



The Role of Emotional Intelligence in Entrepreneurs' Perceptions of Success: An Exploratory Study

Haibo Zhou¹

NIKOS – UTs research group for Entrepreneurship, Strategy and Innovation Management, Faculty of Behavioural, Management and Social Sciences, University of Twente, The Netherlands

Ana Maria Bojica

Faculty of Economics and Business Studies, University of Granada, Spain

Abstract. This study contributes to the entrepreneurship literature by introducing emotional intelligence (EI) as an additional factor that explains how entrepreneurs perceive their own success. Using survey data from a sample of Dutch entrepreneurs, we find that emotionally intelligent entrepreneurs are more likely to judge positively their entrepreneurial success in terms of: employee satisfaction, social responsibility, personal satisfaction, customer satisfaction and business performance. Furthermore, not all EI dimensions are equally relevant to explain self-perceived success. In this respect, we find that the (self-perceived) ability to regulate emotions of other people is most strongly linked to entrepreneurial success.

Keywords: emotional intelligence, regulate emotions of other people, (self-perceived) success criteria, entrepreneurial success, Dutch entrepreneurs.

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1. Introduction

Entrepreneurship scholars have devoted significant attention to study entrepreneurial success, relying mainly on business-oriented criteria such as profitability, market share and employment growth (Murphy et al., 1996; Richard,

1. Corresponding Author: Haibo Zhou, NIKOS – UTs research group for Entrepreneurship, Strategy and Innovation Management, Faculty of Behavioural, Management and Social Sciences, University of Twente, The Netherlands. Tel. 0031-6-42015727. E-mail: h.zhou-1@utwente.nl

2000; Wach et al., 2016; Ingram et al., 2017). At the same time, it has been argued that the essence of entrepreneurship is driven by personal-oriented factors such as personal satisfaction or a good work-life balance. Entrepreneurs not always aim to maximize financial returns or business growth (Grant and Berg, 2011; Miller et al., 2012; Meager, 2015). Once the firm reaches a minimum efficient scale and becomes economically viable, entrepreneurs often have the freedom to decide whether or not to strive for business-oriented success (Zhou and De Wit, 2009). Several studies also indicate that part of the entrepreneurs have modest growth aspirations, restricting the growth rate of their firms (Douglas, 2013). Accordingly, business-oriented criteria do not fully reflect how entrepreneurs determine to what extent they are successful (Walker and Brown, 2004; Gorgievski et al., 2011).

A comprehensive understanding of subjective success criteria that entrepreneurs use is important. The way entrepreneurs perceive their success reflects their motivations for starting and managing their business, which in turn may affect performance of the business (Conner et al., 2000; Perugini and Conner, 2000; Shane et al., 2003; Sheeran and Abraham, 2003; Delmar and Wiklund, 2008). Furthermore, entrepreneurs who fail to fulfill their personal goals are more likely to close their businesses, even when those are profitable (Bates, 2005). Prior research shows that individual-level factors (e.g. age, gender, education, personality traits) correlate with the preference for certain success criteria (Carter and Cannon, 1992; Rauch and Frese, 2000; Kautonen et al., 2014). Yet, there is only limited systematic research on the underlying mechanisms that explain individual differences in self-perception of entrepreneurial success. This paper points to emotional intelligence as an additional factor that may contribute to explaining how entrepreneurs perceive their own success.

Emotional intelligence (EI) is an individual capability related to the subset of social intelligence that (i) monitors one's own and others' feelings and emotions and (ii) uses this information to solve problems and regulate one's thinking, action and behavior (Goleman, 1995, 2005; Salovey and Mayer, 1990; Schutte et al., 1998; Huy, 1999). The role of EI has been extensively acknowledged as influencing performance on both personal level -e.g. career success or life satisfaction (Goleman, 2005; Cartwright and Pappas, 2008) - and organizational level (Rosete and Ciarrochi, 2005; Schutte et al., 2008). Yet, the notion of EI has been largely neglected in the entrepreneurship literature. However, recent studies provide some insights suggesting that EI might contribute to explaining how entrepreneurs' evaluate their own success. Emotions and capabilities to manage emotions might play an important role in explaining entrepreneurial success (Baron and Markman, 2003; Cross and Travaglione, 2003; Cardon et al., 2005; Humphrey, 2013), by affecting opportunity identification and evaluation (Baron and Tang, 2011), resource mobilization or entrepreneurial exit (Shepherd, 2004; Shepherd et al., 2009). Furthermore, organizational capabilities scholars (Winter, 2003) stress that heterogeneity in capabilities entails heterogeneity in

expectations, such that emotionally intelligent entrepreneurs, compared to those with lower levels of EI, are likely to rely on different performance expectations in conducting their entrepreneurial activities.

Building on these insights, using survey data from 112 Dutch entrepreneurs, our study enriches the entrepreneurship literature by exploring whether and how EI is related to entrepreneurs' self-perceived success.

The remainder of the paper is organized as follows: Section 2 discusses and defines the concepts of success criteria and EI. We further hypothesize the link between EI and the perceived success criteria. In section 3, we explain the data collection procedure, sample characteristics, our measurements and the empirical model. We present and discuss the empirical findings in section 4. The discussion and implications are concluded in section 5.

2. Literature Review

Success Criteria

Success criteria refer to the standards used by entrepreneurs to judge the success of their business. The normative criteria that are mostly used to value entrepreneurial success are business-oriented criteria such as profitability, market share and employment growth (Murphy et al., 1996; Richard, 2000; Wach et al., 2016; Ingram et al., 2017). However, recent studies indicate that non-monetary rewards, such as personal satisfaction, a good work-life balance or creating social value are also core to entrepreneurship (Miller et al., 2012; Cardon et al., 2017; Dzunic et al., 2017). It is thus important to include the aspirations or the goals of the entrepreneur in the definition of success. In this study, we adopt a subjective definition of success, that is, the sustained satisfaction of the entrepreneur's aspiration (Jenning and Beaver, 1997). Such definition reflects not only the goals of the entrepreneur (aspiration) but also the personal perception of success (satisfaction).

Based on existing literature (Walker and Brown, 2004; Gorgievski et al., 2011), most frequently mentioned entrepreneurial success criteria are: business performance, firm growth, employee satisfaction, customer satisfaction, personal satisfaction, social responsibility and a good work-life balance. Both business performance and firm growth are the criteria reflecting longevity and wealth generation of a firm. Employee satisfaction and customer satisfaction are two dimensions of the criterion "satisfied stakeholders." Personal satisfaction can be viewed as one of the basic and fundamental measures of success for an entrepreneur (Cooper and Artz, 1995), as being satisfied and happy from their work is a key outcome for entrepreneurs (Paige and Littrell, 2002; Van Praag and Versloot, 2007; Wach et al., 2015). Social responsibility focuses on social and environmental welfare beyond the direct economic interest of the firm (Choongo

et al., 2017) and is a particularly relevant criterion in social entrepreneurship (Hoogendoorn et al., 2010; Hockerts, 2010; Miller et al., 2012). A good work-life balance is a time- and family-related criterion which has been considered important in the emerging literature as work and personal life are interfered with each other (Nelson and Burke, 2000; Okamuro and Ikeuchi, 2017).

Emotional Intelligence of Entrepreneurs

EI has been defined as a set of individual social abilities or skills to monitor, discriminate and use one's own and others' emotions in order to regulate one's thinking and action (Salovey and Mayer, 1990; Schutte et al., 1998; Huy, 1999; Mayer et al., 2000; Ingram et al., 2017). It is a form of social intelligence that helps to (1) recognize one's own feelings and emotions and those of others and (2) manage emotions both individually and in relationships with others (Goleman, 1995, 2005). Unlike traditional cognitive intelligence, EI can be developed over time through training and experience (Goleman, 1995; Mayer et al., 2000).

This study adopts a three-part model of EI proposed by Salovey and Mayer (1990), who postulated that EI consists of (1) *appraisal and expression of emotion in oneself and in others*; this includes awareness of verbally and non-verbal expressed emotions. This dimension of EI represents the ability of appraising and expressing emotions accurately and recognizing other's emotional reactions and responding empathically to them, respectively. Salovey and Mayer (1990) argued that some level of minimal competence in these skills is necessary for adequate social functioning as it enables individuals to respond more appropriately to their own feelings and to choose socially adaptive behaviors in order to affectively respond to others; (2) *regulation of emotions in oneself and in others*. This component of the model represents the ability of adapting and reinforcing one's own and others' mood states to meet particular goals (Salovey and Mayer, 1990); (3) *utilizing emotional intelligence*; this component includes flexibility in planning and creativity in thinking, motivation and the ability to redirect attention. *Flexible planning and creative thinking* represents the abilities to use positive mood for future planning, prepare for future opportunities, integrate and remember relevant information. *Mood redirect attention* is defined as the ability to capitalize on the capacity of emotional processes to refocus attention on the most important stimuli in the environment. *Motivating emotion* represents the ability of utilizing moods to motivate persistence at challenging tasks (Salovey and Mayer, 1990).

While several studies sustain that EI accounts for a significant amount of individual differences in work and academic performance (Goleman, 1995; Schutte et al., 1998; Dulewicz and Higgs, 2000), the role of EI in entrepreneurship has been scarcely analyzed and most studies are exploratory. Shepherd et al. (2009) and Cardon et al. (2012) indicate that EI can play a significant role in the

capacity of entrepreneurs to mobilize resources, because EI relates to the ability to manage social interactions with other individuals. It may enable entrepreneurs in their negotiations with resource owners and facilitate resource mobilization. Foo et al. (2004) find that individuals with a high EI favor the development of win-win solutions during the negotiation. Very recent work suggests that entrepreneurs' EI can help explaining venture performance in different ways: while interpersonal emotional skills are directly linked to performance, both intra and inter-personal emotional skills are indirectly linked to performance through the interpersonal processes that take place in key activities of the firm (Ingram et al., 2017). Thus, EI abilities are particularly salient to entrepreneurs as social interactions with investors, customers, (potential) employees, suppliers and partners are their key activities. Entrepreneurs who are good at managing these interactions may obtain competitive advantages (Ingram et al., 2017).

Linking Emotional Intelligence and Success Criteria

Whereas the specific link between EI of entrepreneurs and the criteria they perceive their success remains unclear, the organizational capabilities literature offers some theoretical insights from which an explanation can be developed. These insights build on the notion of EI as a set of social intelligent skills that jointly conform a capability.

Organizational capabilities play an important instrumental role, in such a way that they allow organizations to achieve specific accomplishments otherwise unattainable (Zollo and Winter, 2002; Winter, 2003). In line with this argument, existing literature suggests salient links between EI and performance in the entrepreneurship context. In particular, EI might enhance entrepreneurial performance by shaping how the entrepreneur manages relationships with customers (e.g. Barlow and Maul, 2000), mobilizes available resources (e.g. Cardon et al., 2012), develops commitment toward organizational goals (e.g. Slaski and Cartwright, 2002; Ingram et al., 2017), promotes innovativeness (Nghah and Salleh, 2015) and reacts to changing conditions (e.g. Huy, 1999).

Furthermore, in explaining the direct impact of organizational capabilities on performance, researchers emphasize the role of expectations as underlying mechanisms of capabilities. Winter (2003: 991) stresses that capability "confers upon an organization's management a set of decision options for producing significant outputs of a particular type". Zollo and Winter (2002) further argue that capabilities build upon purposefully learning investments aimed towards specific goals. Deployment of organizational capabilities is guided therefore by a set of performance expectations. Furthermore, organizational agents self-monitor outcomes of their behavior against what they consider the expected outcomes (Feldman and Pentland, 2003). By the same token, deployment of capabilities is subject to managerial assessments of achieved outcomes, which may vary

according to the development stage of capabilities (Helfat and Peteraf, 2003). Studies using self-reported measures of performance in a variety of contexts provide empirical illustrations of these insights. For instance, a number of studies report that heterogeneity of firms' alliance capabilities explains systematic differences in perceived alliance success across firms (e.g. Kale et al., 2002). This evidence shows that two individuals (or two organizations) with different capability endowments may perceive the same outcome in very different ways, because they are likely to rely on different performance expectations.

Overall, these insights provide strong theoretical reasons to expect that entrepreneurs with high EI are likely to hold different performance expectations with their entrepreneurial activities, and to rely on different priorities in conducting such activities, as compared to those with lower EI levels. Building on these notions, the idea that EI might contribute to explaining how entrepreneurs perceive their own success sounds intuitively compelling. However, we still have a very limited understanding of the phenomenon. This study explores whether and how EI may explain the success criteria that entrepreneurs perceive, disentangling the links between EI, its sub-dimensions, and the (self-perceived) success criteria that entrepreneurs use.

3. Data and Methodology

Data Collection and Sample

This study is based on survey data from 112 entrepreneurs in the Netherlands. We identified 3,600 valid email addresses of firms with less than 50 employees from Orbis database.² In 2013, we addressed the survey to the owners/CEOs of the companies and finally obtained 380 responses (10.6% response rate). In line with our research question, we focused on those that fulfilled the requirements of being entrepreneurs (i.e. owning the company and making the most important decisions). This resulted into a final sample of 112 entrepreneurs. Within our sample, nearly 80% of the respondents are male and 74% of them are between 41-60 years old. 57% of them have university degrees. 58% of them had management experience and 71% of them had industry experience before they started their own firms. Only 26% of them had previously owned a company. Firm specific characteristics of the sample indicate that 41% of them are business service companies and 34% of them are commercial service companies. The average firm size is about 16 employees. 44% of the firms are considered family businesses.

2. Orbis database is available from Bureau van Dijk. This international database contains addresses and information of 200 million private companies from all over the world (<https://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis>).

Scale Construction and Variables

The *dependent variables* of this study are the success criteria used by entrepreneurs. We include the success criteria addressed by Walker and Brown (2004) and Gorgievski et al. (2011). The measures used are taken from these previous studies. Entrepreneurs were asked to assess the extent to which they value 23 statements regarding the success of their business, using a 6-point Likert scale varying from “1= completely disagree” to “6= completely agree”. Factor analysis results in a solution of 7 success criteria factors, i.e. business performance (Cronbach’s $\alpha = 0.856$), firm growth (Cronbach’s $\alpha = 0.832$), employee satisfaction (Cronbach’s $\alpha = 0.946$), social responsibility (Cronbach’s $\alpha = 0.766$), personal satisfaction (Cronbach’s $\alpha = 0.606$), a good work-life balance (Cronbach’s $\alpha = 0.811$) and customer satisfaction (Cronbach’s $\alpha = 0.622$). Though reliabilities of personal satisfaction and customer satisfaction are lower than the cutoff value 0.7 (Nunnally, 1967; Peterson, 1994), it is indicated that sometimes lower thresholds are used in the literature. For the aim of this study, we decided to retain these two success criteria factors (See Table 1).

To check whether entrepreneurs gave honest answers to all the statements, we used another set of questions and asked them to value the importance of 16 success criteria. The exact question reads “To what extent do you use the following criteria to judge your personal satisfaction with regard to your business?”. Each criterion was also measured using 6-likert scale, varying from “1= not important at all” to “6= very much important”. Paired t-tests indicated that there is no significant difference between the answers given in the two sets of questions. Therefore, we can conclude that entrepreneurs participating in the survey gave consistent answers on their perception of success.

The *explanatory variable* in the study is EI. We measured the EI of entrepreneurs in our sample using the Assessing Emotions Scale (Schutte et al., 1998). The original 33 items of the scale assess how well individuals typically identify, understand, regulate and harness emotions in themselves and others. These items represent all portions of the theoretical model of EI hypothesized by Salovey and Mayor (1990) (Schutte et al., 1998; Cherniss, 2010). This scale has also been used in other studies (Schutte et al., 2008; Mishra and Mohapatra, 2009; Yitshaki, 2012) with an internal consistency varying between 0.87 and 0.90 (Cherniss, 2010). In our study, we found that 5 items did not correlate with other items. Therefore, we eventually used only 28 items from the original scale. Cronbach’s α for the EI construct as a whole (28 items) is 0.882, indicating a good reliability (see Table 2).

Furthermore, factor analysis identified 7 dimensions of the EI construct. All of the dimensions represent different categories of the theoretical model of EI proposed by Salovey and Mayor (1990). These dimensions are: emotion in oneself (Cronbach’s $\alpha = 0.786$), emotion in others (Cronbach’s $\alpha = 0.854$),

regulation of emotion in oneself (Cronbach's $\alpha = 0.756$), regulation of emotion in others (Cronbach's $\alpha = 0.828$), flexible planning and creative thinking (Cronbach's $\alpha = 0.721$), mood redirected attention (Cronbach's $\alpha = 0.648$), and motivating emotions (Cronbach's $\alpha = 0.602$). As this study examines how EI explains the way that entrepreneurs perceive success, we decided to include all of the dimensions, even though Cronbach's alphas for the constructs mood redirected attention and motivating emotions are not higher than the cutoff value 0.7 (Nunnally, 1967; Peterson, 1994).

Table 1: Description of seven dimensions of entrepreneurial success (success criteria) (Obs.=112)

Variables (Cronbach's Alpha)	Measurement (<i>To what extent do you value the following statements with regard to the success of your business? "1= completely disagree" to "6= completely agree"</i>)
Business performance (Cronbach's $\alpha = 0.856$)	I make a lot of money with my business
	The return on investments is high in my business
	The continuity of my business is guaranteed
	My business makes more profits than its average competitor
Firm growth (Cronbach's $\alpha = 0.832$)	My business realizes annual growth in the number of customers it serves
	My business realizes nice growth in numbers of employees
	The turnover of my company rises considerably each year
Employee satisfaction (Cronbach's $\alpha = 0.946$)	Employees in my business are happy with the way in which the company is being managed
	I feel pleasant with the way in which my business treats its employees
	My employees derive satisfaction from the work they have to do
	With my business, I add to the happiness of my employees
Social responsibility (Cronbach's $\alpha = 0.766$)	My business has a useful role in the society
	With my business, I add to the (local) community
	My business operates socially and ethically responsible
	Other people respect me for the way I run my business
Personal satisfaction (Cronbach's $\alpha = 0.606$)	With my business, I feel totally independent; I can run it as I like
	The way in which I can lead my life can be described as flexible
	I derive a lot of pride from my business
	I derive satisfaction from running my business
A good work-life balance (Cronbach's $\alpha = 0.811$)	I have a lot of time that I can spend with family and friends
	My private and business life are well balanced
Customer satisfaction (Cronbach's $\alpha = 0.622$)	Customers are loyal to my company
	My business is very successful in satisfying customer needs

Table 2: Description of emotional intelligence (EI) of entrepreneurs (Obs.=112)

Variables (Cronbach's Alpha)	Measurement (<i>To what extent do you value the following statements with regard to yourself in general? "1= completely disagree" to "6= completely agree"</i>)
Emotion in oneself (Cronbach's $\alpha = 0.786$)	I am aware of the non-verbal message I send to others I am aware of my emotions as I experience them I easily recognize my emotions as I experience them I know why my emotions change
Emotion in others (Cronbach's $\alpha = 0.854$)	I can tell how people are feeling by listening to the tone of their voice I know what other people are feeling just by looking at them I am aware of the non-verbal messages other people send By looking at their facial expressions, I recognize the emotions people are experiencing
Regulation of emotion in oneself (Cronbach's $\alpha = 0.756$)	When I am faced with obstacles, I remember the time I faced similar obstacles and overcame them I motivate myself by imagining a good outcome to tasks I take on When I experience a positive emotion, I know how to make it last I seek out activities that make me happy I expect good things to happen I arrange events others enjoy
Regulation of emotion in others (Cronbach's $\alpha = 0.828$)	I present myself in a way that makes a good impression on others I compliment others when they have done something well I know when to speak about my personal problems to others Other people find it easy to confide in me I help other people feel better when they are down
Flexible planning and creative thinking (Cronbach's $\alpha = 0.721$)	When I am in a positive mood, I am able to come up with new ideas When I am in a positive mood, solving problems is easy for me When my mood changes, I see new possibilities
Mood redirected attention (Cronbach's $\alpha = 0.648$)	When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself I like to share my emotions with others Emotions are one of the things that make my life worth living
Motivating emotions (Cronbach's $\alpha = 0.602$)	I use good mood to help myself keep trying in the face of obstacles I expect that I will do well on most things I try I have control over my emotional needs
Emotional intelligence (EI) (all 28 items)	Cronbach's $\alpha = 0.882$

In addition, we include several *control variables*. Several studies have investigated the effect of socio-demographic factors such as age, gender, education, experience, and personality traits like risk tolerance, on job and life satisfaction (e.g. Clark et al., 1996; Gazioglu and Tansel, 2006; Block and Koellinger, 2009). Other studies found these variables to influence the perception of success or the motivation to start a business (e.g. Watson et al., 1998; Walker and Brown, 2004; Gorgievski et al; 2011; Kautonen et al., 2014). In addition, we control for the household income, in order to capture the impact of push versus pull factors in starting and running a business. Furthermore, several organization-specific characteristics, such as firm size, industry sectors, office location and whether the firm is a family business, are also found to be relevant to how entrepreneurs evaluate their success (Carree and Verheul, 2012; Schulze et al., 2003; Walker and Brown, 2004; Gomez-Mejia et al., 2007; Block et al., 2015; Chrisman et al., 2014). We thus also include them as control variables in the empirical model. Control variables are described in Appendix A.

Estimation Methodology

In order to examine the relationship between EI and success criteria perceived by entrepreneurs, we applied seemingly unrelated regression (SUR) proposed by Zellner (1962). We estimate a set of seven success criteria equations with cross-equation parameter restrictions and correlated error terms. Such equations can also be estimated with the help of Ordinary Least Squares (OLS). However, when the error terms of these equations are significantly correlated, the OLS coefficients of each equation are inefficient. In our case, our dependent variables are seven success criteria, i.e. business performance, firm growth, employee satisfaction, social responsibility, personal satisfaction, a good work-life balance and customer satisfaction. We assume that these variables are very likely to correlate. To test whether the estimated correlations between the seven equations are statistically significant, we apply the Breusch and Pagan test for independence (Breusch and Pagan, 1980). The null hypothesis assumes that the covariance between the seven equations is equal to zero. The Breusch-Pagan test shows that the calculated χ^2 values range from 52.04 to 81.10 ($p < 0.001$) which suggests rejections of the null hypotheses at all significance levels in our empirical model. This confirms that SUR is an appropriate method to use.

4. Results

Bivariate relationships are first examined using Pearson product-moment bivariate correlation statistics. As indicated in Table 3, except for the two categories of individual's age, which has a correlation coefficient of -0.59, none

of our independent variables are highly correlated.³ Moreover, as a prior step to seemingly unrelated regression (SUR) analysis, we checked for multicollinearity by calculating the Variation Inflation Factors (VIF) scores for each of the regressions. The values of the VIFs range between 1.23 and 3.47, below the cut-off value of 10 (Neter et al. 1990), so we can conclude that multicollinearity is unlikely to be an issue.

Table 3: Correlation table (Obs. = 112)

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1 Bus. Perf.	0.00	0.26	0.34	0.37	0.19	0.34	0.03	0.05	0.02	-0.07	0.06	0.19	0.04	0.12	-0.05	0.07	-0.05	-0.00	0.37	-0.23	-0.27	0.17	
2 Firm growth		0.33	0.22	0.07	0.12	0.08	0.29	0.19	0.02	-0.11	-0.22	0.20	0.25	0.31	-0.37	0.13	-0.01	0.01	0.21	-0.07	0.00	0.12	
3 Employee satisfaction			0.46	0.30	-0.10	0.18	0.25	0.05	0.19	-0.15	-0.11	0.13	0.18	0.14	-0.43	-0.05	-0.09	-0.08	0.29	-0.10	-0.09	0.28	
4 Social resp.				0.43	0.14	0.38	0.21	-0.01	0.09	-0.11	-0.01	0.11	0.17	0.24	-0.22	-0.04	0.03	-0.04	0.24	-0.16	-0.11	0.39	
5 Personal satisfaction					0.23	0.39	-0.14	0.00	0.12	-0.07	-0.04	0.07	0.09	0.21	-0.01	-0.21	-0.08	-0.04	0.18	-0.03	-0.20	0.57	
6 Balanced life						0.14	-0.03	0.08	-0.01	-0.11	0.06	0.20	0.19	-0.02	0.03	-0.05	-0.03	0.06	0.07	-0.18	-0.17	0.10	
7 Customer satisfaction							-0.07	0.04	0.01	-0.02	0.08	0.06	0.14	0.18	0.06	-0.19	-0.09	0.06	0.08	-0.11	-0.03	0.45	
8 Firm size								0.03	-0.04	-0.13	-0.10	0.01	0.20	0.21	-0.39	0.13	0.29	-0.05	0.25	-0.08	-0.08	-0.08	
9 Age 40									-0.26	-0.29	0.05	-0.03	-0.14	0.19	-0.07	-0.00	0.02	0.08	0.03	-0.06	-0.05	0.02	
10 Age 50										-0.59	-0.06	-0.02	0.01	-0.02	-0.10	-0.00	-0.00	0.01	0.09	-0.01	-0.10	-0.03	
11 Age 60											-0.12	-0.07	-0.06	-0.12	0.07	-0.02	-0.12	-0.13	-0.15	0.09	0.17	-0.03	
12 Industry exp.												-0.18	0.05	0.13	0.19	-0.00	-0.10	-0.07	-0.02	-0.26	0.09	0.04	
13 Ent. exp.													0.35	-0.04	-0.03	0.03	0.04	0.06	-0.08	-0.10	-0.09	0.11	
14 Manag. exp.														0.03	-0.03	0.09	0.02	0.08	0.16	-0.20	-0.02	0.14	
15 Risktaking															-0.23	0.19	0.13	-0.04	0.13	-0.01	-0.19	0.23	
16 Office loc.																-0.14	-0.14	-0.08	-0.38	0.00	0.20	-0.09	
17 Gender																	0.12	-0.11	0.02	0.07	0.06	-0.22	
18 Family bus.																			-0.02	0.16	-0.15	0.02	-0.02
19 High edu.																				0.09	0.03	-0.16	0.05
20 Com. income																					-0.17	-0.13	0.09
21 Bad income																						-0.02	-0.05
22 Dif. income																							-0.07
23 Emotional Intelligence																							1.00

We first examine the relationships between EI as a whole and seven success criteria. Results from SUR show that EI is significantly and positively correlated with several success criteria (see Table 4): business performance (B=0.17, p<0.05), employee satisfaction (B=0.22, p<0.05), social responsibility (B=0.33, p<0.01), personal satisfaction (B=0.56, p<0.01) and customer satisfaction (B=0.47, p<0.01). As regards control variables, we find that socio-demographic factors such as different types of experience only matter to the business-oriented success criteria. Entrepreneurs with entrepreneurial experience are more likely to perceive their business performance as a success (B=0.53, p<0.01). Entrepreneurs with industry experience are less likely (B=-0.44, p<0.05) while those with management experience are more likely to perceive firm growth as a

3. We repeated the correlation matrix for the model using the sub-dimensions of EI and obtained similar results as those in Table 3.

success ($B=0.45$, $p<0.05$). Moreover, risk-taking is only positively correlated with firm growth ($B=0.21$, $p<0.01$). We further observe a positive relation of household income with two perceived success criteria, that is, business performance and personal satisfaction. Entrepreneurs with comfortable household income are more likely to score high on these two criteria.

Table 4: Explaining entrepreneurs' self-perceived success from EI as a whole (Obs.=112)^a

	Business performance	Firm growth	Employee satisfaction	Social responsibility	Personal satisfaction	A good work life balance	Customer satisfaction
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Emotional intelligence (EI)	0.17 (0.08)**	0.02 (0.08)	0.22 (0.09)**	0.33 (0.09)***	0.56 (0.09)***	0.05 (0.10)	0.47 (0.11)***
Control variables							
Firm size	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)*	0.01 (0.01)**	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Age category ^b							
Age 40	0.21 (0.32)	0.47 (0.32)	0.37 (0.34)	-0.07 (0.36)	0.12 (0.34)	0.16 (0.40)	0.22 (0.41)
Age 50	0.23 (0.26)	-0.05 (0.26)	0.53 (0.28)*	0.33 (0.29)	0.33 (0.27)	-0.22 (0.32)	0.24 (0.33)
Age 60	0.32 (0.27)	-0.18 (0.27)	0.10 (0.29)	0.08 (0.30)	0.09 (0.28)	-0.25 (0.33)	0.19 (0.34)
Industry exp.	0.10 (0.20)	-0.44 (0.20)**	-0.18 (0.21)	-0.12 (0.22)	-0.25 (0.21)	0.13 (0.24)	-0.01 (0.25)
Ent. exp.	0.53 (0.19)***	0.26 (0.19)	0.24 (0.21)	0.22 (0.21)	0.05 (0.20)	0.31 (0.24)	0.01 (0.24)
Manag. exp.	-0.30 (0.18)	0.45 (0.18)**	0.22 (0.20)	0.12 (0.20)	0.07 (0.19)	0.26 (0.22)	0.15 (0.23)
Risktaking	0.02 (0.06)	0.21 (0.06)***	0.01 (0.07)	0.10 (0.07)	0.11 (0.07)	-0.06 (0.08)	0.13 (0.08)
Office location	0.49 (0.20)**	-0.49 (0.20)**	-0.67 (0.21)***	-0.04 (0.22)	0.29 (0.21)	0.07 (0.24)	0.40 (0.25)
Gender	0.37 (0.23)	0.14 (0.23)	-0.16 (0.24)	-0.03 (0.25)	-0.31 (0.24)	0.02 (0.28)	-0.35 (0.29)
Family business	-0.27 (0.17)	-0.49 (0.17)***	-0.47 (0.18)***	-0.23 (0.18)	-0.13 (0.18)	-0.09 (0.21)	-0.22 (0.21)
High education	-0.09 (0.16)	-0.09 (0.16)	-0.25 (0.17)	-0.05 (0.18)	-0.25 (0.17)	-0.04 (0.23)	0.07 (0.20)
Household income ^c							
Comfortable	0.82 (0.17)***	0.01 (0.17)	0.26 (0.19)	0.21 (0.19)	0.41 (0.18)**	0.09 (0.21)	0.14 (0.22)
Bad	-1.11 (0.52)**	-0.49 (0.53)	-0.52 (0.56)	-1.12 (0.58)*	-0.02 (0.55)	-0.75 (0.64)	-0.50 (0.66)
Somewhat difficult	-1.92 (0.60)***	1.14 (0.60)*	0.53 (0.64)	0.20 (0.67)	-1.13 (0.63)*	-1.39 (0.74)*	0.04 (0.76)
Industry dummies	Included	Included	Included	Included	Included	Included	Included
R-square	0.41	0.44	0.40	0.35	0.45	0.14	0.28

^a The results were obtained using SUR estimation

^b The reference group for age category is the age above 60

^c The reference group for the household income is the reasonable income category

Note: SE, standard error; * $0.1 > p \geq 0.05$; ** $0.05 > p \geq 0.01$; *** $p < 0.01$.

Secondly, we examine the relationships between the dimensions of EI and success criteria (see Table 5). We find that emotion in oneself is only positively correlated with customer satisfaction ($B=0.27$, $p<0.05$). Emotion in others does not correlate with any success criteria. Regulation of emotion in oneself is only slightly correlated with firm growth ($B=0.16$, $p<0.10$). Regulation of emotion in others seems to be the most dominant dimension that correlates to five success criteria: business performance ($B=0.34$, $p<0.01$), employee satisfaction ($B=0.25$, $p<0.05$), social responsibility ($B=0.24$, $p<0.05$), personal satisfaction ($B=0.39$, $p<0.01$) and customer satisfaction ($B=0.49$, $p<0.01$). Flexible planning and creative thinking is negatively correlated with business performance ($B=-0.23$, $p<0.01$) and social responsibility ($B=-0.19$, $p<0.05$). Mood redirect attention correlates significantly and positively with social responsibility ($B=0.28$, $p<0.01$)

and personal satisfaction ($B=0.21, p<0.05$), while it is significantly and negatively related to a good work-life balance ($B=-0.25, p<0.05$). Motivating emotions is significantly and positively correlated with personal satisfaction ($B=0.27, p<0.01$). As regards control variables, we observe fairly similar results as those in Table 4.

Table 5: Explaining entrepreneurs' self-perceived success from EI sub-dimensions (Obs.=112)^a

	Business performance	Firm growth	Employee satisfaction	Social responsibility	Personal satisfaction	A good work life balance	Customer satisfaction
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
EI sub-dimensions							
Emotion in oneself	0.07 (0.10)	-0.02 (0.11)	-0.04 (0.12)	0.09 (0.12)	-0.14 (0.11)	0.16 (0.13)	0.27 (0.13)**
Emotion in others	-0.12 (0.09)	-0.10 (0.10)	-0.03 (0.11)	-0.16 (0.11)	-0.04 (0.10)	0.17 (0.12)	-0.14 (0.12)
Reg of emotion oneself	0.13 (0.08)	0.16 (0.09)*	0.08 (0.10)	-0.03 (0.09)	0.08 (0.09)	0.02 (0.11)	-0.01 (0.11)
Reg of emotion others	0.34 (0.09)***	0.02 (0.10)	0.25 (0.11)**	0.24 (0.10)**	0.39 (0.10)***	0.09 (0.12)	0.49 (0.12)***
Flex. planning & creative thinking	-0.23 (0.08)***	0.03 (0.09)	-0.03 (0.09)	-0.19 (0.09)**	-0.01 (0.09)	-0.17 (0.10)	-0.11 (0.10)
Mood redirect attention	-0.06 (0.09)	-0.01 (0.10)	0.07 (0.10)	0.28 (0.10)***	0.21 (0.09)**	-0.25 (0.11)**	0.08 (0.11)
Motivating emotions	0.05 (0.09)	-0.01 (0.10)	-0.02 (0.11)	0.15 (0.10)	0.27 (0.10)***	0.01 (0.12)	0.06 (0.12)
Control variables							
Firm size	0.00 (0.00)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)*	-0.01 (0.00)*	-0.01 (0.01)	-0.01 (0.01)
Age category^b							
Age 40	0.15 (0.31)	0.25 (0.34)	0.25 (0.36)	-0.05 (0.35)	-0.09 (0.33)	0.46 (0.40)	0.22 (0.40)
Age 50	0.16 (0.24)	-0.18 (0.27)	0.44 (0.29)	0.26 (0.28)	0.23 (0.26)	-0.02 (0.32)	0.19 (0.32)
Age 60	0.30 (0.25)	-0.30 (0.27)	0.07 (0.29)	0.11 (0.28)	0.15 (0.27)	-0.14 (0.33)	0.15 (0.32)
Industry exp.	0.10 (0.18)	-0.42 (0.20)**	-0.18 (0.21)	-0.02 (0.21)	-0.17 (0.20)	0.03 (0.24)	0.01 (0.24)
Ent. exp.	0.45 (0.18)**	0.25 (0.20)	0.25 (0.21)	0.36 (0.21)*	0.17 (0.19)	0.14 (0.24)	0.00 (0.24)
Manag. exp.	-0.41 (0.17)**	0.39 (0.18)**	0.17 (0.20)	0.07 (0.19)	-0.01 (0.18)	0.29 (0.22)	0.10 (0.22)
Risktaking	-0.02 (0.06)	0.21 (0.06)***	-0.01 (0.07)	0.08 (0.07)	0.09 (0.06)	-0.08 (0.08)	0.09 (0.07)
Office location	0.47 (0.19)**	-0.52 (0.21)**	-0.71 (0.22)***	-0.16 (0.21)	0.29 (0.20)	0.19 (0.25)	0.28 (0.24)
Gender	0.50 (0.21)**	0.16 (0.23)	-0.05 (0.25)	0.05 (0.24)	-0.18 (0.23)	0.02 (0.28)	-0.30 (0.27)
Family business	-0.11 (0.16)	-0.46 (0.17)***	-0.41 (0.18)**	-0.15 (0.18)	-0.08 (0.17)	-0.05 (0.21)	-0.01 (0.20)
High education	-0.27 (0.15)*	-0.07 (0.16)	-0.32 (0.17)*	-0.19 (0.17)	-0.40 (0.16)**	-0.11 (0.19)	-0.11 (0.19)
Household income^c							
Comfortable	0.73 (0.17)***	-0.02 (0.18)	0.29 (0.19)	0.11 (0.19)	0.41 (0.18)**	0.07 (0.22)	-0.01 (0.22)
Bad	-1.79 (0.51)***	-0.37 (0.56)	-0.66 (0.61)	-1.18 (0.58)**	-0.02 (0.55)	-1.61 (0.67)**	-0.96 (0.67)
Somewhat difficult	-1.77 (0.54)***	1.20 (0.60)**	0.43 (0.64)	0.17 (0.62)	-1.16 (0.58)**	-1.28 (0.71)*	-0.00 (0.70)
Industry dummies	Included	Included	Included	Included	Included	Included	Included
R square	0.53	0.47	0.42	0.45	0.54	0.22	0.38

^a The results were obtained using SUR estimation

^b The reference group for age category is the age above 60

^c The reference group for the household income is the reasonable income category

Note: SE, standard error; * $0.1 > p \geq 0.05$; ** $0.05 > p \geq 0.01$; *** $p < 0.01$.

We recognize that the number of independent variables included in our regression model is relatively high for the number of observations. Therefore, as a robustness test, we also ran a series of regressions in which only the most relevant control variables, i.e. entrepreneurial experience, industry experience, management experience, risk-taking, and household income, discussed in Tables

4 and 5, were included. Results for our EI variables remained fairly similar to those in Tables 4 and 5.⁴

5. Conclusions

This study contributes to entrepreneurship literature by introducing emotional intelligence as a missing component that also explains self-perceived success criteria of entrepreneurs. Using survey data of 112 Dutch entrepreneurs, we find that emotional intelligence plays different roles for different dimensions of entrepreneurial success. While previous research indicates that emotional intelligence can explain entrepreneurial success via the development of key strategic capabilities that enhance business performance, our study shows that the link between EI and entrepreneurial success differs across dimensions of EI and of entrepreneurial success.

In general, we find that emotionally intelligent entrepreneurs are more likely to judge positively their entrepreneurial success in terms of the following criteria: employee satisfaction, social responsibility, personal satisfaction, customer satisfaction and business performance. Though less explicit for business performance, the commonality among all criteria is that all of them require social skills of managing one's own and others' emotions or moods in order to meet a particular goal. These criteria also reflect the key social interactions involved in the daily practices of entrepreneurial firms, such as gaining and maintaining customers, attracting, selecting and handling employees, which are key assets particularly for small firms. Entrepreneurs with a high ability to identify, understand, and manage emotional responses of themselves and others, can obtain competitive advantages by managing these relationships (Ingram et al., 2017).

As regards different dimensions of EI, we find that *Regulation of emotions in others* has a triple bottom-line: stakeholders' satisfaction but also self-satisfaction and business performance. Awareness of this ability is related to managing others' emotions in order to meet particular goals. Entrepreneurs with such ability might be sensitive about stakeholders' outcomes and consequently prioritize stakeholders' satisfaction. Satisfying stakeholders (customers, employees, society in general) is congruent with raising financial performance and also personal satisfaction. It is evident from our results that the effect of EI as a whole on perceived entrepreneurial success is mainly driven by this sub-dimension of EI.

Moreover, our findings suggest that not all the dimensions of EI are relevant for explaining self-perceived entrepreneurial success. The dimensions of EI referred to as *appraisal and expression of emotion in oneself and in others*, as well as *regulation of emotion in oneself* are not significantly associated with most of

4. These results are available on request from the authors.

the success criteria, except for the positive relationship between emotion in oneself and customer satisfaction, and the positive relationship between regulation of emotion in oneself and firm growth. The former relationship indicates that entrepreneurs with high ability in accurately appraising their own emotions are better at expressing those emotions to others and are likely to score high on satisfying customers. The latter one indicates that entrepreneurs with high ability in adapting and reinforcing their mood states to meet certain goals are likely to perceive higher firm growth.

Flexible planning and creative thinking involves continuous exploration for new plans and future opportunities. This ability might be associated with preference for different types of outcomes, such as bringing up breakthrough innovations, rather than (short-term) financial results or social responsibility. This is confirmed by our results of its negative relationships with business performance as well as social responsibility.

Mood redirect attention is positively associated with personal satisfaction and social responsibility but negatively related to a good work-life balance. This result suggests that the capacity to reprioritize internal and external demands is associated with preference for both personal and social outcomes, but this might be done at the expense of work-life balance.

Motivating emotions is found to be positively associated with personal satisfaction. This indicates that entrepreneurs with high ability in utilizing moods to motivate persistence at challenging tasks are likely to score high on personal satisfaction. This also reflects self-actualization of entrepreneurs. As argued by Salovey and Mayer (1990), individuals with high motivating emotions are more likely to ask themselves how happy they are in their career instead of how much they will earn in their career. Thus, entrepreneurs with high motivating emotions are more likely to see themselves successful when they feel self-actualized instead of other business-oriented criteria.

Our study has a number of limitations. First of all, we only examine the relationship between EI and subjective success criteria. Further research is required to explore how this relationship in turn affects actual performance. Second, we rely on self-reported data from entrepreneurs, reflecting their judgments on their own EI and entrepreneurial success. These methodological choices raise the risk of retrospective recall bias, common method bias, and validity of some of the self-report data. Third, the current study uses a cross-sectional dataset. Future research might use a longitudinal dataset. This would allow a more thorough means to examine if and how EI develops over time and if such development influences perceived entrepreneurial success. Fourth, the number of observations in our regression model is relatively low for the number of independent variables included in our model. Therefore, the analysis presented in the current paper should be regarded as exploratory. Last, as indicated by recent studies, EI might explain entrepreneurial success by affecting opportunity identification and evaluation (Baron and Tang, 2011), resource mobilization

(Shepherd, 2004; Shepherd et al., 2009), innovativeness (Nghah and Salleh, 2015) and economic and financial performance (Ingram et al., 2017). Therefore, future research can investigate the mediating effects of those variables in the relationship between EI and entrepreneurial success.

Nevertheless, this work should be seen as one of the few explorative studies on the relationship between EI and self-perceived success of entrepreneurs. The findings of this study give new insights from a capability-based view of entrepreneurs to policy makers, who need to understand how entrepreneurs perceive their own success in order to promote valuable entrepreneurial activities that lead to innovation, employment and economic growth (Van Praag and Versloot, 2007; Wach et al., 2016; Cardon et al., 2017).

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Appendix A: Description of control variables

Control variables	Description
Firm size	The number of full-time employees in the current business
Age of entrepreneur	What is your age category? (1=less than 40 years old; 2=between 40 and 50 years old; 3=between 50 and 60 years old; 4=more than 60 years old)
Industry experience	Before your current business, have you worked in the industry in which your current business locates? (1=Yes, 0=No)
Entrepreneurial experience	Before your current business, have you ever run a business of your own? (1=Yes, 0=No)
Managerial experience	Before your current business, have you ever had experience as manager? (1=Yes, 0=No)
Risk-taking	To what extent do you agree with the following statement: I take regularly (calculated) risk. (1=completely disagree; 2=disagree; 3=little disagree; 4=little agree; 5=agree; 6=completely agree)
Office location	Do you use home as your office place? (1=Yes, 0=No, I have a separate office place)
Gender	What is your gender? (1=Male; 0=Female)
Family business	Is your current business a family business? (1=Yes, 0=No)
High education	What is your highest educational level? (1=HBO/WO, 0=otherwise)
Household income	How will you describe your household income? (1= we find it very difficult to get around; 2= we find it difficult to get around; 3= we can live nicely; 4= we can live comfortably)
Sector	In which sector does your business locate? 1= Agriculture; 2=Manufacturing; 3=Service; 4= Non-commercial service; 5= Business service; 6= others