

**Dispositional positive and negative affect and self-employment transitions: The mediating role of job satisfaction**

**Boris Nikolaev**

Affiliation: Hankamer School of Business, Baylor University

Address: One Bear Place #98011, Waco, TX 76798

Phone: 813.401.9756

E-mail: [boris\\_nikolaev@baylor.edu](mailto:boris_nikolaev@baylor.edu)

**Nadav Shir**

Stockholm School of Economics

P.O. Box 6501

SE-11383 Stockholm, Sweden

[nadav.shir@hhs.se](mailto:nadav.shir@hhs.se)

and

Hanken School of Economics

Arkadiankatu 22, 001 01 Helsinki, Finland

[nadav.shir@hanken.fi](mailto:nadav.shir@hanken.fi)

**Johan Wiklund**

Whitman School of Management

Syracuse University, 721 University Avenue/Suite 116

Syracuse NY 13244-2450, United States

[jwiklund@syr.edu](mailto:jwiklund@syr.edu)

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**Abstract:** Affect is increasingly studied within entrepreneurship. We develop a partial mediation model in which positive and negative dispositional affect influences entry into entrepreneurship, suggesting that those experiencing greater negative affect experience less job satisfaction and are more likely to enter entrepreneurship. Using a novel methodological approach to capture affective disposition, we test our model on a large panel dataset from Australia, finding support for our hypotheses. These findings provide a much-needed counterbalance to the prevailing focus in entrepreneurship on the positive consequences of positive affect and introduce affect into the study of the fundamental question of why some people but not others become entrepreneurs on the first place.

**Keywords:** positive affect, negative affect, dispositional affect, self-employment, entry, job satisfaction, partial mediation, structural equation modelling

## **Introduction**

Why do some individuals but not others launch new businesses in the face of uncertainty and setbacks? That's a classic question in entrepreneurship research. Previous studies have identified a wide range of motivations for engagement in the start-up process—from pursuing independence and a sense of purpose to maximizing profits and lack of other options (Carter et al., 2003). Entrepreneurship, however, is a highly emotional journey where the heart as well as the mind plays a central role (e.g., Cardon et al., 2012; Shepherd, 2015). Therefore, affect—emotion, mood, and disposition—is receiving increased attention in entrepreneurship research. For example, studies have linked affect to creativity and innovation (Baron et al., 2011; Baron & Tang, 2011; Perry-Smith & Coff, 2011), opportunity evaluation (Grichnik et al., 2010; Tang et al., 2012; Welp et al., 2012; Arora et al., 2013), risk perceptions and preferences (Foo, 2011; Podoynitsyna et al., 2012), pro-active behavior (Hahn et al., 2012), and focus and effort on future oriented entrepreneurial tasks (Foo et al., 2009).

However, we still lack theorizing and systematic analysis of how affect motivates and influences the decision to enter entrepreneurship in the first place. Arguably, this decision is a precursor to any subsequent entrepreneurial behavior and outcome. In a recent review of research on affect in entrepreneurship, Delgado García et al. (2015) found no study examining actual entry into self-employment and other entrepreneurial activities. In part, this is because studies typically rely on small cross-sectional samples that do not allow for studying the dynamic consequences of affect (Delgado García et al., 2015).

Nevertheless, it is likely that affect plays a fundamental role in the decision to enter self-employment. Because potential entrepreneurs make decisions about uncertain outcomes, often in rapidly changing environments, they are “less likely to rely on well-learned scripts and prescribed set of procedures” (Baron, 2008, p. 329). Instead, it is people's affective states and

dispositions that are most likely to influence their cognition and behavior in such environments (Shepherd, 2003; Baron, 2008; Cardon et al., 2012; Shepherd, 2015). In this regard, affect may exert especially strong motivational effects in the context of entrepreneurial entry because entrepreneurship, as a self-organized and goal-directed endeavor (Shir, 2015), has the potential to support long-term well-being and mental health (Shir et al., 2018; Stephan, 2018), and hence can be potentially appealing for people who want to change their life for the better.

Against this background, we develop and test a partial mediation model in which dispositional (trait) positive and negative affect (henceforth we use PA and NA to denote positive and negative *dispositional* affect) influence the probability of transitioning into self-employment (relative to change in employment).<sup>1</sup> We focus on dispositional affect (rather than state affect), defined as people's "stable, underlying tendency to experience positive and negative moods and emotions" (Barsade & Gibson, 2007, p.37). Because people are innately oriented towards growth, development, and well-being (Ryan & Deci, 2017) and because we believe that entrepreneurship offers unique opportunities for people to thrive and amend their mental health (e.g., Williams & Shepherd, 2016; Shir et al., 2018), we maintain that dispositional affect strongly motivates the decision to enter self-employment.

These stable personality traits have also been shown to influence a range of job outcomes such as performance, salary, turnover intentions, and work-related stress (e.g., see Judge et al., 1998; Diener et al., 2002). Thus, we also propose job satisfaction as a cognitive mechanism that partially mediates our hypothesized direct relationship between PA, NA and self-employment transitions. This allows to connect research on self-employment entry to a long theoretical

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<sup>1</sup> Self-employment has been predominantly used in the literature on affect as a proxy for entrepreneurship (e.g., see recent review Stephan, 2018). Therefore, we follow convention and measure entrepreneurship with self-employment (and use these words interchangeably throughout the text). However, we do point out that not all self-employed people engage in self-organizing and goal-directed practices that involve and the creation of new business activities.

tradition in occupational psychology that has identified the scope, nature and structure of job attitudes as having a strong affective and dispositional basis (e.g., see Judge & Larsen, 2001; Judge & Kammeyer-Mueller, 2012).

Using longitudinal data from the Household, Income and Labor Dynamics in Australia (HILDA) survey from 2001 to 2015, we then test the predictions of our model with a generalized structural equation modelling (GSEM) and multinomial logit (MNL) estimations. Thus, we answer recent calls in the literature that “entrepreneurship should be an active participant in the revival of personality research although it should use more sophisticated theories and methodological approaches” (Baum et al., 2014, p.5).

In carrying out this research, we make several contributions to overlapping streams in the entrepreneurship and careers literatures. First, we focus on both positive and negative trait affect, thus providing an important counterweight to the single-eyed focus on positive emotions (e.g., passion, optimism, inspiration) that dominate the field (e.g., Cardon et al., 2012). For example, in a systematic review of the literature, Delgado García et al. (2015) found only one study that examined any aspect of negative affect in the context of venture success and survival. This is particularly important as we build on established psychological theory to hypothesize – and also find – that *negative* trait affect *positively* and *directly* influences entry into self-employment. This allows us to make novel theorizing on the role of negative affect in self-employment entry and highlight the importance of negative moods and emotions in the venture creation process.

Second, building on previous studies of affect in the workplace (e.g., Weiss & Cropanzano, 1996; Brief & Weiss, 2002), we propose that PA and NA also influence self-employment entry *indirectly* via the channels of job satisfaction (e.g., Levin & Stokes, 1989). Thus, we identify an important cognitive mechanism that underlies the relationship between positive and negative affectivity and self-employment entry. In fact, we focus on how PA, NA, and job satisfaction

associated with *current* employment influences *subsequent* entry into self-employment. While this is a common approach in the job satisfaction literature, it is novel in entrepreneurship where studies tend to focus either on individual characteristics or the nature of the business pursued.

Third, our longitudinal dataset allows us to observe people's transitions from employment into self-employment as well as into other types of employment. Thus, we can contrast the transition into self-employment with other job transitions and identify factors that *uniquely* influence entry into self-employment as opposed to job transitions in general. In doing so, we also contribute to the broader literature on job turnover, which has typically placed all job transitions on equal footing, irrespectively of whether people move to a similar job with a different employer or change their careers.

Finally, we utilize a novel approach (e.g., Graham et al., 2004; Krause, 2013), not previously applied in the entrepreneurship literature, for measuring dispositional affect. Our approach allows us to parcel out the underlying (time-invariant) trait component of affect repeatedly measured over a period of fifteen years using the individual fixed-effects “happiness residual” (Graham et al., 2004). As entrepreneurship scholars increasingly start utilizing long data panels, we believe that this approach can be highly valuable for capturing not only dispositional affect, but several other stable personality characteristics such as optimism (e.g., see Guven, 2011) on the basis of survey responses.

### **Conceptual Foundations**

The relationship between affect, cognition, and behavior is complex and multi-directional. Cognitive and behavioral processes participate in emotional reactions, but affective processes—both momentary and dispositional—influence how people think and act; how they remember, perceive, and interpret events, and how they ultimately behave (e.g., Forgas, 1995; Isen, 2000; Erez & Isen, 2002). Indeed, given our innate orientation towards growth and well-being (Ryan &

Deci, 2017), affect has long been considered a central feature of human (and animal) behavioral regulation (Bechara et al., 2000; Damasio, 2000) and a central factor influencing one's decision to engage or disengage from major life pursuits (Emmons, 1996; Schank & Abelson, 2013). In that sense, affective phenomena have been long understood as fundamental to processes of motivation and self-regulation, which direct human beings in their attempts to strive and attain goals and successfully manage their environments (Bechara et al., 2000; Damasio, 2000), including that of entrepreneurship (Nambisan & Baron, 2013; Shir, 2015).

### **Dispositional Positive and Negative Affect**

Affect refers to a wide range of psychological experiences that individuals have in their day-to-day lives (Watson & Clark, 1984). Emotions are relatively intense feeling states (e.g., fear, anger, disgust) that are short-lived and often associated with a specific object or a known cause (Frijda, 1986; Lazarus, 1991). Moods take the form of more general positive (pleasant) or negative (unpleasant) feeling states (e.g., happy, sad, satisfied) that have no specific object or cause and are generally longer-lasting and diffuse (Tellegen, 1985; Watson & Tellegen, 1985). Dispositional affect, finally, refers to people's relatively stable, underlying *tendency* to feel and act in a predictable way across various situations and over time (e.g., "She is a happy and upbeat person"; "He is always anxious"; "He has a calm disposition"). In that sense, dispositional affect can be thought of as a stable personality trait representing "a person's 'affective lens' on the world" (Barsade & Gibson, 2007, p.38). In other words, the effects of dispositional positive and negative affect, as time invariant constructs, work through the experience of moods and emotions in real time (e.g., a person high on NA will more frequently experience negative emotions on a day to day basis).

Following prior literature (e.g, Chiu & Francesco, 2003), we define dispositional PA as a trait that reflects pervasive individual differences in positive emotionality and self-concept. PA

measures the degree to which a person is predisposed to experience positive emotions and moods. Individuals high on PA tend to be cheerful, energetic and experience positive moods such as happiness across a wide variety of situations and over time (Barsade & Gibson, 2007). NA, on the other hand, is defined as a trait that describes the tendency of an individual to experience a variety of negative moods and emotions across time and situations (Chiu & Francesco, 2003). Individuals characterized by high NA tend to be distressed, upset, nervous and have a negative view of self (e.g., feeling worthless). They tend to focus on shortcomings, disappointments, and mistakes and are provoked by their own thoughts and behavior.

PA and NA have been conceptualized as independent of each other, which has been validated empirically (e.g., Diener & Emmons, 1984; Watson et al., 1988). People can simultaneously experience various combinations of PA and NA and the constructs have different antecedents and consequences (Johnson & Johnson, 2000). They are therefore typically studied as separate constructs (Bradburn, 1969; Diener & Emmons, 1984; Egloff, 1998). This has also been supported in the entrepreneurship context (Hayton & Cholakova, 2012). Therefore, consistent with prior theorizing in the literature (e.g., Baron, 2008; Baron et al., 2011, 2012; Delgado García et al., 2015), we study PA and NA as separate constructs.

Finally, as individuals are naturally oriented towards well-being (Deci & Ryan, 2017) and because entrepreneurship affords opportunities for growth, development, and mental health (Shir, 2015; Shepherd, 2015), PA and NA (rather than temporary state affect) can be especially important as *motivational triggers* in the decision to enter (or not) into self-employment.<sup>2</sup> Also, because the decision to enter into self-employment represents a significant career change it is likely the result of extensive deliberation rather than a sudden impulse (Rhodes & Doering,

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<sup>2</sup> By analogy, a chronically depressed person might take steps to change his/her life (affect repair) by going to a psycho-therapist. Indeed, we partly see entrepreneurship as a process with potential psycho-therapeutic benefits (Shir, 2015).



1983). Negative affect has been found in multiple studies to be important facilitator of early motivational processes prior to goal pursuit (e.g., Alloy & Abramson, 1979; Taylor & Gollwitzer, 1995).<sup>3</sup> All and all, entrepreneurship as a self-organized and an uncertain goal pursuit provides a unique context for predicting the divergent roles of PA and NA on entry into self-employment via both direct and indirect channels. We develop our arguments next.

### **Hypothesis Development**

The direct influence of PA on job turnover has been found to be negative in meta-analysis (Zimmerman, 2008). There may be several reasons for this relationship. Specifically, because people high on PA tend to view their world more positively, and pay greater attention to positive cues, they are likely to experience greater job-person fit. They also experience greater commitment to their jobs and organizations because they are more likely to interpret and experience various workplace events in a positive way (Weiss & Cropanzano, 1996). Both reduce the probability of job turnover (e.g., Hollenbeck & Williams, 1986; Tett & Meyer, 1993). Furthermore, happy people are reluctant to make big changes to their lives because they want to preserve their positive emotional state via self-regulatory processes of *affect maintenance* (see Carver & Scheier, 1982; Forgas, 1995; Isen, 2000; Leventhal, 1984). Therefore, we posit that individuals high on PA are less likely to change jobs because it could potentially compromise their enduring positive affective experiences and because it may jeopardize their experience of fit with their job (Isen et al., 1978; Isen & Simmonds, 1978; Wegener & Petty, 1994).

Additionally, there is reason to believe that this effect of PA is particularly strong on the transition into self-employment. Entering self-employment can be a very challenging goal pursuit for many. The outcomes of self-employment endeavors are also inherently uncertain in

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<sup>3</sup> It should be noted that “although state and dispositional affect appear to derive from different sources (e.g., specific events versus stable biological processes), existing evidence suggests that in general, they produce parallel effects in many contexts” (see Baron et al., 2012, p.313).

ways that other job changes are not (Baron & Tang, 2011), and under such circumstances high PA leads to greater risk avoidance (Isen et al., 1988) because it is more uncertain and difficult to protect and maintain positive affectivity by engaging in the new and risky self-employment endeavors. This logic parallels findings that people high on PA are less likely to engage in gambling behavior because they don't want to undermine the experience of feeling happy (Isen & Patrick, 1983). This has been found to be partially mediated by a greater attention to losses for those who experience heightened positive affect (Isen et al., 1988). Thus, people high on PA likely take a conservative stance and are particularly reluctant to transition into self-employment.

In contrast to the effect of PA, NA has been found to positively influence job turnover in meta-analysis (Zimmerman, 2008). People high on NA tend to have negative views of themselves and their environments and experience negative emotions across time and situations, including various workplace events (Weiss & Cropanzano, 1996). Therefore, they are more likely to seek out new behavioral opportunities to improve their well-being via processes of *affect repair* (Cialdini et al., 1973; Morris & Reilly, 1987; Schaller & Cialdini, 1990). That NA induces such behaviors is evident in a significant body of research (Batson et al., 1989; Carlson & Miller, 1987; Schaller & Cialdini, 1990). As such, they are more likely to seek alternative employment options, including self-employment.

Again, because of the uncertainty of entrepreneurship and the well-being opportunities it offers (Shir, 2015), this effect may be particularly pronounced when it comes to self-employment transitions. People who are predisposed to feel negative are motivated by an implicit goal to repair their condition, which, subsequently, induces them to seek high-reward outcomes despite potential risk, which they weigh more lightly (Cialdini et al., 1973; Schaller & Cialdini, 1990). For example, when facing gambling decisions and job selection decisions, subjects who experienced negative affect were more likely to prefer high risk/high reward options

(Raghunathan & Pham, 1999). This may be particularly true for people with high negative trait affect who are likely to experience negative emotions and moods persistently over time (Baron et al., 2012). It is further supported by micro-level studies of self-employment which have linked prior job dissatisfaction to the decision to become self-employed relative to wage-employed (Brockhaus, 1980; Guerra & Patuelli, 2016). Taken together, this leads to our first set of hypotheses:

**Hypothesis 1a:** *Higher NA increases the probability of job transition and this effect will be stronger for self-employment entry (relative to wage-employment change).*

**Hypothesis 1b:** *Higher PA decreases the probability of job transition and this effect will be stronger for self-employment entry (relative to wage-employment change).*

A considerable literature in occupational psychology suggests that the nature and structure of job attitudes have a strong affective and dispositional basis (e.g., see Judge & Larsen, 2001; Judge & Kammeyer-Mueller, 2012). The implication is that job satisfaction plays a key mediating role in the relationship between dispositional affect and decision-making. In this respect, there is great consensus in the literature regarding the direction of the influence of PA and NA on job satisfaction (Connolly & Viswesvaran, 2000) and the subsequent influence of job satisfaction on job turnover (Griffeth et al., 2000). First, extensive theoretical and empirical literature supports the notion that a “significant part of job satisfaction is rooted in individual personalities” (Judge & Larsen, 2001, p.69). Specifically, people high on PA are far more likely to be satisfied with their jobs compared to those who are high on NA (Judge & Larsen, 2001). In turn, higher job satisfaction is associated with greater probability of staying, whereas lower job satisfaction more often leads to job turnover. This is because lower levels of job satisfaction is associated with psychological withdrawal (Kinicki et al., 2002) absenteeism (Diestel et al., 2014), and turnover intentions (Judge & Kammeyer-Mueller, 2012; Kinicki et al., 2002). This

implies that less satisfied people are more likely to seek alternative employment options (Tenney et al., 2016), and this effect can be particularly pronounced when it comes to self-employment (Guerra & Patuelli, 2016).

Despite the extensive literature on this topic, however, few authors have studied these relationships in an integrated theoretical framework and considered differences based on the *nature* of job turnovers, i.e., the extent to which people change to similar jobs or make career changes, including transitioning into self-employment. There is, however, empirical evidence that, among nurses, low job satisfaction is associated with greater intention to pursue alternative careers (Ingersoll et al., 2002).

Consequently, we posit that the mediating effect of job satisfaction may be particularly strong for self-employment transitions compared to the transitions into other wage employment. Self-employment is associated with higher rewards in terms of fulfillment of basic psychological needs such as autonomy (Benz & Frey, 2008; Lange, 2009). Job satisfaction relates to facets such as relationships with supervisors and coworkers, flexibility to balance work-life commitments, and opportunities for skill utilization (Judge & Kammeyer-Mueller, 2012). All of these facets are related to people's inherent psychological needs for autonomy, relatedness and competence (Ryan & Deci, 2017). Thus, workers who are dissatisfied with their jobs will be more likely to seek alternative career paths such as self-employment that offer better fulfillment of their intrinsic human needs (Shir, 2015; Shir et al., 2018). In support of this, recent findings in the field of entrepreneurship indicate that non-pecuniary dissatisfaction with one's current job is positively associated with making a transition into self-employment relative to wage-employment (Guerra & Patuelli, 2016). Taken together, this leads to our next set of hypotheses:

**Hypothesis 2a:** *Higher NA is negatively associated with job satisfaction, which, in turn, increases the probability of job transition. This effect will be stronger for self-employment entry (relative to wage-employment change).*

**Hypothesis 2b:** *Higher PA is positively associated with job satisfaction, which, in turn, reduces the probability of job transition. This effect will be stronger for self-employment entry (relative to wage-employment change).*

## **Data and Methods**

### **Research Design and Sample**

Data for the empirical analysis were collected from the latest release of the Household, Income and Labor Dynamics in Australia (HILDA) survey (waves 1-15), which is a nationally representative household panel that was initialized in 2001. Interviews are conducted annually with all adult members (15 years or older at the initial interview) of the included households. The first wave in 2001 consisted of 7,682 households for a total of 19,914 individuals. In wave 11, an additional 2153 households (5,477 individuals) were added to the panel to compensate for attrition. The annual retention rates are consistently high, with the proportion of individuals who were successfully re-interviewed from one wave to the next varying from 87 to 97 percent (Watson & Wooden, 2012).

People enter our sample the first year in which they are employed (not self-employed). We then observe whether they remain in the same job, transition into another job, or transition into self-employment. Individuals who are never employed don't enter into our sample. Those who transition into some other status (studying, retirement, death) are included until their last year in (self-) employment and censored thereafter. Because we rely on multinomial logit analysis, our estimates are unbiased despite left censoring (Wooldridge, 2010). In total, following these

specifications, and deleting cases with missing data, our sample consists of 4,664 individuals and 45,664 individual-year observations.

### **Variables and measures**

*Job Transitions.* The dependent variable, job transition, is a three-level categorical variable capturing possible job transitions. Specifically, we code our job transition variable 0 if a person remained with the same employer, 1 if they transitioned to start working for another employer, and 2 if they transitioned into self-employment. We construct this variable based on several available measures that track job transitions in the HILDA survey. Each year, respondents were asked “Did any of these [life events] happen to you in the past 12 months: Changed Jobs.” If they answered ‘yes’ to this question, we then examined their current job status in that same year. We considered that they had transitioned into self-employment if they also reported their employment status as either: (1) employee of own business (incorporated business) or (2) employer/self-employed (non-incorporated business). This definition of transition into self-employment is consistent with an extensive literature (e.g., Amit et al., 1995; Burke et al., 2002; Evans & Leighton, 1989; Parker, 2004; Taylor, 1996; Van Praag & Cramer, 2001). About 2 percent of respondents in our sample transitioned into self-employment during the studied period. This is consistent with transition rates from other household panel studies (e.g., see Guerra & Patuelli [2016], a study of the Swiss Household Panel). If the respondents who answered ‘yes’ regarding job change instead reported that they were employed by another employer in the current year, we considered them to have transitioned into another job. In total, 14.5 percent of our sample made such transitions during the studied period.

*Positive and Negative Affect.* We used the Mental Health and Psychological Distress modules from the HILDA survey to select items that are either closely related or identical to items that appear in two of the most commonly used inventories of affect: The Positive and

Negative Affect Schedule (PNAS-X) and the Profile of Mood States (POMS).<sup>4</sup> Table 1A (see online Appendix) shows the 20 items selected to construct our PA (5-item) and NA (15-item) scales and how they relate to the PNAS-X and POMS affect inventories. Overall, twelve of the twenty items used to construct our scales are identical to the ones found in these two inventories (e.g., happy, full of life, sad, tired, nervous) while the other 8 are closely related (e.g., we use ‘worthless’ instead of ‘useless’, ‘restless’ instead of ‘jittery’, etc.). Thus, consistent with these two major inventories of affect, both of our scales include items that reflect not only high/low pleasantness (sad and distressed vs. happy and satisfied) but also high/low energy (calm and tired vs. energetic and full of life). All items were assessed using frequency scales ranging from “none of the time” to “all of the time” as recommended by prior research and the PNAS-X manual (e.g., Diener & Larsen, 1993; Diener et al., 1991; Watson & Clark, 1999).

Our measures of PA and NA had strong internal consistency, with alpha reliability equal to .84 (PA) and .92 (NA), which is consistent with the original PNAS scales developed by Watson et al., 1998. (alpha equal to .88 for PA and .87 for NA). To further validate our PA and NA scales, we examined their relationship to two measures of personality from the Big Five personality inventory—extraversion and neuroticism—that are considered to be closely related to NA and PA (Costa & McCrae, 1980; Emmons & Diener, 1986; Watson & Clark, 1999; Judge & Larsen, 2001). Previous studies show that NA is substantially correlated with measures of neuroticism, which represents the tendency to exhibit poor emotional adjustment and experience negative affect such as fear, hostility, and depression (Goldberg, 1990; Watson & Clark, 1999). In our sample, the correlation between neuroticism and NA was substantial ( $r=.45$ ), which is consistent with previous findings in the literature (e.g., see Costa & McCrae, 1980; Watson & Clark, 1992). Similarly, PA is positively and moderately correlated with measures of

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<sup>4</sup> The PNAS-X scales “assess affective states that are broadly similar to those measured in existing multi-affect inventories such as POMS” (Watson & Clark, 1999).

extraversion or positive emotionality, which are manifested in talkative, energetic, and outgoing personality. In our study, the correlation between PA and extraversion was  $r=.23$ , which is also in line with prior findings in the literature (e.g., Watson & Clark, 1999).

*Dispositional affect (residual approach).* To create PA and NA variables that reflect a more stable dispositional affect, we follow a methodology proposed in the labor and happiness economics literatures (e.g., Cummins & Nistico, 2002; Dawson, 2017; Graham et al., 2004; Guven, 2011; Krause, 2013) by estimating fixed-effects panel regressions for positive and negative affect of the following form:

$$Affect_{it} = \sum_k \delta_k Controls_{k,it} + \epsilon_i + v_{it} \quad (1)$$

Following Guven (2011), we first identify a substantial serial correlation in the idiosyncratic error term, which suggests that both PA and NA are highly correlated over time, indicating the presence of dispositional (trait) affect. To capture this stable affective tendency of people, we are interested in  $\epsilon_i$  which is an individual specific fixed-effect that does not change over time. Thus, after we run the affect regressions with each one of our indexes of positive and negative mood, we save the individual fixed-effects component of the residual,  $\epsilon_i$ , and use it as a proxy for dispositional affect. These regressions are reported in Table 1A (see online Appendix).<sup>5</sup> It is important to note that the persistence of positive and negative affect (the fixed-effects residual) is independent of the influence of individual specific factors (age, education, household size, employment status, health, disability, marriage, place of residence, year of interview) as well as twenty-one life events (e.g., promotion at work, marriage, death of relative, or birth of a child, etc.) that can influence both entry into entrepreneurship as well current mood (Delgado García et al., 2015). This residual can be interpreted as “some sort of underlying inner disposition or cognitive bias” (Krause, 2013; p.3) that captures psychological differences between respondents

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<sup>5</sup> We provide further rationale for our methodology in online Appendix B.



as well as some random noise (Cummins & Nistico, 2002). One can also think of this fixed (time invariant) “affect residual” as a happiness set point towards which people gravitate in the long-term (Cummins & Nistico, 2002).

Our indexes of positive and negative dispositional affect are negatively correlated ( $r = -.51$ ). As expected, PA is also strongly and positively correlated with the experience of positive affect in the past four weeks ( $r = .75$ ) while NA was positively correlated with the recent experience of negative affect ( $r = .66$ ). NA was also significantly correlated with psychological distress ( $r = .55$ ), measured by the Kessler’s Psychological Distress Scale, neuroticism ( $r = .41$ ), and negatively correlated with job satisfaction ( $r = -.20$ ). PA, on the other hand, was positively correlated with extraversion ( $r = .22$ ) and job satisfaction ( $r = .30$ ). These additional tests provide further confidence for the validity of our measures by showing that they tend to move in a predictable and consistent way with other closely related personality and emotionality measures.

*Job Satisfaction.* We follow the extant literature (Smith, 1969) and create a job attitudes index that captures several job satisfaction domains that are closely related to the Job Descriptive Index (JDI), arguably the most validated measure of job satisfaction in the literature (Judge and Kammeyer-Mueller, 2012). Specifically, we average the responses to the following job satisfaction facets: ‘satisfaction with work itself’, ‘total pay satisfaction’, ‘job security satisfaction’, ‘the flexibility to balance work with non-work commitments satisfaction’, ‘the hours you work satisfaction’, and ‘overall job satisfaction’. All of these items were measured on a scale from 1 “least satisfied” to 10 “most satisfied.” Our job satisfaction index had an alpha reliability of .78 and was almost perfectly correlated ( $r = .99$ ) with an alternative index that used weights based on principle component analysis.

*Control Variables.* We include a number of additional control variables that have been found to influence labor market status and entrepreneurial entry (for a recent review, see Simoes et al.,

2016). Specifically, we control for *age and its square term* (Parker, 2004; Levesque & Minniti, 2006), *gender* (Alsos et al., 2006; Fairlie & Robb, 2009), *education* (Van Der Sluis et al., 2008; Brown et al., 2011), logarithmic transformation of *labor income* as a proxy for financial capital (Blanchflower & Oswald, 1998; Evans & Jovanovic, 1989), and *marital status and children* (Özcan, 2011; Parker, 2004), and health (Diener et al., 2002; Diener & Chan, 2011; Rietveld et al., 2015; Tenney et al., 2016). We also control for regional and year fixed-effects so that most of our estimations capture variance in positive and negative affect across a common regional time trend to account for cyclical economic fluctuations at the regional level that may push or pull people into entrepreneurship and also affect their overall day-to-day emotions (e.g., Sternberg & Wennekers, 2005). Summary statistics are presented in Table 1; organized after each one of the three categories of the dependent variable (see below). Table 2 presents a simple bi-variate correlation matrix for all variables used in this study.

[Insert Tables 1 and 2 about here]

### **Empirical Results**

To test our partial mediation framework, we use a generalized structural equation model (GSEM), which is closely related to the causal mediation analysis proposed by Baron and Kenny (1986). Because our main goal is to examine whether PA and NA lead to change in occupational *class* (employment vs self-employment), rather than just change of job/employer/industry, we use a multinomial logit (MNL) estimator, which is specifically designed to model categorical variables like ours (i.e., in our case, we have three levels 0 ‘no change in employment’, 1 ‘change in wage employment’, and 2 ‘transition to self-employment’). The MNL model is estimated with a maximum likelihood (ML) function using all covariates described above. Conservatively, we use robust standard errors clustered at the individual level to account for heteroscedasticity (White, 1980) and also because our main variables are grouped at the

individual level (Wooldridge, 2010). We use the category 0 ‘no job change’ as a baseline group for comparison. All models use pooled data from all waves of the HILDA survey (2001-2015) and are estimated with Stata 15. We note that NA and PA are time-invariant individual level characteristics, so estimation of these effects comes from between individual-level variance only. This should not be a problem empirically because both PA/NA vary across individuals as well as people’s choices whether to change their occupational status. Finally, consistent with our theoretical model, we are interested in how job satisfaction in one time period influences job transition in the next. To capture this dynamic, we exploit the longitudinal nature of our dataset and lag job satisfaction one time period.

Figure 1 summarizes the main findings from our GSEM model with respect to NA. The results, to a great extent, support the hypothesized relationships. First, NA has a direct positive effect on self-employment entry ( $\beta=0.47, p < .05$ ). This supports H1a according to which higher NA is positively associated with the probability of self-employment entry. We do not find any direct relationship between NA and change into other paid employment. This is consistent with our logic that NA would be particularly important in the context of career changes, not merely change in employer. Furthermore, our findings suggest that the relationship between NA and self-employment entry is mediated by job satisfaction. Specifically, as predicted, negative affectivity is directly associated with lower levels of job satisfaction ( $\beta=-1.5, p < .001$ ), and job satisfaction, in turn, decreases the likelihood of self-employment entry ( $\beta=-0.14, p < .001$ ) and job change ( $\beta=-0.34, p < .001$ ). This is consistent with our mediation hypothesis (H2a), although the mediated effect of NA is stronger for transition into wage employment than transition into self-employment.

Next, Figure 2 presents our findings with respect to PA. Overall, the results support most of our hypotheses. PA decreases the likelihood of transition into self-employment (H1b), although

this coefficient is small and only marginally significant ( $\beta=-0.31, p < .1$ ). We also find evidence for an indirect effect of PA via job satisfaction (H2b). Specifically, PA increases job satisfaction ( $\beta=2.2, p < .001$ ), which decreases the probability of self-employment entry ( $\beta=-0.14, p < .001$ ) and job change ( $\beta=-0.34, p < .001$ ). Again, counter to our prediction, we find that the mediated effect is stronger in the context of wage-employment relative to change in occupation. Overall, based on the four rules suggested by Baron and Kenny (1986), our empirical results support the existence of partial mediation between PA, NA and self-employment entry.

[Insert Figures 1 and 2 about here]

To estimate effect sizes, we calculate predictive margins with 95 percent confidence intervals for the probability of self-employment entry at different levels of NA and PA, while holding other variables constant at their sample means. These effects are presented in Figure 4 and are based on the auxiliary MNL estimations (see Table 2A in online appendix). Noting that the scales on the vertical axes are different for transition into self-employment vs. other employment, the figures show that the influences of NA and PA are stronger for entry into self-employment relative to other job transitions by a large magnitude. This supports our general theoretical logic. Specifically, the probability of entering self-employment increases from around 1.7 percent for those with the highest PA to around 2.4 percent for those with the lowest PA, an increase by over 40%. In terms of NA, the probability of entering self-employment increases from around 1.6 percent for those with the lowest NA to around 2.5 percent for those with the highest NA, an increase by over 50% (the corresponding numbers for transitions into other employment are about 4% for both PA and NA). Overall, these findings illustrate that PA and NA have a substantial effect on the probability of self-employment entry.

[Insert Figures 3 and 4 about here]

In Figure 5, we show the probability of job transitions at different levels of our mediator job satisfaction (based on the results from Table 3A in online Appendix). The figure suggests that people with the highest job satisfaction are 60 percent less likely to enter self-employment than the least satisfied. In the online Appendix (Table 3A and Figure 1A), we also estimate the effect sizes of the relationships between PA and NA and job satisfaction. Both PA and NA exert a substantial influence on job satisfaction, which is consistent with a long theoretical and empirical tradition on the dispositional basis of job satisfaction (e.g., see Judge & Larsen, 2001).

As a robustness test, we replicated our analyses using our state measures of positive and negative affect (see Table 4A in the online Appendix). Overall, the results are consistent with our main findings and suggest that the effects of dispositional and state affect are similar (see e.g., Baron, 2008; Baron et al., 2012). In addition, in Table 5A we used one exogenous work event—getting fired—to extend our analysis and test whether dispositional affect also acts as a moderator of the relationship between work events and job transitions. As expected, we find that getting fired is strongly and significantly correlated with both job change and self-employment entry. However, we do not find evidence that dispositional affect moderates the relationship between the two. This result should be interpreted with caution because we do not have rich information on work events, and while getting fired constitutes a work event, it is also a scenario that pushes individuals to change employment, which can dominate all other. However, even after accounting for the interaction between work events and distortion traits, we still find a direct effect of PA/NA that is consistent with our original findings.

## **Discussion**

We hypothesize and find that negative dispositional affect has a direct and positive influence on the probability of entering self-employment while positive affect decreases the likelihood of occupational change. Thus, we highlight the importance of negative affect in the entrepreneurial

process. This is important because much of the entrepreneurship literature to date has focused on the effect of positive traits such as creativity, optimism, and passion (e.g., Foo et al., 2009; Hahn et al., 2012; Cardon et al., 2012), largely ignoring the role of negative affect. While there is some evidence for negative affective consequences of self-employment (e.g., Blanchflower, 2004; Jenkins et al., 2014), to the best of our knowledge, we are the first to theorize and examine the positive implications of negative affectivity (see Delgado-García et al., 2012).

We believe that this is an important step in the evolution of the affective approach to entrepreneurship. It is well known from a variety of sciences, including psychology, neurology and evolutionary biology, that negative emotions are critical for survival as they provide important information that allows individuals to track their experiences and regulate whether to approach or avoid specific situations (e.g., Kashan & Biswas-Diener, 2014). For example, anxiety is associated with heightened perception and alertness that can activate people to engage in reward-seeking behavior (e.g., Watson & Clark, 1999; Kashan & Biswas-Diener, 2014). It is likely that entrepreneurship scholars have failed to identify positive outcomes of negative affect in entrepreneurship simply because they haven't paid much attention to negative affect in the first place. Future research in entrepreneurship can benefit greatly from taking a more balanced approach by examining both positive AND negative affect and exploring the positive AND negative implications of both.

Entrepreneurship presents an important context for understanding circumstances under which positive and negative affect leads to either expansive or defensive behavioral orientations (Seo et al., 2004). Specifically, entrepreneurship is associated with high uncertainty and failure but also high potential returns, which can induce either expansive or defensive behavior. Positive affect has been linked to motivation, performance achievement, creativity, and effort on future oriented tasks (e.g., Diener et al., 2002; Lyubomirsky et al., 2005; Tenney et al., 2016), which are all

factors that can increase the likelihood of success in entrepreneurship (Baron, 2008). How negative affect relates to similar processes is an open and important question worthy of further study.

Our results that those who are high on negative dispositional affect are more likely to engage in entrepreneurial action is intriguing. Prior research has shown the positive implications of positive affect in entrepreneurship. As such, our findings may imply that those who are innately *least* suited for entrepreneurship (those high on negative dispositional affect) are the *most* likely to pursue it. This could potentially be an alternative explanation for the high exit rates from entrepreneurship (Delgado-García et al., 2012). For example, in additional tests (Table 6A in online Appendix) we show that negative emotionality is correlated with openness to new experiences, a trait that has been found to be negatively correlated to long-term venture survival (see Ciaveralla et al., 2004). The relationship between personality traits and business performance, however, is “woefully under-studied” (Kerr et al., 2018, p.1) and more work is necessary to fully understand how various personality dispositions can influence business performance in the long run (e.g., see Rauch & Frese, 2007; Delgado-Garcia et al., 2015). Thus, a natural extension of our study is to examine the extent to which negative emotionality can affect business success at different stages of the entrepreneurial process.

In examining how dispositions influence behavior, it is important to consider the mechanisms through which they operate (Bandura, 1999). In this respect, we hypothesized and found partial mediation of PA and NA via job satisfaction, a cognitive mechanism that has a strong dispositional basis (e.g., see Judge & Larsen, 2001). Specifically, NA promotes self-employment entry by lowering job satisfaction while the findings for PA were the reverse. This finding is particularly intriguing when we contrast it with factors leading to transitions to other jobs, which our data allowed us to test. The direct effects of PA and NA on the decision to enter self-employment were

much stronger than their effect on changing job. The mediation via job satisfaction, however, appeared stronger for changing to another job. This suggests that the transition into self-employment and entrepreneurship represents a more existential change – a possible solution to discontentment with life in general (as captured by high NA), whereas a job change is a potential solution to discontentment in the workplace (as captured by low job satisfaction). This is an important insight not only for entrepreneurship scholars, but also for career researchers more generally because self-employment transitions are often motivated by different reasons compared to job transitions in general (e.g., Carsrud & Brannback, 2011).

We also explored other cognitive mechanisms between affective disposition and entrepreneurial entry, viz., openness to new experiences, creativity, imaginativeness, selfishness, and cooperativeness (see Table 6A in Appendix). Those with higher PA (NA) tend to be less (more) open to new experiences (model 1), but more (less) likely to report being creative (model 2), imaginative (model 3), and cooperative (model 5), and less (more) selfish (model 4). This is consistent with findings of common genes influencing the phenotypic correlations between extraversion and openness to experience and the tendency to become an entrepreneur (e.g., Shane et al., 2010).

Finally, we introduced a novel methodological approach (Graham et al., 2004; Krause, 2013), which allowed us to use continuous measures of affective states to compute stable underlying dispositions. While this approach is not without its limitations, as panel studies become increasingly common in entrepreneurship, this approach can be applied in other contexts such as separating the stable underlying level of Entrepreneurial Orientation (EO) of a firm from temporary variations driven by short-term internal or external influences.

### **Limitations and future research**



As any study, ours has limitations. First, our measure of entrepreneurial entry is admittedly course-grained. We placed all entry into self-employment on equal footing, i.e., those starting VC-backed high-growth business and those starting corner stores. In addition, our study did not explore other important entrepreneurial outcomes such as venture success and survival. In this respect, examining the role of dispositional affect at various stages of the venture creation process is one of the most promising avenues for future research (e.g., Delgado-García et al., 2012). As we note above, it is foreseeable that the effects on such outcomes could be the opposite (e.g., Ciaveralla et al., 2004). Finally, we use Australian data which were ideal for our purposes. Future work is needed to establish if these results generalize to other cultural contexts. This is important because self-employment rates and the motivation to engage in entrepreneurship as well as the predisposition to experience positive and negative affect differ widely across countries and cultural contexts (GEM, 2013; Mitchell et al., 2013).

## **Conclusion**

We examine the role of dispositional affect on the probability of self-employment entry. Using a unique longitudinal dataset, we find strong suggestive evidence that people who tend to experience more frequently negative moods and emotions are more likely to change careers and start new businesses while positive affectivity decreases the probability of self-employment entry. This effect is partially mediated by job satisfaction and highlights that negative emotions can be an underappreciated resource for entrepreneurship. One possible explanation is that people who are more likely to experience negative emotions might be more inclined to seek self-employment as a strategy to cope with their enduring unhappiness. Despite its positive impact on creativity, interpersonal skills, and resilience, positive affectivity can make people more cautious toward transitioning into self-employment.

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## Figures and Tables

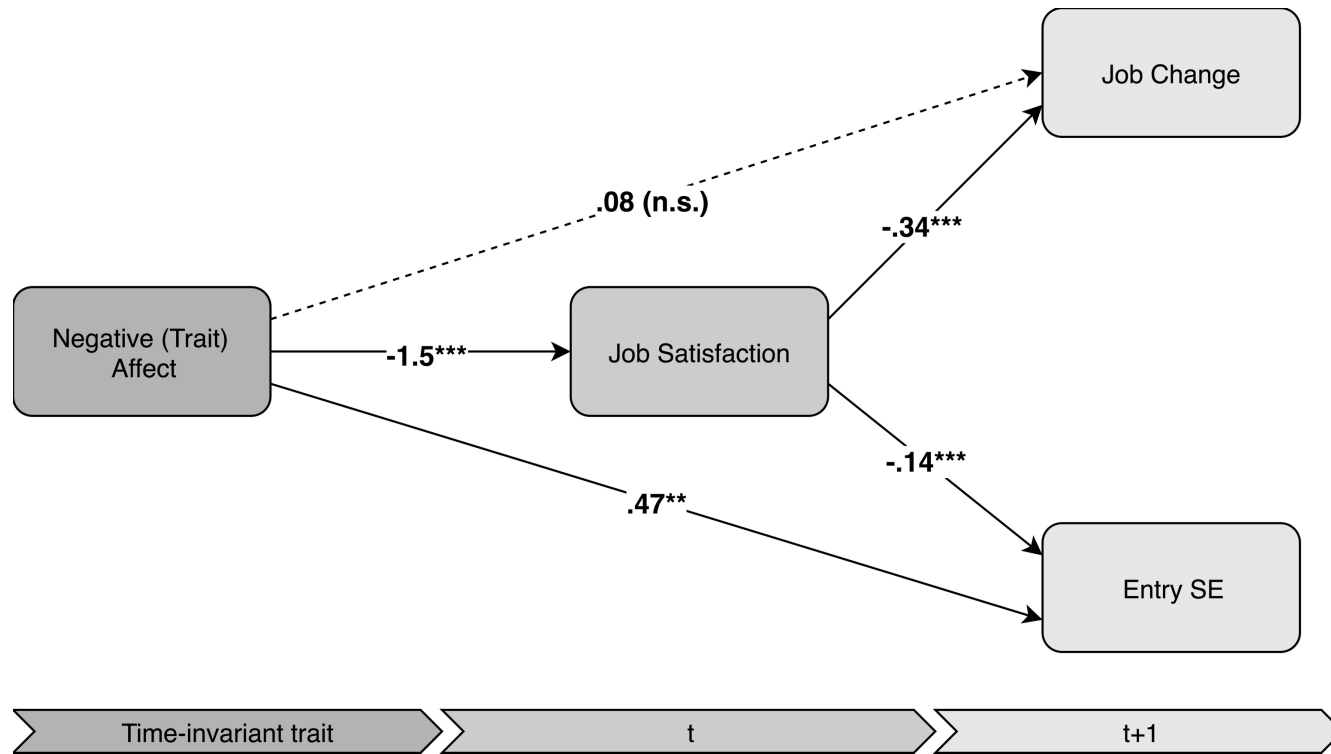


Figure 1: Negative (trait) affect and job transitions (SEM model)

*Note:* Model was estimated with Stata 15 using a multinomial logit Generalized Structural Equation Model (GSEM). Standard errors are clustered at the individual level. The variables sex, age, age squared, education, log income, number of children, marital status, and region are not reported in the figure but used as controls. We allowed for covariance in the error terms of health and job satisfaction. Dashed lines represent statistically insignificant relationships.  $N = 45,638$  Individuals = 4,664. Log-likelihood = -376343.05.

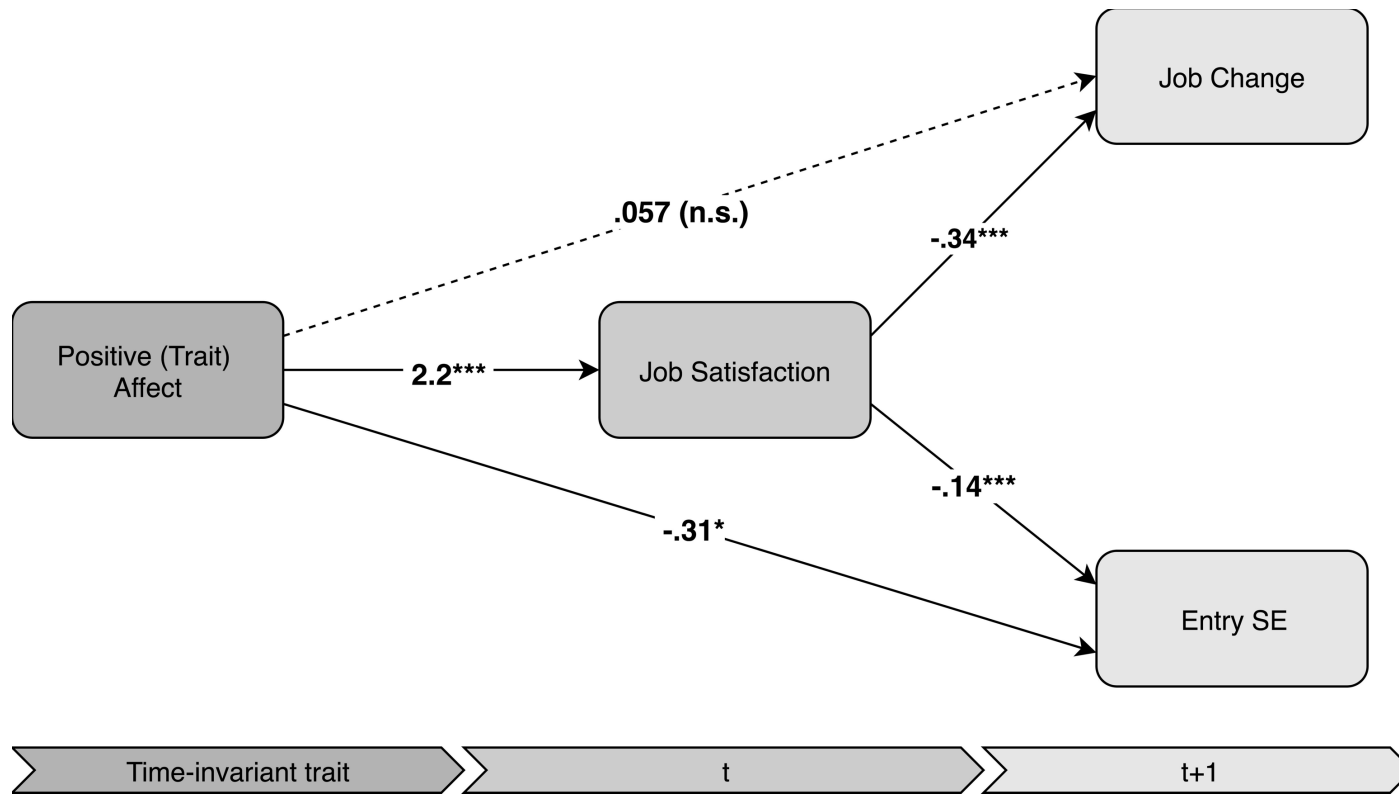
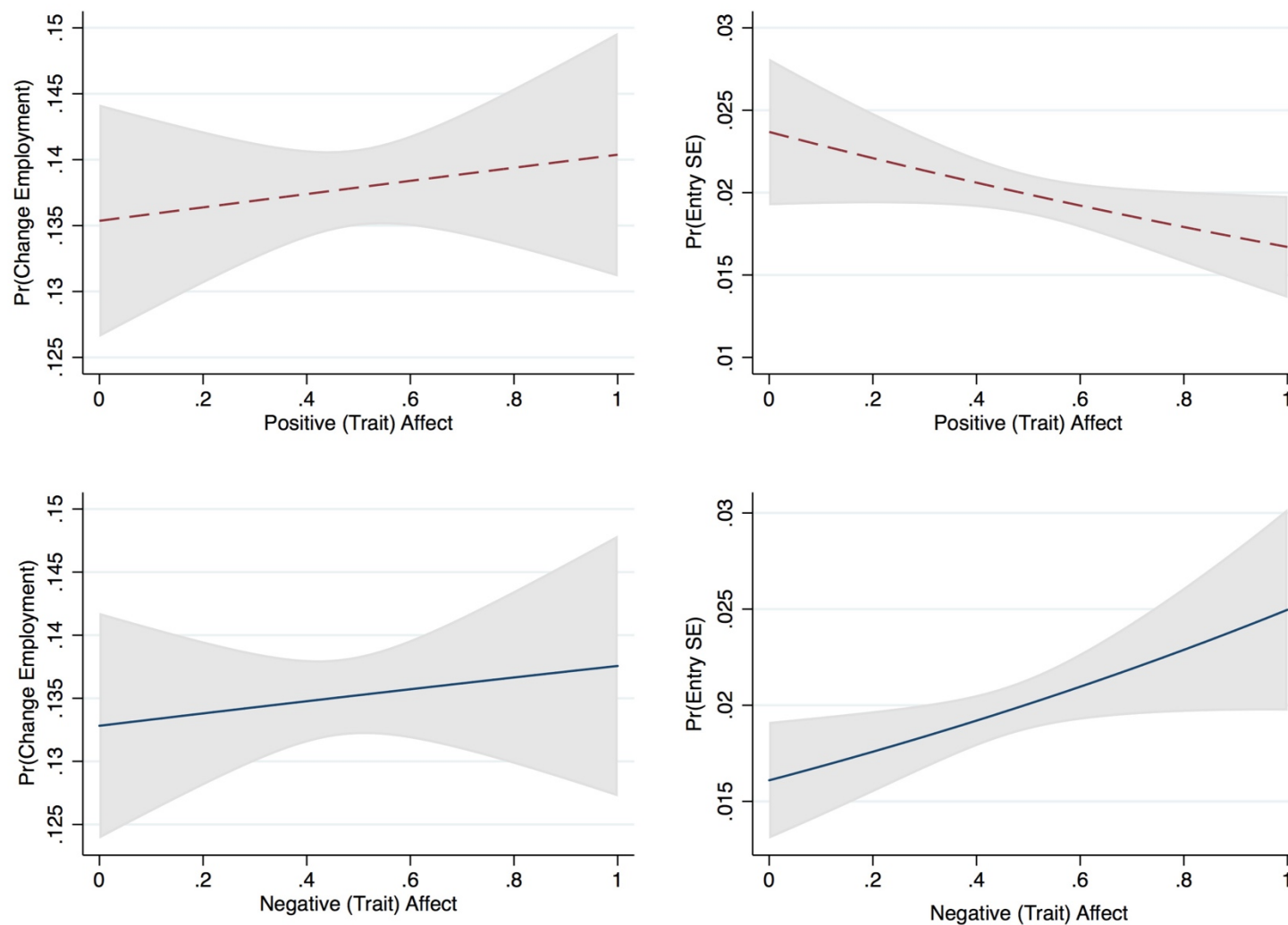


Figure 2: Positive (trait) affect and job transitions (SEM model)

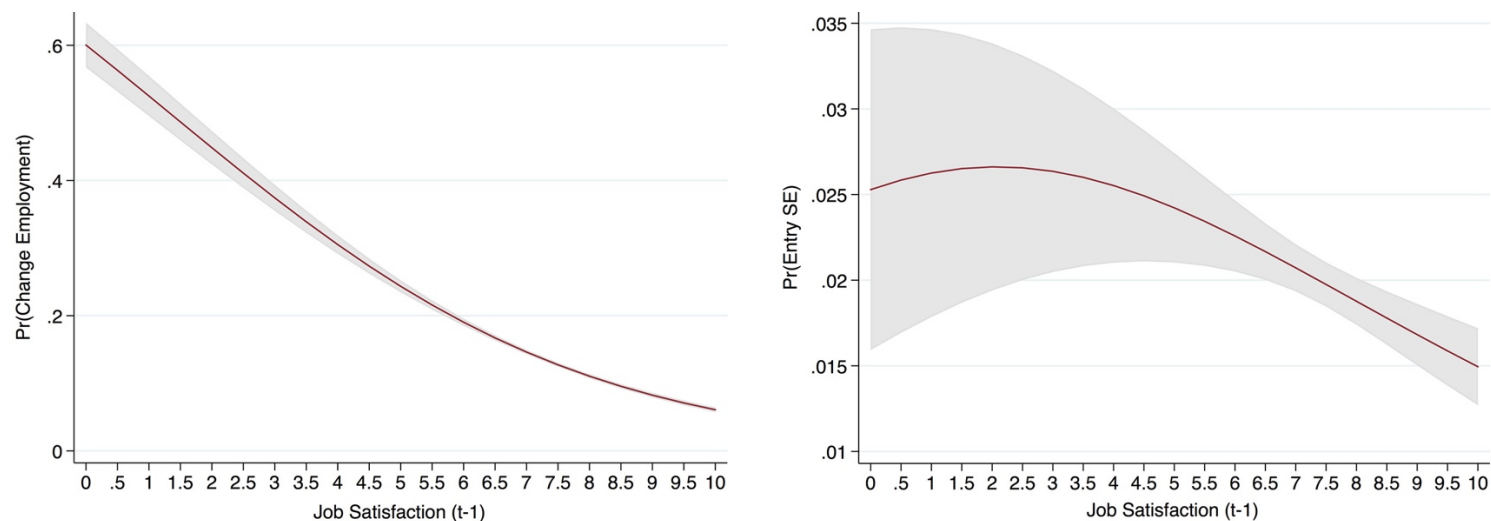
*Note:* Model was estimated with Stata 15 using a multinomial logit Generalized Structural Equation Model (GSEM). Standard errors are clustered at the individual level. The variables sex, age, age squared, education, log income, number of children, marital status, and region are not reported in the figure but used as controls. We allowed for covariance in the error terms of health and job satisfaction. Dashed lines represent statistically insignificant relationships. N = 45,638 Individuals = 4,664. Log-likelihood = -374952.97.

Figure 3: Marginal effects of NA/PA on job transitions



*Note:* Self-employment entry in the right panels and other job changes in the left panels. Predicted margins with 95% confidence intervals based on the multinomial estimations from Table 3. The figure shows probability to transition to wage or self-employment conditional on the controls from Table 3 (sex, age, education, income, etc.). Shaded areas represent 95% confidence intervals.

Figure 4: Marginal effects of job satisfaction on the probability of job transition



*Note:* Self-employment entry in the right panels and other job changes in the left panels. Predicted margins with 95% confidence intervals based on the multinomial estimations from Table 3. The figure shows probability to transition to wage or self-employment conditional on the controls from Table 3 (sex, age, education, income, etc.). Shaded areas represent 95% confidence intervals.

Table 1: Summary statistics

	No Change				Wage → Wage				Wage → Self			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
PA Trait	0.52	0.19	0	1	0.48	0.20	0	1	0.50	0.19	0	1
NA Trait	0.46	0.18	0	1	0.50	0.19	0	1	0.48	0.18	0	1
Job Satisfaction	7.57	1.32	0	10	6.98	1.52	0	10	7.26	1.49	0.33	10
General Health	72.49	18.33	0	100	72.44	18.57	0	100	72.70	18.47	0	100
Female	1.49	0.50	1	2	1.52	0.50	1	2	1.39	0.49	1	2
Age	41.81	12.14	16	70	34.38	11.74	16	70	41.26	11.34	16	68
Education	12.92	2.34	0	18.5	12.90	2.20	0	18.5	13.06	2.29	4	18.5
Log Income	9.72	3.14	0	13.65	10.23	1.58	0	13.64	8.11	4.48	0	13.65
N Children	0.85	1.10	0	10	0.74	1.06	0	10	0.90	1.14	0	9
Married	0.73	0.44	0	1	0.61	0.49	0	1	0.77	0.42	0	1
Single	0.18	0.38	0	1	0.31	0.46	0	1	0.14	0.35	0	1
Widowed	0.01	0.09	0	1	0.00	0.06	0	1	0.00	0.07	0	1
Separated	0.06	0.23	0	1	0.05	0.21	0	1	0.05	0.22	0	1
Divorced	0.03	0.16	0	1	0.02	0.15	0	1	0.03	0.17	0	1
Cases (%)	38,573 (84.52)				6,165 (14.51)				900 (1.97)			

Table 2: Summary statistics and correlation matrix

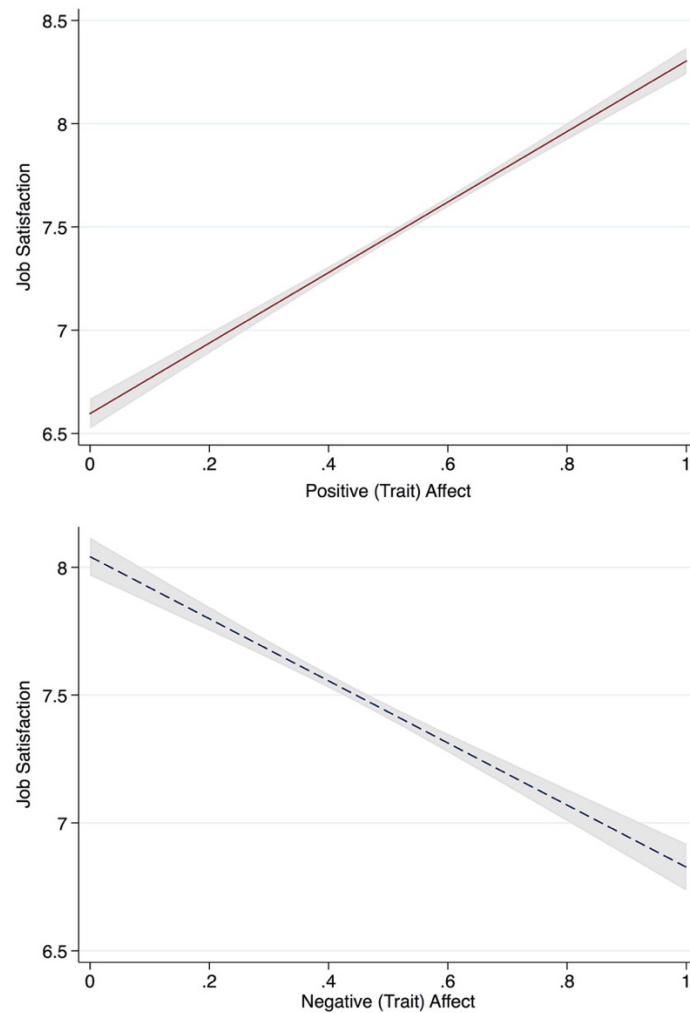
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Wage - Wage	1																
2 Wage - Self	<b>-0.06</b>	1															
3 PA Trait	<b>-0.06</b>	<b>-0.01</b>	1														
4 NA Trait	<b>0.05</b>	<b>0.01</b>	<b>-0.51</b>	1													
5 Job Satisfaction	<b>-0.16</b>	<b>-0.02</b>	<b>0.30</b>	<b>-0.20</b>	1												
6 General Health	0.002	0.002	<b>0.36</b>	<b>-0.28</b>	<b>0.20</b>	1											
7 Female	0.01	<b>-0.03</b>	<b>-0.05</b>	<b>0.08</b>	<b>0.05</b>	<b>0.05</b>	1										
8 Age	<b>-0.19</b>	<b>-0.01</b>	<b>0.17</b>	<b>-0.11</b>	<b>0.04</b>	<b>-0.08</b>	<b>0.02</b>	1									
9 Age squared	<b>-0.18</b>	<b>-0.01</b>	<b>0.17</b>	<b>-0.11</b>	<b>0.05</b>	<b>-0.08</b>	<b>0.02</b>	<b>0.99</b>	1								
10 Education	0.003	<b>0.01</b>	<b>-0.07</b>	<b>0.04</b>	<b>-0.02</b>	<b>0.05</b>	<b>0.04</b>	<b>-0.03</b>	<b>-0.04</b>	1							
11 H Size	<b>-0.04</b>	0.002	<b>0.03</b>	<b>-0.03</b>	<b>0.02</b>	<b>0.03</b>	<b>-0.07</b>	<b>-0.07</b>	<b>-0.11</b>	<b>0.03</b>	1						
12 Log Income	0.003	<b>-0.11</b>	<b>0.03</b>	<b>-0.04</b>	<b>0.004</b>	<b>0.02</b>	<b>-0.09</b>	<b>0.03</b>	<b>0.02</b>	<b>0.10</b>	<b>-0.01</b>	1					
13 N Children	<b>-0.02</b>	<b>0.01</b>	<b>-0.01</b>	<b>-0.02</b>	0.02	<b>0.05</b>	<b>-0.07</b>	<b>-0.15</b>	<b>-0.20</b>	<b>0.05</b>	<b>0.81</b>	<b>-0.01</b>	1				
14 Married	<b>-0.07</b>	<b>0.01</b>	<b>0.08</b>	<b>-0.07</b>	<b>0.05</b>	<b>0.03</b>	<b>-0.07</b>	<b>0.15</b>	<b>0.12</b>	<b>0.06</b>	<b>0.45</b>	<b>0.03</b>	<b>0.29</b>	1			
15 Single	<b>0.09</b>	<b>-0.01</b>	<b>-0.12</b>	<b>0.07</b>	<b>-0.05</b>	<b>-0.02</b>	<b>-0.01</b>	<b>-0.34</b>	<b>-0.31</b>	<b>-0.02</b>	<b>-0.30</b>	<b>-0.03</b>	<b>-0.26</b>	<b>-0.72</b>	1		
16 Widowed	<b>-0.02</b>	<b>-0.01</b>	<b>0.04</b>	<b>-0.01</b>	<b>0.03</b>	<b>0.00</b>	<b>0.06</b>	<b>0.11</b>	<b>0.12</b>	<b>-0.04</b>	<b>-0.09</b>	<b>-0.02</b>	<b>-0.05</b>	<b>-0.16</b>	<b>-0.04</b>	1	
17 Divorced	<b>-0.01</b>	<b>-0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>-0.02</b>	<b>-0.02</b>	<b>0.10</b>	<b>0.16</b>	<b>0.16</b>	<b>-0.05</b>	<b>-0.23</b>	<b>0.01</b>	<b>-0.10</b>	<b>-0.45</b>	<b>-0.11</b>	<b>-0.03</b>	1
18 Separated	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>0.00</b>	<b>-0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.05</b>	<b>0.04</b>	<b>-0.02</b>	<b>-0.13</b>	0.003	<b>-0.04</b>	<b>-0.30</b>	<b>-0.08</b>	<b>-0.02</b>	<b>-0.05</b>

Notes: Data are drawn from the latest release of the HILDA survey, 2001-2015. Numbers show pairwise correlations. **Bold** numbers indicate significance at  $p < .05$ .

## Online Appendix

### Appendix A

Figure 1A: Marginal effects of PA/NA on job satisfaction (mediator). Transition into self-employment only.



*Note:* Predicted margins with 95% confidence intervals based on the multinomial estimations from Table 2B.

Table 1A: HILDA items and their PNAS/POMS equivalents

HILDA	PNAS-X	POMS
<b>Positive Affect</b>		
been a happy person	happy, joyful, cheerful	un (happy)
peaceful and calm	calm, relaxed, at ease	Relaxed, carefree
have a lot of energy	energetic, strong, active	energetic, active,
felt full of life	enthusiastic, energetic, lively,	full of life, active
satisfied	(dis) satisfied	satisfied with self
<b>Negative Affect</b>		
been a nervous person	nervous, scared, afraid	nervous
nothing could cheer you up	blue, sad, downhearted	unhappy, sad
felt down	downhearted, sad, blue	sad, discouraged, bad mood
felt worn out	tired, sleepy, drowsy	tired
tired for no good reason	tired, sleepy, drowsy	tired
everything an effort	tired, sleepy, drowsy	tired, lazy
nothing could calm you down	afraid, scared, nervous, distressed	distressed, tense, panicky
restless	jittery, distressed, shaky, nervous	jittery, distressed, nervous
hopeless	discouraged	hopeless, helpless
nervous	nervous, distressed	nervous, distressed
fidgety	jittery, distressed, shaky, nervous	jittery, nervous, distracted
sad	sad, blue	sad, blue, bad mood
tired	tired, sleepy, drowsy	tired, lazy
worthless		useless
depressed	distressed, anxious	anxious, distressed, nervous

*Note:* All items were collected with the following question: “These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling,” with possible answers ranging from “none of the time” to “all of the time.”



Table 2A: MNL estimations, PA/NA and job transitions

Job Transitions (base = no change)	PANEL A				PANEL B			
	Positive (Trait) Affect				Negative (Trait) Affect			
	Wage→Wage		Wage→SE		Wage→Wage		Wage→SE	
PA Trait	0.037	(0.080)	-0.358*	(0.187)				
NA Trait					0.056	(0.086)	0.464**	(0.200)
Job Satisfaction (t-1)	-0.335***	(0.010)	-0.147***	(0.025)	-0.338***	(0.010)	-0.146***	(0.027)
General Health (t-1)	0.003***	(0.001)	0.004*	(0.002)	0.004***	(0.001)	0.003	(0.002)
Female	0.054**	(0.027)	-0.496***	(0.068)	0.056*	(0.029)	-0.464***	(0.071)
Age	-0.081***	(0.009)	0.033	(0.023)	-0.074***	(0.010)	0.038	(0.025)
Age squared	0.360***	(0.111)	-0.558**	(0.272)	0.281**	(0.122)	-0.608**	(0.296)
Education	-0.004	(0.006)	0.037***	(0.014)	-0.007	(0.007)	0.036**	(0.014)
Log Income	0.015**	(0.006)	-0.183***	(0.008)	0.016**	(0.007)	-0.179***	(0.008)
N Children	-0.069***	(0.014)	-0.034	(0.033)	-0.074***	(0.015)	-0.029	(0.035)
<i>Marital Status</i>								
Single	0.018	(0.038)	-0.338***	(0.108)	0.043	(0.040)	-0.260**	(0.112)
Widowed	-0.015	(0.179)	-0.496	(0.454)	-0.017	(0.205)	-0.327	(0.455)
Divorced	0.269***	(0.057)	0.074	(0.133)	0.219***	(0.061)	-0.051	(0.147)
Separated	0.093	(0.081)	-0.215	(0.209)	0.073	(0.086)	-0.287	(0.227)
Observations	45638				45638			
Individuals	4664				4664			
Log-likelihood	-2.30e+04				-2.07e+04			
Chi2	3913.766				3396.108			
Pseudo R2	0.08				0.08			
AIC	46042.4				41476.7			

Notes: ML estimates of the probability to transition from wage employment to either another wage employment or self-employment. Data are drawn from the latest release of the HILDA survey, 2001-2015. Robust standard errors clustered at the individual level reported in parentheses. All models are estimated with a maximum likelihood (ML) multinomial logit (MNL) model and include regional fixed effects (not reported). The categories male and married are used as a base category (and omitted). AIC, Akaike information criteria.

Statistical significance: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 3A: The effect of PA/NA on job satisfaction (mediator)

Variables	Job Satisfaction			
	(1) PA		(2) NA	
PA Trait	1.708***	(0.0649)		
NA Trait			-1.215***	(0.0803)
Job Satisfaction				
General Health	0.00719***	(0.000465)	0.00828***	(0.000496)
Female	0.174***	(0.0234)	0.168***	(0.0267)
Age	-0.0184***	(0.00595)	-0.0197***	(0.00657)
Age squared	0.323***	(0.0705)	0.336***	(0.0777)
Education	-0.00528	(0.00509)	-0.00472	(0.00575)
Log Income	-0.000387	(0.00341)	-0.00269	(0.00361)
N Children	0.00226	(0.00876)	-0.000381	(0.00935)
Marital Status				
Single	-0.0876***	(0.0252)	-0.0989***	(0.0272)
Widowed	0.0286	(0.0894)	0.0510	(0.0917)
Divorced	-0.115***	(0.0399)	-0.0794*	(0.0429)
Separated	-0.0296	(0.0427)	-0.0272	(0.0455)
Year FE	YES		YES	
Region FE	YES		YES	
Observations	57940		51460	
Individuals	6254		4781	
R2 (overall)	0.10		0.07	

Notes: Data are drawn from the latest release of the HILDA survey, 2001-2015. Robust standard errors clustered at the individual level are reported in parentheses. All models are estimated with random-effects model and include regional and year dummies (not reported). The categories male and married are used as a base category (and omitted). Statistical significance: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4A: PA/NA indexes (non-residual) and job transitions

Job Transitions (base = no change)	PANEL A				PANEL B			
	Positive Affect				Negative Affect			
	Wage → Wage		Wage → SE		Wage → Wage		Wage → SE	
Positive Affect	-0.027	(0.020)	-0.091**	(0.046)				
Negative Affect					0.118**	(0.059)	0.305***	(0.118)
Job Satisfaction (t-1)	-0.332***	(0.010)	-0.143***	(0.026)	-0.350***	(0.022)	-0.129***	(0.049)
General Health (t-1)	0.004***	(0.001)	0.005**	(0.002)	0.007***	(0.002)	0.009**	(0.004)
Female	0.050*	(0.028)	-0.484***	(0.068)	0.014	(0.059)	-0.402***	(0.135)
Age	-0.082***	(0.009)	0.027	(0.023)	-0.066***	(0.023)	0.028	(0.052)
Age squared	0.379***	(0.112)	-0.497*	(0.271)	0.201	(0.271)	-0.629	(0.607)
Education	-0.004	(0.006)	0.036***	(0.014)	0.010	(0.014)	0.023	(0.027)
N children	0.015**	(0.006)	-0.184***	(0.008)	0.062***	(0.014)	-0.170***	(0.014)
Marital Status (base=married)	-0.070***	(0.014)	-0.033	(0.033)	-0.125***	(0.031)	-0.043	(0.064)
Single	0.018	(0.038)	-0.352***	(0.109)	0.118	(0.082)	-0.223	(0.207)
Widowed	-0.062	(0.184)	-0.512	(0.454)	-0.385	(0.523)	0.602	(0.595)
Divorced	0.261***	(0.057)	0.079	(0.133)	0.250**	(0.118)	-0.189	(0.305)
Separated	0.092	(0.082)	-0.219	(0.211)	0.106	(0.172)	0.216	(0.358)
Observations	49952				12406			
Individuals	6051				4257			
Log-likelihood	-2.28e+04				-5232.735			
Chi2	3873.574				895.972			
Pseudo R2	0.08				0.08			
AIC	45687.200				10569.470			

Notes: ML estimates of the probability to transition from wage employment to either another wage employment or self-employment. Data are drawn from the latest release of the HILDA survey, 2001-2015. Robust standard errors clustered at the individual level reported in parentheses. All models are estimated with a maximum likelihood (ML) multinomial logit (MNL) model and include regional fixed effects (not reported). The categories male and married are used as a base category (and omitted). AIC, Akaike information criteria.

Statistical significance: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5A: Moderation or Mediation

Variables	Wage → Wage		Wage → SE		Wage → Wage		Wage → SE	
Positive (Trait) Affect	0.052	(0.089)	-0.269*	(0.199)	0.048	(0.094)	0.415**	(0.209)
Negative (Trait) Affect								
Work Event: Fired	1.266***	(0.168)	1.210***	-0.347	1.258***	(0.192)	0.779**	(0.385)
PA * Fired	0.176	(0.332)	-0.542	(0.685)				
NA*Fired					0.287	(0.368)	0.522	(0.724)
Observations	45638				45638			
Individuals	4664				4664			
R <sup>2</sup>	0.08				0.08			
Log-likelihood	-19314.489				-19314.489			

Notes: ML estimates of the probability to transition from wage employment to either another wage employment or self-employment. Data are drawn from the latest release of the HILDA survey, 2001-2015. Robust standard errors clustered at the individual level reported in parentheses. All models are estimated with a maximum likelihood (ML) multinomial logit (MNL) model and include regional fixed effects (not reported). The categories male and married are used as a base category (and omitted). AIC, Akaike information criteria.

Statistical significance: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 6A: Possible Channels

Variables	(1) Openness	(2) Creative	(3) Imaginative	(4) Selfish	(5) Cooperative	(6) Openness	(7) Creative	(8) Imaginative	(9) Selfish	(10) Cooperative
Positive Affect	-0.0319*** (0.00622)	0.0224** (0.0100)	0.0283*** (0.00968)	-0.137*** (0.00951)	0.0917*** (0.00768)					
Negative Affect						0.0596*** (0.00739)	0.0150 (0.0121)	0.0166 (0.0113)	0.162*** (0.0115)	-0.0673*** (0.00920)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Occupation FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
R2 between	0.0949	0.0164	0.0199	0.0733	0.0686	0.100	0.0156	0.0189	0.0732	0.0599
R2 within	0.00542	0.00361	0.00368	0.00422	0.00902	0.00559	0.00373	0.00400	0.00549	0.0100
N Individuals	13678	13671	13628	13644	13669	13651	13645	13603	13618	13643
N Observations	24792	24767	24634	24658	24763	24726	24701	24575	24599	24696

Notes: Data HILDA, 2001-2015. Robust standard errors clustered at the individual level reported in parentheses. All models are estimated with a random effects model and include all controls from Table 3. The categories male, poor health, and married are used as a base category. Additional variables came from a special HILDA module that is available for waves 5, 9 and 13 and were collected with the following questions: “How well do the following words describe you? For each word, cross one box to indicate how well that word describes you. There are no right or wrong answers.” [followed by, for example, CREATIVE]. Positive answers ranged from 1 ‘Does not describe me at all’ to 7 ‘Describes me very well’.

Statistical significance is reported: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix B

Moods vary over time depending on recent life events, current weather conditions, or even the day the survey is taken (Kahneman et al., 2004; Kahneman & Krueger, 2006; Krueger & Schkade, 2008). Previous studies also suggest that answers can be affected by earlier questions in the survey, whether the interview was conducted by phone,<sup>6</sup> or the presence of other people (Deaton, 2012; Kavetsos, Dimitriadou, & Dolan, 2014; Dolan & Kavetsos, 2016; Nikolova & Sanfey, 2016). Therefore, traditional measures of dispositional affect are likely to be significantly biased because “current mood and context cause fluctuations in people’s answers” with respect to dispositional traits (Kahneman & Krueger, 2006) and can also affect interviewers’ motivation that can further exacerbate measurement error (Heffetz & Rabin, 2013). What this implies for our study is that measures of PA and NA are likely to be influenced by current emotional states (Kahneman & Krueger, 2006) that can lead to common method bias (e.g., see Podsakoff, MacKenzie, & Podsakoff, 2012) because current life events, including job transitions such as entry into entrepreneurship, have been found to be strongly correlated with variety of subjective well-being measures (e.g., see Delgado García et al., 2015).

However, repeated measures of temporary mood can be used to derive a more stable measure of dispositional affect that is independent of people’s life circumstances and short-term emotional fluctuations. One possible strategy is to use the individual fixed-effects residual of positive and negative affect that varies across individuals, but is stable over time, as a proxy for dispositional affect. This unexplained portion of residual affect is independent of observable life circumstances, including recent life events (e.g., marriage, death of a relative, or promotion), and excludes the marginal impact of time-varying environmental influences such as change of

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<sup>6</sup> Dolan and Kavetsos (2016), for example, find that people who are interviewed over the phone are consistently happier than those in face-to-face interviews.

residence or job transition (Dawson, 2017). Guven (2011, p.180), for example, shows that residual happiness (proxied with residual life satisfaction) is the strongest predictor of optimism, a stable personality trait, and further argues that this approach presents an “invaluable opportunity” for researchers to examine the effect of other dispositional traits.

Table 1A: Fixed-effects regressions of positive and negative affect

Variables	(1) Positive Affect		(2) Negative Affect	
Age	-0.0328***	(0.00282)	0.0120***	(0.00365)
Age squared	0.344***	(0.0312)	-0.173***	(0.0395)
Household Size	-0.0126***	(0.00287)	0.00315	(0.00356)
Education	0.00432	(0.00419)	-0.00789*	(0.00470)
Unemployed	-0.0140*	(0.00783)	0.0162	(0.0108)
<i>Health Status (Base=Poor)</i>				
Fair	0.435***	(0.0210)	-0.275***	(0.0312)
Good	0.842***	(0.0227)	-0.506***	(0.0330)
Very Good	1.152***	(0.0236)	-0.651***	(0.0337)
Excellent	1.370***	(0.0251)	-0.746***	(0.0347)
Disability	-0.161***	(0.00950)	0.109***	(0.0121)
<i>Marital Status (base=Married)</i>				
Single	-0.0348***	(0.0122)	0.0315**	(0.0138)
Widowed	-0.187***	(0.0532)	0.0541	(0.0583)
Divorced	-0.0575***	(0.0202)	-0.0110	(0.0255)
Separated	-0.165***	(0.0206)	0.112***	(0.0249)
<i>Life Events</i>				
Adoption of a new child	0.0205**	(0.00977)	0.0281**	(0.0141)
Death of a close friend	-0.0167**	(0.00672)	0.00885	(0.00898)
Death of relative	-0.0305***	(0.00580)	0.0271***	(0.00750)
Death of spouse/child	-0.213***	(0.0345)	0.209***	(0.0572)
Major improvement in finances	0.0504***	(0.0103)	0.00382	(0.0139)
Major worsening in finances	-0.259***	(0.0140)	0.222***	(0.0194)
Fired	-0.0138	(0.0114)	0.0132	(0.0141)
Serious injury of relative	-0.0380***	(0.00545)	0.0320***	(0.00695)
Serious personal injury	-0.122***	(0.00854)	0.0691***	(0.0112)
Close relative detained in jail	-0.00262	(0.0190)	0.0121	(0.0278)
Detained in jail	-0.0183	(0.0557)	0.0440	(0.0896)
Changed jobs	0.0273***	(0.00571)	-0.0133*	(0.00767)
Got married	0.0625***	(0.0109)	-0.0236	(0.0150)
Changed residence	0.0169***	(0.00531)	-0.00532	(0.00696)
Victim of property crime	-0.0296***	(0.00930)	0.0272**	(0.0134)
Pregnancy	0.0174*	(0.00893)	-0.0196	(0.0119)
Promoted at work	0.0336***	(0.00711)	-0.00465	(0.00917)
Got back together with spouse	-0.0173	(0.0220)	0.0120	(0.0313)
Retired from workforce	0.0670***	(0.0155)	-0.0312	(0.0203)
Separated from spouse	-0.147***	(0.0132)	0.129***	(0.0173)
Victim of physical violence	-0.141***	(0.0201)	0.151***	(0.0306)
Year FE (2001-2015)	YES		YES	
Region FE (13 regions)	YES		YES	
Occupation FE (34 occupations)	YES		YES	
R-squared (within)	0.14		0.10	
R-squared (between)	0.35		0.30	

R-squared (overall)	0.30	0.26
N	127,792	46,135
Individuals	21,361	16,538

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*Notes:* Data are drawn from the latest release of the HILDA survey, 2001-2015. Robust standard errors clustered at the individual level are reported in parentheses. All models are estimated with an individual fixed-effects model and include regional, year, and occupational dummies (not reported). The categories male, poor health, and married are used as a base category (and omitted). Statistical significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$