

Well-Being, Personal Success and Business Performance Among Entrepreneurs: A Two-Wave Study

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Abstract This two-wave longitudinal study among 121 entrepreneurs in The Netherlands investigated bi-directional relationships between entrepreneurs' well-being and performance. Results of Smart PLS analyses showed positive well-being at Time 1 (work engagement; life satisfaction; and job satisfaction) predicted subjective entrepreneurial success 2 years later, both as indicated by entrepreneurs' reports of achieved financial success (including personal income security and wealth, business turn-over, sales and profit growth), as well as perceptions of achieved personal success (personal fulfilment, community impact and employee relations). No relations were found with objective indicators of business performance (profit; turnover; and number of employees) over time. The expected recursive relationship between performance and well-being was only found in the short term; a better objective financial situation immediately preceding the second measurement moment, predicted better well-being at T2. These results are both in line with a well-being–performance (gain) cycle, and the happiness set-point thesis that predicts resilience in the face of events. This paper contributes to the literature by emphasizing the importance of entrepreneurs' well-being as a key factor in long-term subjective financial and personal entrepreneurial success. The practical implication is that entrepreneurs should

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maintain and improve their own well-being to achieve positive long term business outcomes.

Keywords Entrepreneurial success · performance · Work engagement · Job satisfaction · General life satisfaction · Well-being · Entrepreneurship · Small business

1 Introduction

The aim of this study is to investigate the relationship between entrepreneurs' well-being and entrepreneurial performance. The research group for this study are 'entrepreneurs' and although a fair amount of research has been executed on this group of people, there is no definition agreed upon (e.g. Chell 2008; Davidsson 2016; Gartner 1985; Rauch and Frese 2000). For this study we keep in line with the definition of the European Commission of small and medium sized enterprises as companies employing less than 250 people. In the demarcation of entrepreneurs we follow the definition by Van Praag and Versloot (2007) namely "individuals who have started up a business or who own a business, i.e., who are self-employed or the owner-manager of an incorporated business".

The role of psychological well-being in entrepreneurial performance is widely acknowledged for employees in both the psychological academic arena and human resources management. Different theories and models exist on the well-being–performance relationship. In the field of human resources management, the 'happy-productive worker hypothesis' is common ground, which assumes satisfaction predicts performance and productivity (e.g. Paauwe and Richardson 1997; Taris and Schreurs 2009; Van de Voorde et al. 2012; Wright and Staw 1999). In the area of psychology, building on expectancy-based theories of motivation, the recursive effect, e.g. the role of performance in creating well-being, has been hypothesized as well (Judge et al. 2001), and both perspectives have been integrated into models predicting a bi-directional relationship between high performance and satisfaction over time, such as the 'high performance cycle' (Locke and Latham 1990a, b, 2002).

In the case of entrepreneurs, only a small number of studies have explored well-being–performance relationships (see for a review Gorgievski and Stephan 2016). These studies mainly have used cross-sectional designs (e.g. Carree and Verheul 2012; Dijkhuizen et al. 2015; Gorgievski et al. 2014), and therefore no firm conclusions can be drawn as concerns the bi-directionality of the relationships or length of the time lags. The current study, is one of the scarce longitudinal studies investigating relationships between entrepreneurial well-being and performance. Two longitudinal studies among Dutch farmers have shown that poor mental and physical well-being predicted financial hardship and poor financial business performance over 1, 2 and even 10 years of time (Gorgievski et al. 2010; Gorgievski-Duijvesteijn et al. 2000, 2005). Evidence for a possible reversed relationship leading from financial problems to impaired well-being was only found within measurement moments, indicating this effect would be relatively short-lived. The current study conceptually validates these findings among a broader and more general sample of entrepreneurs in other branches. Moreover, in contrast to previous longitudinal studies, the current study will focus on positive (rather than negative) well-being: entrepreneurial satisfaction, life satisfaction, and work engagement (Andersson 2008; Binder and Coad 2016; Diener 2000; Fisher 2010). Prior research has shown work-related strain predicted business performance more strongly than work engagement did (Dijkhuizen et al. 2015).

This implies that the question remains open as to whether positive well-being predicts entrepreneurial performance as well.

Finally, we contribute by using multiple measures of entrepreneurial performance as recommended previously by several scholars (e.g. Murphy et al. 1996; Venkatraman and Ramanujam 1986). The most common way to measure entrepreneurial performance to date is by means of (self-reported) financial parameters, like turnover, profit, market leadership, and number of employees (Cooper et al. 1994; Van Praag and Versloot 2007). The past decade however, there has been a growing interest in more subjective measures of entrepreneurial performance, like achieved autonomy (Kuratko et al. 1997), personal satisfaction and growth (Walker and Brown 2004), customer satisfaction (Reijonen and Komppula 2007), family security (Kuratko et al. 1997; Shane et al. 2003) and flexibility (Walker and Brown 2004). The reason for the increased popularity of subjective measures in addition to financial business parameters, is the finding that subjective measures are often more predictive of entrepreneurs' decision making and behaviour than objective indicators (e.g. Wach et al. 2016; Reijonen and Komppula 2007). Our study includes a recently developed multi-dimensional measure of subjective entrepreneurial success, including achieved financial success (personal income security and wealth, business turnover, sales and profit growth), as well as achieved personal success (personal fulfilment, community impact and employee relations), in addition to self-reported financial business performance indicators (Dej 2011; Wach et al. 2016).

Research into predictors of entrepreneurial performance remains crucial. Evidence that positive well-being affects business performance, will be of interest to entrepreneurs themselves, but also to business consultants, and policy makers. The findings can be food for thought about possible interventions to increase entrepreneurs' well-being and thus possibly their entrepreneurial performance. Improving entrepreneurial performance is not only favourable for individual entrepreneurs, but also for the economy at large, as entrepreneurs play a major role in the general economy.

2 The Bi-directional Relationship Between Entrepreneurial Performance and Well-Being

The first postulation we will test is the 'happy-productive worker hypothesis', according to which different dimensions of positive well-being predict entrepreneurial performance. In the current study, job and life satisfaction are included, but also work engagement as a third construct of positive well-being. The concepts are all on the pleasure side of the circumplex model of affective well-being (Bakker and Oerlemans 2011; Russell 1980, 2003; Russell and Carroll 1999). This means that the three concepts are all about positive emotions. Work engagement differs from job satisfaction and life satisfaction as it combines work pleasure (dedication) with high activation (vigor, absorption). In other words, work engagement is positioned on the high activation side of the circumplex model (feeling energized and excited), and both job satisfaction and life satisfaction are positioned on the low activation side (feeling relaxed and calm). Job satisfaction and life satisfaction are typically more passive forms of well-being (Bakker and Hakanen 2013).

Theoretically, several mechanisms have been put forward explaining why happy workers perform better (Bakker and Demerouti 2007, 2008), which in the case of entrepreneurs can be expected to relate to entrepreneurial success and better business performance. Firstly, positive emotions broaden peoples' 'thought-action repertoires' which in

itself serve to build lasting personal resources (Fredrickson 2001, 2013). Secondly, engaged people experience better health, which means they can put their energy to their work. Thirdly, happy people actively take care of acquiring job and personal resources themselves. Finally, engaged people inspire their environment, which can improve networking quality and team performance.

Empirical findings have generally supported the ‘happy-productive worker hypothesis’, although the strength of the relationships between happiness and performance vary considerably across studies, for example depending on the conceptualization and operationalization of “happiness”, for example as purely affective measures versus general or job specific satisfaction, which also has a cognitive component (Zelenski et al. 2008). A meta-analysis of Iaffaldano and Muchinsky (1985) shows that relationships between job satisfaction and job performance are fairly low. Interestingly, Judge et al. (2001) and Petty et al. (1984) found considerably higher correlations in their meta-analyses. Work performance may be more strongly predicted by general life satisfaction than by job satisfaction (Lyubomirsky et al. 2005a; Wright and Cropanzano 2000). As concerns work engagement, studies have consistently shown positive relationships between work engagement and performance among employees (e.g. Bakker and Bal 2010; Halbesleben and Wheeler 2008; Xanthopoulou et al. 2009). Among entrepreneurs, Dej (2011) found a positive relationship between job satisfaction and subjective entrepreneurial success and two recent studies showed work engagement positively related to subjective entrepreneurial success (Dijkhuizen et al. 2015) and business growth and subjective business performance (Gorgievski et al. 2014).

Another aspect influencing whether the ‘happy-productive worker thesis’ gained support in prior studies is the time frame of the study. Studies focusing on happiness as a state generally found stronger evidence than studies operationalizing it as a trait (Zelenski et al. 2008). Our study investigates if well-being impacts on entrepreneurial performance over 2 years of time. We do not expect an incidental dip in satisfaction or work engagement could have such a long term effect, but prior research has shown the different dimensions of well-being have a highly stable set-point over time (Lyubomirsky et al. 2005b). This stability is caused by internal adjustment processes, also referred to as a ‘hedonic treadmill’ (Diener et al. 2006). Life satisfaction has been found to have a high degree of stability over 2 years (Headey and Wearing 1989), and even 4 years of time (Pavot and Diener 1993), irrespective of important life-events that may have happened in between. Also work engagement is seen as a relatively stable characteristic of a person (Bakker et al. 2008; Seppälä et al. 2014). Empirical evidence exists that this stable component, presumably affecting entrepreneurs’ efforts and decision making continuously, and not incidental impaired well-being, influence financial business performance over a longer period of time (Gorgievski et al. 2010). We therefore expect a positive relationship between well-being and entrepreneurial performance.

Hypothesis 1 Well-being at T1 predicts entrepreneurial performance at T2.

The second expectation we will test, is a reversed causal relationship leading from good entrepreneurial performance to positive well-being. Several empirical studies among employees have indeed shown good performance makes people happy (e.g. Diener et al. 1993; Locke and Latham 1990a; Lyubomirsky et al. 2005a). The explanation given by Veenhoven (1991) is that income helps people to meet their needs and therefore relates to well-being. Other studies show that positive organizational performance leads to positive employee attitudes and satisfaction (Ryan et al. 1996; Schneider et al. 2003; Van de Voorde et al. 2014). In line with these findings, Siehl and Martin (1990) found that

organizations which perform well, have more resources to invest in their employees, which leads to positive well-being. We can also expect such a reversed relationship building on expectancy-based theories of motivation, which postulate that high performance relates to valued and rewarding outcomes, which subsequently lead to job satisfaction. Valued outcomes are typically those outcomes relating to the fulfilment of innate human needs, such as need for competence, accomplishment and personal growth (Judge et al. 2001; Locke and Latham 1990a, b, c, 2002). Subjective entrepreneurial performance links to those entrepreneurial outcomes entrepreneurs themselves have identified as relevant success criteria, in other words, desirable end states entrepreneurs themselves aim to achieve with their business (Laguna et al. 2016; Wach et al. 2016). Hence, it can be expected that achieving at or above these criteria leads to satisfaction, whereas performing below these criteria leads to dissatisfaction.

Also for the reversed relationship we expect relative stability of entrepreneurial performance and well-being to play a role. Whereas we expected the stable component of well-being to impact on entrepreneurial performance, we expect changes in performance to impact on entrepreneurs' well-being. Economic conditions have not changed considerably in The Netherlands during the time of our study (Bangma and Snel 2014; Panteia 2013), because of which business performance may not have shown sudden or dramatic changes during the 2 year time lag of this study for most entrepreneurs. Because of the happiness set-point (Diener et al. 2006; Lyubomirsky et al. 2005b), we assume good entrepreneurial performance does relate to the experience of positive well-being, but because the entrepreneur has to go back to business the next day as usual, this relationship may be quite modest in the longer term. Some empirical evidence supports this notion, showing financial hardship predicted short-term fluctuations in mental health complaints for agricultural business owners, not long term health complaints (Gorgievski et al. 2010). In addition to testing the reversed relationship from success to well-being over 2 years of time, our data also allow for testing if objective business performance precedes better well-being within a shorter time frame (Fisher 2003). After all, the entrepreneurs had retrospectively reported on their financial situation in the book year prior to data collection. Therefore, we formulate our second hypothesis as follows:

Hypothesis 2 Entrepreneurial performance predicts well-being over time.

3 Methodology

3.1 Procedure and Participants

In order to find respondents, the business network of the first author was approached directly by mail. This network consists of business owners from various industries and different sizes across The Netherlands. Furthermore, the URL of the questionnaire was sent to several magazines that have a readership of Dutch entrepreneurs, and also to different LinkedIn Groups related to entrepreneurship. Analyses show the way respondents were approached did not significantly influence results: there were no differences concerning demographics or scores on any relevant variables. Therefore, respondents were treated as one group of participants. A total of 277 respondents filled in an online Dutch questionnaire in the first quarter of 2012 (T1) and a total of 121 (response rate of 44%) cooperated in the follow-up in the first quarter of 2014 (T2). A 2 year time interval was chosen based on analysis of the literature (Mitchel and Lawrence 2001). This time lag was expected to be

long enough for possible changes in e.g. business performance measures, but not too long for too much non-response in the sample (cf. Frese and Zapf 1988; Mitchel and Lawrence 2001). Entrepreneurs work on 1 year cycles, based on the fiscal year, and a 2 year time frame gives a more reliable view of the venture development.

Only the 121 respondents who filled in the questionnaire both in 2012 and 2014, are taken into account for this study. They were individuals who founded or owned a private company employing less than 250 people in The Netherlands. This is in line with the definition of the European Commission of small and medium sized enterprises as companies employing less than 250 people. In the demarcation of entrepreneurs we follow the definition by Van Praag and Versloot (2007) namely “individuals who have started up a business or who own a business, i.e., who are self-employed or the owner-manager of an incorporated business”. People who had decided not to participate or who dropped out later ($N = 156$) did not differ significantly from the people who did participate in the follow-up, as concerns business parameters at T1 (firm size, turnover and profit) and most demographics, but they differed in gender. In the group of respondents 53% was male, in comparison with 44% in the group of non-respondents. The fairly high percentage of sample drop outs can be explained by the fact that respondents were asked at the end of the questionnaire in 2012, whether or not they wanted to cooperate again in the future. Respondents stating they did not want to participate at a later stage, were not contacted in 2014.

Respondents were on average 47.26 years old ($SD = 9.85$) at T1, 53% male. Three per cent only had lower education; 12% had a middle education; 46% had a bachelor degree and 39% a master degree. Distribution of company age at T1 was 4% more than 1 but less than 3 years; 23% between 3 and 5 years; 40% between 6 and 10 years and 33% >10 years. Average company size at T1 was 6.19 ($SD = 24.98$) employees and at T2, 7.27 ($SD = 31.96$). At T1, 66% were self-employed without personnel, at T2 this was 57%.

3.2 Measures

General Life Satisfaction was measured with the 5 item version of the Satisfaction With Life Scale (Diener et al. 1985). This is a 5-point scale ranging from 1 = *totally disagree* to 5 = *totally agree* with e.g. the question ‘I am satisfied with my life’. The Cronbach’s alpha for this study was 0.86 in 2012 and 0.85 in 2014. The scale was adapted to generate in parallel a ‘*satisfaction with entrepreneurship*’ scale, using the same 5-point scale. The previous question was, for example, changed into ‘I am satisfied with entrepreneurship’. The Cronbach’s alpha for this adapted scale was 0.86 in 2012 and 0.88 in 2014.

The 9 item version of the Utrecht Work Engagement Scale (Schaufeli and Bakker 2003) was used (7-point scale, 1 = *never* to 7 = *daily*) to measure *work engagement*. An example question was ‘At my work, I feel bursting with energy’; Cronbach’s alpha was 0.90 in both 2012 and 2014.

Objective business performance was measured using self-reported number of employees, profit and turnover during the past book year (self-reported objective performance). For the latter two: 1 = <€25,000; 2 = €25,000–€50,000; 3 = €50,000–€100,000; 4 = €100,000–€500,000; 5 = €500,000–€2,000,000; 6 = €2,000,000–€10,000,000 and 7 > €10,000,000 (Cooper et al. 1994; Van Praag and Versloot 2007).

Subjective entrepreneurial success was measured with the Subjective Entrepreneurial Success–Achievement Scale (Dej 2011; Wach et al. 2016). The scale uses a 5-point scale running from 1 = *totally not achieved* to 5 = *totally achieved*. All items are introduced with ‘Indicate to what extend you have achieved...’ The instrument consists of six

subscales measuring two underlying factors. The first factor is subjective financial success consisting of the subscales: *personal finance* (e.g. 'Indicate to what extent you have achieved an increase in (family) income'; 5 items; $\alpha = 0.90$ in both 2012 and 2014), and *business finance* (e.g. 'Indicate to what extent you have achieved turnover/sales'; 5 items; $\alpha = 0.89$ in 2012 and 0.90 in 2014). The second factor is subjective personal success and consists of the subscales: *social factors* (e.g. 'Indicate to what extent you have achieved social recognition'; 6 items; $\alpha = 0.75$ in 2012 and 0.74 in 2014), good *relationship with clients* (e.g. 'Indicate to what extent you have achieved customer loyalty'; 3 items; $\alpha = 0.88$ in 2012 and 0.83 in 2014), *personal goals* (e.g. 'Indicate to what extent you have achieved maintaining good personal relations and networks'; 5 items; $\alpha = 0.74$ in 2012 and 0.81 in 2014), and *personal development* (e.g. 'Indicate to what extent you have achieved developing yourself personally'; 3 items; $\alpha = 0.71$ in 2012 and 0.73 in 2014).

4 Method

Data was analysed using structural equations modelling in Smart PLS (Hair et al. 2014). Standardized variables were analysed in a bootstrapping procedure using 5000 samples of 121 cases. Smart PLS uses a variances based partial least squares approach. Similar to other structural equation modelling programs, Smart PLS accounts for measurement error and therefore provides more accurate estimates of effects than ordinary regression analyses (Chin 1998). Smart PLS has advantages over other path modelling programmes that use a covariance based structural equation modelling approach (such as AMOS, EQS, and Lisrel), in case of a small data file.

In Smart PLS, the quality of the measurement model needs to be assessed before structural path models can be evaluated. The variables self-reported objective performance, subjective financial success, subjective personal success, and well-being were all modelled as reflective constructs (see Fig. 1). Self-reported objective performance was formed by the observed indicators 'number of employees', 'turnover', and 'profit'. Observed indicators for subjective financial success were the SES-AS scales 'personal finance' and 'business finance'. For subjective personal success the indicators were the SES-AS scales 'social factors', 'relationship clients', 'personal goals', and 'personal development'. The scales 'life satisfaction', 'job satisfaction', and 'work engagement' were used as observed indicators of the latent factor well-being.

Average variance extracted is relatively high for all latent factors, except for subjective personal success, which had scores just below the recommended 0.50 (0.48 at T1 and 0.46 at T2). This latent variable most strongly reflected the subscales 'personal goals' with factor loading of 0.88 at T1 and 0.90 at T2, and 'personal development' with a factor loading of 0.78 at T1 and 0.71 at T2. The subscales 'social factors' and 'relationship clients' had much lower factor loadings and were thus less well reflected by the latent construct.

Additionally, as Table 1 shows, the square roots of the AVE's, except for subjective personal success, were well above the highest correlation, indicating fairly good convergent and discriminant validity. This is especially noteworthy for self-reported objective performance and subjective financial success factors and the latent factors of similar constructs over time.

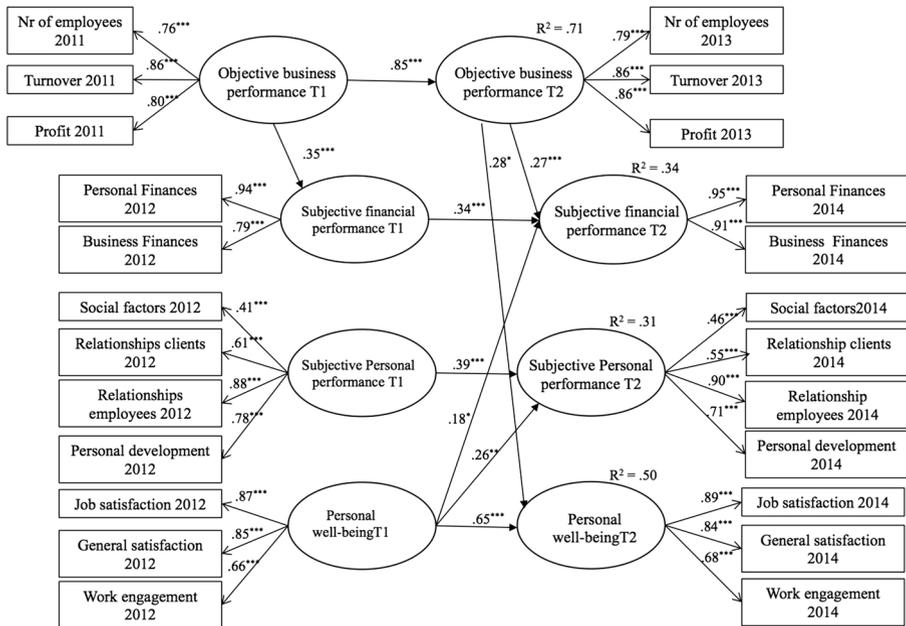


Fig. 1 Relationships between entrepreneurs well-being and performance. SmartPLS results 121 entrepreneurs. Results are controlled for entrepreneurs' age and gender

5 Results

5.1 Descriptive Findings

Tables 1 and 2 show means, standard deviations of the raw study variables, and the Average Variance Extracted and correlation coefficients of the latent study variables. As Table 2 shows, the relationships between well-being at T1 and subjective personal success at T2 ($r = 0.43$), subjective financial success at T2 ($r = 0.32$) and to a lesser extent with self-reported objective business performance at T2 ($r = 0.11$) were as expected. The table also shows reversed relationships from subjective financial success at T1 ($r = 0.34$), subjective personal success at T1 ($r = 0.27$) and again to a lesser extent with self-reported objective business performance at T1 ($r = 0.17$) to well-being at T2. However, the constructs are also quite stable over time, with auto-correlations being $r = 0.69$ for well-being, $r = 0.86$ for self-reported objective performance, and $r = 0.50$ for both subjective financial and subjective personal success. The question thus remains whether there are longitudinal relationships, or whether lagged findings could be explained by cross-sectional links and stability over time. More detailed findings are discussed in the next section.

5.2 Stability of the Constructs

In the introduction section we argued that the stability of constructs needs to be taken into account when interpreting longitudinal relationships between well-being and performance. The findings show that both business performance and well-being had been fairly stable over time. Self-reported objective performance at T1 predicted self-reported

Table 1 Descriptive statistics of the study variables (N = 121 Dutch entrepreneurs)

	T1	T2
Gender		
Male	53%	
Female	47%	
Age	$M = 47.26$ ($SD = 9.85$)	
No. of Employees	$M = 6.19$ ($SD = 24.98$)	$M = 7.27$ ($SD = 31.96$)
Turnover	$M = 3.23$ ($SD = 1.88$)	$M = 3.26$ ($SD = 1.93$)
1. <€25,000	22%	21%
2. €25,000–€50,000	19%	20%
3. €50,000–€100,000	17%	21%
4. €100,000–€500,000	27%	21%
5. €500,000–€2,000,000	6%	10%
6. €2,000,000–€10,000,000	7%	5%
7. >€10,000,000	2%	2%
Profit	$M = 1.98$ ($SD = 1.26$)	$M = 2.14$ ($SD = 1.40$)
1. <€25,000	52%	45%
2. €25,000–€50,000	17%	21%
3. €50,000–€100,000	18%	21%
4. €100,000–€500,000	10%	9%
5. €500,000–€2,000,000	3%	2%
6. €2,000,000–€10,000,000	0%	2%
7. >€10,000,000	0%	0%
Subjective success; personal Finances	$M = 2.81$ ($SD = 1.10$)	$M = 2.79$ ($SD = 1.12$)
Subjective success; business Finances	$M = 3.03$ ($SD = 1.30$)	$M = 2.81$ ($SD = 1.07$)
Subjective success; social factors	$M = 3.44$ ($SD = 0.77$)	$M = 3.34$ ($SD = 0.71$)
Subjective success; relation clients	$M = 4.21$ ($SD = 0.62$)	$M = 4.24$ ($SD = 0.59$)
Subjective success; relation employees	$M = 3.92$ ($SD = 0.70$)	$M = 3.79$ ($SD = 0.77$)
Subjective success; personal development	$M = 4.20$ ($SD = 0.70$)	$M = 4.06$ ($SD = 0.68$)
General life satisfaction	$M = 3.76$ ($SD = 0.67$)	$M = 3.65$ ($SD = 0.77$)
Satisfaction with entrepreneurship	$M = 3.53$ ($SD = 0.77$)	$M = 3.56$ ($SD = 0.86$)
Work engagement	$M = 6.30$ ($SD = 0.69$)	$M = 5.21$ ($SD = 0.79$)

objective business performance at T2 considerably ($p = 0.85$, $SE = 0.05$, $T = 17.78$, $p < 0.001$). The same is found for subjective financial success ($p = 0.34$, $SE = 0.08$, $T = 4.25$, $p < 0.001$) and to a lesser extent for subjective personal success ($p = 0.40$, $SE = 0.09$, $T = 4.51$, $p < 0.001$). The R^2 of the performance measures are 0.71 for self-reported objective business performance, 0.39 for subjective personal success, and 0.34 for subjective financial success, indicating that between 34 and 71% of variance was explained by scores on the same variables in an earlier point in time. Well-being was stable as well over T1 and T2 ($p = 0.65$, $SE = 0.08$, $T = 8.28$, $p < 0.001$) with an R^2 of 0.50. Thus, especially for objective business performance, a relatively small proportion of variance was left to be explained by other variables.

Table 2 Average variance extracted (between brackets on the diagonal) and correlation coefficients between the latent study variables (N = 121)

	Sex	Age	Self-reported objective performance T1	Subjective financial performance T1	Subjective personal performance T1	Well-being T1	Self-reported objective performance T2	Subjective financial performance T2	Subjective personal performance T2	Well-being T2
Sex	–									
Age	–0.34	–								
Time 1										
Self-reported objective performance T1	–0.16	–0.02	(0.65)							
Subjective financial performance T1	0.01	–0.06	0.32	(0.74)						
Subjective personal performance T1	0.13	–0.14	–0.24	0.25	(0.48)					
Well-being T1	0.06	0.18	0.15	0.37	0.42	(0.64)				
Time 2										
Self-reported objective performance T2	–0.24	–0.03	0.86	0.28	–0.25	0.11	(0.70)			
Subjective financial performance T2	–0.04	–0.10	0.26	0.49	0.15	0.32	0.38	(0.87)		

Table 2 continued

	Sex	Age	Self-reported objective performance T1	Subjective financial performance T1	Subjective personal performance T1	Well- being T1	Self-reported objective performance T2	Subjective financial performance T2	Subjective personal performance T2	Well- being T2
Subjective personal performance T2	0.05	-0.01	-0.19	0.09	0.52	0.45	-0.19	0.12	(0.46)	
Well-being T2	-0.04	0.10	0.17	0.34	0.29	0.69	0.21	0.48	0.53	(0.65)

5.3 Hypothesis Testing

The first relationships we tested were between positive well-being at T1 and entrepreneurial performance indicators at T2. All relationships were controlled for gender and age. Subjective financial performance was additionally corrected for self-reported objective business performance. Well-being shows significant positive relationships with both subjective personal success at T2 ($\rho = 0.28$, $SE = 0.09$, $T = 3.20$, $p < 0.01$), explaining additionally 4% of variance over and above the autoregression coefficient, and subjective financial success at T2 ($\rho = 0.18$, $SE = 0.08$, $T = 2.41$, $p < 0.05$), explaining additionally 3% of variance over and above the autoregression coefficient and self-reported objective financial situation. No relation was found for self-reported objective business performance at T2 ($\rho = -0.01$, $SE = 0.04$, $T = 0.34$, p ns). Herewith *Hypothesis 1* is partly confirmed.

Hypothesis 2 stated entrepreneurial performance predicts well-being over time. Contrary to the expectations, none of the relationships between entrepreneurial performance at T1 and well-being at T2 turned out to be significant. Self-reported objective performance at T1 did not show a significant positive relationship with well-being at T2 ($\rho = 0.02$, $SE = 0.08$, $T = 0.24$, p ns), neither did subjective financial success ($\rho = 0.09$, $SE = 0.10$, $T = 1.14$, p ns), nor subjective personal success ($\rho = -0.02$, $SE = 0.09$, $T = 0.28$, p ns). However, self-reported objective business performance at T2, which was a retrospective report about the situation in the book year prior to the data collection, did predict well-being at T2 ($\rho = 0.28$, $SE = 0.13$, $T = 2.13$, $p < 0.05$). Thus, *Hypothesis 2* was only supported for the relatively short term relationship within measurement moments.

6 Discussion

This study among 121 Dutch entrepreneurs investigated the bi-directional relationships between well-being and entrepreneurial performance over 2 years of time. Longitudinal studies on this relationship are scarce, and a conceptual validation and replication among a more general sample of entrepreneurs is seen as a valuable tool for verification of facts (Schmidt 2009).

Results indicated that well-being at T1 predicted subjective financial and subjective personal entrepreneurial success at T2, but not self-reported objective business performance. We therefore partly confirmed *Hypothesis 1*. Arguably, this result can be explained by the fact that each time a happier entrepreneur meets a challenge, he or she responds more effectively, which in the end leads to an overall better outcome. Some evidence exists supporting this notion. Agricultural entrepreneurs with better mental health tend to do more replacement investments, thus keeping their businesses more up to date as compared to entrepreneurs with poorer mental well-being (Gorgievski et al. 2010). The results are also in line with earlier findings among employees, such as the meta-analysis of Lyumomirsky et al. (2005a) presenting several longitudinal studies which found relationships between well-being and different performance measures. Separate studies show a positive relationship of well-being with for example longer-term income among employees (Marks and Fleming 1999; Diener et al. 2002), and supervisory ratings over time (Wright and Staw 1999; Wright and Cropanzano 2000; Wright et al. 2007). The absence of the relationship with self-reported objective business performance indicates that entrepreneurs who had better well-being at T1 did perceive they had achieved a better personal income situation, higher turnover, profit growth and increased market share than entrepreneurs with lower

well-being 2 years later, but this did not show in actual financial indicators of turnover and profit, or number of employees. Possibly, these measures lack sensitivity because of the broad classification of turnover and profit they use.

The expected positive relationship between entrepreneurial performance at T1 and well-being at T2, was not confirmed, rejecting *Hypothesis 2*. A recursive relationship between performance and well-being was only found in the short term for self-reported objective business performance within the second measurement moment. These findings are not in line with the longitudinal studies among employees, such as Schneider et al. (2003), who found a reciprocal relationship between job satisfaction and organizational and market performance in a sample of employees in American corporations. However, the findings are similar to those of longitudinal studies among farmers with 1, 2 and 10 year time lags, showing impaired well-being predicted financial hardship over longer periods of time, vice versa financial hardship only predicted short-term fluctuations in mental and physical health complaints (Gorgievski-Duijvesteijn et al. 2000, 2010). An alternative explanation for the non-significant result can be found in the non-response group of the study. Although significant differences between the response and the non-response group were not found, the results could be extrapolated to entrepreneurial exit, for example, in such a way that people with poorer business performance and personal well-being would also be more likely to quit their business. It is therefore possible that poor business results are especially detrimental to well-being if they go past a certain inflection point.

Our results underscore the homeostatic nature of peoples' well-being (Gorgievski et al. 2010; Lykken and Tellegen 1996; Headey and Wearing 1989; Tellegen et al. 1988). This means changes in the level of well-being are only short-lived, and tend to return to the so-called 'happiness set point', a genetically determined level of well-being that is assumed to be stable over time (Lyubomirsky et al. 2005b). In line with this set point hypothesis, Headey and Wearing (1989) presume that people have an 'equilibrium level' of well-being and only in the case of a serious life event or continued small changes, well-being changes. As we found business performance had been relatively stable during the 2 years of time, we assume that the changes that may have occurred were too small for being a life event with longer lasting well-being effects and hence its effects much shorter lived than 2 years of time. Fredrickson (2001) stated that it is challenging to capture emotional experiences in the work place, because emotions are usually short-lived. After good performance, entrepreneurs must go back to their daily work and the issues of the day and the effect of having achieved personal and business performance over the past 2 years may wear off.

6.1 Limitations and Future Research

In this study we acknowledge several limitations. First of all, the sample of 121 respondents is relatively small. Future research is recommended with larger samples. In addition, only entrepreneurs participated in the second wave of the data collection if they gave consent for this and were still in business after 2 years. Even though comparison of the respondents with the dropouts showed only minor differences on T1, the sample was doing relatively well and might not have experienced significant changes in business circumstances or events in their private life, such as a change of business partners, new investors or illness. A sample of entrepreneurs operating in more dynamic and hostile environments might experience more changes in entrepreneurial success and hence show stronger well-being effects of entrepreneurial success over longer periods of time.

Secondly, the broader economic, political and societal environment entrepreneurs work in was not included in our study, and hence its effect could not be investigated. Including

these factors in a next study could be interesting to increase our understanding of the relationship between well-being and entrepreneurial performance.

Thirdly, data on entrepreneurial performance and well-being were gathered by self-report measures. Using self-report measures for well-being is valid (Sandvik et al. 1993), and for measuring entrepreneurial performance we used multiple measures as recommended, including self-reported objective indicators, which is defensible (e.g. Murphy et al. 1996; Venkatraman and Ramanujam 1986). However, in this study the objective indicators were measured using quite broad classifications. In future research, researchers can be advised to include more fine grained financial measures which may show more variability over time. In addition, our scale of subjective personal success had a rather low average variance extracted, which might need some further research attention. For future studies we additionally advice using multiple source measures. Objective entrepreneurial success measures could, for example, be obtained from bookkeepers (e.g. Gorgievski et al. 2010), tax agencies or the chamber of commerce (Pérez and Canino 2009).

Fourthly, a limitation of our study is the small number of measurement points and the relatively long time frame of 2 years between the two measurement points. This means our study has been able to capture only relatively long-term processes, and not the more short-lived waxing and waning of entrepreneurial success and entrepreneurs' well-being. A study among agricultural entrepreneurs indicated negative mental health effects in response to financial hardship would occur only in the short term (Gorgievski et al. 2010). As our results also indicate, the recursive effect of entrepreneurial performance on well-being might only occur within much shorter time frames such as weeks, and especially in response to periods of change, such as when the financial situation is boosted, or vice versa, if it does not allow for meeting important goals or fulfilling financial obligations. For future longitudinal studies it would be interesting to include more measurement moments or focus on shorter time frames in order to investigate bidirectional effects or possible non-linear relationships.

Lastly, findings indicate that well-being precedes future subjective experiences of entrepreneurial personal and financial success, but it did not precede self-reported objective performance. Future research is recommended to extend our knowledge of the discrepancy between objective parameters of entrepreneurial performance and the more subjective appreciation of entrepreneurial performance indicators.

6.2 Implications

The finding that well-being predicted subjective entrepreneurial success, but entrepreneurial performance in turn did not predict entrepreneurs' future well-being, has interesting practical implications. Based on the 'happy-productive worker hypothesis' employers are already advised to do their utmost to maintain and improve their workers' well-being. In the literature, different personal interventions have been described, such as developing effective coping skills to alleviate exhaustion (Maslach et al. 2001), executing leisure activities with friends (Sonnentag 2001), psychological detachment (Sonnentag and Fritz 2007), or more organizational adaptations like effective employee selection, training and competitive pay (e.g. Delaney and Huselid 1996; Koys 2001; Ulrich et al. 1991). As this study shows, entrepreneurs should also maintain and improve their own well-being (general satisfaction, satisfaction with entrepreneurship, and work engagement). As concerns satisfaction and happiness, although some authors claim this cannot easily be improved (Boehm and Lyubomirsky 2008; Lyubomirsky 2001; Lyubomirsky et al. 2005b), other theoretical perspectives and empirical data suggest it can through intentional

activities and practices over a longer period of time (Diener et al. 2006; Fisher 2010; Lyubomirsky et al. 2005b; Seligman 2004, 2006; Seligman and Csikszentmihalyi 2000). So, entrepreneurs need to take the next step towards putting long-term effort into activities improving their well-being.

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