Investigating the Effect of Emotional Intelligence and Personality Traits on Entrepreneurial Intention Using the Fuzzy DEMATEL Method

Ali Mobini Dehkordi
AssistantProfessor
Faculty of Entrepreneurship
University of Tehran
Iran

Ali Sasani
M.A. Candidate of Entrepreneurship Management
University of Tehran
Iran

Mohammad Reza Fathi
M.A. Candidate of Industrial Management
University of Tehran
Iran

Ehsan Khanmohammadi
M.A. Candidate of Industrial Management
University of Tehran
Iran

Abstract

Entrepreneurial intention is a result of new approaches in entrepreneurship studies in recent years. According to literature, there are several factors which affect on Entrepreneurial intention such as entrepreneurial knowledge, desirability of the entrepreneurial activity, or its feasibility, culture and work experience, and role model. In this paper, we focused on two main factors (Personality traits and Emotional intelligence) that have important effect on Entrepreneurial intention but have been studied their effects together less. At first we have tried to identify factors of Personality traits and Emotional intelligence affective on Entrepreneurial intention and after that we have ranked these factors using of fuzzy decision-making trial and evaluation laboratory (DEMATEL) method.According to fuzzy DEMATEL result,need of achievement (C_1) is the most important factor that affect on Entrepreneurial Intention.

Keywords: Emotional intelligence (EI), Personality traits, Entrepreneurship, Entrepreneurial intentions, Fuzzy theory, DEMATEL

1. Introduction

Promoting entrepreneurship may be vital for the success of today's societies, which face enormous economic and social challenges (Audretsch, 2007). Therefore the entrepreneur is the main responsible for economic development, as it is understood nowadays. Most authoritative conceptions about the entrepreneur's figure (Knight, 1921; Shumpeter, 1934; Kirzner, 1998) stress his/her promoter role in the economy, above and beyond other more extended roles as manager and property owner (Liñán*et al*., 2005).

Humans are active agents in their own development (Brandtstädter & Lerner, 1999). They do not engage in entrepreneurship by accident; they do it intentionally as a result of choice (Krueger, 2007). Accordingly, *entrepreneurial intentions* (defined as the conscious state of mind that directs personal attention, experience, and behavior toward planned entrepreneurial behavior; Bird, 1988) are seen as the strongest proximal predictor of entrepreneurial activity and serve as a central and widely studied outcome variable in contemporary entrepreneurship research (Krueger, Reilly, & Carsrud, 2000; Lee, Wong, Foo, & Leung, in press).

Krueger *et al*.,(2000) had analyzed factors affecting entrepreneurial intentions. While analyzing relations of entrepreneurial intentions and proactivity an input of theory of planed behavior is very significant (Ajzen, 1991). On the basis of this theory entrepreneurial intentions are critical factor, defining behavior of an enterprising individual in enterprise creation, actions, attitude, subjective norms and self efficiency (Zakarevičius*et al*., 2010). Behavior is often only weakly predicted by attitudes alone or by exogenous factors that are either situational (for example, employment status or informational cues) or individual (for example, demographic characteristics or personality traits) (Krueger*et al*., 2000).

New businesses emerge over time and involve considerable planning. Thus, entrepreneurship is exactly the type of planned behavior (Bird 1988; Katz and Gartner 1988).

Previous researches suggest that *personality* is an important predictor of entrepreneurial intentions (Crant, 1996), which is consistent with general theories on career choice, such as Holland's (1997) assumption that "the choice of a vocation is an expression of personality" (p. 7). While estimating the influence of personal characteristics to entrepreneurship, an emotional intelligence, being related to interaction of human's emotions and contemplation, which has been started to analyze in the beginning of the 20th century, was invoked (Krueger*et al*., 2000). Emotional intelligence is related to human's emotions and thinking. Bandura (1997) relates emotional intelligence to self awareness (perception of emotions, management of emotions, empathy, impulsivity). Goleman ,(1998) qualify an emotional intelligence more widely by stating, that it is a set of personal (self-awareness, confidence, diligence and motivation) and social (empathy, communication, management of conflicts) capabilities.

The assumption may be done, that emotional intelligence is an important construct of entrepreneurship's development. Mikolajczak *et al*., (2006) had analyzed the importance of emotional intelligence while managing the stress. Stress settlement may be one of the ways connecting emotional intelligence and entrepreneurial intentions as well as entrepreneurship attitudes.

This current study has considered Identification and Ranking Factors of Emotional intelligence and Personality Traits Affective on Entrepreneurial Intention. Our data come from a sample of young last year undergraduate students. This population has been selected on the basis of its high propensity to start a venture (Krueger*et al*., 2000).

2. Literature review

Entrepreneurship theory has substantially advanced during the past 30 years (Liñán and Santos,2007). The main reason is the central role nowadays assigned to human capital and entrepreneurs by the scientific community in the growth of the different regions of the world economy (Wennekers and Thurik, 1999; Audretsch and Thurik, 2000; Galindo and Alvarez, 2004).

A large number of studies on qualitative aspects of entrepreneurs have focused on the psychological characteristics and personality traits which differentiate both successful entrepreneur from non-successful entrepreneurs, and entrepreneurs from the rest of the population (Borland, 1975).Many authors looked for the existence of certain personality features or traits that could be associated with the entrepreneurial activity (McClelland, 1961; 1985). Research has strongly supported psychological attributes, not perception and awareness, as the theoretical cornerstone for predicting adult entrepreneurial behavior and potential (Lumpkin,2004).

The different fields of study within the entrepreneurship research program have recently focused both on the analysis of the characteristics of existing entrepreneurs and their quality (Davidsson, 1991; Lumpkin and Dess, 1996; Santos and Guzmán, 2001), and also on the analysis of the characteristics of potential entrepreneurs and the firm-creation process (Krueger and Carsrud, 1993; Reynolds et al., 1999; Liñán, 2004).

Both lines of analysis have allowed the identification of significant relationships among certain traits or demographic characteristics of the individual, and the fulfillment of entrepreneurial behaviors (Liñán *et al*., 2006). However, their predictive capacity has been very limited (Reynolds, 1997).

From a third perspective, since the decision to become an entrepreneur may be plausibly considered as voluntary and conscious (Krueger *et al*., 2000), it seems reasonable to analyze how that decision is taken (Liñán *et al*., 2006).

Entrepreneurship may be viewed as a process that occurs over time (Gartner *et al*., 1994; Kyrö and Carrier, 2005). In this sense, entrepreneurial intentions would be the first step in the evolving and –sometimes- long term process of venture creation (Lee and Wong, 2004). In the psychological literature, intentions have proven the best predictor of planned behavior, particularly when behavior is rare or difficult to observe (Ajzen, 1991), intentions offer critical insights into underlying processes such as opportunity recognition (Krueger et al.,2000).

According to Bird (1988), intentionality can be defined as a state of mind directing a person's attention, experience and action towards a specific goal or a path to achieve something. Therefore, entrepreneurial action can be also classified as an intentional behavior (Bird, 1988; Shapero, 1982) or intention is a predictor of planned entrepreneurial behavior (Krueger, 1993). Shapero (1982) indicated that the entrepreneurial intention stems from the perception of feasibility and desirability of a person and this path is affected by the cultural and social context. Based on the models of Shapero (1982) and Ajzen (1991), a process-based approach has been widely used by the scholars in the literature (Krueger, 1993; Krueger and Brazeal, 1994; Krueger and Carsrud, 1993).

Empirical studies, analyzing relation of emotional intelligence with entrepreneurial intentions only had been started to carry out. Zampetakis *et al*., (2009) made a significant input in creation of theoretical model, connecting emotional intelligence and entrepreneurship attitudes, as well as entrepreneurial intentions. Authors integrate emotional intelligence and entrepreneurial intentions with features of an individual (Zakarevičius*et al*., 2010). The study carried out by Zampetakis *et al*.,(2009) states the entrepreneurial intentions as the result of emotional intelligence. Krueger et al.,(2000), Lee and Wong, (2004) have presented the model of entrepreneurial intentions. The intentions are assessed by affecting behavior of individual and are useful while realizing the choice of student's career, related to behavior of own business organization (Krueger *et al*., 2000).

The distal roots of emotional intelligence (EI) can be traced back to the concept of "socialintelligence" coined by Thorndike (1920) to refer to the ability to understand and manage people and to act wisely in human relations. Its proximal roots lie in Gardner's work on multiple intelligences and, more specifically, in his concepts of intrapersonal and interpersonal intelligence (Petrides, 2010). According to Gardner (1999), "interpersonal *intelligence* denotes a person's capacity to understand the intentions, motivations, and desires of other people and, consequently, to work effectively with others" (p. 43). By contrast, " *intrapersonal intelligence* involves the capacity to understand oneself, to have an effective working model of oneself — including one ' s own desires, fears, and capacities — and to use such information effectively in regulating one ' s own life " (p. 43).

Researchers suggested that entrepreneurs possess some key psychological attributes or characteristics, and that these in turn produce specific personality traits. Need for achievement, tolerance for ambiguity, risk taking and locus of control were analyzed with respect to entrepreneurial characteristics and were identified as correlates of being or desiring to be an entrepreneur (Olson, 2004).

Ang and Hong (2000) compared entrepreneurial spirits of university students in Hong Kong and Singapore. The study concentrated specifically on the role of some personality characteristics (risk-taking propensity, tolerance for ambiguity, internal locus of control, innovativeness, and independence) and motivational factors (love for money, desire for security, and desire for status), rather than the differences in the contextual factors. Wang and Wong (2004) explained entrepreneurial interest of students in Singapore based on personal background.

The proposed model of Lu¨thje and Franke (2003) incorporated both personality traits and contextual factors. The study revealed that the impact of attitude towards self-employment might be linked to two personality traits (risk-taking propensity and internal locus of control) and two contextual factors (perceived barriers and perceived support). The study of Turker *et al*., (2005) also considered the impacts of both internal factors (motivation and self-confidence) and external factors (perceived level of education, opportunities, and support) on entrepreneurial propensity of university students. The study found that two internal factors and perceived level of support were statistically significant factors. In a cross-cultural study, Parnell *et al*., (1995) compared the entrepreneurial propensity of American and Egyptian university students. In their study, entrepreneurial propensity was taken as a function of self-confidence, perceived level of education, and perceived opportunities. The study revealed that entrepreneurial propensity of American students is greater than Egyptian students.

According to Previous study, individual's intentions and actions include the contour of faith and desires (Ajzen, 1991; Greve, 2001). Bandura, (1977) associates feasibility to self-efficiency of an individual, and this factor is related to emotional intelligence.

This fact allows personal characteristics of individual link to business organization intentions within the emotional intelligence (Zakarevičius*et al*., 2010).

After detailing the feature of emotional intelligence by the identified characteristics typical for entrepreneurs in entrepreneurship literature, it can be identified how do these features are set need of achievement, tendency to risk (McClelland, 1961), internal control, self confidence (Timmons, 1999) of an individual and other personality traits. A conceptual model of entrepreneurial intentions will help to identify links between personality traits, emotional intelligence and entrepreneurial intentions that has been shown in below(Figure 1):

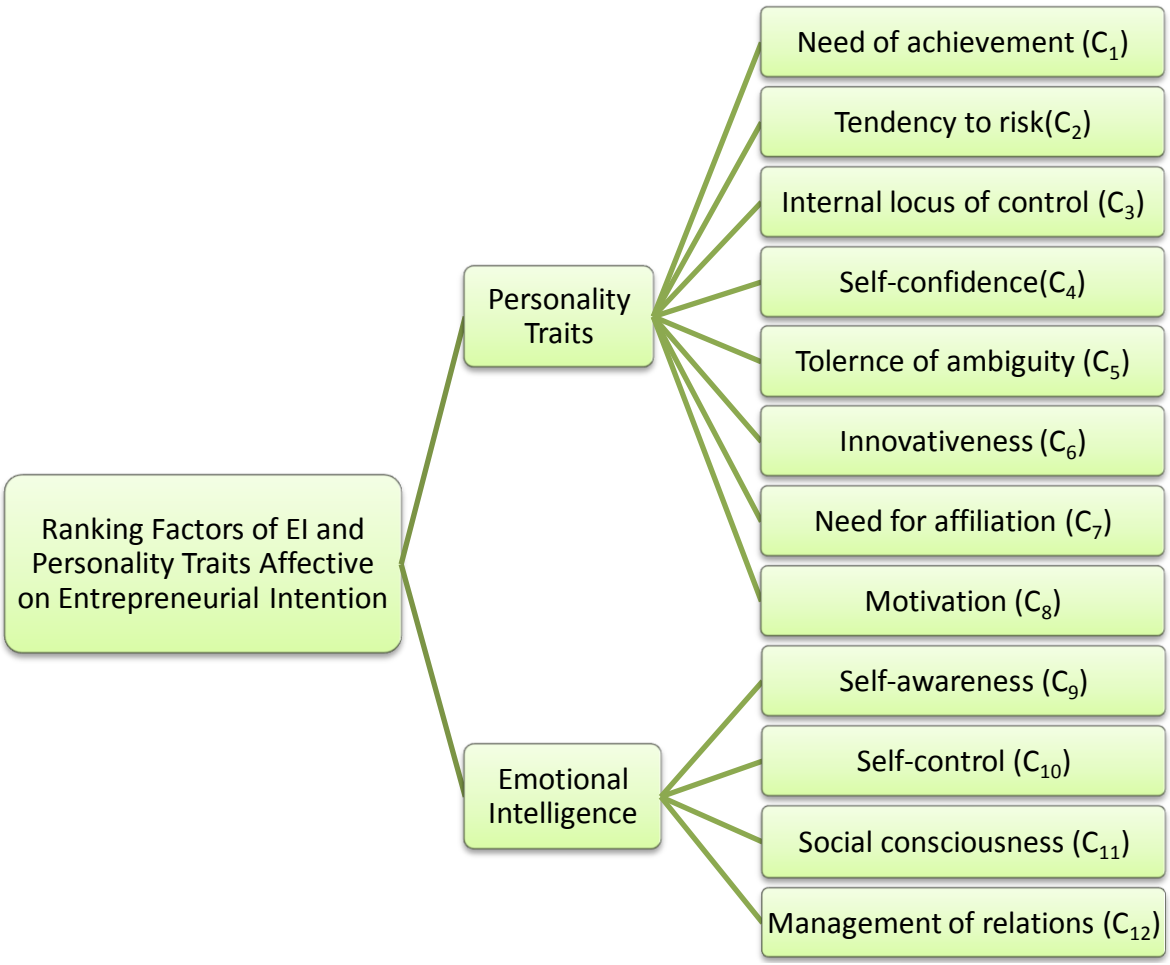


Figure 1: Conceptual Model

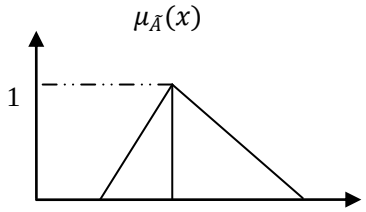
3. Research Methodology

The empirical analysis was carried out through three questionnaires given to a sample of young undergraduate students in the last year of their Economics and Management degrees. This kind of sample is very common in entrepreneurship studies (Krueger *et al*., 2000). The sample was obtained from economics and management faculty of Tehran University. In the study, 73 respondents were randomly selected according to the proportions of these two faculties. The sample consisted of 69.2% Management students, and the remaining were Economics students. With regard to other demographic aspects, 55% of interviewees were women, while the average age was 23.7 years old. Fieldwork was carried out during April and May of 2011. The Entrepreneurial Intention Questionnaire (EIQ) used for the analysis has been carefully developed from the entrepreneurship literature (Krueger, et al., 2000) and Emotional intelligence Questionnaire (Crowne, 2007) used for the analysis of emotional intelligence and for analysis of personality traits, a compound of several Questionnaires have been used which are:The need for achievement and affiliation were measured by the 10 items that were selected from the scale developed by The McGraw-Hill Companies (2005) to measure motivation in achievement, power and affiliation. Internal locus of control was measured using items from Rotter's locus of control scale (Rotter, 1954).

The original scale consists of29 pairs and has a force choice format. For this study, 5 items that seemed most suitable for a student sample were selected. Propensity for risk-taking was measured by using 5 items from the extraversion and introversion scale (Mayer, 1996). And tolerance for ambiguity was measured by using 5 items selected from the scale (16 items) of tolerance for ambiguity. Items that would be most relevant to student's life were selected. Additionally, motivation was measured using items from Taormina et al. (2007) scale and innovativeness was measured using Questionnaire of Gorbetta *et al.* (2005). In these questionnaires, all responses were obtained on a 5-point Likert-type scale from strongly agree to strongly disagree.The rest of the paper is organized as follows: The following section presents a concise treatment of the basic concepts of fuzzy set theory. Section 3.2 presents the methodology of fuzzy DEMATEL. The application of the proposed framework is addressed in Section 4. Finally, conclusions are provided in Section 5.

3.1. Fuzzy sets and Fuzzy Numbers

Fuzzy set theory, which was introduced by Zadeh (1965) to deal with problems in which a source of vagueness is involved, has been utilized for incorporating imprecise data into the decision framework. A fuzzy set $\tilde{A}$ can be defined mathematically by a membership function$\mu_{\tilde{A}}(X)$, which assigns each element x in the universe of discourse X a real number in the interval [0,1]. A triangular fuzzy number $\tilde{A}$can be defined by a triplet (a, b, c) as illustrated in Fig 2.



F L **re** 2 Mtriangu Ufuzzy number $\tilde{A}$

The membership function$\mu_{\tilde{A}}(X)$is defined as

$$\mu_{\tilde{A}}(x) = \begin{cases} \frac{x-a}{b-a} & a \le x \le b \\ \frac{x-c}{b-c} & b \le x \le c \\ 0 & otherwise \end{cases} \quad (1)$$

Basic arithmetic operations on triangular fuzzy numbers $A_1 = (a_1,b_1,c_1)$, where $a_1 \le b_1 \le c_1$, and $A_2 = (a_2,b_2,c_2)$, where $a_2 \le b_2 \le c_2$,can be shown as follows:

Addition: $A_1 \oplus A_2 = (a_1 + a_2 ,b_1 + b_2,c_1 + c_2)$ (2)

Subtraction: $A_1 \ominus A_2 = (a_1 - c_2 ,b_1 - b_2,c_1 - a_2)$ (3)

Multiplication: if k is a scalar

$$k \otimes A_1 = \begin{cases} (ka_1 , kb_1, kc_1), & k > 0 \\ (kc_1 , kb_1, ka_1), & k < 0 \end{cases}$$

$A_1 \otimes A_2 \approx (a_1a_2 ,b_1b_2,c_1c_2)$, if $a_1 \ge 0$, $a_2 \ge 0$ (4)

Division: $A_1 \oslash A_2 \approx (\frac{a_1}{c_2} , \frac{b_1}{b_2} , \frac{c_1}{a_2})$, if $a_1 \ge 0$, $a_2 \ge 0$ (5)

Although multiplication and division operations on triangular fuzzy numbers do not necessarily yield a triangular fuzzy number, triangular fuzzy number approximations can be used for many practical applications (Kaufmann& Gupta, 1988). Triangular fuzzy numbers are appropriate for quantifying the vague information about most decision.

The primary reason for using triangular fuzzy numbers can be stated as their intuitive and computational-efficient representation (Karsak, 2002). A linguistic variable is defined as a variable whose values are not numbers, but words or sentences in natural or artificial language. The concept of a linguistic variable appears as a useful means for providing approximate characterization of phenomena that are too complex or ill defined to be described in conventional quantitative terms (Zadeh, 1975).

3.2. The fuzzy DEMATEL method

The Decision Making Trial and Evaluation Laboratory (DEMATEL) method is presented in 1973 (Fontela & Gabus, 1976), as a kind of structural modeling approach about a problem. DEMATEL is an extended method for building and analyzing a structural model for analyzing the influence relation among complex criteria. However, making decisions is very difficulty in fuzzy environment to segment complex factors. The current study uses the fuzzy DEMATEL method to obtain a more accurate analysis. The steps of Fuzzy DEMATEL as follow:

Step 1: Set up fuzzy matrix which is shown by $\tilde{z}^p$ and called Assessment Data Fuzzy Matrix.
For forming fuzzy matrix, we use fuzzy linguistic variables as shown in Table1.

Table 1.The fuzzy linguistic scale

Linguistic terms	Triangular fuzzy numbers
No influence (No)	(0.00, 0.00, 0.25)
Very low influence (VL)	(0.00, 0.25, 0.50)
Low influence (L)	(0.25, 0.50, 0.75)
High influence (H)	(0.50, 0.75, 1.00)
Very high influence (VH)	(0.75, 1.00, 1.00)

Next (Lin & Wu, 2004), it must acquire and average the assessment of executives' preferences using

$$\tilde{z} = \frac{(\tilde{z}^1 \oplus \tilde{z}^2 \oplus \ldots \oplus \tilde{z}^p)}{p} \quad (6)$$

Then, fuzzy matrix $\tilde{z}$ is produced which is shown as

$$\tilde{z} = \begin{bmatrix} 0 & \tilde{z}_{12} & \cdots & \tilde{z}_{1n} \\ \tilde{z}_{21} & 0 & 0 & \tilde{z}_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{z}_{n1} & \tilde{z}_{n2} & \cdots & 0 \end{bmatrix} \quad (7)$$

which is called initial direct-relation fuzzy matrix. In this matrix,$\tilde{z}_{ij} = (i_{ij}, m_{ij}, u_{ij})$ are triangular fuzzy numbers and $\tilde{z}_{ij} = (i = 1,2,\ldots,n)$ will be regarded as triangular fuzzy number (0, 0, 0) whenever is necessary. Then, by normalizing initial direct-relation fuzzy matrix, we acquire normalized direct-relation fuzzy matrix$\tilde{x}$ by using

$$\tilde{X} = \begin{bmatrix} \tilde{x}_{11} & \tilde{x}_{12} & \cdots & \tilde{x}_{1n} \\ \tilde{x}_{21} & \tilde{x}_{21} & 0 & x_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{x}_{n1} & \tilde{x}_{n2} & \cdots & \tilde{x}_{nn} \end{bmatrix} \quad (8)$$

$$\tilde{x}_{ij} = \frac{\tilde{Z}_{ij}}{r} = \left(\frac{l_{ij}}{r}, \frac{m_{ij}}{r}, \frac{u_{ij}}{r}\right) \quad (9)$$

$R = \max_{1 \le i \le n} \left(\sum_{j=1}^{n} u_{ij}\right)$ (10)
It is assumed at least one i such that $\sum_{j=1}^{n} u_{ij} < r$
After computing the above matrices, the total-relation fuzzy matrix $\tilde{T}$is computed. Total-relation fuzzy matrix is defined as (Lin & Wu, 2004)

$\tilde{T}= \lim_{K\to\infty}(\tilde{X}^1 + \tilde{X}^2 + \cdots + \tilde{X}^K)$ (11)

Then,

$$\tilde{T}=\begin{bmatrix} \tilde{t}_{11} & \tilde{t}_{12} & \cdots & \tilde{t}_{1n} \\ \tilde{t}_{21} & \tilde{t}_{21} & 0 & \tilde{t}_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{t}_{n1} & \tilde{t}_{n2} & \cdots & \tilde{t}_{nn} \end{bmatrix} (12)$$

In which $\tilde{t}_{ij} = (l''_{ij}, m''_{ij}, u''_{ij})$ and

$[l''_{ij}]= X_{l\times}(I - X_I^{-1})$, $[m''_{ij}]= X_{l\times}(I - X_m^{-1})$, $[u''_{ij}]= X_{l\times}(I - X_u^{-1})$ (13)

By producing matrix$\tilde{T}$, then it is calculated $(\tilde{D}_i + \tilde{R}_i)$and $(\tilde{D}_i - \tilde{R}_i)$in which $\tilde{D}_i$and $\tilde{R}_i$are the sum of row and the sum of columns of $\tilde{T}$respectively. To finalize the procedure, all calculated $\tilde{D}_i + \tilde{R}_i$and $\tilde{D}_i - \tilde{R}_i$are defuzified through suitable defuzification method. Then, there would be two sets of numbers: $(\tilde{D}_i + \tilde{R}_i)^{def}$ which shows how important the strategic objectives are, and $(\tilde{D}_i - \tilde{R}_i)^{def}$ which shows which strategic objective is cause and which one is effect. Generally, if the value $(\tilde{D}_i - \tilde{R}_i)^{def}$ is positive, the objectives belong to the cause group, and if the value $(\tilde{D}_i - \tilde{R}_i)^{def}$ is negative, the objectives belong to the effect group.

4. Application of Proposed Method

This study has been conducted foryoung undergraduate students in the last year of their degrees in economics and management faculties of Tehran University. In this case, we want to prioritize factors of emotional intelligence and personalitytraits affective on entrepreneurialintentionusing fuzzy DEMATEL. These factors are shown in Figure 1.

At the next step, subject to the fuzzy linguistic scale, every student is asked to make pair wise relationships between factor. Then, we will have 73 assessmentsdata fuzzy matrix in hand. Using (6) to average all these assessments matrices, we will have initial-direct fuzzy matrix$\tilde{z}$. Our partial results are shown in Table 2. Then, using (9), the normalized direct-relation fuzzy matrix$\tilde{x}$will be produced. The partial results are depicted in Table 3.

Table 2.The Initial direct-relation fuzzy matrix $\tilde{z}$

	Ct_1	C_2	C_3	C_4	…	C_{12}
C_1	(0,0,0)	(10,9.5,8)	(10,9.5,8)	(10,9.5,8)	…	(8,6.5,5)
C_2	(10,9.5,8)	(0,0,0)	(6,5,4)	(0,0,0)	…	(0,0,0)
C_3	(9,8,7)	(6,5,4)	(0,0,0)	(0,0,0)	…	(0,0,0)
C_4	(9,8,7)	(5,3.5,2)	(6,5,4)	(0,0,0)	…	(9,8,7)
C_5	(0,0,0)	(10,9.5,8)	(6,5,4)	(0,0,0)	…	(0,0,0)
C_6	(0,0,0)	(9.8,9.3,7.8)	(0,0,0)	(0,0,0)	…	(0,0,0)
C_7	(0,0,0)	(9.8,9.3,7.8)	(0,0,0)	(5,3.5,2)	…	(9.06,8.08,7.06)
C_8	(0,0,0)	(9.8,9.3,7.8)	(0,0,0)	(0,0,0)	…	(8,6.5,5)
C_9	(6,5,4)	(9.9,9.4,7.9)	(0,0,0)	(0,0,0)	…	(0,0,0)
C_{10}	(7.89,6.42,4.9)	(0,0,0)	(10,9.5,8)	(0,0,0)	…	(0,0,0)
C_{11}	(6.1,5.08,4.06)	(0,0,0)	(10,9.5,8)	(5.11,3.67,2.2)	…	(0,0,0)
C_{12}	(0,0,0)	(4.8,3.4,1.9)	(0,0,0)	(9.94,9.4,7.94)	…	(0,0,0)

Table 3.The normalized initial direction-relation fuzzy matrix $\tilde{x}$

	C_1	C_2	C_3	C_4	…	C_{12}
C_1	(0.0,0.0,0.0)	(0.14,0.13,0.11)	(0.14,0.13,0.11)	(0.14,0.13,0.11)	…	(0.11,0.09,0.07)
C_2	(0.14,0.13,0.11)	(0.0,0.0,0.0)	(0.08,0.07,0.06)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_3	(0.13,0.11,0.10)	(0.08,0.07,0.06)	(0.0,0.0,0.0)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_4	(0.13,0.11,0.10)	(0.07,0.05,0.03)	(0.08,0.07,0.06)	(0.0,0.0,0.0)	…	(0.13,0.11,0.10)
C_5	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.08,0.07,0.06)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_6	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.0,0.0,0.0)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_7	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.0,0.0,0.0)	(0.07,0.05,0.03)	…	(0.13,0.11,0.10)
C_8	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.0,0.0,0.0)	(0.0,0.0,0.0)	…	(0.11,0.09,0.07)
C_9	(0.08,0.07,0.06)	(0.14,0.13,0.11)	(0.0,0.0,0.0)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_{10}	(0.11,0.09,0.07)	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.0,0.0,0.0)	…	(0,0.00,0.0)
C_{11}	(0.08,0.07,0.06)	(0,0.00,0.0)	(0.14,0.13,0.11)	(0.07,0.05,0.03)	…	(0,0.00,0.0)
C_{12}	(0,0.00,0.0)	(0.07,0.05,0.03)	(0.0,0.0,0.0)	(0.14,0.13,0.11)	…	(0,0.00,0.0)

Following (13), we will acquire the total-relation fuzzy matrix which will be the last step for transforming crisp data into the fuzzy environments. Our matrix partially depicted on Table 4.

Table 4. The total-relation fuzzy matrix $\tilde{T}$

	C_1	C_2	C_3	C_4	…	C_{12}
C_1	(0.05,0.07,0.09)	(0.17,0.22,0.25)	(0.15,0.19,0.21)	(0.15,0.15,0.17)	…	(0.10,0.13,0.16)
C_2	(0.12,0.15,0.16)	(0.06,0.08,0.10)	(0.07,0.09,0.11)	(0.02,0.02,0.03)	…	(0.02,0.03,0.05)
C_3	(0.11,0.14,0.16)	(0.07,0.08,0.10)	(0.03,0.05,0.06)	(0.01,0.02,0.03)	…	(0.01,0.01,0.01)
C_4	(0.11,0.13,0.15)	(0.04,0.07,0.10)	(0.07,0.09,0.11)	(0.02,0.03,0.03)	…	(0.10,0.12,0.14)
C_5	(0.03,0.04,0.05)	(0.11,0.14,0.15)	(0.08,0.10,0.12)	(0.0,0.00,0.01)	…	(0.0,0.00,0.00)
C_6	(0.01,0.02,0.02)	(0.12,0.15,0.16)	(0.01,0.01,0.01)	(0.0,0.00,0.01)	…	(0.01,0.02,0.02)
C_7	(0.02,0.03,0.03)	(0.11,0.14,0.15)	(0.01,0.02,0.03)	(0.04,0.07,0.09)	…	(0.10,0.12,0.13)
C_8	(0.02,0.03,0.03)	(0.13,0.16,0.18)	(0.01,0.02,0.02)	(0.01,0.02,0.03)	…	(0.07,0.10,0.12)
C_9	(0.07,0.09,0.10)	(0.12,0.14.0.15)	(0.01,0.02,0.02)	(0.0,0.01,0.01)	…	(0.0,0.01,0.01)
C_{10}	(0.08,0.11,0.14)	(0.03,0.05,0.06)	(0.13,0.17,0.18)	(0.01,0.02,0.02)	…	(0.01,0.02,0.03)
C_{11}	(0.08,0.10,0.13)	(0.01,0.02,0.03)	(0.13,0.16,0.18)	(0.04,0.06,0.08)	…	(0.01,0.01,0.02)
C_{12}	(0.02,0.02,0.04)	(0.04,0.07,0.10)	(0.02,0.03,0.03)	(0.12,0.14,0.16)	…	(0.02,0.03,0.04)

To access the casual relationships between factors, we will calculate ($\tilde{D}_i + \tilde{R}_i$) and ($\tilde{D}_i - \tilde{R}_i$)in which $\tilde{D}_i$and $\tilde{R}_i$are the sum of row and the sum of columns of our total-relation fuzzy matrix respectively. Our partial results and the result of ranking are shown in Table 5.

Table 5. The value of ($\tilde{D}_i + \tilde{R}_i$), ($\tilde{D}_i - \tilde{R}_i$) and the result of ranking

Ranking	$(R+C)^{def}$	$(R-C)^{def}$	C^{def}	R^{def}	Ranking R+C
C_1	2.58	0.77	0.91	1.68	1
C_2	2.27	-0.33	1.30	0.97	2
C_3	1.58	-0.25	0.91	0.66	3
C_4	1.12	0.04	0.54	0.58	9
C_5	1.05	0.04	0.50	0.54	10
C_6	0.84	0.03	0.40	0.43	11
C_7	1.30	-0.21	0.75	0.55	7
C_8	1.33	0.05	0.64	0.69	6
C_9	0.79	-0.07	0.43	0.36	12
C_{10}	1.52	0.16	0.68	0.84	5
C_{11}	1.54	-0.27	0.91	0.64	4
C_{12}	1.21	0.02	0.59	0.62	8

The fuzzy DEMATEL results are shown in Table 5.According to the $(R + C)^{def}$ values, need of achievement (C_1) is themost important factors that effect on entrepreneurial intention.

5. Conclusion

Entrepreneurship and entrepreneurial culture are receiving an increased amount of attention in both academic research and practice(Zampetakis*et al*., 2009). It is quitepossible that a better understanding of the factors that influence attitudes towardsentrepreneurship and entrepreneurial intent could facilitate the successfuldevelopment of these initiatives, especially for university students who, incomparison to individuals without university education, are more likely to pursueself-employment that has significant impact on economic growth (Robinson and Sexton, 1994).Understanding factors related to entrepreneurial intentions is important sinceintentions are reliable predictors of entrepreneurial action (Krueger *et al*., 2000).The aim of this study is identifyingfactors of emotional intelligence (EI) and personalitytraits affective on entrepreneurial intentionand ranking these factors using of fuzzy decision-making trial and evaluation laboratory (DEMATEL) method. The DEMATEL method evaluates factors and prioritizes them. According to fuzzy DEMATEL result,need of achievement (C_1) is the most important factor that affect on Entrepreneurial Intention.

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