs. 3)	1.44 (vs. 10)

Beta coefficients reported. Standard errors are in parentheses. Standardized variables were used for independent and moderating variables

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

^a AIC is Akaike's information criterion ($2k-2$)*(log likelihood), where k denotes the degrees of freedom (number of predictors in the model). Gradually smaller values over models denote improved model fit

^b Statistical significance confirms that the country-level variance component is important

^c LR test performed between models using maximum-likelihood estimates (MLE)

Table 4 Effects of age and cultural dimensions on perceived feasibility

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
<i>Intercept</i>	1.968*** (0.050)	2.538*** (0.170)	2.601*** (0.179)	2.389*** (0.173)	2.533*** (0.177)	2.531*** (0.177)	2.529*** (0.177)	2.536*** (0.179)	2.532*** (0.180)	2.525*** (0.177)	2.517*** (0.177)
Gender	-0.236*** (0.018)	-0.236*** (0.018)	-0.236*** (0.018)	-0.201*** (0.017)	-0.214*** (0.017)	-0.214*** (0.017)	-0.211*** (0.017)	-0.214*** (0.017)	-0.213*** (0.017)	-0.214*** (0.017)	-0.214*** (0.017)
Education	0.144*** (0.019)	0.145*** (0.019)	0.144*** (0.019)	0.186*** (0.018)	0.165*** (0.018)	0.162*** (0.018)	0.158*** (0.018)	0.161*** (0.018)	0.159*** (0.018)	0.164*** (0.018)	0.163*** (0.018)
Entrepreneurial education	0.318*** (0.020)	0.317*** (0.020)	0.317*** (0.020)	0.239*** (0.020)	0.251*** (0.020)	0.251*** (0.020)	0.251*** (0.020)	0.249*** (0.020)	0.249*** (0.020)	0.251*** (0.020)	0.252*** (0.020)
Entrepreneurial experience	0.265*** (0.025)	0.265*** (0.025)	0.265*** (0.025)	0.402*** (0.025)	0.393*** (0.025)	0.393*** (0.025)	0.392*** (0.025)	0.393*** (0.025)	0.393*** (0.025)	0.394*** (0.025)	0.396*** (0.025)
Self-employed parents	0.110*** (0.019)	0.111*** (0.019)	0.110*** (0.019)	0.116*** (0.019)	0.121*** (0.019)	0.119*** (0.019)	0.118*** (0.019)	0.119*** (0.019)	0.119*** (0.019)	0.120*** (0.019)	0.120*** (0.019)
Professional	0.111*** (0.019)	0.111*** (0.019)	0.112*** (0.019)	0.075*** (0.019)	0.012 (0.020)	0.009 (0.020)	0.011 (0.020)	0.012 (0.020)	0.014 (0.020)	0.010 (0.020)	0.013 (0.020)
Manual worker	0.064* (0.032)	0.065* (0.032)	0.062† (0.032)	0.020 (0.031)	-0.050 (0.032)	-0.052 (0.032)	-0.053† (0.032)	-0.053† (0.032)	-0.051 (0.032)	-0.049 (0.032)	-0.047 (0.032)
GDP	-0.000† (0.000)	-0.000† (0.000)	-0.000 (0.000)	-0.000† (0.000)	-0.000† (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000† (0.000)	-0.000† (0.000)
Old age dependency ratio	-0.014* (0.006)	-0.014* (0.006)	-0.019** (0.007)	-0.013* (0.006)	-0.014* (0.006)	-0.013* (0.006)	-0.013* (0.006)	-0.014* (0.007)	-0.014* (0.007)	-0.013* (0.006)	-0.013* (0.006)
Unemployment rate	-0.027** (0.010)	-0.022† (0.012)	-0.022† (0.012)	-0.024* (0.012)	-0.025* (0.012)	-0.025* (0.012)	-0.024* (0.012)	-0.025* (0.012)	-0.025* (0.012)	-0.025* (0.012)	-0.024* (0.012)
Institutional collectivism	0.027 (0.048)	0.027 (0.048)	0.027 (0.048)	0.049 (0.046)	0.054 (0.047)	0.060 (0.047)	0.089† (0.048)	0.055 (0.048)	0.055 (0.048)	0.056 (0.047)	0.055 (0.047)
Performance orientation	-0.060 (0.053)	-0.060 (0.053)	-0.060 (0.053)	-0.047 (0.052)	-0.049 (0.052)	-0.047 (0.052)	-0.047 (0.053)	-0.040 (0.053)	-0.017 (0.054)	-0.046 (0.053)	-0.047 (0.052)
Uncertainty avoidance	0.071 (0.070)	0.070 (0.067)	0.071 (0.070)	0.070 (0.067)	0.073 (0.069)	0.072 (0.069)	0.074 (0.069)	0.076 (0.070)	0.076 (0.070)	0.074 (0.069)	0.110 (0.069)
Age	-0.334*** (0.012)	-0.334*** (0.012)	-0.454*** (0.017)	-0.334*** (0.012)	-0.453*** (0.017)	-0.453*** (0.017)	-0.454*** (0.017)	-0.454*** (0.017)	-0.453*** (0.017)	-0.457*** (0.017)	-0.448*** (0.018)
Age × age	-0.164*** (0.017)	-0.164*** (0.017)	-0.167*** (0.017)	-0.167*** (0.017)	-0.167*** (0.017)	-0.167*** (0.017)	-0.171*** (0.017)	-0.166*** (0.017)	-0.166*** (0.017)	-0.167*** (0.018)	-0.165*** (0.018)
Age × institutional collectivism				0.028** (0.011)			-0.024 (0.015)				
Age × age × institutional collectivism							-0.071*** (0.015)				

Table 4 continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Age × performance orientation								0.048*** (0.011)	0.010 (0.016)		
Age × age × performance orientation									-0.053*** (0.016)		
Age × uncertainty avoidance										0.019 (0.012)	-0.037* (0.016)
Age × Age × Uncertainty avoidance											-0.079*** (0.016)
<i>Random-effects parameters</i>											
Number of observations	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963	13,963
Number of countries	21	21	21	21	21	21	21	21	21	21	21
Variance of random intercept	0.207 (0.033)	0.161 (0.027)	0.150 (0.025)	0.145 (0.024)	0.148 (0.024)	0.148 (0.024)	0.148 (0.024)	0.150 (0.025)	0.151 (0.025)	0.148 (0.024)	0.148 (0.024)
<i>Model fit statistics</i>											
Chi-square (χ^2)	877.86	892.63	898.52	1,737.80	1,836.19	1,843.76	1,869.61	1,856.16	1,869.27	1,839.16	1,867.27
Log likelihood	-19,999.72	-19,994.74	-19,993.25	-19,609.81	-19,565.75	-19,562.38	-19,550.95	-19,556.67	-19,550.77	-19,564.41	-19,552.03
AIC ^a	40,019.43	40,015.47	40,018.5	39,253.63	39,167.5	39,162.76	39,141.91	39,151.35	39,141.55	39,166.83	39,144.07
LR test versus linear regression χ^b	468.90***	267.72***	240.37***	252.28***	269.58***	271.29***	271.95***	276.77***	281.53***	270.62***	269.83***
LR test of model fit: χ^{2c} (null model in parentheses)	-	9.96* (vs. 1)	2.98 (vs. 2)	766.87*** (vs. 3)	88.12*** (vs. 4)	861.73*** (vs. 3)	22.85*** (vs. 6)	873.15*** (vs. 3)	11.80** (vs. 8)	857.67*** (vs. 3)	24.76*** (vs. 10)

Beta coefficients reported. Standard errors are in parentheses. Standardized variables were used for independent and moderating variables

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

^a AIC is Akaike's information criterion ($2k-2$)*(log likelihood), where k denotes the degrees of freedom (number of predictors in the model). Gradually smaller values over models denote improved model fit

^b Statistical significance confirms that the country-level variance component is important

^c LR test performed between models using maximum-likelihood estimates (MLE)

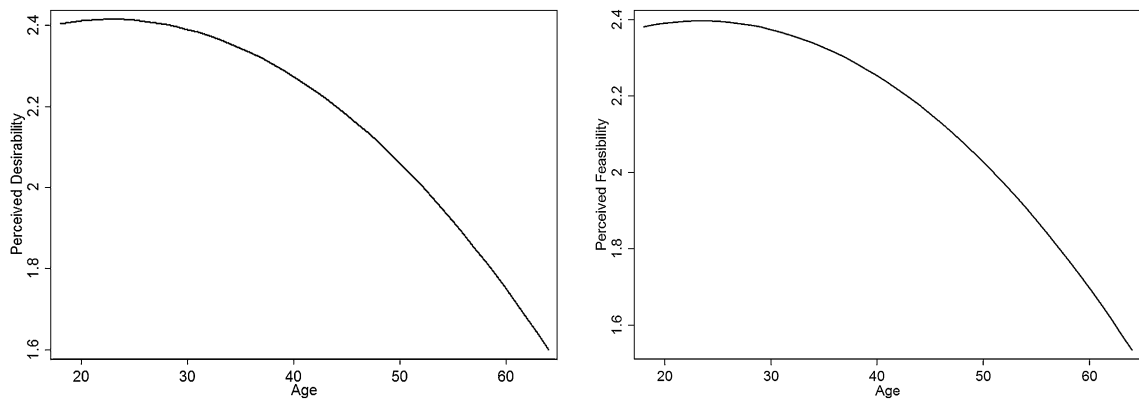


Fig. 1 Curvilinear effect of age on desirability beliefs (*left*) and desirability beliefs (*right*) in the overall sample (including all cultures)

relationship between age and our self-employment motivation variables. Without these tests, it is difficult to determine whether the potential maximum point (or the inflection point) is within the bounds of the data. First, the tests begin with a Wald test to assess the joint significance of the direct and squared terms of age. The results confirm that both terms are jointly statistically significant for desirability [$F_{(2,13947)} = 433.64$; $\text{Prob} > F = 0.0000$] and feasibility beliefs [$F_{(2,13947)} = 424.86$; $\text{Prob} > F = 0.0000$]. Second, the Sasabuchi test (Sasabuchi 1980) was used to assess whether (1) the effect of age on self-employment motivation variables is increasing at low values of age, and (2) the effect of age on self-employment motivation variables is decreasing at high values of age. Significant values, as in our case, indicate the presence of an inverted *U*-shaped relationship for both desirability (lower bound slope = 0.0067806; t value = 2.221547; $p > |t| = 0.013165$; upper bound slope = -0.0738197 ; t value = -11.56896 ; $p > |t| = 4.09e-31$; overall test of presence of an inverse *U*-shaped relationship: t value = 2.22; $p > |t| = 0.0132$) and feasibility beliefs (lower bound slope = 0.006268; t value = 2.056345; $p > |t| = 0.0198839$; upper bound slope = -0.0721317 ; t value = -11.31957 ; $p > |t| = 7.07e-30$; overall test of presence of an inverse *U*-shaped relationship: t value = 2.06; $p > |t| = 0.0199$). To further assess whether the maximum point is within the upper and lower bounds of age, Lind and Mehlum (2010) propose the Fieller approach to estimating confidence intervals around the extreme points. If the confidence intervals are within the bounds of the low and high

values of age, it provides further evidence of the inverted *U*-shaped relationship in the data. In our analysis, the estimated maximum point is 21.98 years for desirability beliefs and 21.64 years for feasibility beliefs, and both values are included between the upper and lower bounds of age (95 % Fieller interval for extreme point).

The robustness of all models presented in Tables 3 and 4 is granted by the significant reduction of the *log-likelihood* function value. Such reduction is calculated by subtracting the value of the *log-likelihood* function when only the intercept is introduced from the value of the model that also takes into account the explanatory variables in the model. Therefore, the reduction of the *log-likelihood* confirms the better suitability of the model. The Wald Chi-square test proves that such reduction is statistically significant with $p < 0.001$ in all models. Moreover, we conducted pairwise likelihood ratio (LR) tests on all subsequent models in order to test whether adding new variables reduces significantly the log-likelihood ratio and thus improves model fit significantly. This test is significant in all plotted models.

We run a VIF test for Model 4 in Tables 3 and 4 to check potential multi-collinearity among explanatory variables. All values are below 10 (Hair et al. 2006) (see Table 2). To rule out cohort effect as alternative explanation, we followed Gielnik et al. (2012) subsamples procedure (three cohorts created based on GDP growth or decline over the age range of our population). Three additional models were estimated on each subsample, revealing the same figure as the total sample. This reduces the likelihood that cohort

effects affected our results and yields a mitigation of such methodological concern.⁶

5 Discussion and limitations

While previous research has delivered important insights into the role of age differences in entrepreneurship (Caliendo et al. 2014; Kautonen et al. 2010; Heim 2015), this study takes a novel perspective by studying the interplay between age, culture, and self-employment motivation. In doing so, we examine age differences in two central motivational factors behind self-employment and entrepreneurship, desirability and feasibility beliefs. We used a large, cross-national, representative sample to examine cross-sectional age differences in these two motivational factors in individuals from age 18 to age 64. We then investigated whether prevalent cultural factors moderate this lifespan pattern.

First, results from the overall data set show a curvilinear association of changes in entrepreneurial desirability and feasibility beliefs with age in cross-sectional estimations. Patterns are very similar for the two curves, portraying a reversed U-shape with a peak around the age of 22, which mirrors our reasoning based on lifespan literature.

Second, we tested for cross-cultural generalizability of the intrinsic maturational perspective against the prominence of environmental influences on psychological development (Baltes et al. 1999). We indeed found indications for a moderating effect of cultural factors. Given the significant cross-cultural differences that emerge, our results indicate that developmental patterns are only partially universal across cultures. In particular, our evidence (Fig. 2) from sociocultural contexts with high degree of IC, UA and PO practices (as compared with contexts scoring low in these practices) shows: (a) culture moderation of *some* age differences, with larger culture effects at young age until adulthood and general convergence (indicating a marginal effect of culture) at older ages; (b) mean changes in self-employment motivations

curves, in particular with a negative shift over the whole lifespan for desirability, and a more nuanced difference for feasibility; (c) a “buffering effect,” meaning that declines in motivation occur at later age for both desirability and feasibility. While the buffering effect of cultural practices is probably the most interesting finding and suggests possible theoretical implications, the three effects taken together reveal an articulate view and indicate that the interaction “age × culture” reflects quite dynamic and complex relationships which are worth considering in age-entrepreneurship research.

With respect to the first of the three effects, while considerable differences generally appear at young ages, we observe an overall convergence at old ages. Based on Park et al. (1999) model, this indicates that self-employment desirability and feasibility belief highly reflect some “basic hardware of mind” (such as memory, control, and processing speed) that decline consistently with age, and cannot be influenced much by culture. This means that the cognitive requirements needed to show a high level of self-employment motivations increase with age and the supporting effect of our cultural dimensions cannot counter individual losses. Higher level of cultural practices are needed with increasing age for a compensation of the associated biological weakening—a perspective that follows Baltes et al. (1999) model of the overall architecture of lifespan development which highlights the lifespan dynamics between biology and culture. One crucial assumption in this meta-theory, in fact, is that cultural efficiency in maintaining psychosocial functions decreases in late adulthood.

To discuss the latter effects (mean differences and buffering), for the sake of simplicity, the discussion of our results considers desirability and feasibility separately. The case of IC can serve as an illustrative example. According to Fig. 2.b1, high societal level of IC negatively affects desirability (across the whole lifespan, and especially at young ages); this is in line with works that have suggested that practices of IC generally discourage entrepreneurship (McMullen and Shepherd 2006): venturing into new business, indeed, acts as a strong signal for self-interest and self-loyalty, hampers individuals’ societal standing, and represents a legitimacy cost that reduces desirability of entrepreneurship. Figure 2b1 also reports a light increase in desirability until early adulthood and then a decline from late adulthood; when IC is high, such

⁶ These analyses are available from authors upon request, together with other analyses such as: the repetition of the estimations through OLS regression, not taking into consideration the nested data structure; robustness checks on outlying nation; and effect size representation of the estimations.

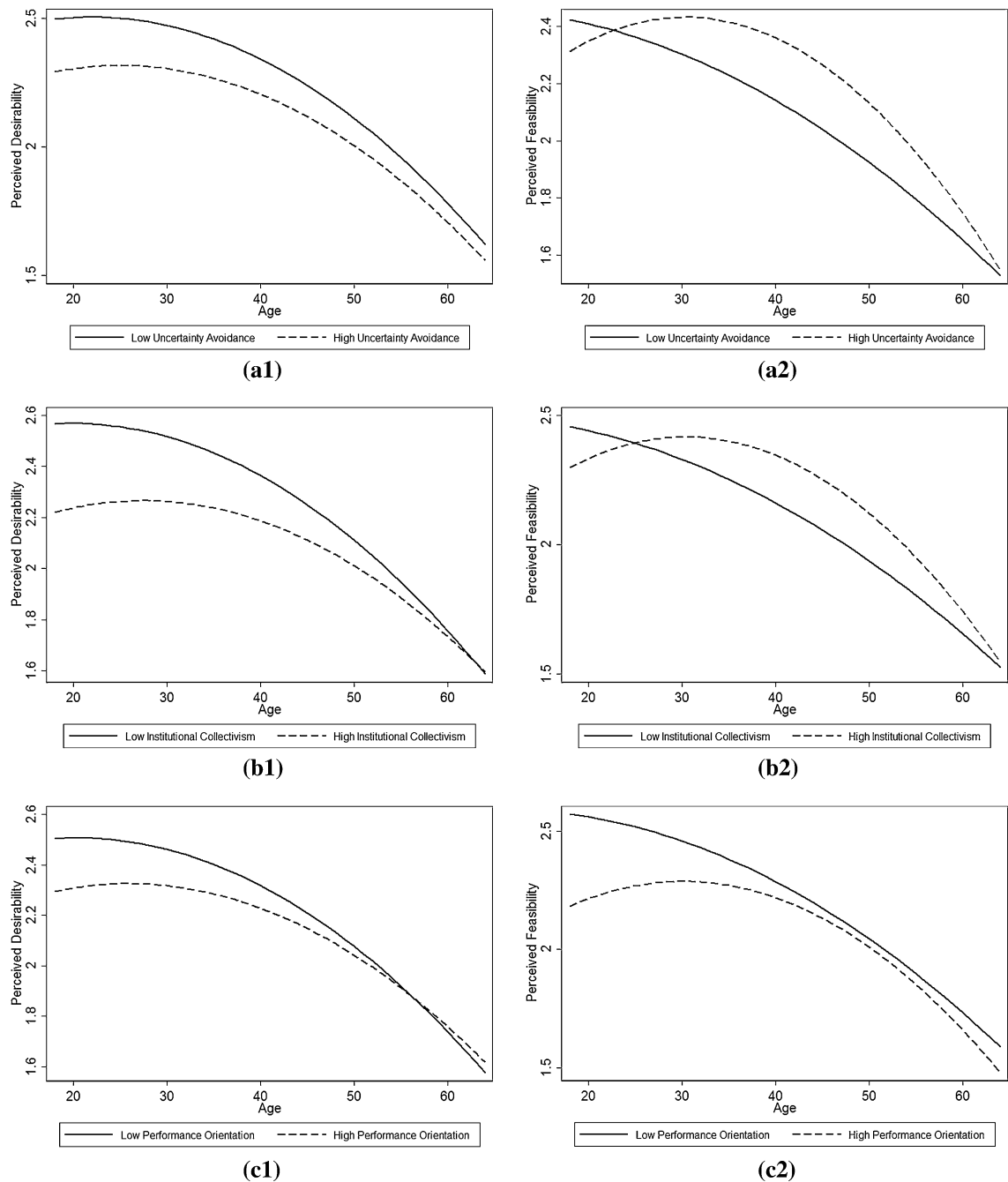


Fig. 2 Moderating effect of cultural dimensions

decline begins at later ages and we referred to that as “buffering effect.” Despite the overall effect of IC cultural practices, which could be labeled as “negative,” this buffering effect might be described as “positive,” meaning that age-related decline is retarded. This might be explained with the fact that

adult individuals in IC cultures are cognizant of, and keener on, the potential benefit their would-be venture could bring to broader society (Reynolds and Miller 1992). For example, successful founders are often referred to as “job creators” (Bruno et al. 2014) and in societies that exhibit strong IC practices, individuals

would be motivated to work harder and display high entrepreneurial commitment (desirability) when they perceive a co-alignment between their success and societal benefits such as economic development and employment. In high IC context, this sense of creation associated with goals and commitment toward self-employment and entrepreneurship more strongly resonates with the interest for generativity of older individuals (Erikson 1980). These people will experience a more persistent attitude and optimism; over longer time frames, they will drive career preferences toward self-employment (Wu et al. 2007). This might explain the initial growth of desirability and its peak at middle adulthood for high IC, while the peak for low IC occurs much earlier.

Turning to feasibility beliefs, IC practices are mostly associated with upward mean differences, which speaks in favor of a general “positive” effect of IC on feasibility: Societal redistribution mechanisms that are typical of IC societies have here the advantage to offer social structures that encourage the pursuit of entrepreneurial endeavor and increase access to collective resources (e.g., through grants and subsidies) (Autio et al. 2013). Based on this, individuals may experience inflation in self-efficacy and risk-taking perceptions. Besides, and more central to our reasoning, buffering effects become even more evident for feasibility (Fig. 2b2): While with low IC, curves show a quasi-monotonic age decline, and the curvilinear effects nearly disappear, with high IC, the decrease with age is smoother until late adulthood and starts from later age, until mid-adulthood feasibility perception shows positive changes with age. Hence, our results suggest that, in their development from childhood to early adulthood, individuals’ feasibility beliefs could particularly benefit IC practices; people might be able to avoid intrinsic losses in control, declines in risk-taking and, in turn, feasibility, and be enabled by cultural context to maintain a higher level of control and self-esteem for longer.

Our work offers some important theoretical contributions. First, lifespan psychology, which has been mainly used so far to study entrepreneurial actions, emerges as an insightful perspective also for the study of self-employment motivations. Besides, the findings reveal that the same cultural practice dimension can exert contrasting effects on the two motivations (Figs. 2a1, a2) or on the same motivation at different ages (Fig. 2c2). This (apparently) ambivalent effect of

cultural practices is not new in entrepreneurship research. For example, from a legitimacy perspective (Autio et al. 2013), the same practices that inhibit desirability for entrepreneurial entry have been found to enhance feasibility beliefs and growth orientation (Baker et al. 2005; Kim et al. 2012). Hence, our findings confirm a fairly nuanced picture of the cultural effect over lifespan; therefore, a first theoretical contribution of our work is that referring to generic age “effects” in entrepreneurship while ignoring culture, appears limitative, if not inappropriate.

Another theoretical contribution of our work lies at the intersection of lifespan perspectives and entrepreneurship (Obschonka et al. 2011; Obschonka and Silbereisen 2012). In sum, our work emphasizes that both intrinsic and environmental perspectives (McCrae et al. 1999) are at work when observing age changes in self-employment motivation. A normative timetable does exist, but it is only partially universal and is highly influenced by cultural practices. In particular, by looking at Figs. 1 and 2 together, one can easily recognize that by including cultural practices as moderators of the curvilinear age-related patterns, there emerges a more comprehensive understanding of lifespan development of self-employment motivation. This conclusion resonates with other developmental psychology research, such as personality studies (McCrae et al. 1999; Donnellan and Lucas 2008) but, to the best of our knowledge, has not yet been extensively adopted in entrepreneurship research.

Third, studies of self-employment motivation that include both age difference and culture are rare, and often focus on one aspect while marginally mentioning the other. These two dimensions, taken together and based on the systematic cross-cultural variation of age changes, suggest that age patterns are sociocultural constructions. This reflects some studies of entrepreneurial intention on gender and culture (Shneor et al. 2013), or family embeddedness and culture (Danes et al. 2008), and overall confirms that self-employment motivation and its development are “contextualized state[s] of mind” (Hindle et al. 2009).

Our study has some limitations. The first limitation of the study is the cross-sectional nature of the data. Hence, our data cannot pinpoint the exact cause of the correlation between self-employment motivation and age. However, our results are consistent with developmental research on comparable motivational constructs such as general self-esteem/self-efficacy, risk,

growth goals, and self-determination, as described in Sect. 2.1. Future studies should explore this issue to infer more causal conclusions, possibly with the use of longitudinal designs and of different birth cohort, e.g., cohort-sequential design (Schaie 1965) or cross-temporal meta-analysis (Twenge and Campbell 2001). Another limitation is represented by our measures of desirability and feasibility, which were assessed by means of a single item. However, previous studies have shown that single-item measures of well-defined constructs are reliable in cross-cultural development psychology investigations (e.g., Lucas and Donnellan 2009; Robins et al. 2001). Likewise, earlier research on self-employment motivation also used single-item measures (Schjoedt et al. 2014). Finally, we have to stress again that due to the nature of the data we use, our analyses refer to potential entrepreneurs only. This was a given restriction of the cross-cultural data set we used—it does not contain information on self-employment motivation in acting entrepreneurs. Nevertheless, the “potential entrepreneurs” population in each society can be considered as a “seedbed” for future entrepreneurship in these societies and we study central motivational factors (desirability and feasibility beliefs) that drive such entrepreneurial endeavors. Moreover, many public policy measures aiming to stimulate more entrepreneurial thinking and acting focus, first and foremost, on the potential entrepreneurs.

6 Implications for research and practice

Previous studies indicate that people in mid-adulthood are considerably more prone to engage in self-employment than younger and older individuals (Kautonen et al. 2010; Heim 2015). While mirroring these results, our findings point to a specific antecedent of entrepreneurial engagement (i.e., motivation) and raise attention to the cultural embeddedness of lifespan patterns in self-employment motivation. This offers a number of implications for future research and also indicates that, by looking at the age differences in entrepreneurship and self-employment, one can gather a better understanding about the mechanisms through which institutions and societies shape individual decisions for self-employment (Wyrwich 2013). Research in this stream might be developed along several directions; for example, what are the cultural origins of institutional and socioeconomic differences

that affect self-employment? Since many cross-country institutional differences are likely to be culturally rooted, it might be interesting to study how cultural practices specifically affect formal and informal institutional arrangements (such as role models, educational systems and financial capital available for innovation) that make self-employment more desirable or feasible within a certain context. Another implication stems from the fact that many other aspects of the relationship between age and entrepreneurship have been objects of recent empirical studies. Therefore, bringing the cultural buffering argument over lifespan might extend prior research on growth (Aidis and Van Praag 2007), innovation (Allen et al. 2007), decision-making speed (Forbes 2005), and stress (Bluedorn and Martin 2008) of older versus younger entrepreneurs. Besides, personality traits are often indicated as crucial antecedents to entrepreneurship and self-employment (Obschonka et al. 2012). Lifespan and cross-cultural psychology also largely study age difference in personality (Lucas and Donnellan 2009). We believe that future research might be enriched by considering how age differences in personality across cultures reflect on the different facets of entrepreneurship in multi-country settings. Finally, it might be particularly appropriate to further disentangle the developmental effect from cohort/historical effects in self-employment motivation; while longitudinal research would better serve to illustrate developmental patterns, time-lag designs (comparing different samples measured in different years) would allow capturing of secular trends or sociocultural heritage that are typical of a given region. In this respect, transition economies offer unique opportunities to study *zeitgeist* and historical effects on age differences in entrepreneurship (Wyrwich 2013; Lafuente and Vaillant 2013).

Our research resonates with Lévesque and Minniti (2011) and Minola et al. (2014) by suggesting that scrupulous assessment of individual characteristics jointly with contextual factors can shed light on incentives for self-employment (Caliendo et al. 2014) and result in practical implications (Evans and Leighton 1989). Our results are not causal, but if they could be replicated in more causal analyses, this would have definitive important policy implications. Our results on self-employment motivations, in fact, point to the importance of different mechanisms in fostering the entrepreneurial potential of individuals at different

ages and in different countries. Policymakers should consider the culturally embedded nature of entrepreneurship and that one size does not fit all (Lévesque and Minniti 2011). Cultural practices such as those addressed in this study are obvious antecedents of a country's regulatory frameworks and infrastructure, and will directly and indirectly affect entrepreneurship policies, e.g., through education and support programs or tax incentives and immigration strategies, respectively.

In countries with a high level of UA such as Switzerland and Germany, we would expect a comparative shortage of role models and social desirability for entrepreneurship and a lack of potential entrepreneurs with desirability for self-employment at all ages, especially among young people (see Fig. 2a1). Therefore, in such countries policies should promote publicly available and visible support systems that facilitate early career sensitization (Minola et al. 2014). Support systems should address obstacles that are specific to national culture such as positional (dis)advantages of aging (Siivonen and Isopahkala-Bouret 2014) and stylized role and status of young people (Pantea 2015). Our findings indicate this might be a particular concern in countries that score high in IC, such as South Korea and Japan, where both desirability and feasibility beliefs are penalized in youth. Furthermore, recent works have also highlighted the importance of cross-country collaborative entrepreneurship education initiatives (Solomon et al. 2008). In fact, they are spreading considerably at the European level, especially for young people (Athayde 2009). Based on our work, these programs might better take into account not only age (e.g., approaching and educating different age groups differently), but also cultural factors, by tailoring programs for each culture.

Talking about indirect effects, immigration is particularly relevant in aging countries (Arthur and Espenshade 1988) and has required explicit strategies and interventions by nations, which should be considered with the aim of fostering aggregate entrepreneurship (Lévesque and Minniti 2011). On one hand, our study contributes to explaining why in countries such as USA, Australia, and Canada a concern on productivity of new immigrants has recently been induced to include young age as an admission criterion. On the other hand, our findings highlight that the "right" age categories of immigrating individuals for a given country depend on the cultural setting of that country.

The promotion of young immigrant entrepreneurs might be particularly valuable in countries with a high level of IC such as South Korea and Japan; similarly, older immigrant entrepreneurs might serve to bridge the gap of third-age entrepreneurs that is particularly pronounced in countries high in UA such as Switzerland and Germany.

The weaker level of self-employment motivation in late adulthood/old age is to some extent not surprising (cf. Heim 2015); however, under progressively higher exclusion of third-age workers from the job market, this represents a growing concern (Kautonen et al. 2011). Policies that are particularly concerned about the inclusion of third-age people in social and economic life (Kautonen et al. 2014) clearly need to be culture-specific. Based on our findings, in low PO cultures such as Italy and Portugal, where the prevalent culture does not buffer the decline in motivation in old age as much, there is an obvious need for "stronger" programs for older adults to stimulate their self-employment motivation. In a similar vein, based on the importance of socialization practices to support third-age entrepreneurship (Kautonen et al. 2010), countries scoring low in IC (such as Hungary and Greece), where social support is likely to be weaker *ex ante*, should proactively tackle the disadvantages of older individuals; in those countries, programs should cultivate cultural attitudes toward enterprise and the mechanism of peer support (Tornikoski and Kautonen 2009), so to increase people's general understanding of self-employment as a feasible and desirable late-career decision.

7 Conclusion

Taken together, the cross-sectional age differences identified in this study, and their overlap to existing developmental theories and research on comparable constructs, speak for a certain normative age trend of self-employment motivation. This normative trend also shows some similarities with the observed age trends in actual entrepreneurial behavior. However, and this is maybe the most important message from this study, the data suggests that this age trend in self-employment motivation is not strictly universal across cultures and that such age trends differ by cultural factors such as IC, UA, and PO. Hence, self-employment motivation should not be taken as being

independent of age and culture, either in future research or in the world of practice (e.g., entrepreneurship promotion programs targeting self-employment motivation).

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