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Ready to Dare? A Case Study on the Entrepreneurial Intentions of Business and Engineering Students in Turkey

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Abstract

Today entrepreneurship is accepted as the critical component of sustainable economic growth and employment creation. Entrepreneurship is not a simple plan-and-do act, and is a behavior that is resulted from the attitude that reflects an individual's motivation and capacity to identify an opportunity and to pursue it in order to produce new value or economic success. However the previous and determinant element towards performing entrepreneurial behavior is entrepreneurial intentions. Therefore, understanding the level of entrepreneurial intentions provides insights to policy makers and researchers for forecasting future entrepreneurship activities and the entrepreneurial potentials that can be utilized for achieving economic objectives. In other words, entrepreneurial intent that is defined as the intention of an individual to start their own business is the primary predictor of future entrepreneurs. In theoretical background, personal history, social context, attitudes toward entrepreneurship, planned behavior and personality traits are pointed out as factors that have impact on the propensity to engage in entrepreneurship, and these factors are categorized as internal (personality) and external (contextual or environment). For Turkey, some previous research focused on the entrepreneurial intentions of students. However, there is still room for research on the impacts of personality, university environment/education on entrepreneurial intent. Also the differences between the entrepreneurial intentions of students from different disciplines were rarely explored. In this context, study aims to define the level of entrepreneurial intentions as well as the impact of discipline (engineering vs. management) and gender in business administration and management engineering departments in two major public universities in Turkey. By this aim, we conducted a survey among total 446 students from these universities in the first and final term (1st and 4th grades). Survey Questionnaires are designed in the light of the theoretical background and Theory of Planned Behavior is revisited. Findings reveal that the entrepreneurial intentions of students are considerable for most of the constructs, while the educational programme, university and gender cause significant differences in the intent.

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Keywords: Entrepreneurship, Entrepreneurial intentions, Higher Education Institutions

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1. Introduction

For achieving economic growth through entrepreneurship, it is priorly needed to understand the entrepreneurial potentials and design and implement strategies to foster entrepreneurship. Entrepreneurial potentials can be forecasted through analyzing entrepreneurial intentions of the people and the factors that have impact on these intentions. In literature, it is emphasized that entrepreneurial intentions are affected by various internal (personality) and external (contextual or environment) factors. The factors that have impact on entrepreneurial intentions of university students are widely researched and explored by many scholars, as especially university students from business and engineering schools are the most possible future entrepreneurs that can create the value required for economic development. In Turkey, research on the entrepreneurial intentions and related impact factors is still evolving and there is still room for research. In this context, this study aims to explore the entrepreneurial intentions of university students in management and management engineering departments in two major public universities in Turkey. In the first section of the study, theoretical background on entrepreneurial intentions, entrepreneurial intentions of university students in the developed and developing countries and in Turkey is presented. The second section includes research methodology that includes data collection, hypotheses. In the third sections, findings of the research are presented. Finally, the conclusion, discussion and recommendations for further research are presented in the fourth section of the study.

2. Literature Review And Hypotheses

2.1. Entrepreneurship

Entrepreneurship is an attitude that reflects an individual's motivation and capacity to identify an opportunity and to pursue it, in order to produce new value or economic success (Ajzen 1991, Shapero 1982). Entrepreneurship has a passive and active component with propensity to induce changes oneself, but also the ability to welcome and support innovation brought by external factors by welcoming change,taking responsibility for one's actions, positive or negative, to finish what we start, to know where we are going to set objective and meet them, and have the motivation to succeed. (Shapero-Sokol, 1982). Important aspects of entrepreneurship can be summarized as identifying one's personal strengths and weaknesses, displaying proactive behavior, being curious and creative, understanding risk, responding positively to changes and the disposition to show initiative (Shapero-Sokol, 1982). Entrepreneurship requires time, involving both considerable planning and a high degree of cognitive processing

2.2. Determinants of Entrepreneurial Intention

Entrepreneurship research has long examined the vast impact of personal history and social context on the propensity to engage in entrepreneurship by starting one’s own business (Katz, 1992). Decision to become an entrepreneur may be plausibly considered as voluntary and conscious and it seems reasonable to analyze how that decision is taken (Krueger et al., 2000). Previous research illustrates that the theory of planned behavior can be used to predict employment status choice intentions (Kolvereid, 1996). Employment status choice intentions were defined by Katz (1992) as “the vocational decision process in terms of the individual’s decision to enter an occupation as a salaried individual or as self-employed.” Kolvereid (1996) argued that the greater a person’s perceived behavioral control, the stronger is that person’s intention to become self-employed. Perceived behavioral control in turn corresponds to perceived feasibility, one of the key factors of self-efficacy. Self-efficacy has been found to greatly influence entrepreneurial behavior (Krueger et al., 2000) and strengthening entrepreneurship students’ self-efficacy is therefore seen as a key tool in entrepreneurship education to enhance students’ entrepreneurial intentions (Fayolle, 2005). Various studies have proven that entrepreneurial intent is the primary predictor of future entrepreneur (Katz, 1988; Reynolds, 1995; Krueger et al., 2000). In general, intent can be defined as “a state of mind directing a person’s attention toward a specific object or a path in order to achieve something”(Vesalainen and Pihkala, 1999). Numbers of research on personal and environment-based determinants of entrepreneurial intent such as personality traits, attitudes toward entrepreneurship, or social environment have been extensively discussed (Begley et al., 1997; Brandstätter, 1997; Davidsson, 1995; Robinson et al., 1991; Segal et al., 2005). As Ajzen (2005) underlined, further understanding of different entrepreneurial aspects can contribute to more realistic perceptions about the entrepreneurial activity, thus influencing intentions indirectly. According to Bird (1988), entrepreneurial intentions refer to a state of an individual mind, which directs and guides them toward the development and the implementation of new business concept. Research on factors affecting entrepreneurial intentions referred to personality traits (Franke and Lüthje 2004; Johnson

1990; Bonnett and Fuhrmann 1991), and planned behaviour (Ajzen 1985, 1987, 1988, 1991; Ajzen and Fishbein, 1980; Bird, 1988; Davidsson, 1995; Autio, et al., 2001; Franke and Lüthje, 2004). Shapero's (1982) model of the 'Entrepreneurial Event' (SEE) is implicitly an intention model, specific to the domain of entrepreneurship. In the SEE, intentions to start a business derive from perceptions of desirability, perceptions of feasibility, propensity to act upon opportunities. Shaver and Scott (1991) provided a "personological" approach and found some statistically significant relationships between certain personality traits and being an entrepreneur. Various other studies supported this approach by providing findings on the fact that Situational or "demographic" factors have an influence on intentions (Boyd and Vozikis, 1994; Lee and Wong, 2004). For gender, there is substantial overrepresentation of males among business founders in most countries (Scherer et. al, 1990). Brush (1992) study that female with similar back ground is less entrepreneurship oriented than male counterpart because women have to face a number of social barriers in under developed countries. As Keong (2009) adapted from Linan and Rodriguez (2004) three different personality traits (Willingness to take risks, Locus of control, Need for independence) are often associated with entrepreneurship. For personality traits' impact on entrepreneurial intentions, however there also have contradictory findings about the role of personal characteristics (Brockhaus et al., 1986; Robinson et al 1991). However, this view on the impact of personality traits are criticized for being fruitless in predicting start-up decisions by individuals (Liñán & Santos, 2007). Bird and Katz (1992) concluded that situational variables or individual (for example, demographic characteristics or personal traits) variables are not mature predictors as they have limited explanatory power and validity. Robinson et al (1991) stated that planned behaviour can be changed both across time and across situations in virtue of the individual's interaction with the environment. Also approaches that positions entrepreneurial intention as a determinant element towards performing entrepreneurial behavior (Kolvereid, 1996), Bird's model of "Implementing Entrepreneurial Ideas" (1988), Douglas and Shepherd's (2000) "Maximization of the Expected Utility" provided a step forward in entrepreneurial intentions research but criticized for being individualistic in nature and do not take into the account the social factors.

Numerous researchers also explored the impact of education on entrepreneurial intentions, Cooper (1985, 1993) highlighted the relevance of experience and education in terms of the increased knowledge it provides (Cooper, 1985, 1993), while Arenius et al. (2004) came up with a bold conclusion as "The more educated a person, the less likely she or he is to act as an entrepreneur". In other words, greater knowledge provides a greater awareness about the existence of that professional career option (Liñán, 2004). This idea conflicted with the previous century's approach that people with higher education would not prefer going into self-employment as they normally have a better offer or better chances of success and attainment of personal goals as employees (Warneryd et al., 1987).

On the other hand, the impact of directed Entrepreneurship Education is also deeply analyzed and discussed in previous researches. Early studies came up with the thesis that students participated in entrepreneurship education have shown more intentions towards starting their own business (Noel, 1998). This positive impact of education on entrepreneurship intentions was also supported by the following researches as it is underlined that entrepreneurship education develops a person"s level of self efficacy (Wilson et al 2007) or because entrepreneurship education develop a vision among students to start their own business with innovation (Wilson, 2007, Aslam et al., 2012). Franke and Lüthje (2004) also pointed out the academic context as an enabler of entrepreneurial action. For the impact of entrepreneurship courses as a formal way of entrepreneurship of education, Zaidatol (2009) and Schwarz et al. (2009) analysed university courses on entrepreneurship and small business management and found a positive impact. Students believe that the lectures provide knowledge and skills pertaining to entrepreneurship (Lüthje Franke, 2002). Franke and Lüthje, (2004) provided a conceptual model that has dimensionalised the entrepreneurial content as internal (personality) and external (contextual or environment) factors. Grundsten (2004) also reported that environmental factors have some bearing on an individual's entrepreneurial activities as they refer to the attributes of an individual's social environment, such as role model and social identification, which play a role as an antecedent of one's intention. Role models are also listed as an impact factor for they will affect entrepreneurial intention only if they change attitudes and beliefs such as perceived self-efficacy (Carrier, 2005). Moreover, the need for autonomy or independence is one of the most frequently stated reasons for founding a firm as wanting to do so (Scheinberg & MacMilan, 1988). As Linan and Chen (2004) summarized, expected workload, risk and financial gain varies by individual motivations, which is referred as an unconditional measure of intention (Zhao et al., 2005; Kickul, Zaper, 2000; Krueger et al., 2000), while other forced participants to state their preferences and estimated likelihoods of pursuing a self-employment career "as opposed to organizational employment" (Kolvereid, 1996; Fayolle and Gailly, 2004). All these approaches is hyphotesized by Ferreira (2012) as major constructs in Entrepreneurial Intention Model.

2.3. Entrepreneurial Intentions of University Student and the Impacts of Academic Context

As a part of environmental context that influence entrepreneurial attitude and behaviour, university environment has already been accepted as an enabling factor and emerged as an intent predictor. (Schwarz et al, 2009). Both research (Franke and Lüthje, (2004). Schwarz et al (2009) Lüthje and Franke, 2002; Tung Moi et al., 2010) and practice (Silicon Valley, Triple Helix model, Technology incubators, science shops etc.) proved the positive perception of university actions to foster entrepreneurship leads to a stronger willingness to start up an own business in the future. Franke and Lüthje (2004) report that academic context is an important part of the students' environment, as universities are in a position to shape and encourage entrepreneurial intentions. University activities of initiation, development and support somehow "trigger" the intentions of students to become entrepreneurs and prompt them toward more ambitious start up plans. Schwarz et al (2009) was found that a positive perception of university actions to foster entrepreneurship will leads to a stronger willingness to start up an own business in the future. Schwarz et al study also stated that only the university environment emerges as an intent predictor. University course on entrepreneurship and small business management as well as incubators located on campus appear to be a central role in waking students' enthusiasm and interest in business ownership (Schwarz et al, 2009). Similarly to the study conducted by Autio et al. (1997) stated that the support received from the university environment is one of the factors influence the students' career decision and interest in becoming an entrepreneur in the future. The US students believe that the lectures provide knowledge and skills pertaining to entrepreneurship (Lüthje and Franke, 2002). A lot of empirical research also done on education enhances entrepreneurial efficacy of students as well as encouraging and supporting them to start-up their own business (Fiet, 2000; Segal, et al., 2005; Wilson et al., 2007). According to Wilson et al. (2007), education will enhance students' entrepreneurial efficacy such as opportunity seeking, resource assembling, and leading the business to success through attitude, knowledge and skills that provided to them. Education also can enhance entrepreneurial efficacy of students through learning activities, business plan development, running a real small business (Fiet, 2000), and increasing their desirability to start-up a new venture (Segal, et al., 2005). In Zaidatol (2009) study also stated that entrepreneurship related courses and training are needed to increase the university students' entrepreneurial intention and entrepreneurial efficacy. There have been only a limited number of studies addressing influence factors for students' entrepreneurial intention (Lüthje and Franke, 2003; Wang and Wong, 2004), specifically, few researches have examined the influence of perceived university environment and perceived educational support (e.g. Parnell et al. 1995, Autio et al. 1997, Franke and Lüthje 2004, Turker et al. 2005, Turker and Selcuk 2009, Schwarz et al, 2009) on students' intentions to become an entrepreneur.

2.4. Research on Entrepreneurial Intentions in Turkey

In Turkey, motives behind entrepreneurial intentions are discussed in some studies that focus on samples from Turkey. Independent behavioır, success and control capability, risk taking intention were taken as the independents of entrepreneurial potentials (Keskin, Alpkan ve Zehir, 2002). Ufuk, Özgen, 2001). To be able to control is the determinant that can enable individuals to evaluate their initiative in the rewards and penalties in their life experience (Pervin, 1998). Individuals with high achievement motivations and desiring high level of control are found to be more insistent on success which is a characteristics that is needed for being an entrepreneur (Keskin, Alpkan ve Zehir, 2002). Turker and Selcuk (2009) also revealed that educational support or supportive university environment was significant predictors of entrepreneurial intention. In Turkey, according to Inter-university Entrepreneurship and Innovativeness Index (TUBİTAK, 2015), universities' involvement, support and providing structures for fostering entrepreneurship increased the level of entrepreneurial activity among students and academics..If a university provides adequate knowledge and inspiration for entrepreneurship, the possibility of choosing an entrepreneurial career might increase among young people (Turker and Selcuk, 2009). Şeşen and Basım (2012) studied the impact of demographic factors and personality on the entrepreneurial intentions of students and concluded that age, gender, previous job experience, and monthly income of the family has significant impact on the entrepreneurial intentions of students. Karabulut (2009) also explored the impact of education on entrepreneurial intentions of students and indicated that the students who took entrepreneurship courses mostly did not have high entrepreneurial intentions. Gurbuz and Aykol (2008) found that the family, gender, academic support have positive impacts on entrepreneurial intentions of students.

2.5. Development of Hypotheses

TPB is an extension of the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975), has been the dominant

theoretical approach to guide research on health-related behaviour for the past three decades. The theory is well recognised amongst researchers and is also familiar to many students, practitioners and policy-makers (Sniehotta et al., 2015). Most frequently used theoretical framework in major studies of entrepreneurial intention is the Theory of Planned Behaviour (TPB) (Autio et al. 2001; Krueger, Reilly and Carsrud 2000; van Gelderen et al. 2006). The roots of TPB can be found in the model of Bird (1988) about entrepreneurial intentionality; factors that determine intentions as presented by (Autio et al. 2001; Krueger, Reilly and Carsrud 2000; van Gelderen et al. 2006).

- Attitude,
- subjective norms,
- perceived behavioral control,
- perceived control liability of behavior,
- self-efficacy,
- perceived desirability and feasibility

Though criticized as a model with a limited predictive validity in recent years by some scholars, (e.g. Sinohuetta et al., 2015), TPB still stands as a validated solution to construction of research in entrepreneurial intent. Entrepreneurship considered as a type of planned behavior for which the intention models are ideally convenient in understanding the business venture formation intentions (Krueger et al., 2000)

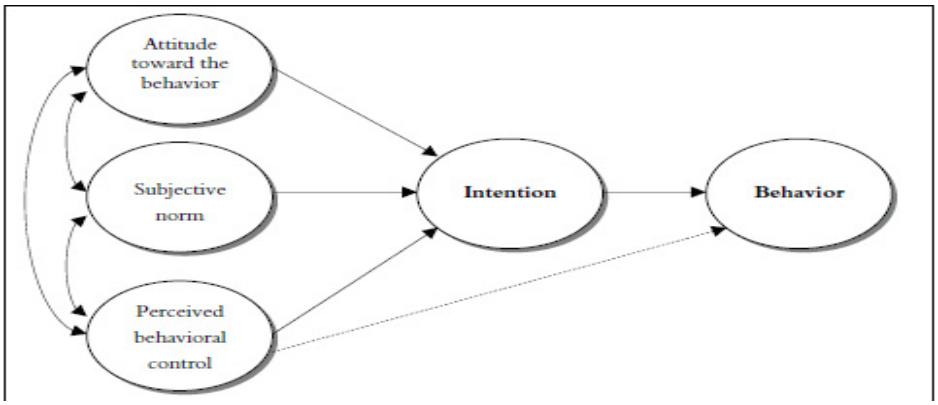


Figure 1: The framework of Theory of Planned Behavior

Entrepreneurship is also associated with the psychographic factors: (Katz, 1992), like attitude toward risk, (Brockhaus, 1986, Muller & Thomas (2000); and achievement motivation. Achievement Motivation is perhaps the most used and the most criticized psychological concept in entrepreneurship research. Davidson (1995) stated that propensity for oneself to go into business due to this type of influence exists but that achievement motivation is not a major determinant of entrepreneurial behavior. It is related to performance compared with an individual's internal standards like tolerance for ambiguity, (Pillis & Reardon, 2007) and locus of control etc.

In this context, research is based on the constructs of TPB. Survey Questionnaires are designed in the light of the theoretical background and the questions are derived from the recent research and questionnaires (if available) as summarized in Table 1:

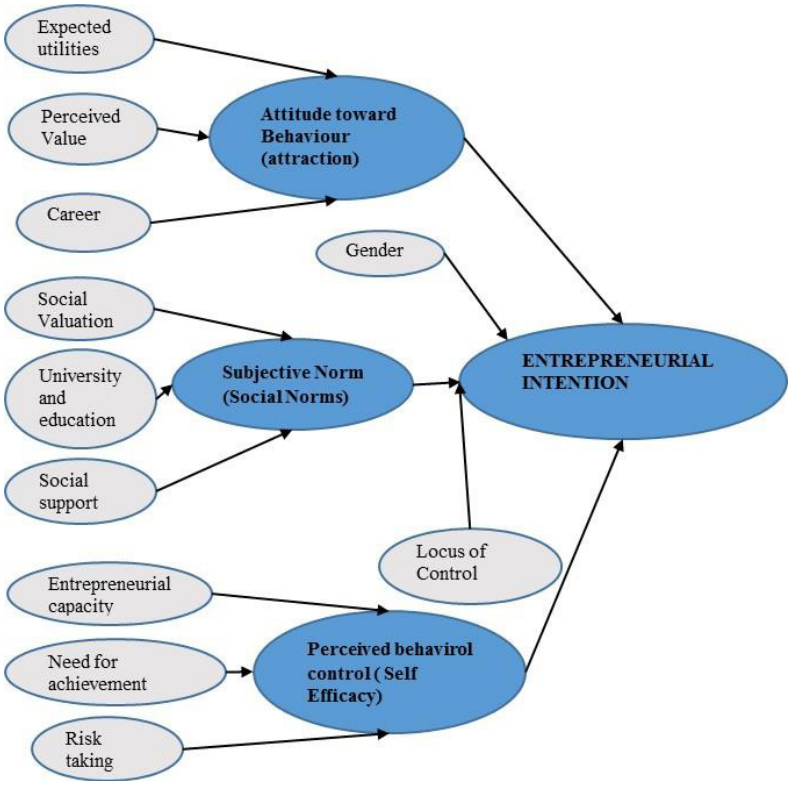
Table 1: Literature Review on Entrepreneurial Intention Research

Factor	Dimension	Research
Attitude Towards Behaviour (Attraction)	Advantage/Disadvantages	Autio et al., 2001; Krueger et al., 2000; Leon and Gorgiewski, 2007; Linan and Chen, 2006
	Professional Attraction	Autio et al., 2001; Leon and Gorgiewski, 2007; Linan and Chen, 2006
	Expected Utilities: perceived value of outcomes	Autio et al., 2001; Douglas and Shepherd, 2000; Bird, 1988; Krueger et al., 2000; Leon and Gorgiewski, 2007; Linan and Chen, 2006
	Career	Autio et al., 2001; Linan and Chen, 2006; Keong, 2009 ; Linan and Rodriquez, 2004
Subjective Norm (Social Norms)	Social Valuation; Family	Krueger et al., 2000; Leon and Gorgiewski, 2007; Keong, 2009; Linan and Rodriquez, 2004; Linan and Chen, 2006; Autio et al., 2001; Harbi et al., 2009
	Social Valuation; Friends	Krueger et al., 2000; Leon and Gorgiewski, 2007; Keong, 2009; Linan and

	Social Valuation; Role model	Rodriquez, 2004; Linan and Chen, 2006; Autio et al., 2001; Harbi et al., 2009 Krueger et al., 2000; Harbi et al., 2009
	Social Valuation; Society	Linan and Rodriquez (2004;
	University and Education	Parnell et al. 1995, Autio et al. 1997, Autio et al., 2001; Franke and Lüthje 2004, Turker et al. 2005, Turker and Selcuk 2009, Schwarz et al, 2009; Linan and Rodriquez (2004); Lüthje and Franke, 2002; Robinson and Sexton, 1994; Zamani & Agili, 2006; Saadi, 2011; Arenius et. al, 2004 + Shapero, 1980 (negative))
	Subjective Norm	Wilson et al 2007; Zaidatol, 2009: Schwarz et al, 2009, Lüthje and Franke, 2002.
Perceived behavirol control (Self-efficacy)	Entrepreneurial capacity	Krueger et al., 2000; Leon and Gorgiewski, 2007; Linan and Chen, 2006; Autio et al., 2001; Keong, 2009; Linan and Rodriquez, 2004; Shapero, 2000; Fayolle, 2005
	Barriers	Saadi, 2011; Brockhaus, 1980; Muller & Thomas, 2000; Ang and Hung, 2000.
	Risk taking	Linan and Rodriquez, 2004
	Perceived behavirol control	Kolvereid, 1996, Autio et al., 2001
Intention: EI:		Leon and Gorgiewski, 2007; Linan and Chen, 2006; Krueger et al., 2000; Hamidi et al., 2008; Autio et al., 2001; Petrova, 2005
Locus of Control		Keong, 2009; Linan and Rodriquez, 2004
Need For Achievement		Keong, 2009; Linan and Rodriquez, 2004
Gender		Hamidi et al., 2008; Shaver&Scott, 1991; Bird &Katz,1992; Scherer et. al, 1990)

Depending on the theoretical background, following relations were aimed to be explored for our case study.

Figure 2: Research Model and Theoretical Constructs for Theory of Planned Behaviour on Entrepreneurial Intent



Therefore; constructed hypotheses for exploring the research topic given above:

- Hypothesis 1: University students in these 2 universities have similar entrepreneurial intentions.

- Hypothesis 2: There is significant difference between the entrepreneurial intentions of management engineering students and business administration students
- Hypothesis 3: There is significant difference between the entrepreneurial intentions of male and female students

3. Methodology

2. 1 Research Goal

The basic aim of the study is to explore the level of entrepreneurial intentions in selected public universities, and to provide insights about the factors that have impact on these intentions and the differences by demographic characteristics. Therefore; the objectives of the study can be summarized as follows:

1. Defining the entrepreneurial intentions of university students in two major public universities in Turkey as a case study
2. Exploring the impact of University education on entrepreneurial intentions of the students in terms of the
   - Differences between engineering and management students
   - Differences between the entrepreneurial intentions of first term students and final year students
3. Exploring the impact of demographic factors and personal characteristics of students on entrepreneurial intentions

Following statistical analyses are conducted by using SPSS tools for reliability, validity and testing the hypotheses:

- Cronbach's Alfa for statistical reliability
- Factor analysis to categorize the questions and validity of the constructs,,
- Correlation analysis between factors to evaluate validity and correlation between factors and demographic factors to find out the relationships between the semester (showing the level of education)

2.2. Data Collection:

In this study, data is collected on the entrepreneurial intentions of business administration and management engineering students from two different major public universities in İstanbul-Turkey. The survey was conducted with 451 respondents who were all undergraduate students. Management Engineering is a rare undergraduate programme that contains both management/business administration and engineering components in its curriculum. Hence the study also aims to find the impact of engineering component on the students as well as the impact of "technical university eco-system" on the factors that define the entrepreneurial intentions of students. As well, the data is collected from 1st and 4th grades (1st and 8th terms) in order to test the impact of education on the entrepreneurial intentions. A scale with fifty-one items was utilized and data were collected by a self-questionnaire. Each item was measured with 5-level Likert scale and at least 443 of cases are valid along data analysis.

.Table 2. Study Area * Gender Crosstabulation

		Gender		
		Female	Male	Total
University and Study Area	University 1 - Business Administration	139	158	297
	University 2- Management Engineering	75	71	146
Total		214	229	443

2.3. Analyses and Results

Contingency tables were used to show conditional distributions (Table 2) and test significant dependencies between study area (university) and gender. It is obvious that there is no any dependency (Table 3) between study area selected and gender with a p-value 0.336.

Table 3. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,818[a]	1	,366		
Fisher's Exact Test				,419	,211
N of Valid Cases	443				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 70,53.

Firstly, reliability of data was tested by cronbach's alpha statistic and it is calculated as 0,921. This result satisfies the requirements for further analysis. Then, to utilize factor analysis, principal component analysis is applied for validity. This technique was repeated three times in order to reach better results. In the first stage, fifty-one of items are included and Kaiser-Meyer-Olkin (KMO) measure was calculated as 0.910. These items resulted in twelve principal components. This number of components exceeds theoretical frame. Moreover, eighteen of items have low factor loads and omitted in the next stage. In the second stage, thirty-three of items are included and KMO measure was calculated as 0.877. These items resulted in nine principal components. The number of components still exceeds theoretical frame. Also, four of items which represent two of components were omitted since it is problematic to measure a concept with only two items. And seven of items were omitted because they has low factor loads. In the third stage, twenty-two of items are included and KMO measure was calculated as 0.855. These items resulted in six principal components (Table 4).

Table 4. Rotated Component Matrix

	Component					
	1	2	3	4	5	6
i15	,800					
i14	,753					
i12	,703					
i10	,696					
i20	,641					
i21	,638					
i57		,873				
i56		,865				
i55	,301	,813				
i44			,759			
i43	,364		,758			
i35			,709			
i42			,699			
i25				,867		
i26				,834		
i24				,735		
i52					,845	
i53					,794	
i51		,317			,613	
i49						,796
i54						,720
i48						,714

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

These components explain about sixty-seven percent of total variance. Each components includes different numbers of valid cases and summary statistics of components are shown in Table 5. These factors are mostly aligned with the constructs that was derived from the literature in the beginning, however in Factor 1 two constructs (attitudes towards behavior and Social Norms) are combined, showing a conflict with the theory. Within Factor 1, 4 questions are on

perceived value of outcomes (including autonomy, financial performance, personal quality of life) of starting a business is grouped.

Table 5. Summary Statistics

FACTORS	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
F1 Attitude Towards behaviour- Attraction; Social Norms-Social Valuation	449	3,8000	,80659	-,952	,115	1,183	,230
F2- Social Norms - Education	447	3,8945	1,06858	-,942	,115	,335	,230
F3- Entrepreneurial Intent	450	3,1824	,95811	,014	,115	-,484	,230
F4- Social Norms- Social Support/enablers	449	2,9009	,85298	,106	,115	,000	,230
F5- Perceived Behavirol Control- Self Efficacy- Need For Achievement	447	3,6622	,77476	-,440	,115	,250	,230
F6 - Locus of Control	447	2,4851	,87006	,311	,115	-,149	,230
Valid N (listwise)	446						

However, questions about family and friends attitude to entrepreneurial activity that belongs to social valuation dimension of Social Norms Construct are also included in the same factor group. When the means for each factor is considered, participating university students had high attitude towards behavior in terms of attraction, in Factor 1, and also approved their education as a social norm that creates entrepreneurial intention in Factor 2. Perceived Behavirol Control referring self efficacy and need for achievement is also considerable.

Additionally, several significant differences are detected by comparing components' means with respect to educational programmes and university and gender. When the t-test for equality of means is applied as the independent samples test to test the significant differences by demographics as situtational traits, findings indicate that there is significant difference by two schools and student groups by the programme/university and gender.

According to both components Factor 4 - Social Norms- Social Support and enablers and Factor 6-- Locus of Control, which has questions with a negative meaning, mean of students who study business administration at Marmara University is significantly higher than that of students who study management engineering at Istanbul Technical University with p-values 0.01 and 0.06 respectively.

Questions of Factor 4 – Social Norms Social Support are:

- "Qualified consultant and service support for new company is available".
- "Young entrepreneurs are supported in our country"
- "In our country, political stability and economical dynamism exists to promote entrepreneurship".

Business Administration students has a more positive view in terms of their societal environment in this context. On the other hand, Questions used in Factor 6 – Locus of Control factor which have negative meaning are as follows: Hence, it is noted that the BA students in Marmara University has negative intentions for locus of control construct.

- "When everything goes right, I think that' is mostly a question of luck"
- "I often feel that is just the way things are and there is nothing I can do about it."
- "If I do not succeed on task, I tend to give up".

Moreover, according to components Factor 2 including motivation towards entrepreneurship education as a social norm, mean of female students is significantly higher than that of male students with a p-value 0,028. And, according to components Factor 3 referring to Entrepreneurial Intent, mean of female students is significantly lower than that of male students with a p-value 0,000.

Finally, From Table 6, it can be seen that most of paired correlations are significant at level 0.05. But it is remarkable that component F6- Locus of Control Factor is negatively correlated with other four components as expected. As the correlations between factors were found to be providing validity of factor groups, Factor 1 should be accepted and considered as a hybrid new construct in this case's specific environmental context.

Table 9. Correlations

		F1	F2	F3	F4	F5	F6
F1	Pearson Correlation	1	,566**	,515**	,161**	,413**	-,188**
	Sig. (2-tailed)		,000	,000	,001	,000	,000
	N	449	446	449	449	446	446
F2	Pearson Correlation	,566**	1	,396**	,142**	,456**	-,247**
	Sig. (2-tailed)	,000		,000	,003	,000	,000
	N	446	447	447	446	447	447
F3	Pearson Correlation	,515**	,396**	1	,042	,337**	-,180**
	Sig. (2-tailed)	,000	,000		,380	,000	,000
	N	449	447	450	449	447	447
F4	Pearson Correlation	,161**	,142**	,042	1	,122*	,006
	Sig. (2-tailed)	,001	,003	,380		,010	,900
	N	449	446	449	449	446	446
F5	Pearson Correlation	,413**	,456**	,337**	,122*	1	-,250**
	Sig. (2-tailed)	,000	,000	,000	,010		,000
	N	446	447	447	446	447	447
F6	Pearson Correlation	-,188**	-,247**	-,180**	,006	-,250**	1
	Sig. (2-tailed)	,000	,000	,000	,900	,000	
	N	446	447	447	446	447	447

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Conclusion and Discussion

Entrepreneurial intent of university students stands as the first tile in creating a dynamic and sustainable economy that is fueled and sustained by entrepreneurial and innovative activities. Hence understanding the entrepreneurial intent of especially business administration students who will act as managers and executives of future may provide insights on the future entrepreneurship potential. On the other hand, engineers with managerial knowledge and skills is valuable for the same vision. Understanding the impact of engineering component in education had been another motivation of this study. Based on Theory of Planned Behavior and the widely researched and validated constructs of entrepreneurial intent within TPB frame, survey is designed and data is collected from BA and Management Engineering students from 2 different major public universities in Turkey. Provided by the reliability and validity tests including factor analysis, this research's findings showed similar and supporting patterns for the accumulated knowledge in the field with some derivations. Factor 1 has been found to be related to two constructs (attitudes towards behavior and Social Norms) from the theoretical background; both the perceived value of outcomes (including autonomy, financial performance, personal quality of life) of starting a business and family and friends attitude to entrepreneurial activity that belongs to social valuation dimension of Social Norms Construct. This may be due to some sociological context of the country which needs further hypothesis building and research on the possibility that social valuation may be perceived as a perceived value by the respondents. Findings reveal that students in these two programs from two different universities have high attitude towards entrepreneurial behavior in terms of attraction, while showing a considerable Perceived Behavioral Control referring self-efficacy and need for achievement.

There are significant differences by educational program and university and also by gender. Business Administration students has a higher perception about the Social Norms-Social Support for entrepreneurship, and feel more supported in societal environment in this context. However, they have a more negative perception about themselves in terms of locus of control. In terms of diversity, it is promising that female students show higher motivation towards entrepreneurship education as a social norm. However, it is discouraging and worth analyzing that entrepreneurial Intent of female students is significantly lower than that of male students. This may stand as a major problem for developing women entrepreneurship in the future, so specific policies should be considered for empowering and encouraging female students for entrepreneurial activities.

Higher education decision makers should focus on the impact of their institutions' curriculum on the entrepreneurial intentions of their students. Besides more intense, focused and well-designed formal courses and practices on enhancing entrepreneurial intentions of students, some social and organic structures like student clubs,

student organizations, contests should be also taken into the agenda of the administrators of universities in Turkey.

In further research, causality between the factors will be explored by constituting a regression or SEM model. Also entrepreneurship intentions of university students in different levels of University Entrepreneurship and Innovativeness Index can be compared and discussed.

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