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Latent profiles of personality, temperament, and eudaimonic well-being: Comparing life satisfaction and health outcomes among entrepreneurs and employees

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ABSTRACT

Considerable research finds that entrepreneurs enjoy higher subjective well-being than wage-earning employees. At the same time, entrepreneurship is uniquely stressful for founders, who generally have high levels of personal commitment to the business and often higher workloads than wage employees. This highlights a tension in entrepreneurship research where it is unclear how self-employment influences well-being. This research seeks to resolve some existing tensions by tackling complex constellations of well-being profiles among both entrepreneurs and wage employees. Our latent profile analysis and commentary suggest the multifaceted nature of self-employment experiences, straddling both personal and business goals that may not always be hedonic, as an important consideration for future research on entrepreneurial well-being.

1. Introduction

Studies on well-being among entrepreneurs increasingly offer a panoply of theoretical, contextual, and empirical perspectives. Due to sample heterogeneity among the studies, the literature provides mixed evidence on whether entrepreneurs experience higher levels of well-being (Williamson et al., 2021). Recent work by Ryff (2019) calls for a closer examination of the well-being construct in entrepreneurship. Episodic experiences of self-employment coupled with personality and temperament may latently coalesce to drive an individual's eudaimonic well-being (Grant et al., 2009; Huta, 2017; Mann et al., 2021; Sun et al., 2018). According to Rothbart and Bates (2006), temperament refers to individual differences in prevailing affect and activity, whereas the trait-based view of personality refers to the stable patterns of behaviors less bounded by sociocultural contexts (Wilt and Revelle, 2009; Zillig et al., 2002). Personality, temperament, and well-being are increasingly considered jointly in the broader psychology literature (Anglim et al., 2020; Bojanowska and Piotrowski, 2021; DeNeve and Cooper, 1998; Lucas and Diener, 2009). Such confluence of personality, temperament, and well-being may latently vary among employees and entrepreneurs.

The undergirding connectivity among personality, temperament, and well-being could result in latent combinations that help explain constructs at a meso-theoretical level. The micro-level well-being measures driven by individual-level entrepreneurial activity, may be meso-theoretically explained by latent profiles that are not clearly discernible. The interaction and manifestation of these three dimensions highlight the processual elements that drive the formation of plausible latent profiles. The personality and temperament type factors combine with experienced well-being in the entrepreneurial context, resulting in coping responses that entrepreneurs take

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to improve their experience while struggling with the challenges of running a business. Though entrepreneurs enjoy higher subjective well-being than wage-earning employees (Stephan et al., 2020), the ways in which latent profiles drive meaning and personal identification with their work could provide an additional basis for future theory building. The idea that entrepreneurs experience both higher and lower well-being (Williamson et al., 2021), coupled with the notion that individual personality and temperament lead to varying experiences of realized well-being, highlights a black box containing potential latent profiles, profiles that may drive the realization of personal well-being. Opening and exploring this black box could be theoretically relevant and empirically desired.

Latent profiles represent the crystallization of experiences that are filtered, reacted upon, and internalized through personality and temperament. Though controlling for these factors seemingly accounts for their influence, our premise is that the kaleidoscopic combinations of these elements may drive distinctive patterns of personality, temperament, and well-being combinations. Considerable research has been published on entrepreneur personalities, seeking to provide clarity on which personality traits might cause entrepreneurs to create new organizations, persist in building those organizations, or direct new ventures to successful outcomes (Brandstätter, 2011; Patel and Thatcher, 2014; Zhao et al., 2010). Albeit with some nuances (for example, due to the differences in the definition of what an entrepreneur is or the consideration of different phases—e.g., startup vs. exit), research has found that some personality traits differentiate entrepreneurs from managers or other populations. Considering the Big Five personality dimensions, there is considerable agreement that entrepreneurs are more open to experience and have higher conscientiousness (e.g., Zhao and Seibert, 2006). Other aspects have reached a limited consensus because their effects are smaller or harder to determine. For example, some studies found that entrepreneurs are more extraverted but less agreeable and neurotic (e.g., Zhao and Seibert, 2006) but other found the differences between entrepreneurs and other populations are too small or harder to determine (Antoncic et al., 2015).

Therefore, the purpose of this research is to explore the differences in these potential latent profiles that emerge from combinations of personality, temperament, and eudaimonic well-being between entrepreneurs[1] and wage employees. Using samples from Portugal and the United States, we aim to unpack these underexplored latent profiles with the overarching goal of adding resolution to the longstanding lineage of work on entrepreneurship, personality, affect, and well-being (Baron, 2008; Wiklund et al., 2019). The latent profiles uncovered in this study demonstrate that realized eudaimonic well-being is a complex combination of a more stable personality and temperamental traits and experiences of self-employment.

2. Theoretical background

The studies on well-being highlight the heterogenous evidence to date and add to the literature that explores both the causes and consequences of well-being (Shir et al., 2019; Stephan, 2018; Wiklund et al., 2019). Although this research has been elucidating, others argue that, even though individual personalities may be unique, entrepreneurship is not caused by some mystic recipe of, for example, the Big Five personality dimensions (Kerr et al., 2017; Ramoglou et al., 2020). It is not our intent to settle this debate. However, the discordant (and sometimes unexpected) past results, which show that entrepreneurs experience both higher and lower well-being (Williamson et al., 2021), calls for further study. Yet, the meso-level latent profiles that could provide additional theory building can complement this literature. We focus on entrepreneur profiles that combine *both* well-being and personality dimensions to understand how these profiles describe entrepreneurs and employees, and the effect that these profiles have on important outcomes such as satisfaction with life and general health. Similarly, related to temperament, activations driving affective reactions are widely known to influence opportunity recognition (Baron, 2008), resource-seeking efforts (Baron and Tang, 2011; Laguna et al., 2017), and coping with entrepreneurial failures (Fang He et al., 2018).

We provide a list of representative studies on entrepreneurial personality and well-being in Table 1 to motivate the need for exploring the underlying latent profiles to complement ongoing inquiries on entrepreneurial well-being. The studies focus on a variety of contextual elements ranging from the microdynamics of engagement in entrepreneurship (Shir et al., 2019) to the role of personality in impelling well-being related outcomes (Klotz and Neubaum, 2016), and from the cross-level role of agentic and communal factors (Hmieleski and Sheppard, 2019) to fluctuations in affect among the self-employed (Uy et al., 2013). In addition to the variegation in the focus on levels and processes of realized well-being based on trait-like factors (i.e., dispositional affect and personality), studies have leveraged role congruence theory (Stephan et al., 2020) and the genetic basis of well-being outcomes (Shane et al., 2010). Further adding to this complexity, a recent meta-analysis finds that entrepreneurial well-being is harmed by hindrance stressors, but the entrepreneur's performance improves when an entrepreneur considers stress as a challenge to overcome (Lerman et al., 2021).

Considering the Big Five personality dimensions, Berglund et al. (2016) show that not only does personality matter for well-being, but there are also differences—albethey small—between entrepreneurs and wage employees. The differences in personality traits between entrepreneurs and wage employees were also found in other dimensions such as self-efficacy, need for achievement, psychological capital risk taking or internal locus of control (Baron et al., 2016; Bencsik and Chuluun, 2021; Frese and Gielnik, 2014; Welter and Scrimpshire, 2021; Wolfe and Patel, 2021 among others). As such, both personality traits and psychological states influence individual's self-selection into entrepreneurship (Beugelsdijk and Noorderhaven, 2005; Brandstätter, 1997, 2011; Gunia et al., 2021) and ultimately contribute to their well-being (Berglund et al., 2016). The personality and temperament related factors are further influenced by the contextual conditions of entrepreneurship. Heavier workloads, more uncertainty, higher earnings variability, difficulties to conciliate work and life balance or stress are some of the additional considerations in assessing the combinations of personality and temperament (Baron et al., 2013; Hessels et al., 2017; Laguna et al., 2017; Lange, 2012; Stephan et al., 2020; van der Zwan

[1] We capture a heterogeneous range of employment types in our operationalization of entrepreneurship, using a classification that includes self-employed individuals in both high-growth and 'everyday' firms (Welter et al., 2017).

Table 1
Representative studies on entrepreneurial personality and well-being.

Short citation	Question	Direction of effect	Sample Heterogeneity	Measures	Findings
Shir et al. (2019)	Is engagement in entrepreneurship associated with entrepreneur's psychological well-being?	Active engagement in entrepreneurship -> Psychological well-being (Psychological competence and relatedness)	Actively engaged entrepreneurs and non-entrepreneurial workers	IV: Active engagement in entrepreneurship DV: Psychological well-being (Psychological competence and relatedness)	Engagement in entrepreneurship is systematically associated with higher levels of well-being compared to engagement in regular employment and is likely to fulfill all three basic psychological needs (autonomy, relatedness, and competence)
Hmieleski and Sheppard (2019)	Does communal and agentic characteristics influence entrepreneurs of different genders ' subjective well-being and performance?	Communal and agentic characteristics - > Well-being and performance	The sample was stratified based on gender, such that it comprised an equal number of startups led by men and women. In addition, the sample was restricted to firms that were 7 years or younger	IV:1) Communal and agentic characteristics 2) Gender DV: 1) Well-being 2) Firm performance	The interaction between creativity and founding CEO gender on person-work fit is significant and positive. The founding CEOs' level of person-work fit had a positive and significant relationship with work satisfaction, negative relationship with work-family conflict, and positive relationship with new venture performance
Uy et al. (2013)	How entrepreneurs coping impacts their psychological well-being (PWB) and how prior start-up experience influences this relationship?	Entrepreneurs coping (and prior start-up experience) -> Psychological well-being (PWB)	Business owners who personally founded their ventures and are actively involved in running them, recruited from the Entrepreneurs Society of the Philippines (ESP), an association of individual entrepreneurs in Manila, Philippines	IV: 1) Entrepreneurs active/avoidance coping 2) prior start-up experience DV: Psychological well-being (PWB)	The use of avoidance coping positively predicted immediate PWB for entrepreneurs with more start-up experience. This relationship was negative for entrepreneurs with less start-up experience and entrepreneurs who used avoidance coping had improved PWB only if they also used active coping
Williams and Shepherd (2016)	How new venture creation impacts entrepreneurs' post-disaster functioning?	Venture creation - > Post-disaster functioning	Ventures emerged as an immediate result of Black Saturday disaster	IV: Venture creation DV: Post-disaster functioning	Venture creation mediates the positive relationship between human capital and functioning and that for those who do not create ventures, human capital is negatively related to functioning
Ryff (2019)	What is the relevance of eudaimonic well-being for understanding entrepreneurial experience?	Eudaimonic well-being - > Entrepreneurial experience	Conceptual	–	–
Uy et al. (2017)	How affect fluctuations and goal orientation affects psychological well-being and venture goal progress?	Affect fluctuations and goal orientation - > Psychological well-being and venture goal progress	Recruited entrepreneurs from a business incubator attached to a university in Manila, Philippines with 63 participants in the final sample	IV: 1) Affect fluctuations 2) Goal orientation DV: 1) Psychological well-being 2) Venture progress	High performance-approach goal orientation weakened the negative relationship between affect spin and psychological well-being and venture goal progress. High learning goal orientation strengthened the negative impact of affect spin on well-being but not on venture goal progress
Kibler et al. (2019)	Prosocial motivation can harm entrepreneurs' subjective well-being when they run a commercial venture?	Prosocial motivation - > Impact on well-being	Using the proprietary Bilendi Panel, a sample of 525 commercial entrepreneurs were selected. In addition, was collected a sample of employees working at for-profit organizations	IV: Prosocial motivation Mediator: Level of stress Moderators: Intrinsic motivation and autonomy DV: Life satisfaction	Prosocial motivation has a negative effect on entrepreneurs' life satisfaction due to increased levels of stress. However, the negative effect of prosocial motivation dissipates when perceived autonomy at work is high compared to when it is low
Wach et al. (2021)	How specific challenge and hindrance stressors impact entrepreneurs' well-being?	Hindrance stressors - > Entrepreneurs' well-being	"Everyday entrepreneurs," i.e., owner-managers and self-employed recruited via private networks and during entrepreneurship events	IV: Challenge and hindrance work stressors Mediator: Problem-solving pondering and work-related affective	High cognitive demands are positively associated and high emotional demands negatively associated with entrepreneurs' well-being at the between person level. In

(*continued on next page*)

Table 1 (*continued*)

Short citation	Question	Direction of effect	Sample Heterogeneity	Measures	Findings
				rumination DV: Entrepreneurs' well-being Control: Sleep efficiency	the short term, however, spikes of both types of work stressors (cognitive and emotional) during the workday impair entrepreneurs' recovery in the evening by making it difficult for them to detach from work and, in turn, feel energized and rested the next morning
Stephan et al. (2020)	Why and where self-employment is related to higher levels of eudaimonic well-being?	Self-employment- > Eudaimonic well-being	Individuals which were present simultaneously in EWCS (individual-level data) and GEM (country-level data) datasets in the year of 2010. Analyzed data from 16 European countries and 22,002 individuals	IV: Self-employment DV: Eudaimonic well-being	Self-employment is associated with higher eudaimonic well-being (subjective vitality)
Lerman et al. (2021)	How challenge and hindrance stressors impact entrepreneurs' well-being and performance?	Hindrance stressors - > Entrepreneurs' well-being and performance	Meta-analysis: 38 studies with a total sample size of 17,586 observations	IV: Challenge and hindrance work stressors DV: 1) Entrepreneurs' well-being 2) Performance	Challenge stressors are positively associated with performance and hindrance stressors negatively impact psychological and physiological well-being of entrepreneurs. Challenge and hindrance stressors are less detrimental to those in an entrepreneurial context versus those in nonentrepreneurial work settings
Zhao and Seibert (2006)	Do entrepreneurs differ from others in terms of their basic personality?	Big Five personality dimensions - > Entrepreneurial Status	Broad definitional approach and include managers of all ranks and functions. Excluded are comparison groups that comprise other subgroups of entrepreneurs (e.g., female entrepreneurs or less successful entrepreneurs), students, or the general population	IV: Big 5 Personality Traits Moderators: uncertainty avoidance and performance orientation DV: Entrepreneurial Status	Entrepreneurs are higher on conscientiousness, emotional stability, and openness to experience and are lower on agreeableness than non-entrepreneurs' managers
Zhao et al. (2010)	Are personality traits related to the formation of entrepreneurial intentions and new venture performance?	Big Five personality dimensions - > Entrepreneurial intentions and entrepreneurial performance	Individuals who have not yet started a venture (e.g., students); entrepreneurial performance data should be collected after the launch stage from a sample of individuals who have founded and personally managed their own businesses (e.g., entrepreneur)	IV: Big 5 Personality Traits Moderators: performance indicator type DV: Entrepreneurial intentions and entrepreneurial performance	Four of the Big Five personality dimensions are related to both entrepreneurial intentions and entrepreneurial performance. Openness to experience and conscientiousness appear to be the personality constructs most strongly and consistently associated with both these important outcomes. Only agreeableness appears to be unrelated to either outcome
Ciavarella et al. (2004)	What factors contribute to, and what factors detract from, an entrepreneur's success?	Big Five personality dimensions - > Long-term venture survival	Surveyed graduate students who were entrepreneurs during their careers from 1972 to 1995	IV: Big 5 Personality Traits DV: 1) Survival likelihood for at least 8 years 2) Venture's overall life span	Conscientiousness dimension was positively related to long-term venture survival and Openness to Experience had a negative relationship with long-term venture survival. Extraversion, emotional stability, and agreeableness were unrelated to long-term venture survival
Herron and Robinson (1993)	Explain the failure to link entrepreneurial characteristics with performance and thus to stimulate and modify research agendas	Personality traits - > New venture performance	Conceptual	–	–

(*continued on next page*)

Table 1 (*continued*)

Short citation	Question	Direction of effect	Sample Heterogeneity	Measures	Findings
Korunka et al. (2003)	Does the personality of nascent entrepreneurs influence the startup process based on the configuration approach?	Personality of nascent entrepreneurs - > Startup configurations	"Nascent entrepreneurs" and "New business owner-managers"	IV: Personality Traits and self-realization motive DV: Configuration areas (personal resources, environment, and organizing activities)	The nascent entrepreneurs showed a typology of three clearly distinguishable types (the nascent entrepreneurs against their will, the "would-be" nascent entrepreneurs, and the networking nascent entrepreneurs with risk-avoidance patterns). Two of these configurations show strong similarities to a startup pattern described in sociological entrepreneurial literature as the "economy of necessity" versus the "economy of self-realization"
Miller (2015)	Does certain entrepreneurial personality traits devolve naturally into aggressiveness, narcissism, ruthlessness, and irresponsibility?	Personality traits - > Negative feelings and behaviors	Conceptual	–	–
Shane et al. (2010)	Does genetic factors account for part of the covariance between the Big Five personality characteristics and the tendency to be an entrepreneur?	Genetic factors - > Big Five personality traits and tendency to be an entrepreneur	Sample of 3412 monozygotic and dizygotic twins from UK (Twins UK registry) and 1300 monozygotic and dizygotic twins from the US (MIDUS Sample)	IV: Genetic correlation; shared environmental correlation and nonshared environmental correlation DV: Personality characteristic overlap with those on the tendency to be an entrepreneur	Modest association between two of the Big Five personality characteristics and the tendency to be an entrepreneur. The strongest associations were for the personality characteristics of Extraversion and Openness to Experience
Klotz and Neubaum (2016)	Understand the complex process through which personalities shape behavior and influence outcomes, building on Miller (2015) observations	Personality traits - > Negative feelings and behaviors	Conceptual	–	–
Nikolaev et al. (2020)	Does positive and negative dispositional affect influences entry into entrepreneurship?	Dispositional affect - > job satisfaction - > entrepreneurial entry	People enter our sample the first year in which they are employed (not self-employed). Individuals who are never employed don't enter the sample. Those who transition into some other statuses (studies, retirement, death) are included until their last year in (self-) employment and censored thereafter	IV: Job transitions; dispositional (trait) positive and negative affect; Job satisfaction DV: Probability of transitioning into self-employment	Negative affect has a direct positive effect on self-employment entry, and the relationship between negative affect and self-employment entry is mediated by job satisfaction. Positive affect increases job satisfaction, which decreases the probability of self-employment entry

et al., 2018).

Expanding further on the above discussion and keeping entrepreneurship center stage, we expect that wage employees exhibit well-being profiles distinct from entrepreneurs. As such, our model jointly focuses on combinations of personality, temperament, and self-employment. With experiences of well-being rooted in myriad contextual and stable factors, we hope that this exploratory analysis provides added understanding to ambiguous answers in contemporary scholarship on well-being and entrepreneurship. Our work seeks to resolve some existing tensions by tackling complex constellations of well-being profiles. In doing so, we aim to provide some clarity regarding personality and well-being profiles for both entrepreneurs and employees. To set the stage for this research, we pose the following set of questions:

Research Question 1: Do latent profiles of personality, temperament, and eudaimonic well-being (subjective and psychological) differ both quantitatively (i.e., in mean levels) and qualitatively (i.e., in profile shapes) between wage-earning employees and self-employed?

Research Question 2: Do the uncovered latent profiles have differential effects on satisfaction with life or general health outcomes?

Research Question 3: Do personality and well-being profiles among entrepreneurs and employees follow similar patterns in separate country contexts?

Our efforts herein provide answers to these questions over the course of two studies using an innovative method that is relatively novel in organizational research, latent profile analysis (LPA; Gabriel et al., 2018; Wang and Hanges, 2011). Study 1 employs primary data collected in Portugal to investigate entrepreneur and employee profile similarities and differences. Study 2 seeks to replicate the findings of the first study using archival data in the United States.

3. Study 1

3.1. Sample and procedure

We use a Portuguese sample ($N = 936$) of both entrepreneurs ($n = 330$; 35.3%) and wage employees ($n = 606$) to construct latent profiles of personality, temperament, and well-being. These data were collected at the end of 2019, before the worldwide COVID-19 pandemic. We obtained a list of approximately 35,000 contacts within Portuguese firms from Informa D&B, a proprietary database, and sent an email invitation to each contact. About 10 percent of the emails bounced back as undeliverable. Of the delivered emails, 2821 individuals clicked the link in our invitation, a response rate of about 9 percent. We excluded 1748 participants who did not finish the survey. We excluded another 137 responses that showed no variation in their responses throughout the survey. Thus, our final sample contains 936 participants who were 45.1 years old on average ($SD = 11.0$); 43.2 percent were male, with 21.7 years of work experience ($SD = 11.2$). As a token of appreciation for the time participants invested in responding to our survey, we donated 0.5 Euros for each valid response to one of six Portuguese charities of the respondent's choice.

Table 2
Eudaimonic well-being retained scale items.

Autonomy (α = .81)
1. I am able to resist social pressures to think and act in certain ways
2. I am able to regulate social pressures to think and act in certain ways
3. I am able to regulate my behavior from within
4. I evaluate myself based on standards I set for myself
Mastery (α = .79)
1. I have a sense of mastery in managing my surroundings
2. I control a complex array of external activities
3. I make effective use of surrounding opportunities
4. I am able to choose and create contexts suitable with my personal values
Personal growth (α = .85)
1. I continue to develop personally
2. I see myself as growing and expanding
3. I am open to new experiences
4. I see improvement in my self over time
5. I am changing in ways that reflect greater self-knowledge
Positive relationships (α = .86)
1. I have warm relationships with others
2. I am concerned about the welfare of others
3. I am capable of strong empathy
4. I am capable of strong affection
5. I am capable of strong intimacy
6. I understand both give and take in my relationships
Purpose (α = .82)
1. I have a sense of directedness
2. I feel there is meaning in past and present life
3. I hold beliefs that give life purpose
4. I have aims and objectives for living
Self-acceptance (α = .80)
1. I have a positive attitude about myself
2. I acknowledge and accept multiple aspects of myself, including both good and bad
3. I feel positive about my past life

3.2. Measures

3.2.1. Big Five personality traits

We measured each of the Big Five personality traits, including two items each from openness, conscientiousness, extraversion, agreeableness, and neuroticism (Gosling et al., 2003). These personality measures include one indicator that is positively associated with the trait and one indicator that is negatively associated. For example, the two indicators for neuroticism were "anxious, easily upset" and "calm, emotionally stable." Participants rated the extent to which both terms within each indicator applied to them on a scale of 1 "disagree strongly" to 7 "agree strongly." Correlations between the two items within each construct ranged from −0.11 to −0.47.

3.2.2. Psychological distress

We measured psychological distress with the K6 questionnaire (Kessler et al., 2002). An example item is feeling, "so depressed that nothing could cheer you up." Cronbach's alpha for the six-item scale was 0.88.

3.2.3. Positive affect

We separated positive valence items from the affect circumplex (Watson et al., 1988) into both high- and low-activation (Williamson et al., 2019). High-activation items include "excited" and "energetic." Low-activation items include "serene" and "contented." The scale anchors went from 1, "very slightly or not at all," to 5, "extremely." Cronbach's alphas were .91 and .92 for high- and low-activation positive affect, respectively.

3.2.4. Eudaimonic well-being

We modified Carol Ryff's conceptualization of eudaimonic well-being (EWB; Ryff, 2019) to create a set of items, with subdimensions including autonomy, mastery, personal growth, positive relationships, purpose, and self-acceptance. See validation steps on Page 1 of the Appendix. Retained EWB items and reliabilities are reported in Table 2.

3.2.5. Satisfaction with life

We measured satisfaction with life using a five-item scale (Diener et al., 1985). An example item was "In most ways my life is close to my ideal." Answers ranged from 7 "strongly agree" to 1 "strongly disagree." Cronbach's alpha was .90.

3.2.6. General health

We measured general health by asking, "In general, how would you rate your health?" Responses ranged from 1, "very good" to 5, "very bad."

3.2.7. Entrepreneurship

Remaining with a broad conceptualization of entrepreneurship (Welter et al., 2017), we recorded 330 self-employed participants.

3.3. Analysis strategy

To begin our analysis of entrepreneur and employee well-being profiles, we used Mplus version 8.3 to perform a multiple indicator multiple cause analysis (Muthén & Muthén, 1998–2017) and relied on recent empirical work from Gabriel et al. (2018) to identify latent classifications without *a priori* assumptions about those classifications. This analysis strategy is called Latent Profile Analysis (LPA; Wang and Hanges, 2011). The benefit of using LPA, as opposed to a variable-centric approach with OLS-type regressions, is that LPA allows for complex configurations of variables to describe the extracted classifications both quantitatively and qualitatively (Wang

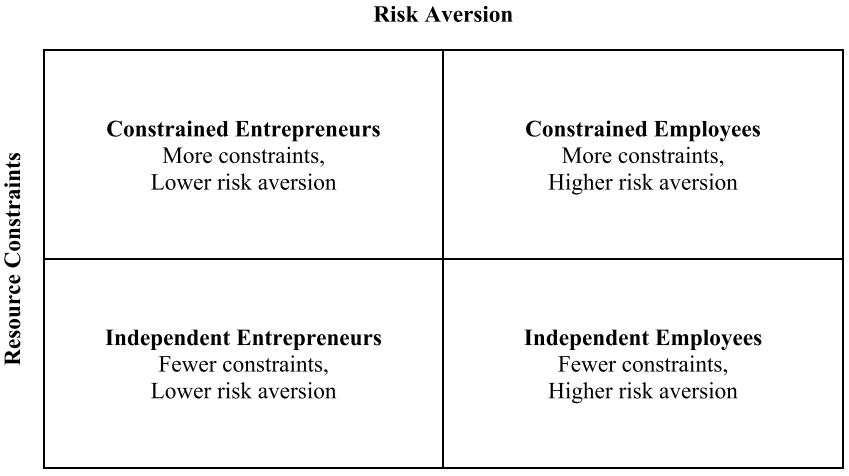

Fig. 1. Description of latent classifications.

and Hanges, 2011). Furthermore, the LPA method recognizes that classifications of individuals into specific categories may be imperfect. LPA improves on methods like cluster analysis by abstaining from 'forcing' participants into category assignments (Wang and Hanges, 2011). Conversely, the LPA approach provides probabilities for individuals to be assigned to a profile. Considering Research Questions 2 and 3, and following recommendations from (Lanza et al., 2013), we included satisfaction with life and general health as continuous distal outcome variables via the Bolck, Croon, and Hagenaars (BCH; 2004) auxiliary method (Asparouhov and Muthén, 2021; Bakk and Vermunt, 2016; Nylund-Gibson et al., 2019). This allows us to predict outcomes via complex profiles, as opposed to individual variable(s) in multiple regression.

The process of choosing the appropriate number of profiles (i.e., latent classifications) to extract from the data can be described as more qualitative than quantitative, optimizing for both parsimony and contextual salience (Lawrence and Zyphur, 2011). Although quantitative fit statistics are calculated for varying numbers of extractions, the research team must analyze those fit statistics holistically, as opposed to individually, to determine the appropriate number of latent classifications (Gabriel et al., 2018). Enumeration fit statistics can be viewed in Appendix Table A2. We constructed an elbow plot (see Appendix Figure A1) to visualize two of the fit statistics and help our determination of the appropriate number of profiles (cf. Howard et al., 2016). The elbow plot revealed the sharpest bend at four profiles. This noticeable feature of the elbow plot implies that moving from four to five profiles has diminishing

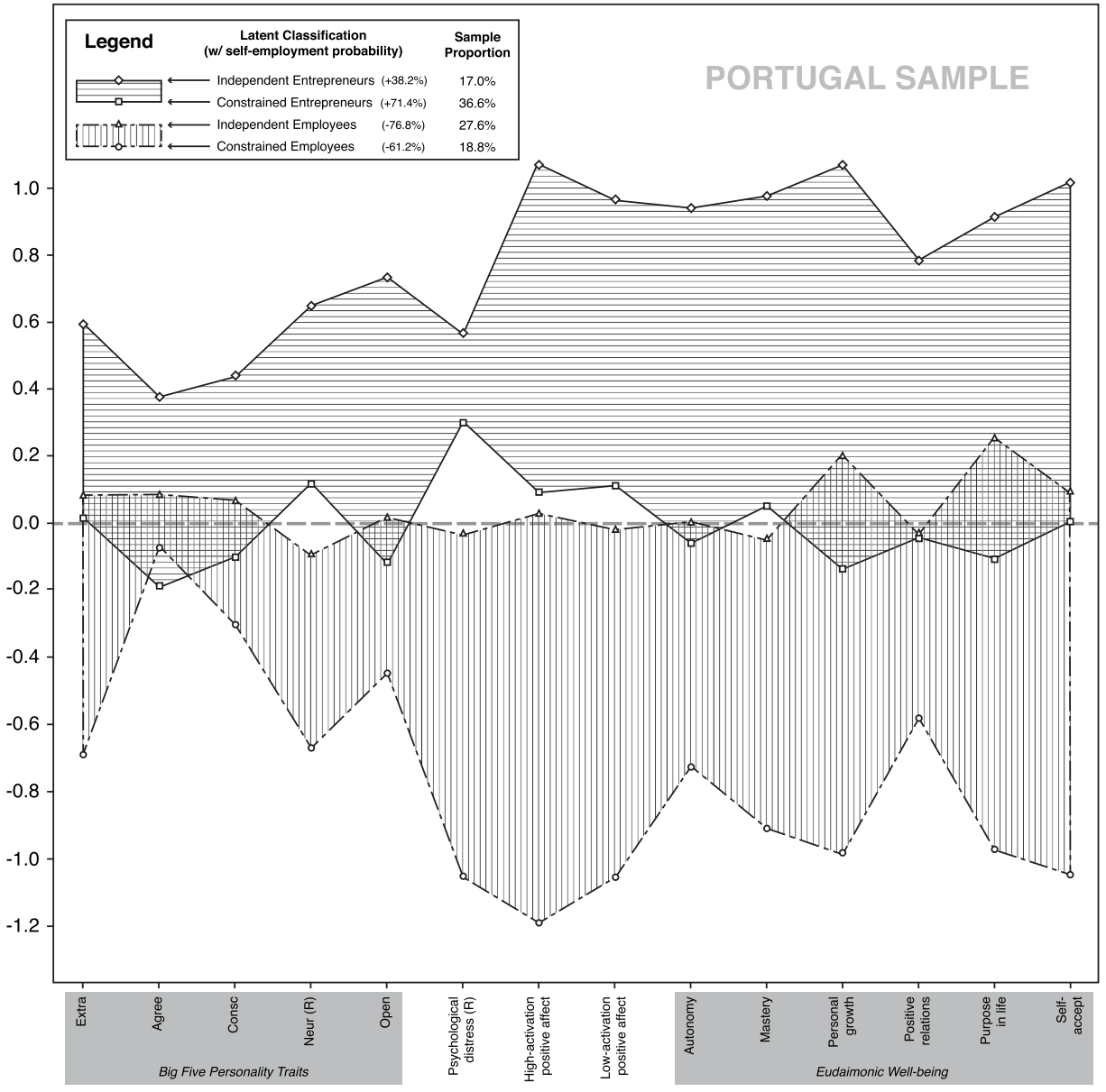

Fig. 2. Profile plot of latent classifications (Portugal). *Note.* Variables labeled with (R) are reverse-coded. All variables were scaled to have a mean of zero and a standard deviation of one.

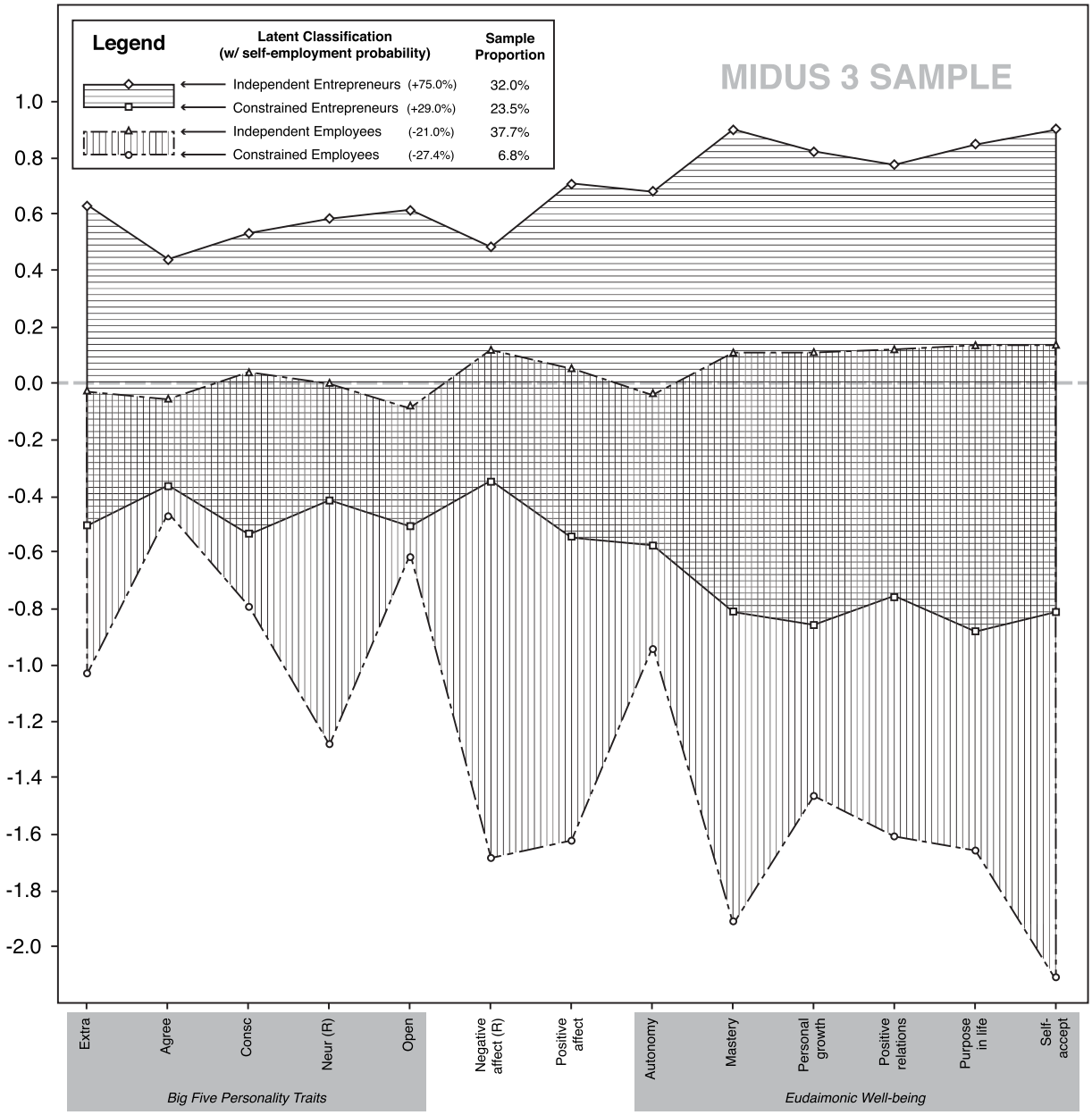

Fig. 3. Profile plot of latent classifications (United States). *Note.* Variables labeled with (R) are reverse-coded. All variables were scaled to have a mean of zero and a standard deviation of one.

returns on additional fit (Morin and Marsh, 2015). Furthermore, the consistent Akaike information criterion (C-AIC), which incorporates both the Bayesian information criterion (BIC) and the number of free parameters, starts to diverge more rapidly from the BIC line following the four-profile solution. This separation further suggests that moving beyond four profiles yields marginally less additional fit. Thus, we chose four profiles for our final solution, which supplies an answer to Research Question 1.

After extracting four profiles, we examined whether there were differences in probabilities of self-employment. This examination revealed that two groups were much more likely than the other two groups to have risked self-employment. We separate those two groups into more risk-averse (i.e., more likely to be a wage employee) and less risk-averse (i.e., more likely to be self-employed). Within these two groups (entrepreneurs and employees), there should varying levels of resource constraints (i.e., independence), but the two groups experience these constraints for different reasons. For entrepreneurs, fewer constraints can be the result of, for example, greater access to capital or selling to a well-established and accessible market. Entrepreneurs might experience more constraints because of greater personal financial investments, working longer hours, or substantial debt financing. Employees might experience fewer constraints, for example, by having permission to pursue projects they find personally meaningful within their organization, or by working flexible hours at a location they choose (i.e., office, home, café, etc.). Employees might experience more constraints through a rigid working schedule (e.g., 8:00 a.m. to 5:00 p.m., Monday through Friday) at one office location, or working for a low wage that requires more hours—or even precipitates the need for a second job—to earn sufficient personal income. With two types of entrepreneurs and two types of employees classified, we organized and named the four profiles into a two-by-two matrix in Fig. 1.

3.4. Results

As stated above, our analysis strategy created four distinct profiles among the entrepreneurs and employees in our sample. The profiles consist of entrepreneurs and employees with higher levels of independence, and entrepreneurs and employees with more constraints (see Fig. 1). We plot the profiles and their relative values on personality and well-being dimensions in Fig. 2 and present salient features for each of those profiles below in turn.

3.4.1. Constrained employees

This profile had the lowest well-being outcomes of any sub-group and the highest psychological distress. They also had a very low likelihood to be self-employed, 61.2 percent lower than the sample average.

3.4.2. Constrained entrepreneurs

Compared to other profiles, the constrained entrepreneurs had average levels of well-being and psychological distress, and the lowest level of agreeableness. Other than their highest likelihood to be self-employed, 71.4 percent greater than the sample average, their well-being profile is very comparable, in both shape and levels, to those of the independent employees.

3.4.3. Independent employees

This profile had similar well-being outcomes and psychological distress to the constrained entrepreneurs. The notable distinction between this profile and the constrained entrepreneurs, since the two groups' well-being profiles are so similar, is that this group is the least likely to be self-employed, 76.8 percent lower than the sample average.

3.4.4. Independent entrepreneurs

This profile had the highest well-being outcomes among any of the other three profiles. They are also very likely to be self-employed, 38.2 percent greater than the sample average.

Turning to the results from the distal outcomes analysis, which employs extracted profiles—as opposed to individual variables—to predict outcome variables, we find that the extracted profiles predict significantly different overall levels of satisfaction with life (χ^2 (3, $N = 936$) = 175.50, $p < 0.001$) and general health outcomes (χ^2 (3, $N = 936$) = 43.61, $p < 0.001$), providing an answer to Research Question 2. For each outcome, we compare each profile's mean outcome levels relative to other profiles in Appendix Tables A4 and A5.

4. Study 2

4.1. Replication sample and procedure

To investigate whether these profiles are generalizable or more idiosyncratic to our Portuguese sample (see Research question 3), we turned to an archival dataset from the United States. Carol Ryff and colleagues have collected a representative nationwide sample of middle-aged individuals in the United States (MIDUS; Ryff et al., 2019). The overarching goal of this nationwide data collection was to capture behavioral, psychological, and social factors among individuals, the upshot being that these data contain largely similar variables to our Portuguese data collection. We downloaded the third wave of the MIDUS data collection (MIDUS 3), completed in 2014, to perform another latent profile analysis ($N = 3294$). Participants were 63.6 years old on average ($SD = 11.4$) and 45.1 percent were male. These individuals worked 36.3 h per week on average ($Mdn = 40.0$, $SD = 15.7$), and had 32.0 years of full-time employment experience ($SD = 12.2$). We report measures for Study 2 on Pages 1 and 2 of the Appendix.

4.2. Results

The same four profiles from Study 1 emerged in Study 2 (see Fig. 3). We describe these four profiles in turn below.

4.2.1. Constrained employees

This profile had the lowest well-being outcomes and the highest negative affect. They also had the lowest likelihood to ever try self-employment, 27.4 percent lower than the sample average.

4.2.2. Constrained entrepreneurs

The constrained entrepreneurs showed lower-than-average levels of well-being and higher negative affect. This profile also had a higher likelihood to have been self-employed during their career, 29.0 percent higher than the sample average.

4.2.3. Independent employees

This profile had average levels of personality, affect, and well-being compared to the entire sample. They were less likely to ever try self-employment, 21.0 percent lower than the sample average.

4.2.4. Independent entrepreneurs

This profile had the highest well-being outcomes among any of the other three profiles. They are also the most likely to have tried self-employment, 75.0 percent greater than the sample average.

The extracted profiles predict significantly different overall levels of satisfaction with life (χ^2 (3, $N = 3294$) = 958.24, $p < 0.001$) and general health outcomes (χ^2 (3, $N = 3294$) = 174.48, $p < 0.001$). Similar to the results in Study 1, we compare each profile's mean levels relative to other profiles in Appendix Tables A7 and A8.

Although the four profiles that emerged in Study 2 resemble the profiles extracted in Study 1 (i.e., qualitative shape similarity), indicating a successful replication in a disparate country setting, there are some quantitative differences that we address in the following section.

5. Conclusions

We include descriptive statistics and correlations between the two samples in Appendix Tables A3 and A6. Some notable differences are participant age ($M_{\text{Portugal}} = 45.1$ years; $M_{\text{MIDUS}} = 63.6$) and work experience ($M_{\text{Portugal}} = 21.7$ years; $M_{\text{MIDUS}} = 35.9$). These differences are due to the nature of the MIDUS sampling frame, aiming to collect data on mid-life individuals in the United States. Conversely, the Portuguese sample recruited participants from various industries or organizations in that country, regardless of the participant's age. Gender proportions were roughly the same between entrepreneurs in each sample (62.4% male in Study 1 and 61.9% male in Study 2). There are also notable differences between the results displayed in Figs. 2 and 3.

The constrained entrepreneurs in the U.S. sample were significantly lower, on all measures, than of those with a similar profile in Portugal. There are several possible reasons for this discrepancy. One reason could be access to state-funded health care in Portugal. When the MIDUS 3 sample was collected in 2014, the Affordable Care Act in the U.S. was still in its infancy, and self-employed individuals were still either paying for their own healthcare or finding out how they might benefit from state-funded health care. Those additional expenses and uncertainties could have contributed to lower well-being outcomes. Another possible explanation is that the entrepreneurs in the U.S. participate in a type of "hustle culture" that subverts sleep quality/quantity and increases psychological distress (Gish and Wagner, 2016; Gish et al., 2019; Wolfe and Patel, 2020). The "hustle culture" places business needs ahead of individual needs, which could cause additional distress and lower well-being outcomes.

Much of the extant entrepreneurship literature on well-being focuses on well-being during self-employment. Extending this notion of well-being during self-employment, Ryff (2019) recently challenged entrepreneurship researchers to consider the concept of eudaimonic well-being. Eudaimonic well-being is a richer and multifaceted measure of well-being that considers the human experience and psychological well-being rooted in the goal of what constitutes "a good life." Counter to the hedonism-based subjective well-being, the eudaimonic version is rooted in Aristotle's Nicomachean Ethics focused on well-being derived from the pursuit of excellence and self-actualization in pursuit of personal growth.

Indeed, entrepreneurs aim to improve their *daimon* (i.e., self) in the pursuit of starting and managing a business. Though the contextual challenges are many, the arc of self-employment pursuits bends towards engagement and reflexivity with deeply held values and beliefs that improve subjective experiences of eudaimonia. Our study is among the first to jointly consider the stable traits and current self-employment state that form complex latent patterns in driving eudaimonia among entrepreneurs. The multifaceted nature of self-employment experiences that straddle personal and business goals, that may not always be hedonic, is an important consideration for future research on entrepreneurial well-being. We hope that the identified patterns in this study catalyze future theoretical development on profiles of eudaimonic well-being among entrepreneurs.

Author statement

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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APPENDIX

Scale Validation for Eudaimonic Well-being (EWB) in Study 1

We report fit and consistency statistics for the EWB scale used in Study 1. A principal components analysis revealed that the items loaded onto six distinct constructs, as Ryff (2019) outlined. However, subsequent factor analyses indicated that several redundant items exist within each construct. Therefore, we removed items that did not load well onto their intended sub-dimension (i.e., loadings <0.5) and redundant items (i.e., reverse-coded items that essentially mirror another positive-coded item). After removing these items, the EWB subscales had an acceptable fit (χ^2 (279, $N = 936$) = 789.92, $p < 0.001$, SRMR = 0.031, RMSEA = 0.042, CFI = 0.962). We report fit statistics for three separate models in Appendix Table A1.

Measures for Study 2

Big Five personality traits

MIDUS 3 measured the same five higher-order personality traits as in Study 1, although the traits were measured by more than two items. Cronbach's alphas for these traits ranged from 0.56 to 0.81.

Negative affect

Since the MIDUS 3 survey did not measure psychological distress, we substitute negative affect as the closest relative construct to psychological distress. Cronbach's alpha for the five-item scale was 0.81.

Positive affect

Since the MIDUS 3 survey did not parse high- and low-activation positive affect, we used the combined measure as one construct in Study 2. Cronbach's alpha for the four-item scale was 0.86.

Eudaimonic well-being

The MIDUS 3 sample measured the same six constructs as Study 1, but did not perform a factor analysis to evaluate or eliminate items for poor fit or redundancy. The resulting scales had Cronbach's alphas ranging from 0.69 to 0.84.

Satisfaction with life

Respondents were asked to rate life satisfaction with five items including their life overall, work, health, relationship with spouse/partner, and relationship with children. Responses ranged from 0 to 10, with 10 being the best possible rating. The Cronbach's alpha for the scale was 0.64.

General health

We adopted a single question from the MIDUS 3 to measure general health as it relates to the respondent's career. This question asked what effect the participant's job has had "on emotional/mental health." Responses ranged from 1 "very positive" to 5 "very negative," and were reverse coded so that higher scores indicate better general health.

Entrepreneurship

Just as in Study 1, we include individuals who were self-employed at the time of the survey; 332 participants indicated they were self-employed.

Table A1
Fit statistics for Eudaimonic Well-being

Model	χ^2	*df*	$\Delta\chi^2$	Δdf	*p*	CFI	TLI	RMSEA (90%CI)	SRMR
Model 1: One EWB factor	7423.15	434				.547	.514	.131 (.129, .134)	.104
Model 2: Six factors (guided by PCA)	1521.49	413	5901.66	21	<.001	.928	.919	.054 (.051, .056)	.043
Model 3: Six factors (without redundant items)	731.57	279	789.92	134	<.001	.962	.956	.042 (.038, .045)	.031

Note. $N = 936$. CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. $\Delta\chi^2$ = change in chi-squared test statistic from the previous model.

Table A2
Latent Profile Enumeration Fit Statistics

Number of profiles	Log-likelihood	Free parameters	AIC	C-AIC	BIC	SSA-BIC	LMR	Entropy
2	−28629.00	69	57396.01	57799.08	57730.08	57510.94	0.000	0.826
3	−28173.12	96	56538.24	57099.03	57003.03	56698.14	0.563	0.836
4	−27791.22	123	55828.44	56546.96	56423.96	56033.32	0.228	0.848
5	−27612.98	150	55525.95	56402.19	56252.19	55775.81	0.350	0.853
6	−27424.12	177	55202.24	56236.21	56059.21	55497.07	0.159	0.874
7	−27293.61	204	54995.23	56186.92	55982.92	55335.03	0.380	0.862

Note. $N = 936$. AIC = Akaike information criterion; C-AIC = consistent Akaike information criterion (calculated as the number of free parameters plus the BIC value); BIC = Bayesian information criterion; SSA-BIC = sample-size-adjusted BIC; LMR = Lo et al. (2001) likelihood ratio test.

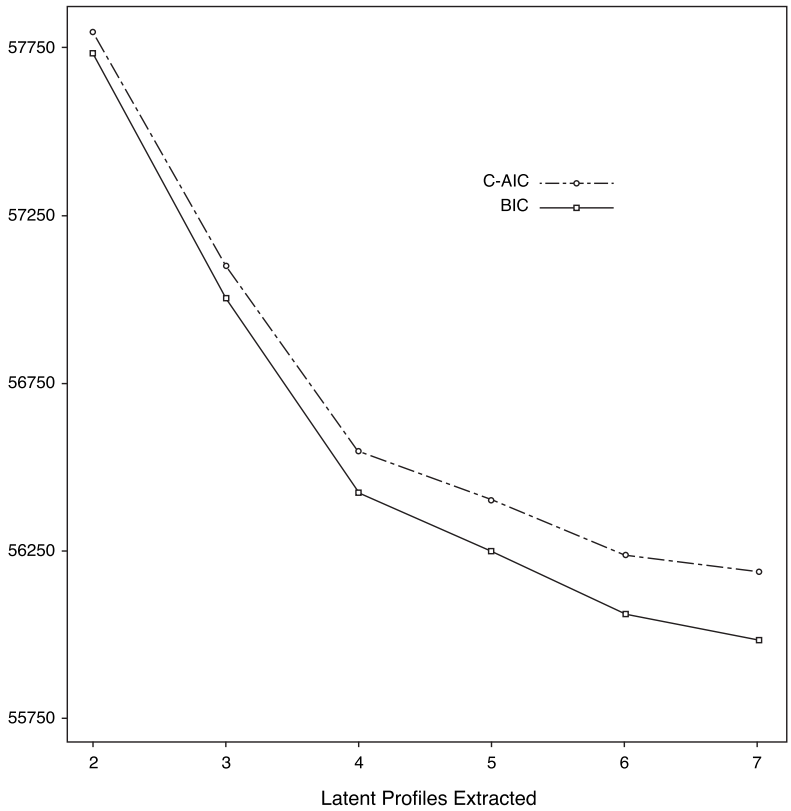

Fig. A1. Elbow plot for BIC and C-AIC .

Table A3
Descriptive statistics and Correlations (Portugal Sample)

	M	*SD*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1. Life Satisfaction	4.74	1.29	–																				
2. Extraversion	4.70	1.31	.21**	–																			
3. Agreeableness	5.38	0.91	.06	.01	–																		
4. Conscientiousness	5.56	1.01	.05	.11**	.09**	–																	
5. Neuroticism	4.31	1.12	.27**	.17**	.22**	.07*	–																
6. Openness	5.41	0.98	.06	.28**	.13**	.20**	.17**	–															
7. Physic Distress	1.89	0.70	-.43**	-.23**	-.06	-.09**	-.43**	-.10**	–														
8. High activation	3.36	0.79	.44**	.33**	.07*	.11**	.26**	.17**	-.50**	–													
9. Low activation	3.28	0.87	.46**	.18**	.15**	.07*	.43**	.11**	-.58**	.67**	–												
10. Autonomy	3.68	0.71	.16**	.17**	.10**	.24**	.28**	.29**	-.22**	.32**	.32**	–											
11. Mastery	3.35	0.80	.27**	.26**	.07*	.19**	.18**	.25**	-.23**	.50**	.38**	.49**	–										
12. Personal Growth	3.84	0.75	.25**	.25**	.16**	.17**	.25**	.35**	-.22**	.50**	.37**	.45**	.49**	–									
13. Positive Relations	3.75	0.72	.13**	.34**	.25**	.04	.19**	.19**	-.13**	.36**	.25**	.23**	.32**	.36**	–								
14. Purpose in Life	4.00	0.75	.33**	.27**	.13**	.17**	.24**	.25**	-.24**	.43**	.31**	.36**	.39**	.55**	.28**	–							
15. Self-Acceptance	0.00	0.73	.33**	.35**	.12**	.25**	.38**	.29**	-.39**	.45**	.41**	.41**	.36**	.50**	.31**	.50**	–						
16. General health	4.70	0.54	.31**	.11**	.05	.06	.20**	.02	-.33**	.21**	.23**	.06	.09**	.11**	.03	.14**	.19**	–					
17. Self-employed	1.65	0.48	-.11**	-.07*	.03	.04	-.12**	-.01	.15**	-.19**	-.16**	-.10**	-.20**	-.09**	-.13**	-.07*	-.08*	-.01	–				
18. Marital status	1.94	0.62	-.02	.14**	-.03	.01	.10**	.06	-.07*	.04	.03	.04	.07*	.03	.03	.01	.11**	-.05	-.17**	–			
19. Sex	1.43	0.50	.01	-.02	-.17**	-.08*	.17**	-.01	-.19**	.08*	.15**	.12**	.10**	.02	.03	.02	.12**	.03	-.29**	.10**	–		
20. Education level	2.09	1.04	.06	.01	-.04	-.04	.11**	.03	-.02	.02	.05	.05	.01	.07*	-.03	.07*	.00	.07*	.05	-.11**	-.06	–	
21. Work experience	21.69	11.20	.03	.06	-.02	.07*	.21**	.05	-.22**	.08*	.08*	.08*	.09**	-.02	.06	.00	.12**	-.04	-.36**	.40**	.30**	-.18**	–
22. Age	45.11	11.05	-.00	.07*	-.05	.03	.19**	.03	-.22**	.05	.08*	.06	.07*	-.07*	.07*	-.02	.10**	-.05	-.37**	.44**	.30**	-.12**	.88**

Note. *p < 0.05, **p < 0.01.

Table A4
Between-profile comparison of satisfaction with life (Portugal sample)

			χ^2 test statistic		
Profiles	*Mean*	*S.E.*	1.	2.	3.
1. Constrained Employees	−0.89	(0.08)	–		
2. Constrained Entrepreneurs	0.08	(0.05)	96.49***	–	
3. Independent Employees	0.17	(0.06)	106.15***	1.17	–
4. Independent Entrepreneurs	0.53	(0.08)	158.56***	20.58***	12.77***

Note. $N = 936$. Test statistics measure the difference in distal outcomes (mean satisfaction with life) between latent profiles. $^{\dagger}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$, $^{***}p < 0.001$.

Table A5
Between-profile comparison of general health (Portugal sample)

			χ^2 test statistic		
Profiles	*Mean*	*S.E.*	1.	2.	3.
1. Constrained Employees	−0.47	(0.09)	–		
2. Constrained Entrepreneurs	0.03	(0.05)	22.13***	–	
3. Independent Employees	0.11	(0.07)	23.88***	0.80	–
4. Independent Entrepreneurs	0.27	(0.07)	42.15***	6.92**	2.30

Note. $N = 936$. Test statistics measure the difference in distal outcomes (mean general health) between latent profiles. $^{\dagger}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$, $^{***}p < 0.001$.

Table A6
Descriptive statistics and Correlations (MIDUS Sample)

	M	*SD*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(18)	(19)	(20)	(21)
1. Life Satisfaction	7.78	1.32	–																			
2. Extraversion	3.09	0.58	.26**	–																		
3. Agreeableness	3.43	0.50	.13**	.50**	–																	
4. Conscientiousness	3.45	0.46	.28**	.26**	.28**	–																
5. Neuroticism	2.06	0.63	-.33**	-.15**	-.08**	-.20**	–															
6. Openness	2.90	0.54	.15**	.52**	.36**	.30**	-.18**	–														
7. Negative Affect	1.49	0.54	-.44**	-.18**	-.06**	-.22**	.51**	-.13*	–													
8. Positive Affect	3.55	0.77	.51**	.44**	.23**	.33**	-.36**	.33**	-.41**	–												
9. Autonomy	37.32	6.67	.21**	.29**	.11**	.29**	-.34**	.34**	-.26**	.30**	–											
10. Mastery	38.41	7.51	.55**	.37**	.18**	.41**	-.49**	.29**	-.52**	.55**	.49**	–										
11. Personal Growth	38.32	6.85	.37**	.43**	.30**	.38**	-.33**	.49**	-.31**	.46**	.43**	.59**	–									
12. Positive Relations	40.63	6.74	.44**	.49**	.44**	.29**	-.35**	.29**	-.36**	.46**	.33**	.61**	.57**	–								
13. Purpose in Life	38.11	7.02	.45**	.39**	.24**	.41**	-.33**	.34**	-.35**	.51**	.40**	.65**	.70**	.59**	–							
14. Self-Acceptance	38.02	8.15	.55**	.41**	.20**	.34**	-.48**	.34**	-.48**	.58**	.49**	.77**	.62**	.65**	.69**	–						
15. General health	2.43	1.09	-.39**	-.17**	-.09**	-.10**	.25**	-.12**	.25**	-.27**	-.15**	-.34**	-.22**	-.26**	-.25**	-.32**	–					
16. Self-employed	1.86	0.35	-.04	-.01	.05*	-.00	.03	-.06**	.01	-.03	-.09**	-.03	-.06**	-.02	-.08**	-.06**	.16**	–				
17. Marital status	1.89	1.37	-.18**	-.01	.01	-.08**	.05*	.03	.08**	-.10**	-.03	-.11**	-.08**	-.13**	-.17**	-.17**	.06*	.08**	–			
18. Sex	1.55	0.50	-.00	.08**	.29**	.08**	.10**	-.02	.06**	-.00	-.11**	-.07**	.07**	.15**	-.01	-.04*	.03	.13**	.16**	–		
19. Education level	7.51	2.51	.11**	-.03	-.09**	.10**	-.12**	.20**	-.07**	.05**	.09**	.13**	.27**	.08**	.21**	.15**	-.03	-.05**	-.05**	-.11**	–	
20. Work experience	35.90	13.16	.09**	.04	-.03	.06**	-.15**	.05**	-.13**	.10**	.15**	.14**	.05**	.03	.08**	.11**	-.15**	-.09**	-.06**	-.34**	.06**	–
21. Age	63.64	11.35	.14**	.02	.05**	-.06**	-.14**	-.01	-.14**	.08**	.08**	.11**	-.09**	.11**	-.06**	.11**	-.22**	.01	.14**	-.00	-.14**	.27**

Note. $^{*}p < 0.05$, $^{**}p < 0.01$.

Table A7
Between-profile comparison of satisfaction with life (MIDUS sample)

			χ^2 test statistic		
Profiles	*Mean*	*S.E.*	1.	2.	3.
1. Constrained Employees	−1.63	(0.10)	–		
2. Constrained Entrepreneurs	−0.48	(0.04)	116.21***	–	
3. Independent Employees	0.11	(0.03)	292.73***	109.98***	–
4. Independent Entrepreneurs	0.61	(0.02)	517.81***	488.74***	131.39***

Note. $N = 3294$. Test statistics measure the difference in distal outcomes (mean satisfaction with life) between latent profiles. $^{\dagger}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$, $^{***}p < 0.001$.

Table A8
Between-profile comparison of general health (MIDUS sample)

			χ^2 test statistic		
Profiles	*Mean*	*S.E.*	1.	2.	3.
1. Constrained Employees	−0.91	(0.12)	–		
2. Constrained Entrepreneurs	−0.33	(0.06)	17.70***	–	
3. Independent Employees	−0.03	(0.05)	44.23***	12.21***	–
4. Independent Entrepreneurs	0.42	(0.05)	107.30***	95.38***	36.07***

Note. $N = 3294$. Test statistics measure the difference in distal outcomes (mean general health) between latent profiles. $^{\dagger}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$, $^{***}p < 0.001$.

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