The Impact of Education, Economy and Culture on Entrepreneurial Motives, Barriers and Intentions: A Comparative Study of the United States and Turkey

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Abstract

This study incorporates three primary perspectives used in international comparisons of entrepreneurial intentions—culture, economic conditions and education—in a study of attitudes toward entrepreneurship. Using samples drawn from two countries with distinctly different cultures, economies and education—Turkey and the United States—we develop and test hypotheses regarding the impact of these factors on entrepreneurial intentions and on perceptions of motives and barriers regarding entrepreneurship. For motive and barriers, we discuss and distinguish between intrinsic and extrinsic factors. We observe a number of significant differences between the two sample groups and significant relationships between explanatory factors, intentions and motives and barriers. We discuss the implications of the study for entrepreneurship education and for future research.

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Keywords

entrepreneurship education, United States, Turkey, barriers, motives, intentions

As one of the significant forces of modern civilisation, entrepreneurship has long taken the attention of many disciplines, but with the impact of globalisation it became a major research area. As many writers believe that entrepreneurship is an attitude that can be learned, university students at the beginning of their working life careers arose as a noteworthy sample for studies of entrepreneurial intention. Moreover, with the impact of globalisation, understanding cultural diversity became more important and led to many cross-cultural comparative studies of entrepreneurial intentions.

Studies of entrepreneurial intention differences between countries focus mostly on three basic factors: culture, economic climate and education. The first factor, national cultural diversity, appears to cause some differences in the entrepreneurial intentions of university students. Culture defined as a set of shared values and beliefs between groups of people (Mead, 1978) or shared and distinctive mental programmes (Hofstede, 1980) and differentiates entrepreneurial intentions. For example, Engle, Dimitriadi, Gavidia, Schlaegel, Delanoe, Alavarado, He, Buame and Wolff (2010) studied entrepreneurial intentions of university business students in twelve countries and found that Ajzen's (1991) the theory of planned behaviour (TPB) could be used successfully to predict entrepreneurial intent in each of these countries. However, the significant contributing elements and explanatory power of the TPB model differed across countries (Engle et al., 2010). Pruett, Shinnar, Toney, Llopis and Fox (2009) found similar results in a comparative study of three countries—although university students generally share similar views about motivations and barriers to entrepreneurship, there are significant differences between nations.

The second factor, differences between countries in economic development level or climate, can differentiate entrepreneurial intention. Economic environments differ greatly between countries, especially between developed and developing ones, and these differences affect the level and nature of entrepreneurial activity (Iakovleva, Kolvereid &

Stephan, 2011; Valliere & Peterson, 2009). Additionally, the contribution of entrepreneurs to an economy differs according to the economic level of the country (Wennekers, Van Stel, Thurik & Reynolds, 2005). The Global Entrepreneurship Monitor (GEM), begun in 1997 to study differences in entrepreneurial activities among 59 countries, confirms this variability in its reports—there are significant differences between countries on entrepreneurship and entrepreneurial activities are more common in developing countries than developed ones (Bosma, Wennekers & Amoros, 2012). Similarly, Iakovleva et al. (2011) found that university students in developing countries are more likely to have entrepreneurial intentions than in developed countries.

The third factor, entrepreneurship education, may explain differences in entrepreneurial intentions across countries. Giacomin, Janssen, Pruett, Shinnar, Llopis and Toney (2011) question whether entrepreneurship education should be the same in every country or, instead, adapted to cultural context. They studied entrepreneurial intention and its relation with entrepreneurship education in American, Asian and European students and found that entrepreneurial intentions of students varied across nations. They indicated that cultural differences should be taken into consideration when developing entrepreneurship education programmes. Packham, Jones, Miller, Pickernell and Brychan (2010) compared entrepreneurship education's impact on the entrepreneurial attitude of French, German and Polish students. Interestingly, they found that entrepreneurship education has a positive impact on entrepreneurial intentions in France and Poland but a negative effect on German male students.

In this framework of previous literature, the main purpose of this study is to compare the entrepreneurial intentions of university students in the United States and Turkey. Many previous studies have compared countries or regions with similar economies, cultures or entrepreneurship education (e.g., Autio, Keeley, Klofsten, Parker & Hay, 2001; Boissin, Branchet, Emin & Herbert, 2009; Franco, Haase & Lautenschlager, 2010; Lee, Chang & Lim, 2005). In contrast, the present study compares entrepreneurial intentions in two relatively dissimilar countries in order to provide a better understanding of how we can improve entrepreneurial activities in diverse settings. We assess the two countries' entrepreneurship education, cultural context and economic

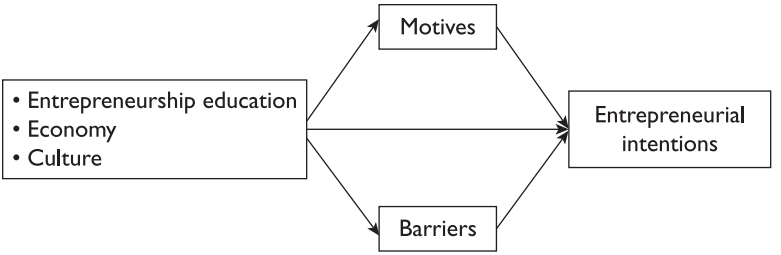

Figure 1. Research Model

environment to explain possible differences in entrepreneurial intentions and to answer these research questions:

1. Do American and Turkish students differ in terms of the skills included in curriculum, university stimulation, entrepreneurial intention and workplace aspirations?
2. Do they differ regarding the motives for starting a business?
3. Do they differ regarding the barriers to starting a business?
4. Do they differ regarding the relative importance of factors in entrepreneurial intentions?

The study has four main parts. Following the introduction, the article begins with a brief review of entrepreneurial intention literature, then looks at entrepreneurship motives and barriers and introduces the hypotheses. The third part presents methods and research findings and the fourth develops the discussion and conclusion.

The research model is presented in Figure 1. University entrepreneurship education, level of economic development and culture each influence a person's entrepreneurial intentions. In addition, they influence a person's perception of entrepreneurship motives and barriers which in turn also affect intentions.

University Education and Entrepreneurial Intentions

Entrepreneurship education has come to play an increasingly important role in entrepreneurship research since the beginnings of the field.

Writers have long attempted to define entrepreneurship. Schumpeter (1934) defined the entrepreneur as an individual who makes new combinations in creative destruction. Kirzner (1985) considered the entrepreneur as someone who recognises profit opportunities and takes initiative to supply those unsatisfied demands. Bygrave and Hofer (1991) noted new venture creation and defined an entrepreneur as a person who recognises an opportunity and establishes a new venture.

Although preliminary research portrayed entrepreneurship as an innate behaviour (Thompson, 1999), recent approaches associate it with an individual's own decision. Many authors (e.g., Ajzen, 1991; Davidsson, 1995; Krueger & Carsrud, 1993; Krueger, Reilly & Carsrud, 2000; Robinson, Stimpson, Huefner & Hunt, 1991; Shapero, 1982) revealed that intentions can be the best predictor of entrepreneurial behaviours. Entrepreneurial intention can be defined as an involvement or intention of an individual to start his/her own business venture (Drennan, Kennedy & Renfrow, 2005; Krueger & Carsrud, 1993; Souitaris, Zerbinati & Al-Laham, 2007). Therefore, entrepreneurial intention is a mental process that orients the planning and implementation of a business plan (Boyd & Vozikis, 1994; Gupta & Bhawe, 2007). Today it is widely accepted this mental process and the entrepreneurship decisions of individuals can be significantly affected by entrepreneurship education and an entrepreneurial university environment (Fayolle, 2008; Katz, 2003; Robinson & Hayes, 1991; Solomon, Duffy & Tarabishy, 2002).

University education may affect entrepreneurial intentions in two ways. First, education refers to whether an entrepreneurship course is taken during university years. Kolvereid and Moen (1997) stated that students who studied entrepreneurship majors or took entrepreneurship courses during their university education had higher entrepreneurial intentions than those who did not. They indicated that although entrepreneurship courses did not solely create entrepreneurial intentions, they could support or hinder the formation or realisation of intentions. Upton, Sexton and Moore (1995) found that 40 per cent of those who had entrepreneurship courses in university years have established their own businesses and Cheng, Chan and Mahmood (2009) indicated that students who had entrepreneurship classes revealed higher intentions to be entrepreneurs in Malaysia.

Second, education refers to whether the general educational environment in the university is supportive of new venture creation. Franke and

Lüthje (2004) found that students who assess the environment of university as insufficient or negative have significantly lower entrepreneurial intentions than those who have positive perceptions. Schwarz, Wdowiak, Almer-Jarz and Breitenecker (2009) found parallel results and stated that educational environment had a significant impact on entrepreneurial intentions. As noted earlier, Packham et al. (2010) compared students' attitudes toward entrepreneurship education in three European countries and found that while entrepreneurship education is an important factor for entrepreneurial intentions in France and Poland, it has a negative impact on German male students. In a study of entrepreneurial education in British universities, Smith, Collins and Hannon (2006) discussed how entrepreneurship education could be embedded in university programmes to foster the entrepreneurial intentions of students.

The American higher education system may have been the first in the world to offer an entrepreneurship course to students and to establish an education environment to encourage entrepreneurship. Since the pioneering effort of Harvard Business School in 1947 (Kirby, 2004), many universities have offered entrepreneurship courses, minors or majors in the US. In 2003, there were 2,200 entrepreneurship classes in 1,600 American colleges or universities, and entrepreneurship was one of the four-year majors in 200 universities (Katz, 2003). There are more than 100 university-based entrepreneurship centres (Charney & Libecap, 2000) in the country. Graduates of these universities or colleges are more likely to be entrepreneurs than non-entrepreneurship graduates (Charney & Libecap, 2000). Not surprisingly, world-scale innovative digital firms like Cisco Systems, Microsoft, Google, Hewlett-Packard, Sun Microsystems or Yahoo are the result of this system (Pfeiffer, 1997). Today, many universities or colleges like Babson College, St. Louis University, Harvard University, University of Pennsylvania or MIT offer undergraduate or graduate level entrepreneurship courses and majors in the US. Lee et al. (2005) state that entrepreneurship education is very common and diversified in the US and American students have strong recognition of the importance of entrepreneurship education.

Conversely, entrepreneurship education in Turkey is not sufficiently well-developed to encourage many students to create new ventures. A few universities in Turkey offer entrepreneurship classes in business schools as a selective course (Patir & Karahan, 2010) and students in other departments graduate from the universities without learning

anything about entrepreneurship. There are only a few research centres of entrepreneurship in some Turkish universities (Ertuna & Gurel, 2011). Gurol, Aydinlik and Atsan (2008) noted that although business plans, fundamental tools of entrepreneurship and basic knowledge about entrepreneurship are included in entrepreneurship courses in Turkish universities, innovation, entrepreneurship typologies or outstanding entrepreneurship examples are not found in entrepreneurship curricula. Moreover, Gurol and Atsan (2006) state that though a young and dynamic population in Turkey presents an important potential for new venture, this potential is not well understood by higher education institutions. In a recent GEM report, Karadeniz (2010) implies that in contrast to positive trends in primary and secondary education about entrepreneurship in Turkey, the quality and quantity of university level entrepreneurship education are inadequate. Thus, most of the entrepreneurial activities in Turkey are not opportunity-driven but necessity-driven.

In light of previous studies we propose the following hypotheses.

Hypothesis 1a: Turkish students' perceptions about skills included in curriculum will be lower than Americans.

Hypothesis 1b: Turkish students' perceptions about university stimulation will be lower than Americans.

Economic Differences and Entrepreneurial Intentions

Based on the gross domestic product (GDP) per capita and the share of primary goods relative to total exports, economies can be divided into three distinctive groups (Iakovleva et al., 2011): factor-driven, innovation-driven and efficiency-driven. In factor-driven economies, economical activities mostly depend on agriculture or natural resources and agglomeration of wealth is regional (Kelley, Bosma & Amorós, 2011). In efficiency-driven economies or developing countries (Iakovleva et al., 2011), industrialisation is widespread but still the service sector is small scale. However, in innovation-driven economies (developed countries), R&D investments, knowledge intensity and expanding

service sector are very common (Kelley et al., 2011). Iakovleva et al. (2011) compared the entrepreneurial intentions of university students in developed and developing countries and found that students in developing countries had stronger intentions for entrepreneurship than those in developed ones. They suggest that the economic dynamism in developing countries encourages students for new venture creation. In another comparative study, Franco et al. (2010) found that regional differences have strong impacts on students' entrepreneurial intention: students from central Portugal were more likely to have entrepreneurial intentions than those from Eastern and Western Germany. They imply that the economic climate and dynamic activities in central Portugal foster students' entrepreneurial intentions. This inter-regional level of analysis within a country is conceptually similar to that of Naudé, Gries, Wood and Meintjies (2008), who found that economic differences across regions of South Africa are related to regional differences in the rate of business start-ups.

Turkey and the United States differ in terms of the relative frequency of new businesses and in terms of relative economic development. The Global Entrepreneurship Monitor (GEM) uses the earlier mentioned segmentation to compare economies. GEM reports identify the US as an innovation-driven country and Turkey as an efficiency-driven one. Moreover, Turkey has recently enjoyed remarkable economic growth driven by entrepreneurship and new business development, while the US and other developed countries have had economic struggles. According to World Bank Global Economic Prospects (2012), GDP growth in Turkey was 9.2 per cent in 2010 and 8.5 per cent in 2011, far ahead of America's 3.0 and 1.7 per cent rates for the same years. Entrepreneurial activity has played a significant role in Turkey's GDP growth. Ali, Bush, De Castro, Lange, Lyons, Meyskens, Onochie, Phinisee, Rogoff, Suhu and Whitman (2010) note that the Total Entrepreneurial Activity (TEA) rate, which represents the percentage of 18–64 years old population who are either nascent entrepreneurs or owner-managers of new businesses, was 2.8 per cent for the US, and 5.1 per cent for Turkey in 2010.

As the biggest economy in the world, the United States had a 2011 GDP of more than 15 trillion dollars; Turkey's was nearly 800 billion dollars, positioning it as the 18th largest economy in the world (World Bank, 2012). The US is the leading country among the developed countries, and Turkey is one of the leading emerging economies in Europe

(International Monetary Fund, 2011). Geary (2007) counts Turkey as one of the fastest emerging economies in the world, and estimates that it will surpass some advanced economies within 20 years.

As noted earlier, entrepreneurship activity in developing countries encourages university students much more than that in developed countries (Iakovleva et al., 2011). Thus, by considering the relative economic development of the US and Turkey, we propose the following hypothesis:

Hypothesis 2: Turkish students' entrepreneurial intentions will be higher than Americans.

Motives and Barriers to Entrepreneurship

Prior studies identified many motivational factors and barriers for university students for an entrepreneurial career choice. Table 1 summarises the motives and barriers mentioned in previous research. It demonstrates that motives and barriers can readily be divided into two distinctive groups: intrinsic and extrinsic.

Table 1. Motives and Barriers for Students for Business Venturing

Author(s)	Motives	Barriers
Finnerty and Krzystofik (1985)		• Market potential (E)* • Ability to secure financing (E) • General state of business climate (E) • State and federal tax climate (E) • Personal financial risk (E) • Security of present employment (E) • Family commitments (E) • Reward and/or satisfaction (E/I)** • Assumption of managerial responsibilities (I)

(Table 1 continued)

(Table 1 continued)

Author(s)	Motives	Barriers
Volery, Doss, Mazzarol and Thein (1997)	• Invest (E) • Status (E) • Market opportunity (E) • Money (E) • Creativity (I) • Autonomy (I)	• Lack of resources (E) • Compliance costs (E) • Hard reality (E)
Choo and Wong (2006)	• Extrinsic rewards (E) • Independence/ Autonomy (I) • Intrinsic rewards (I)	• Lack of capital (E) • Compliant costs (E) • Hard reality (E) • Lack of confidence (I) • Lack of skills (I)
Birdthistle (2008)	• Safety orientation (E) • Leisure time (I) • Creativity (I) • Independence (I)	• Lack of the right business idea (E) • Own financial risk (E) • Lack of equity (E) • Lack of dept capital (E) • Lack of contact clients/ customers (E) • Lack of courage (I)
Sandhu, Sidique and Riaz (2011)		• Lack of resources (E) • Lack of social networking (E) • Aversion to stress and hard work (I) • Aversion to risk (I) • Fear of failure (I)
Smith and Beasley (2011)	• Co-mentoring from business partners (E) • Course content (E) • Financial gain (E) • Overarching package of support (E) • Control and risk taking (I) • Creativity and innovative idea (I)	• Lack of finance (E) • Contradictory advisory support from external agencies (E) • Lack of sector-specific mentors (E) • Experience of familiar entrepreneurship (I) • Lack of general business knowledge (I)

Author(s)	Motives	Barriers
Giacomin, Janssen, Pruett, Shinnar, Llopis and Toney (2011)	• Pursuit of profit and social status (E) • Desire for independence (I) • Creation (I) • Personal development (I) • Professional dissatisfaction (I)	• Lack of support structure and fiscal or administrative costs (E) • Economic climate and lack of entrepreneurial competencies (E) • Lack of knowledge and experience (I) • Lack of self confidence (I) • Risk aversion (I)

Notes: (1) *E = Extrinsic.
(2) **I = Intrinsic.

Creativity/creation and independence/autonomy can be considered as intrinsic motives while market opportunity and pursuit of profit and social status can be considered as extrinsic motives. Similarly, reward and/or satisfaction, lack of confidence and lack of courage can be listed as intrinsic barriers whereas market potential, economic climate and lack of entrepreneurial competencies and lack of sector-specific mentors can be considered as extrinsic barriers.

The studies summarised in Table 1 mostly focus on extrinsic motives or barriers rather than intrinsic ones. In their pioneering study, Finnerty and Krzystofik (1985) focused on barriers, and defined primarily as extrinsic constructs. In a later study, Volery, Doss, Mazzarol and Thein (1997) conducted interviews with a group of entrepreneurs and non-entrepreneurs to find out the motivational and obstructing factors for entrepreneurship. They did not define intrinsic barriers prior to the interviews, but the most influential factors identified in the interviews were creativity and autonomy, both of which were intrinsic factors in entrepreneurial intentionality.

Choo and Wong (2006) studied the triggers and barriers to new venture creation in a group of retired Singaporean armed forces officers. They indicated that intrinsic rewards (having an interesting job, taking advantage of one's creative talents and challenging her/himself) were the most influential motivating factors whereas hard reality (risks greater than initially expected, uncertainty of the future and bad economic indicators in general) was the most powerful barrier. Lack of confidence

was the least important barrier, which may be unsurprising as the sample was retired army officers.

Birdthistle (2008) focused on motivating factors and obstacles to entrepreneurship in a group of tertiary students. Highlighting extrinsic factors, she indicated that safety orientation (extrinsic) and creativity (intrinsic) were the most influential motivating factors while lack of access to dept capital and personal financial risk were the strongest barriers to entrepreneurship. Similarly, Sandhu, Sidique and Riaz (2011) found that the most powerful barrier was lack of social networking among Malaysian postgraduate students. In their study, intrinsic factors (aversion to risk and fear of failure) had weaker effects than extrinsic ones but were significant. At a more finely-grained level of analysis, García-Cabrera and García-Soto (2008) find that cultural differences regarding individualism across regions of Cape Verde are related to differences in entrepreneurship levels within that nation. Their findings are echoed in a subsequent study by Liñan, Urbano and Guerrero (2011), who find that the culture of a more economically developed region of Spain places higher social value on entrepreneurship than does that of a less developed region. Culture clearly may have an impact on the unfolding of entrepreneurship—in a study of Chinese entrepreneurship, Batjargal (2010) demonstrates how the traditional Chinese cultural phenomenon of *guanxi* (the development of a personal network emphasising a give-and-take of personal favours and the usefulness of those relationships) plays a major role in entrepreneurial development.

Giacomin et al. (2011) developed a more balanced approach regarding intrinsic and extrinsic motives and barriers by identifying five motivating factors and five barrier factors for business start-ups in their five-country comparative study. Although they do not focus on the relative importance of these factors for business start-up, their balanced approach to motivating and barrier factors affecting entrepreneurial intentions is a useful approach for the present study.

While extrinsic factors mostly point out economical activities, intrinsic ones highlight some personality-dependent features. Personality is now viewed as a combination of genetic and cultural influences (George & Jones, 2005), so cultural variety between nations may be an influential factor for new business creation. Many previous studies (e.g., Busenitz, Gomez & Spencer, 2000; George & Zahra, 2002; Mueller, Thomas & Jaeger, 2002) consider national culture as one of the most important

moderating factors between economical activities and entrepreneurship. Pruett et al. (2009) and Giacomin et al. (2011) indicate that cultural differences between nations create significant differences in entrepreneurial intentions and perceptions of motives and barriers. Karadeniz (2010) points out that some Turkish cultural norms might pose significant barriers to entrepreneurship. These norms include not emphasising self-sufficiency, autonomy or initiative and not encouraging creativity and innovation in young people.

Along with cultural differences, we believe that economic differences play a critical role in the perception of motives and barriers. With the help of economic growth in the last several years, many indicators about entrepreneurship increased significantly in Turkey. In 2008, the nascent new entrepreneurship rate was 3.2 per cent, the business ownership rate was 3 per cent, the total entrepreneurial activity index was 6 per cent and the new established business rate was 4.82 per cent. However, in 2010 those figures were 3.7, 5.1, 8.6 and 10.7 respectively, indicating significant increases in all four dimensions (Karadeniz, 2010).

Based on previous studies, we assume that Turkey's economic growth and dynamic developing economy will mean that Turkish respondents' motivations will be higher than those of Americans. However, because of the significant impact of cultural norms as intrinsic barriers, we also expect that Turkish students' barrier perceptions will be higher than those of American. Thus, we postulate the following hypotheses:

Hypothesis 3: Turkish students will have higher perceptions about motives than Americans.

Hypothesis 4: Turkish students will have higher perceptions about barriers than Americans.

Along with cultural factors and economic context, entrepreneurship education has a significant role in the entrepreneurial intentions of students (Fayolle, 2008; Katz, 2003; Robinson & Hayes, 1991; Solomon et al., 2002). Entrepreneurship education can inspire desirability (the desire for entrepreneurship) and can increase entrepreneurial feasibility by developing needed skills and knowledge (Hills, 1988). Krueger and Brazeal (1994) argue that faculty should improve the desirability and

feasibility perceptions of students so that entrepreneurship programmes can foster entrepreneurial intentions.

Barriers are necessarily part of a person's perception of feasibility. Pittaway and Cope (2007) state that entrepreneurial intentions are shaped by an individual's perceptions of barriers to new venture creation, cultural values and the environment. Giacomin et al. (2011) argue that in order for entrepreneurship education programmes to be efficient, they must be adjusted to the perceived barriers and motives. Not only can entrepreneurship education encourage students' motives tendencies—it also can decrease their barrier perceptions, thus strengthening their entrepreneurial intentions.

As discussed earlier, many American higher education institutions offer programmes to encourage entrepreneurship. Developing entrepreneurs is a long-standing effort. Harris and Gibson (2008) state that the small business institute programme initiated 40 years ago in 1972 combines nascent and actual entrepreneurs. In the programme, students develop comprehensive reports to solve participating businesses' problems and can get useful knowledge and abilities for their business plans. Supporting the effectiveness of that kind of programme, Boissin et al. (2009) found that American students' entrepreneurial intentions were higher than those of French students. In another comparative study, Lee et al. (2005) suggest that American students' intention of venture creation, knowledge and ability about entrepreneurship and intention of overseas venture creation are stronger than those of Korean students.

Conversely, entrepreneurship education in Turkey is less developed. Karadeniz (2010) and Gurol and Atsan (2006) state that entrepreneurship education in Turkish universities is under-emphasised. They urge a new entrepreneurship education policy for the short and long term. Ertuna and Gurel (2011) imply that entrepreneurship education within the higher education system of Turkey is in its infancy and needs substantial development. Interestingly, Gurel, Altinay and Daniele (2010) found that entrepreneurship education in Turkish universities did not foster the entrepreneurial intentions of students.

Since entrepreneurship education may influence entrepreneurial intentions and barrier and motives perceptions, and since the US has relatively strong and institutionalised entrepreneurship education, we believe that American students' motive perceptions will be stronger than those of Turkish students. However, because of Turkey's relative lack of

well-established entrepreneurship education, Turkish students' barrier perceptions will be higher than those of Americans. Thus, we postulate the following hypotheses:

Hypothesis 5: Motives will be positively related to the entrepreneurial intentions of American students.

Hypothesis 6: Barriers will be negatively related to the entrepreneurial intentions of Turkish students.

Methods

Participants

The participants of the present study comprised 317 American and 459 Turkish students from a variety of departments, including art, business, chemistry, civil engineering, communication, computer engineering, education, electronics engineering, health sciences, tourism management, mechanical engineering and social services. Of the students, 48.6 per cent were females, 11.4 per cent were freshman, 19.7 per cent were sophomores, 32.3 per cent were juniors, 31.7 per cent were seniors, 4.9 per cent were graduates, 39.5 per cent were from non-business departments and 60.5 per cent were from business.

Questionnaires and Measures

The questionnaire used in this study is developed from a survey carried out by Genesca and Veciana (1984) and has been used in various studies (e.g., Giacomin et al., 2011; Pruett et al., 2009; Veciana, Aponte & Urbano, 2005). While American respondents were asked in English, Turkish participants were asked in Turkish. The Turkish version was translated from English and then back-translated to prevent any deficiency of meaning. The questionnaire consisted of four main parts. In the first part there were questions about university environment, curriculum, workplace aspirations and entrepreneurial disposition. The second part

included motives and barriers for starting a business. In the third part, respondents were asked about entrepreneurial intentions, family reaction, immediate circle, work experience and interest in taking an entrepreneurship course as part of their course of study. The fourth part included questions about demographics and educational information.

Each of the topics included in curriculum, university stimulation, interest in entrepreneurship course, workplace aspirations and entrepreneurial disposition and intention was asked with one question. For example, students were asked 'What is your main employment goal' or 'On a scale of 1 to 7, indicate the degree to which you consider yourself to be an entrepreneur, full of ideas and initiative to start your own business'. Topics in curriculum and university stimulation items were answered via a four-point Likert scale ranging from 'very few/not at all' to 'very/greatly'. Interest in an entrepreneurship course as part of their course of study was asked with a yes/no question. There were three options for workplace aspirations: work in my/their own business, work in an organisation or work in public administration. Entrepreneurial disposition was asked with a question in which the answers were ranged from 1 (not entrepreneurial at all) to 7 (very entrepreneurial) and entrepreneurial intention was measured with one question in which the answers were ranged from 1 (no, never) to 4 (yes, I have a definite plan to start my own business).

Beliefs about motives and barriers were measured with scales taken from Pruett et al. (2009) and Giacomin et al. (2011). The motives measure included 16 items and the barriers measure consisted of 20 items. Sample items for motives were 'be independent', 'make enough money to be independent' and 'get high social status' and for barriers were 'too much risk', 'fear of failure' and 'lack of business and market knowledge'. Each item was answered via a five-point Likert scale ranging from 'very unimportant' to 'very important.'

In accordance with the findings of Pruett et al. (2009) and Giacomin et al. (2011), we aggregated the motives and barriers into factors. We defined five factors for motives: pursuit of profit and social status, desire for independence, creation, personal development and professional dissatisfaction. We then defined five factors for barriers: lack of support structure and fiscal or administrative costs, lack of knowledge and experience, economic climate and lack of entrepreneurial competencies, lack of self-confidence and risk aversion.

To ensure the construct validity of the study variables, confirmatory factor analysis (CFA) was conducted with AMOS software. In CFA, maximum likelihood estimation on the covariance matrix is used. On the motivations and barriers scales, we tested five-factor models separately as described in Pruett et al. (2009) and Giacomin et al. (2011). As hypothesised, the five-factor models yielded acceptable fit for motives [$\chi^2 = 623{,}6$, $p < 0.01$, $df = 99$, GFI (goodness of fit) = 0.89, CFI (comparative fit index) = 0.91, RMSEA (root mean square error of approximation) = 0.07, IFI (incremental fit index) = 0.89] and for barriers [$\chi^2 = 850.19$, $p < 0.01$, $df = 165$, GFI = 0.92, CFI = 0.88, RMSEA = 0.06, IFI = 0.88].

Findings

Skills in Curriculum, University Stimulation and Students' Entrepreneurial Intention

Table 2 presents the scores of student responses regarding the extent of business start-up knowledge contained within the curriculum of the respondent's major field, the extent to which universities stimulate students to pursue entrepreneurship, and the entrepreneurial intention of students.

Regarding skills included in the curriculum, American students had lower scores (M = 2.39, SD = 0.914) than Turkish students (M = 2.65, SD = 0.836) and the difference between American and Turkish students' perceptions about the extent to which their curricula provide knowledge

Table 2. ANOVA Results of American and Turkish Students

Factor	Country		Mean	SD	F	p
Skills included in curriculum	US	316	2.39	0.914	17.340	0.000
	Turkey	459	2.65	0.836		
University stimulation	US	316	2.39	0.678	0.004	0.948
	Turkey	459	2.39	0.910		
Students' entrepreneurial intention	US	317	1.21	0.844	44.399	0.000
	Turkey	459	1.63	0.870		

to prepare them to start businesses was significant (F = 17.340, p = 0.000) with average scores somewhere between 'little' and 'some'.

In university stimulation, American (M = 2.39, SD = 0.678) and Turkish (M = 2.39, SD = 0.910) students showed similar tendencies. The difference between their perceptions about the extent to which their universities stimulate students to start businesses was insignificant (F = 0.004, p = 0.948) with average scores somewhere between 'little' and 'somewhat'.

Regarding entrepreneurial intentions, Turkish students' scores (M = 1.63, SD = 0.870) were significantly (F = 44.399, p = 0.000) higher than those of American students (M = 1.21, SD = 0.844), with average scores somewhere between 'yes, vaguely' and 'yes, seriously'.

Hypothesis 1a postulates that Turkish students' perceptions about skills included in curriculum will be lower than American. The findings about the skills included in curriculum indicated a reverse result, so Hypothesis 1a is rejected. Hypothesis 1b postulates that Turkish students' perceptions about university stimulation will be lower than American but the findings showed no difference between the two countries. Thus, Hypothesis 1b is rejected. Hypothesis 2 states that Turkish students' entrepreneurial intentions will be higher than Americans. The findings supported this idea and Hypothesis 2 is accepted. Although the distinctions of responses vary significantly in 3 of 4 instances, it is interesting to note overall that neither group feels highly positive about their university's role.

Student Interest in Entrepreneurship Courses and Aspirations about Workplace

As shown in Table 3, there is a substantial difference between American and Turkish students regarding their interest in taking an entrepreneurship course in their curriculum. In both countries, significant percentages of students have an interest in entrepreneurship courses, with 71.2 per cent for Americans and 92.4 per cent for Turkish. However, 28.8 per cent of American students—more than one in four—are not interested in an entrepreneurship course, while this figure is just 7.6 per cent for Turkish students.

Table 3. Interest in taking an Entrepreneurship Class and Occupational Aspirations: American versus Turkish Students

	American Student		Turkish Student	
	Frequency	%	Frequency	%
Interest of entrepreneurship course				
Yes	225	71.2	424	92.4
No	91	28.8	35	7.6
Workplace				
Own business	89	28.2	164	35.8
In a company	183	57.9	153	33.3
Public administration	44	13.9	142	30.9

There are substantial differences between American and Turkish students on workplace aspirations. Nearly one-third of students in both countries aspire to work in their own businesses: American 28.2 per cent and Turkish 35.8 per cent. However, there are significant differences between American and Turkish samples on working in a company or in public administration. While 57.9 per cent of American students desire to work in a company and only 13.9 per cent in public administration, 33.3 per cent of Turkish students want to work in a company and 30.9 per cent in public. These figures indicate that working in public administration is still a significant choice in Turkey.

Motives for Starting a Business

Student perceptions of the motives to start businesses were gathered under five factors as Pruett et al. (2009) and Giacomin et al. (2011) described: (i) Pursuit of profit and social status (based on views about the appeal of income and wealth, social status, family tradition and heading an organisation), (ii) desire for independence (personal, decision-making and financial independence), (iii) creation (creating something of one's own and the chance to create jobs), (iv) personal development (the desire for free time and quality of life) and (v) professional dissatisfaction (responses regarding being paid fairly, job dissatisfaction and finding a job that fits the respondent). Table 4 provides the mean scores and ANOVA results for students' perceptions of motives.

Table 4. Motives for Starting a Business: American versus Turkish Students

Motives	American Ranking	Turkish Ranking	American		Turkish		F	p
			M	SD	M	SD		
Pursuit of profit and social status	4	4	3.55	0.667	3.92	0.684	53.877	0.000
Desire for independence	1	1	4.42	0.696	4.49	0.553	2.468	0.117
Creation	2	2	3.99	0.824	4.33	0.705	39.186	0.000
Personal development	3	3	3.91	0.898	4.25	0.773	32.217	0.000
Professional dissatisfaction	5	5	3.52	0.787	3.80	0.855	20.754	0.000

At first glance, it can be seen that in four factors there are significant differences between American and Turkish students; they agree only in desire for independence. Further, the relative ranking weights they give are similar. Students from both countries rank positive, intrinsic motives highest: desire for independence, creation and personal development. The externally-driven motives of pursuit of profit and social status and professional dissatisfaction come in last.

Regarding pursuit of profit and social status, American students' opinions (M = 3.55, SD = 0.667) were significantly different (F = 53.877, p = 0.000) from Turkish students (M = 3.92, SD = 0.684) and the mean score of Turkish students exceeded the Americans. The difference between American (M = 4.42, SD = 0.696) and Turkish (M = 4.49, SD = 0.553) students was insignificant (F = 2.468, p = 0.117) on the motivation for desire for independence. Turkish students (M = 4.33, SD = 0.705) gave more importance to creation than Americans (M = 3.99, SD = 0.824) and the difference between those two groups was significant (F = 39.186, p = 0.000). On personal development, the difference between two countries was significant (F = 32.217, p = 0.000) and Turkish scores (M = 4.25, SD = 0.773) were higher than the Americans (M = 3.91, SD = 0.898). Lastly, the difference between American (M = 3.52, SD = 0.787) and Turkish (M = 3.80, SD = 0.855) students on professional dissatisfaction was significant (F = 20.754, p = 0.000) and Turkish scores were higher than American.

In conclusion, we can state that there are significant differences between American and Turkish students about the motivations for starting business and in all factors Turkish students' scores are higher than American students. Based on this result, Hypothesis 3 is supported.

Barriers to Starting a Business

Using the same process as for motives, we aggregated opinions about barriers into five factors as suggested by Pruett et al. (2009) and Giacomin et al. (2011): (i) Lack of support structure and fiscal or administrative costs (based on views about start-up guidance, counsellors and organisations, fees and administrative costs), (ii) lack of knowledge and experience (responses regarding knowledge and experience about the business environment, marketing, accounting and management), (iii) economic

climate and lack of entrepreneurial competencies (risk, financing, economic conditions and competence), (iv) lack of self-confidence (lacking suitable business ideas and support from family and friends, problems of managing people and uncertainty about personal ability) and (v) risk aversion (concerns about workload, varying income and failing). Table 5 presents the mean scores and ANOVA results for students' perceptions of the barriers.

In general, Turkish students' scores were higher than Americans for lack of support, structure and fiscal or administrative costs, lack of knowledge and experience and economic climate and lack of entrepreneurial competencies, but American students' scores exceeded Turkish students on lack of self-confidence and risk aversion. However, on all dimensions the differences between the two nations were insignificant. For both groups, economic climate and lack of entrepreneurial competencies stands as the most important barrier factor, and lack of knowledge and experience is the second. Hypothesis 4 postulates that Turkish students' barrier expectations will be higher than Americans but the findings did not support this idea. For this reason, Hypothesis 4 is rejected.

Regression Analysis

Hierarchical regression was used to explore the impacts of motives and barriers on the entrepreneurial intentions of students. Motives were entered in Step 1 and barriers in Step 2. Table 6 shows the results.

In the final model of American students, the significant motivational factors were creation ($\beta = 0.168$, $p < 0.05$) and personal development ($\beta = 0.165$, $p < 0.05$). The significant barrier was lack of support, structure and fiscal or administrative costs ($\beta = –0.119$, $p < 0.01$). The model was significant ($F = 3.889$, $p < 0.001$) and explained 12.6 per cent of variance. The factor with the largest impact was creation and the effect of personal development was very close to creation.

In the Turkish students' final model, the significant motivational factors were pursuit of profit and social status ($\beta = 0.131$, $p < 0.01$), desire for independence ($\beta = 0.108$, $p < 0.05$) and creation ($\beta = 0.168$, $p < 0.001$). Significant barriers were economic climate and lack of entrepreneurial competencies ($\beta = –0.130$, $p < 0.05$), lack of self-confidence

Table 5. Barriers to Starting Business: American versus Turkish Students

Barriers	American Ranking	Turkish Ranking	American		Turkish		F	p
			M	SD	M	SD		
Lack of support, structure and fiscal or administrative costs	5	3	3.44	0.825	3.47	0.884	0.292	0.589
Lack of knowledge and experience	2	2	3.76	0.861	3.77	1.004	0.003	0.959
Economic climate and lack of entrepreneurial competencies	1	1	4.11	0.698	4.18	0.754	1.430	0.232
Lack of self-confidence	4	5	3.44	1.021	3.35	1.010	1.439	0.231
Risk aversion	3	4	3.50	0.869	3.43	1.113	0.861	0.354

Table 6. Hierarchical Regression Coefficients for American and Turkish Students' Entrepreneurial Intentions

	β			
	American		Turkish	
Variable	Step 1	Step 2	Step 1	Step 2
Pursuit of profit and social status	0.050	0.101	0.055	0.131**
Desire for independence	0.021	0.022	0.125*	0.108*
Creation	0.128	0.168*	0.202***	0.168***
Personal development	0.160*	0.165*	–0.063	–0.005
Professional dissatisfaction	–0.082	–0.051	–0.241***	–0.069
Lack of support, structure and fiscal or administrative costs		–0.119**		–0.110
Lack of knowledge and experience		–0.055		–0.028
Economic climate and lack of entrepreneurial competencies		–0.107		–0.130*
Lack of self-confidence		–0.052		–0.169*
Risk aversion		–0.051		–0.246***
F	3.507***	3.889***	9.834***	13.594***
R^2 change	0.060	0.066	0.098	0.135
$\triangle R^2$	0.060	0.126	0.098	0.233

Notes: (1) All columns are standardised β values.

(2) *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ ($N = 317$ for American; $N = 459$ for Turkish).

(β = –0.169, $p < 0.05$) and risk aversion (β = –0.246, $p < 0.001$). The model was significant ($F = 13.594$, $p < 0.001$) and explained 23.3 per cent of variance. These results indicate that for Turkish students risk aversion has the largest impact on entrepreneurial intentions; as expected, its impact is negative.

Hypothesis 5 states that motives will be significantly important for explaining entrepreneurial intentions of American students. The findings showed that creation and personal development were significant factors for American students' entrepreneurial intentions. With this regard, Hypothesis 5 is supported.

Hypothesis 6 states that barriers will be significantly important for explaining entrepreneurial intentions of Turkish students. The results

highlighted economic climate and lack of entrepreneurial competencies, lack of self-confidence and risk aversion as significant barrier factors in the entrepreneurial intentions of Turkish students. Thus, Hypothesis 6 is supported.

Discussion

The purpose of this study was to model the cultural, economic and educational differences between countries and to explore their influence on entrepreneurial intentions and perceptions of entrepreneurship motives and barriers.

The relationship between intentions and perceptions of motives and barriers is especially interesting.

As discussed earlier, we developed five-factor models for perceptions of motives and barriers. Considering motives, the respondents from both countries rank motives similarly, but the strength of their perceptions differs significantly for four of the five factors. However, they do not differ in their perception of the desire for independence as a motive. Turkish and American students feel equally strongly about independence, and both groups rank it as the single most important motive for entrepreneurship. The other four motive factors receive the same rank ordering by both groups: creation, personal development, pursuit of profit and social status and professional dissatisfaction. However, the Turkish respondents feel more strongly about these motives than do the Americans. Interestingly, for both groups, intrinsic motives are the most important ones. Extrinsic motives rank the lowest.

For barriers, the respondent groups do not differ significantly in the degree of importance they attribute to the five factors. They also agree that the most important barriers relate to economic conditions and knowledge.

Now we turn to how respondents' perceptions of motives and barriers are related to their entrepreneurial intentions. Again, we find interesting differences between Turkish and American respondents. Although American students see a desire for independence as the primary motive for entrepreneurship, this desire is not a significant factor when we regress their expressed intentions on motives and barriers. However, two

other intrinsic motives—creation and personal development—are significant predictors of American students' entrepreneurial intentions, with essentially equal impacts. The extrinsic barrier factor related to lack of support and costs also is significant, but influences intentions less than the positive intrinsic motives. Intrinsic barriers (self-confidence and risk aversion) are not significant predictors of American students' intentions.

For Turkish respondents, the predictors of entrepreneurial intentions are somewhat different. Intrinsic motives of independence and creation are significant positive influences on intentions. The extrinsic motive of profit and social status also has a positive influence on intentions. This is perhaps unsurprising. Turkey is less economically developed than the United States, yet it also has experienced a relative economic boom in recent years, a boom which has focused attention on the economic benefits of entrepreneurship.

However, despite the significant positive influence of intrinsic and extrinsic motives on Turkish respondents, barriers also loom large in their thinking and in predicting their entrepreneurial intentions. Risk-aversion has the single largest (and negative) influence on Turkish intentions, followed by lack of self-confidence and economic climate/competencies.

The findings for both countries reinforce our conclusion that intrinsic motives are major triggers for would-be entrepreneurs. This has an important implication for education—we believe that the single most effective way for education in either country to stimulate entrepreneurship in terms of motives is to heighten students' awareness of the intrinsic benefits of entrepreneurship. Further research may show whether this conclusion applies as well in countries and settings with different combinations of culture, economic climate and education. We tentatively suggest that it may—sociologists and psychologists may be able to weigh in on the issue of whether intrinsic motives are universally powerful motivators for human beings.

The major negative influence in Turkey of the intrinsic barriers of risk-aversion and lack of self-confidence also yields an important implication for entrepreneurship education in Turkey and, perhaps, in countries with similar economic conditions and cultural norms. It appears to us that the single most important step to take in Turkish entrepreneurship education in terms of barriers is to consider how to address Turkish

students' relatively high levels of risk-aversion and lack of self-confidence. This, too, merits further research, not just to develop better models, but to design new approaches to entrepreneurship education and to empirically test the impact of evolution in the content and context of that education.

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