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Entrepreneurial intention: antecedents to entrepreneurial behavior in the U.S.A. and Turkey

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Abstract

Research confirms that intentions play an important role in the decision to start a new firm. But what factors influence intention? The purpose of this study is to investigate the antecedents to entrepreneurial behaviour with particular attention to social (experience and education), societal (economic and political climate), and personality factors. This study compares and contrasts U.S. and Turkish students based on surveys of 589 junior and senior students at one American and one Turkish university. The findings indicate that although they hold a positive attitude towards entrepreneurship, both U.S. and Turkish students show a low level of entrepreneurial intention. Confirming prior work, the findings also indicate that there is a statistically significant relationship among personality attributes of optimism, innovativeness, risk-taking propensity and entrepreneurial intention. In a new line of inquiry, experiential activities known to promote creative thinking—exposure to other cultures, new experiences and art events—were found to contribute to perceived innovativeness. Both U.S. and Turkish students expressed a need for more training and education on entrepreneurship to start a new business. As U.S. students perceived a high level of risk associated with entrepreneurship, Turkish students evaluated the economic and political conditions of home country quite unfavourably to start own business.

Keywords: Entrepreneurship, Intention, Traits, Creativity

JEL classification numbers: M00

Introduction

Considerable agreement exists about the importance of promoting entrepreneurship in both developed and developing countries. In advanced industrialized countries, such as the United States, entrepreneurship has long been considered as a way to spur innovation and technological progress, engender competition, and create employment, leading to economic growth and national prosperity (Holmgren and From 2005). In less developed countries, more governments see entrepreneurship as a way to stimulate economic development and tackle serious economic and social challenges. So how can countries encourage young people to become entrepreneurs? The answer requires knowing more about the range of factors associated with entrepreneurial intention in different cultural contexts. Research on entrepreneurial traits has a long history in the United States, where there exists a strong entrepreneurship tradition. For example, in

economics and management literature we find evidence of the connection between an individual's intentions to his or her later decision to start a new business. However, less is known about the factors that nurture those early entrepreneurial intentions - personal, environmental, social and cultural. Further, cross-cultural studies and studies in non-U.S. cultural, social, and economic contexts regarding this topic are rare. What are the factors that influence and shape individuals' intentions to start a new business across different cultural contexts?

To address this gap, this study compares and contrasts the United States and Turkey in order to learn more about the variables that influence entrepreneurial intention in the young people of two culturally diverse contexts. This is an empirical study based on data collected from university students in the U.S. and Turkey, two countries with significantly different cultural contexts. An array of factors are potentially relevant to the formulation (or not) of entrepreneurial intentions: personality traits, family and friends, experiences and education, political and economic conditions, and perceived motivations and obstacles. In this study, we report the results of three potential influences on entrepreneurial intention: *personality* factors, *social* factors (personal experiences and education), and *societal* factors (the perceived political and economic climate of the country). A strong intention is eventually likely to result in an attempt to start a new business (even though immediate circumstances may cause a delay).

We assume that all these factors have certain effects that drive the students' career decision towards self-employment. In order to investigate the impact of these factors on the entrepreneurial intent, we use data collected from university students in the U.S. (University of Washington, Seattle) and Turkey (Marmara University) to: (1) examine the relative strength of personal, social and societal factors in determining students' intention to pursue a career as an entrepreneur; and (2) reveal how these factors differ (or not) in the two different cultural contexts.

Background

Over the past decades entrepreneurship has become a growing area of interest to both researchers and governments around the world due to increasing global competition, fast-changing technological advances, and developing market economies. Because entrepreneurship is increasingly seen as a way of dealing with global challenges it becomes relevant to understand how young people might develop into entrepreneurs. In attempts to universally define entrepreneurship, researchers tend to agree on elements such as opportunity, innovation, organizing, creating and risk taking. Most relevant to this study is Hisrich and Peters (2002), 10 comprehensive definition: "*Entrepreneurship is the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence.*" By articulating the risks of entrepreneurship (financial, psychic, social), this definition suggests a possible range of antecedents that may encourage or discourage entrepreneurial intention in a country's youth.

In the United States, a combination of policy incentives, relatively open immigration policies, and many other structural factors, coupled with a culture of determination and motivation, accounts for that nation's entrepreneurial success. The Global

Entrepreneurship Monitor (2013) reports that the United States consistently exhibits one of the highest entrepreneurship rates among the developed countries from North America, Europe, and Asia. Accordingly, efforts to foster entrepreneurship through education and training dates back to the 1940s when the first courses in entrepreneurship were introduced at the Harvard Business School (Katz 2003). In the United States, a majority (51 %) say they would prefer to work alone. This contrasts sharply with attitudes of a majority of Europeans (58 %) who state that they would prefer to work as an employee rather than risk starting their own business. The Eurobarometer Survey on Entrepreneurship reports that a lack of business experience, the difficulty of raising start-up capital, red tape, the poor economic environment and an innate “European fear of failure” were often to be blamed for preventing more of Europe’s potential entrepreneurs from taking the plunge.

Yet, the governments and universities of a large number of European, Asian and Latin American countries as well as the transition economies of Central and Eastern Europe are designing programs to stimulate new venture development. In Turkey, a growing economy, with declining inflation rates and progressive government policies are encouraging entrepreneurship. Often considered an emerging market, Turkey offers enormous possibilities for entrepreneurs, provided that some of the country’s issues improve. Much of the population in Turkey is young, offering a considerable talent pool. A diverse industry base, a strong domestic market, a relatively stable political and economic environment and underserved neighbour markets also add to the advantages of starting business in Turkey. Aiming for a transition from being an efficiency-driven economy to being an innovation-driven economy, Turkey is still behind in the number of start-ups (ranking 52nd for entrepreneurship in the world), the number of nascent entrepreneurs, and the ratio of “by necessity” to opportunity-driven “by-choice” entrepreneurs. Currently only 9 out of 100 people are entrepreneurs (GEM 2010) – still a low rate given the high level of the country’s development. However, the Turkish government is committed to fostering a more entrepreneurial culture through tax reforms and regulations along with a series of support programs to provide funds, incentives, training and education for start-ups and male/female entrepreneurs. There are also challenges within the education system. In Turkey, entrepreneurship education has started rather recently. Universities began to offer elective courses under business administration programs only after 1995. In limited number of universities, an entrepreneurship course is now compulsory in four-year degree or MBA programs (Gürol and Atsan 2006). Universities also offer certificate programs, conferences, seminars, congresses and symposiums as part of entrepreneurial education. In addition, a number of universities have Techno Cities, Entrepreneurship Research and Application Centres and Entrepreneurship Clubs to help educate both students and small business owners in the area of entrepreneurship (Özmen and Özaltın 2008). Despite a number of improvements in the higher education system, such as more entrepreneurship courses and training programs in university curriculum, entrepreneurship education has a long way to go in Turkey. Many also believe that societal and cultural views on entrepreneurship need to be changed in order to create an inviting and successful entrepreneurial climate.

In the United States, more than 60 % of 18- to 29-year-old youngsters report that they want to have their own businesses (Kuratko 2007). Despite these encouraging

numbers, some recent studies have shown that students have mixed feelings about considering entrepreneurship as a career and that very few intend to pursue an entrepreneur career immediately after graduation (Hisrich and Peters 2002). Bosma et al. (2008) also claim that only a small percentage of the working population typically engages in entrepreneurship. Given the importance of new business start-ups to the economy and society, this is a research area requiring further attention. To understand more about this problem, it is important to know more about university students' career intentions and the impact of their individual environments.

Researchers studying entrepreneurial traits and behaviours have generally assumed that characteristics associated with entrepreneurs are rooted in the "Western" or the North American culture and ascribed such traits universally to entrepreneurs (Hayton et al. 2002). Numerous international researchers have questioned the generalizability of most empirical evidence and prevailing theories of entrepreneurship - North American in character - to countries with distinctly different cultural, social, and economic climates (Thomas and Mueller 2000). Such arguments lead researchers to answer these questions through cross-cultural, cross-contextual research.

While there has been significant previous research on entrepreneurship, only a limited number of studies focused on cross-cultural studies in terms of *entrepreneurial intent among students* (Lüthje and Franke 2003). Research into students' career decisions concludes that cultural context influences career decisions through social norms, valuations and practices and there exist consistent cross-cultural differences in people's willingness to become an entrepreneur (Bosma et al. 2008; Flores et al. 2010). Thus, considering Turkish culture as a mixture of Western and Eastern values and the improvements in the entrepreneurship ecosystem in Turkey it will be interesting to investigate, however, the differences (if there are any) between Turkish and U.S. students' entrepreneurial intentions.

A cross-cultural approach to understanding entrepreneurial intention

Hofstede (1980), 25 defines culture as "the collective programming of the mind which distinguishes the members of one human group from another. . .[and] includes systems of values." Values and norms which are typically formed early in life guide choices, attitudes and behavior patterns which show consistency within the cultural context. Thus, culture acts as a powerful force to motivate individuals in a group or society to show certain behaviours that may not be prevalent in other societies (Mueller and Thomas 2000). Research into students' career decisions also concludes that cultural context influences career decisions through social norms, valuations and practices (e.g. Lent et al. 2000; Flores, et al. 2010). Bosma et al. (2008) also note that there exist consistent cross-cultural differences in people's willingness to become an entrepreneur. The "entrepreneurial culture" enables and fosters entrepreneurial activities with a positive social approach (Güney et al. 2006). Hofstede's culture dimensions may help to explain why some cultures are more conducive to entrepreneurial activity than others. In individualistic cultures (e.g., United States, United Kingdom, Australia), for example, such social values as personal initiative, autonomy, achievement, diversity and personal financial security are encouraged by the society. In collectivistic cultures (e.g., Turkey, China) however, the interests of the group overrides the personal needs.

While group loyalty and group decision is rewarded, individual decision making and deviance in opinion or behaviour is typically discouraged (Hofstede 1980). Since individualistic cultures are more supportive and tolerant of self-reliance, individual decision making, diverse thinking and independent action - qualities well associated with entrepreneurship - we can claim that individualism may facilitate the intention for entrepreneurial action. Resultantly, such personality traits as innovativeness and competitiveness are shaped in individualistic cultures and well documented to be related with entrepreneurial activity.

Another culture dimension - uncertainty avoidance - is defined by Hofstede (1991), 113 as “. . . the extent to which the members of a culture feel threatened by uncertain or unknown situations”. In low uncertainty avoidance cultures, members develop strategies to deal with the inherent uncertainties of life and consequently there is more willingness to take risks. Deviant thinkers are not perceived as threats, thus there is a greater tolerance for creative thinking and novel behaviour. In high uncertainty avoidance cultures, however, uniformity is emphasized and social deviants are perceived as different and with suspicion. Achievement is often recognized as safety in life; thus in high uncertainty avoidance cultures there is a greater fear of failure, a lower willingness to take risks and lower tolerance for ambiguity (Hofstede 1980). Considering entrepreneurs think innovatively and take risks with an optimistic bias in evaluating the uncertainties in the environment, we can conclude that low uncertainty avoidance cultures will foster entrepreneurial traits such as risk-taking and optimism. As the U.S. culture typically emphasizes free choice, personal effort and initiative, people in such individualistic cultures are independently motivated toward self enhancement, have a belief that they can control and direct their present and future and thus have an (unrealistic, in some cases) optimism for future events (Rose et al. 2008). Schultz and Schultz (2013) claim that people in individualistic Western cultures have shown greater happiness (or subjective well-being) and optimism about their future. Such optimism may also be due to social help and easily retrievable aid resources in such Western cultures. One may also claim that the difference between West and East may relate to fate attribution. In Eastern cultures much associated with fatalistic and deterministic world view, destiny or fate is believed to determine one's actions and happiness or unhappiness, because they are bound to happen. Thus, Easterners are supposed to accept passively whatever comes their way and lack motivation or confidence to change it. Heine & Lehman (1995); Heine et al. (1999); Triandis (1995) and Chang et al. (2001) discuss that optimistic and pessimistic bias between Easterners and Westerners is due to the mapping of self-enhancement and self-criticism which arise from within individualistic and collectivist cultures, respectively. Having said this, we assume that Westerners hold an optimistic bias and Easterners hold a pessimistic bias. The U.S. culture as the best example for an individualistic society with low uncertainty avoidance is conducive to entrepreneurship as those entrepreneurial personality traits are well shaped within the cultural context. Being a collectivist country with high uncertainty avoidance, however, the Turkish national culture does not seem to emphasize self-reliance, autonomy, self-sufficiency, diversity or personal initiative, thus discouraging creativity and innovativeness in young people. Rather, traditional emphasis in Turkish society is on uniformity and obedience, reinforced by the practice of educating children within the family unit and in formal

education. Such barriers deriving from the social and cultural norms surrounding entrepreneurship lead us to think that young “by-choice” entrepreneurs may well be discouraged in their entrepreneurial career choices. Besides, Turkey scores high in femininity, as opposed to masculinity in the U.S. culture, implying that rather than focusing on competition, material success and ambition, Turkish culture values modesty, caring, quality of life and social relationships.

Considering Turkish culture as a mixture of Western and Eastern values and the improvements in the entrepreneurship ecosystem in Turkey it will be interesting to investigate, however, the differences (if there are any) between Turkish and U.S. students’ entrepreneurial intentions.

Theoretical background and hypotheses

1. Ajzen’s Theory of Planned Behavior Model

The theoretical framework of this study is built on Ajzen’s (2002) Theory of Planned Behaviour that suggests that the immediate antecedent of behaviour is the intention to perform a given behaviour. Intention is a direct antecedent of real behaviour; and the stronger the intention for behaviour, the bigger the success of behaviour prediction or actual behaviour. Krueger et al. (2000) and Kolvereid & Isaksen (2006) claim that intentions are the single best predictor of most planned behaviour, including entrepreneurial behaviour. Pillis and Reardon (2007), 383 define entrepreneurial intention “the intention to start a new business.” The decision to become an entrepreneur and create a new business is a deliberate and conscious decision (Wilson et al. 2007) that requires time, considerable planning and a high degree of cognitive processing. Thus, an entrepreneurial career decision can be considered as a planned behaviour that can be explained by intention models. In order to understand the entrepreneurship phenomenon, studying individuals’ entrepreneurial intentions based on socio-cognitive models has been a suitable approach to analyse new venture creation (Zhao et al. 2005).

According to Ajzen’s (2002) TPB model, intentions are determined by *subjective norms*, *personal attraction* or *attitude* and *perceived behavioural control*.

In context of entrepreneurship, *subjective norms* refer to the perception of what a person’s “reference group” such as family, friends or significant others would think about performing entrepreneurial behaviour or whether they approve or disapprove of the entrepreneurial decision. In general, subjective norms tend to contribute more weakly on intention depending on the individuals’ propensity to conform and personality characteristics (Armitage and Conner 2001).

Attitude toward the behaviour or *personal attraction* refers to the degree to which the individual holds an overall positive or negative personal valuation about being an entrepreneur. Ajzen (2005) claims that people develop attitudes based on the beliefs they hold about the consequences of performing the behavior. Such consequences include both intrinsic and extrinsic rewards as financial rewards, independence/autonomy, personal rewards and family security, all of which do influence favorably the intention to start a business (Choo and Wong 2006; Vanevenhoven and Liguori 2013).

Negative or costly outcome expectancies such as perceiving risk associated with entrepreneurial activities impact unfavorably the intent to start own business.

Perceived Behavioural Control refers to an individual's belief and confidence in his/her capability in performing as an entrepreneur and realizing control and success in entrepreneurial activity (Ajzen, 2002). In context of entrepreneurial activity, it can also be called *entrepreneurial self-efficacy*. Krueger et al. (2000) argued that entrepreneurial self-efficacy greatly influences entrepreneurial behavior. To summarize, the research of many scholars supports the roles of entrepreneurial attitudes, subjective norms and perceived behavioural control in predicting entrepreneurship behaviour (e.g., Krueger et al. 2000; Li 2007; Engle et al. 2010; Pihie and Bagheri 2011). Shapero and Sokol (1982) in the Enterpreneurial Event Model (SEE) assumes that intentions to start a business derive from a *propensity to act* and perceptions of *desirability* and *feasibility* which are products of cultural and social environments and determine personal choice. *Propensity to act* on an opportunity refers to the innate disposition to act upon one's decisions and depends on one's control perceptions.

Perceived desirability is described by Krueger (1993) as "the degree to which one finds the prospects of starting a business to be attractive; in essence, it reflects one's affection toward entrepreneurship." Such "willingness" to carry out entrepreneurial activity can be considered as a combination of personal attitude and social norms in the TPB model. Shapero and Sokol (1982) examine the concept of desirability using data on the family (particularly the father or mother), peer groups, educational and professional contexts and cultural values held by potential entrepreneurs.

Perceived feasibility is defined as the degree to which individuals consider themselves personally capable of performing entrepreneurial activity. Perceived feasibility can be influenced by the presence of role models or partners, obstacles, financial and social support, education, confidence in one's ability to perform entrepreneurial tasks, or perceived availability of resources needed to create a business (Gasse and Tremblay 2011). We can see that perceived feasibility corresponds quite well with perceived behavioral control in Ajzen's TPB model.

Ajzen (2005) refined the Theory of Planned Behavior model by expanding or adding new variables; namely, *personal*, *demographic*, and *environmental* factors which can be antecedents of entrepreneurship behavior. Shapero (1982) and Bird (1989) also emphasized the predictive role of *personal characteristics* and *contextual* factors in entrepreneurial behavior. In line with these arguments we included personality, social, environmental and cultural factors in our model to investigate how they contribute to entrepreneurship intention and behavior.

Considering that intention models seem to be a solid starting point for the analysis of entrepreneurial intentions, we first propose the following hypotheses:

H1a: *Students (in both cultures) whose families and friends value entrepreneurial activities above other career options will have a higher level of entrepreneurial intention.*

H1b: *Students (in both cultures) who hold a positive attitude and personal attraction (perceived desirability) towards entrepreneurship will have a higher level of entrepreneurial intention.*

H1c: *Students (in both cultures) who have high behavioural control (perceived feasibility) will have a higher level of entrepreneurial intention.*

Ajzen (2005) refined the Theory of Planned Behaviour model by expanding or adding new variables; namely, demographic, personal, social and environmental factors which can be antecedents of entrepreneurship behaviour. Bird (1989) also emphasized the predictive role of *personal characteristics* and *contextual* factors in entrepreneurial behaviour. In line with these arguments we included: 1) *personality*, 2) *social* and 3) *societal* factors in our model to investigate how they contribute to entrepreneurship intention and behaviour.

2. Personality factors

One of the oldest research traditions in entrepreneurship has been the search for understanding how entrepreneurs differ from the rest of the population in terms of various personality traits.

It is now well accepted that personality *is* an important predictor of entrepreneurial behaviour and “...continues to be of interest in entrepreneurship research” (Rauch and Frese 2000, 46). Although many personality traits have been associated with entrepreneurial intention and behaviour, we included in our study the ones which we assume will show differences between the USA and Turkish students due to cultural differences. Thus, students’ personality traits namely optimism, innovativeness, risk-taking propensity and competitiveness will be investigated in relation to students’ entrepreneurial intention.

Optimism

Seligman (2006) defines an optimist as someone who looks at the bright side of things and expects positive and desirable events happening in the future. Considering the new venture creation is a complex process and over half of all starting new ventures will probably fail (Knaup 2005), we can conclude that such positive emotions are necessary for entrepreneurial activity. Positive emotional states such as optimism, hope and resiliency have been reported as critical for successful leaders of high-technology new ventures (Peterson et al. 2009; Ucbasaran et al. 2010). Further, Janssen et al. (2013) found that students who are more optimistic are more entrepreneurially inclined and have strong intentions to pursue an entrepreneurial career. Hmieleski and Baron (2009) further comments that the entrepreneur high in dispositional optimism can cope better when faced with obstacles and challenging situations in pursuit of a new venture.

Innovativeness

Innovation is the process of turning ideas and knowledge into new value through creative thinking. Innovativeness is an important element of entrepreneurship. Innovativeness is the ability and tendency of entrepreneurial leaders to think creatively and recognize opportunities to produce novel and practical ideas, create new markets, introduce new products and services (Chen 2007; Gupta et al. 2004). Research findings have provide evidence that innovation is a primary motive in starting a new venture and also has a significant impact on venture performance (Hisrich et al. 2008). Many authors argue that entrepreneurs have significantly higher levels of innovative characteristic than managers or non-entrepreneurial counterparts (Gürol and Atsan 2006).

Risk-taking propensity

Risk-taking propensity refers to a tendency to take or avoid risks. Entrepreneurship has always been associated with risk-taking. Research findings also provide evidence that

individuals with a greater risk acceptance had stronger levels of entrepreneurial intention (Hmieleski and Corbett 2006). In a Turkish student sample, Gürol and Atsan (2006) found that students with entrepreneurial inclinations had higher scores in risk-taking propensity compared to students with no such inclination. Although Zhao et al. (2010) claimed that risk propensity is the best predictor of entrepreneurial intentions among other entrepreneurial traits, it is not necessarily related to entrepreneurial performance.

Competitiveness

Competitiveness has not been typically emphasized as an entrepreneurial personality trait in entrepreneurship research, yet it seems to be a convincing personality trait related to new venture creation. Decades ago, Schumpeter stressed the role of competitiveness as major motivation in engaging in entrepreneurial activity. Competitiveness is associated with the need for achievement, which has a positive relationship with venture performance (Rauch and Frese 2000). In a highly competitive business world, entrepreneurs tend to thrive on competitive spirit with standards of excellence to win and excel not only others, but also themselves.

Considering the cultural differences discussed earlier, we hypothesize that:

H2a: *U.S. students will score higher compared to Turkish students in the levels of optimism, innovativeness, risk-taking propensity and competitiveness.*

Having considered the impact of such entrepreneurial traits on the intent for entrepreneurship, we hypothesize that:

H2b: *Students' (in both cultures) optimism, innovativeness, risk-taking propensity and competitiveness will be positively related to their entrepreneurial intention.*

3. Social factors

As to the social dynamics of entrepreneurship, the main focus in this study is on the influence of immediate social factors that students are exposed to. By immediate social conditions, we mean *experiential activities* - what we call “creative catalysts” - and participation in *entrepreneurship education*.

a. Experiential activities

Certain experiences or activities are known to promote the kind of creative thinking and idea generation central to innovation and new venture development (Seelig 2012). For the purposes of this study, we call these creative catalysts. Drawing on this literature we can suggest that exposure to creative catalysts might play a role in encouraging entrepreneurial intention. A range of life experiences, such as those gained through living in different cities, traveling outside home country, trying new and different foods, meeting new people from different cultures and exposure to foreign books, movies and music can all contribute to cognitive diversity and exposure to new perspectives. Page (2007) also notes that individuals with cognitively diverse tools can be more creative and outperform high “ability” individuals at problem solving and predictive tasks. He further comments that the power of diversity creates better functioning firms, schools and societies. Zaki (2012) recommends promoting diversity of experience in order to create innovative cultures. Thus, we conclude that variety and a willingness to seek out

new experiences both play important roles in creative thinking and idea generation. To come up with new ideas, Chrysikou (2012) believes one should keep an open mind with minimal restrictions on thought and behaviour. However, with fear of risk, humans tend to move to safe routes – the biggest challenge to creative potential.

Exposure to others' creativity also enhances creativity. Amabile and Pillemer (2012) emphasize social-environmental influences on creativity and defend a comprehensive view of individual creative behaviour in social context. Seelig (2012) also argues that one's immediate surroundings significantly influence innovation and creativity. She adds that if you are not in an environment that rewards and stimulates the generation of new ideas, then it is unlikely that creativity will flourish. In this sense, being involved in experiential activities such as going to shows or galleries to view art and paying attention to public art and artists performing all stimulate and motivate individual creativity.

Furthermore, exposure to nature enhances creativity. Frumkin and Fox (2011) argue that being in contact with natural settings elicits a sense of wonder and fascination, creating an opportunity for disengaging from normal thought patterns and allowing the mind to wander. Natural environments catalyze shifts in attitudes, which can in turn create psychological space for creativity. Thus, spending time in the outdoors (e.g., hiking, fishing, camping) can serve as a creative catalyst contributing to individual creativity. Zaki (2012) also recommends seeking out diverse or non-traditional environments in order to promote creativity. Amabile (1996) reviews the strong association between creative and entrepreneurial behaviours. As Ward (2004) comments, creative individuals are more likely to engage in entrepreneurial activities that involve the creation of something new, such as a new product or service. For this reason we included all the above-mentioned experiential activities in our study, hoping to discover to what extent students in both cultures engage in them. These creative catalysts may or may not be directly linked to entrepreneurial intention. However, creativity literature well documents that they all enhance individual creativity, which in turn may trigger intentions to start a new venture. Thus, we hypothesize that:

H3a: Students' (in both cultures) experiential activities will be positively linked to their perceived innovativeness.

b. Entrepreneurship education

Entrepreneurship education is all about the development and improvement of entrepreneurial inspiration, awareness, knowledge and skills that are much needed to successfully establish and run an entrepreneurial venture. Many authors (e.g., Lee et al. 2005; De Jorge-Moreno et al. 2012) stress the importance of entrepreneurial education in cultivating the entrepreneurial spirit in individuals who could start new ventures. The literature, however, regarding the impact of education on entrepreneurial behaviour is quite contradictory and polarized. While some researchers claim that people's entrepreneurial inclination actually increases with education (e.g., Giacomini et al. 2011), there are others who say that education lessens the entrepreneurial desire of the individual. On the negative side, such researchers as Laukkanen (2000) argue that when business schools teach their students to be too analytic, problem-conscious and risk-averse, they scare them from establishing new business ventures. Instead, they prepare them for jobs in corporations and suppress creativity and entrepreneurship. The point

such authors are evidently making is that besides providing basic business knowledge, entrepreneurial education should also seek to empower students to become enterprising thinkers with enhanced self-worth and confidence to recognize business opportunities, deal with challenges in the business world, think creatively, and serve catalysts for economic growth.

On the positive side, there are researchers such as Pruett et al. (2009) who report that one of the main barriers for entrepreneurial intention among students is the lack of knowledge in management, business, accountancy and other administrative topics. The authors conclude that this lack can be filled in through proper education. Rauch and Frese (2000) also argue that entrepreneurial education can enhance an individual's creativity, flexibility and ability to respond to changing situations and thus contribute to innovative behaviors. Türker and Selçuk (2009), 143 notes that, "...getting an adequate education may foster entrepreneurial intention of a person".

As a result, entrepreneurship education has gained a universal recognition. However, little is known about the effects of different entrepreneurship programs on students' subsequent entrepreneurial action. That said, one of the objectives of this study is to investigate the influence of having entrepreneurship education on students' intentions towards entrepreneurship. Thus, we have set our hypotheses as:

H3b: *Students (in both cultures) who have prior exposure to courses on entrepreneurship will show a higher entrepreneurial intention.*

H3c: *Students' (in both cultures) prior exposure to courses on entrepreneurship will have a positive relationship with their entrepreneurial intention.*

c. Entrepreneurial family exposure

As to the social dynamics of entrepreneurship, this study focuses on the informal institutions that impact on the individual's entrepreneurial intention. We assume that individuals are influenced by the even more immediate social environment characterized by closer links to family or friends and relatives. Research suggests that with respect to the source of the family background and role models – for example, parental versus others (i.e., close friends), or immediate family (i.e., mother, father, siblings) versus extended family (i.e., aunt, uncle, cousin, grandparent)– that all can affect entrepreneurial intentions through attitudes (Krueger 1993; Delmar and Davidsson 2000). However, Shapero (1982) examines the concept of desirability for entrepreneurship using data on the family and peer groups and concludes that, in particular, the father or mother plays the most powerful role in establishing the desirability of the entrepreneurial behavior. Mueller (2006) also found parental role modeling to be the most significant familial factor on entrepreneurial intention. Through the socialization process of children, exposure to entrepreneurship experience in the family business constitutes important intergenerational influence on entrepreneurship intentions (Carr and Sequeira 2007). McElwee and Al-Riyami (2003) also found that children who grew up with entrepreneur parents had a greater tendency to choose a self-employed career. Similarly, Fairlie and Robb (2005) showed that entrepreneurs tended to have a self-employed mother or father in their family history. These entrepreneurs also indicated that within the family business context they acquired the skills, confidence and values required to do their own businesses (Altınay 2008). However, past or existing exposure to parental

entrepreneurial experiences may impact individuals' attitudes and behaviors positively or negatively towards business ownership. For example, Zellweger et al. (2011) found that individuals raised in business families, might perceive the entrepreneurial career as more feasible but not necessarily desirable. Experiences with past or existing success of the family members or close friends in entrepreneurial activities will affect the students' entrepreneurial intentions positively. Thus, we hypothesize that:

H3d: *Students (in both cultures) whose immediate family members have started a business will have a higher entrepreneurial intention.*

H3e: *Students (in both cultures) whose immediate family members have been successful as an entrepreneur will have a higher entrepreneurial intention.*

4. Societal factors

Because we are focused on university students, the main focus in this study will be on the *perceptions of the economic and political conditions of the home country* the students live in.

a. Economic and political conditions of the home country

The intention and market-oriented behaviours of an entrepreneur should also be influenced by the existing and anticipated economic and political infrastructure of the home country. Aldrich and Wiedenmayer (1993) claims that the socio-political environment of a country can be so powerful that it may create or destroy entrepreneurship. For example, a "hostile" economic environment, characterized by severe market fluctuations, high inflation and unemployment rates and economic instability may produce scepticism and discourage the potential entrepreneur from taking action. Economic instability in a country usually goes together with political instability as well. The lack of intellectual property rights, bureaucratic barriers, corruption, lack of corporation law and proper tax arrangements are factors among many others that undermine entrepreneurial activity. IMD World Competitiveness Yearbook (2005) lists those determining criteria effective on the entrepreneurship performance of countries, among which are "the ease of doing business in economy"; "availability of venture capital for business development"; "political stability"; "availability of legislations for easily creation of firms"; "availability of funds"; "bureaucratic barriers for business activity"... etc. Thus, in an environment characterized by supportive political and business leaders, latent entrepreneurs become motivated to act. Thus, we hypothesize that:

H4a: *Students (in both cultures) who think that the economic and political conditions of their home country are better for starting a new business will exhibit a higher level of entrepreneurial intention.*

The students were also asked to project to the economic and political conditions of the home country in the coming 5 to 10 years, and accordingly we hypothesize that:

H4b: *Students (in both cultures) who think that the economic and political conditions of their home country will be better in the coming 5 to 10 years for starting a new business will exhibit a higher level of entrepreneurial intention.*

b. Cultural valuations of home country concerning entrepreneurship

In GEM reports, cultural and social norms are emphasized as the major differentiating factor that impacts entrepreneurial activity in different countries. With regard to entrepreneurial career decisions, Gasse and Tremblay (2011) examined entrepreneurial intentions of students in different countries and showed that cultural environments of some countries affect entrepreneurial behavior by either favoring or discouraging it. Guerrero et al. (2008) in his research with different countries also concluded that the favorable cultural attitudes towards entrepreneurship and the high status of entrepreneurs had an important impact on student's intention to start a new business. It seems that a positive attitude of society towards entrepreneurship motivates people to start a new venture; entrepreneurship cannot prosper in a society where most members view it with suspicion. Culture influences entrepreneurial intentions through social norms and valuations (e.g., the image of entrepreneurs in society), generating differences across national and regional boundaries (Lent et al. 2000). Based on this line of thinking, we can suggest that in an "entrepreneurially supportive" national culture where entrepreneurial activities are valued and considered to be worthwhile (despite the risks), potential entrepreneurs may develop an intention to start their own business. Considering the characteristics of the U.S. culture, which is more conducive to entrepreneurship, we set our hypotheses as the following:

H5a: Cultural valuations perceived by the U.S. students as to entrepreneurial activity will be more favorable compared to Turkish students' valuation.

H5b: Cultural valuations perceived by students as to entrepreneurial activity (whether entrepreneurship considered as worthwhile or undervalued) will have a positive or negative impact on entrepreneurial intention.

Method

Sampling and data collection

Surveys were administrated at the University of Washington, Seattle, Washington USA and Marmara University, Istanbul Turkey. Using a convenience sampling, our sample consisted of enrolled undergraduate junior and senior U.S. and Turkish students. While selecting students from only two universities is based on convenience and accessibility, the selection of university students is intentional. As Mueller (2004) rightfully notes a sample of today's university students potentially include tomorrow's entrepreneurs and also include those with no such intention to get involved in entrepreneurial activities. Krueger and Carsrud (1993) also point out that by studying students, it is possible to investigate the related phenomena before they occur. Further, we were interested in the influence of curriculum on entrepreneurial intention. As pursuing a career as an entrepreneur can be the intention of any student with any major of study, we chose our subjects in both universities from various departments such as Economics, Communication, Business Administration, Informatics, Computer and Engineering (IT/Computer). The U.S. respondents were aged between 18 and 33 years old, and with a mean age of 21.67 (SD = 2.11) with 31 % of the students male and 69 % female. In the U.S. 36 % of the students were juniors and 64 % were seniors. The Turkish students ranged from 20 to 33 with a mean age of 22.72 (SD = 1.48). Of the Turkish students, 42 % were male and 58 % were female; 13 % of the students were juniors and 87 % were seniors.

Surveys were voluntary and anonymous. The study went through IRB review and received human subjects exempt categorization. Being content identical, a choice of print and electronic versions of surveys were available. The Turkish students were administered questionnaires in classrooms before classes and, although voluntary, the answer rates were 100 %. The total number of valid surveys reached 300. At the University of Washington, incentives were offered to ensure participation. Participants were entered into a random drawing for one of three \$150 gift cards, and all participants received a brochure with career advice. Surveys were promoted by the researchers through flyers and cards posted on bulletin boards, in email distribution lists and on department websites or newsletters provided by undergraduate advising and career centres. To ensure anonymity yet be eligible for the incentives, students provided their e-mail addresses, after completion the survey, on a separate form detached from the survey. The final valid count reached 20 print and 269 electronic surveys, totaling 289 U.S. respondents. Surveys took 20 min to complete. Data were collected between November 10 and December 15, 2014.

Survey instruments

Data were collected through a survey titled Career Path Survey. The surveys were originally constructed in English, then translated into Turkish for the Turkish student sample. In order to ensure that questions from the original scales in English measured the exact same construct, a *translation/back translation* procedure was employed using two experts, one of which is the co-author on this paper. The survey investigated students' self-perception of their personality traits, their evaluations of social and environmental factors, along with a self-assessment of their entrepreneurial intentions. Respondents were additionally instructed to provide specific demographic information. All items were measured by using a 6-point Likert scale and dichotomous nominal scales.

Entrepreneurial intention and its antecedents – namely subjective norm, personal attraction/attitude and perceived behavioural control/entrepreneurial self-efficacy – were measured by scales developed by the researchers based on a careful cross-check of work by Aldrich and Martinez (2001), Krueger et al. (2000); Ajzen (2002); Liñán and Chen (2009), and Choo and Wong (2006). Likert scales that ranged from 1 = Strongly disagree, to 6 = Strongly agree were used to assess the *Subjective norm* (two items; e.g., “My immediate family values entrepreneurial activity above other activities and careers”), *Perceived behavioral control/Entrepreneurial self-efficacy* (three items; e.g., “If I became an entrepreneur, it would be very likely that my company would be successful after two years”), and the *Personal attraction/attitude* (three items; e.g., “The idea of owning my own business is very appealing to me”). Students also assessed the attractiveness of a career as an entrepreneur in comparison to other career options such as a job in the public sector, a job in the private sector, and being self-employed on a four-item 6-point Likert scale (1 = Very unattractive to 6 = Very attractive) developed by the researchers. It is important to note that the term “entrepreneur” did not appear until half way through the survey (after questions such as the personality trait assessment questions). When introduced, an “entrepreneur” was defined for respondents as a person who starts his or her own business or organization, and in doing so takes on financial risk versus being self-employed (working as a freelancer or contract worker).

Entrepreneurial intention was measured with 6 items (e.g., “It is a high probability that in the foreseeable future I will start my own business”). These are general sentences indicating different aspects of entrepreneurial intention. Students’ entrepreneurial intention was also assessed with a dichotomous nominal scale (1 = Yes and 2 = No).

Students self-evaluated their personality traits of *optimism*, *innovativeness*, *risk-taking propensity* and *competitiveness* on Likert scales that ranged from 1 = Strongly disagree, to 6 = Strongly agree. *Optimism* was assessed with 4 items from Life Orientation Test (LOT) developed by Scheier and Carver (1992). Positively worded items included “I always look on the bright side of things”. *Innovativeness* was measured by an 8-item Innovation Scale from the Jackson Personality Inventory Manual (JPI) as utilized by Mueller & Thomas (2000). The items chosen were those which appeared to contain the least amount of potential Anglo-American context bias. Statements included “I like to experiment with various ways of doing the same thing”. *Risk-taking propensity* was measured by a 5-item reduced version of the Risk Orientation Questionnaire (ROQ) developed by Rohrmann (1997). Items include: “I don’t like to put something at risk, I would rather be on the safe side”. *Competitiveness* was measured by 5-item Competitiveness Scale developed by Lynn (1991). Items include: “I enjoy working in situations involving competition with others”.

Students’ exposure to *experiential activities* was measured by Likert and nominal scales developed by the researchers. The operationalization was done based on prior studies of creativity conducted by Page (2007); Frumkin and Fox (2011) and Amabile and Pillemer (2012). The students expressed how often they are exposed to new experiences (e.g., travelling outside of home country, going to shows or galleries to view art, spending time in nature, and participating in individual sports with a degree of risk).

The exposure to *entrepreneurial education* was assessed with a 2-item dichotomous nominal (1 = Yes and 2 = No) scale (e.g., “Have you taken a class that discusses entrepreneurship in your university education?”). The *need for entrepreneurial education* was also measured with a 3-item Likert scale (e.g., “I am interested in receiving entrepreneurial training as part of my university education”). Both scales were developed by the researchers based on work in entrepreneurial education literature.

Entrepreneurial family exposure was assessed on a dichotomous nominal (1 = Yes and 2 = No) 2-item scale developed by the researchers based on work by Chen et al. (1998). Items included: “Do you have an immediate family member (i.e., parent or sibling) who has started a business?” and “Do you have an immediate family member (i.e., parent or sibling) who is currently successful as an entrepreneur?”.

Cultural valuation of entrepreneurial activity as perceived by students was measured with 5-item scale developed by Liñán (2008). Sample items include: “The culture in my country is highly favorable towards the entrepreneurial activity” and “The entrepreneur’s role in the economy is generally undervalued in my country”.

Perceptions of the present and future *economic and political conditions of the home country* was measured by 4 items (e.g., “I think the economic conditions of my country now for starting a new business ...”, “I think the political conditions of my country in the coming 5 to 10 years will be ...”). The 6-point Likert scale ranged from 1 = Definitely worse to 6 = Definitely better.

Demographic questions: Age and gender were chosen as the demographic variables in this study.

Results

The data were analyzed with SPSS 22.0. Prior to testing our hypotheses, we employed factor analyses to test whether the preconditions for cross-cultural comparison are met. The results of the factor analyses show that all items in both data sets are significantly related to the underlying constructs that they were hypothesized to measure, and not to other constructs. There were two exceptions. In Turkey one item supposedly measuring innovativeness “I usually continue doing a new task in exactly the way it was taught to me” was not significantly related to the factor measuring innovativeness and eliminated from the analyses. In addition, the item measuring risk-taking propensity “You participate in individual sports with a degree of risk (e.g., rock climbing, snowboarding, skydiving)” did not appear under any factor and was consequently excluded from the Turkish data. Cumulative variance explained was 60.652 % for the Turkey data. Similarly, the item measuring risk-taking propensity “I follow the motto, ‘nothing ventured, nothing gained’” had a loading below the 0.40 threshold and was excluded from further analyses. Cumulative variance explained was 62.764 % for the U.S. data. The Cronbach’s alpha statistics showed that both the English and Turkish versions of the scales were highly reliable “good” measures with minimal variance across country samples.

Entrepreneurial intention

Table 1 shows descriptive statistics of entrepreneurial intention and its antecedents – attitude, subjective norms and behavioural control for both U.S. and Turkish samples.

Findings reveal that both U.S. and Turkish students show a low level of entrepreneurial intention (Mean U.S. = 2.65; Mean Turkey = 3.13 respectively). Interestingly enough, though, they hold a highly favorable attitude toward being an entrepreneur (U.S. Mean = 4.01; Turkey Mean = 4.59 respectively). This finding suggests that there may be other variables which affect the relationship between attitude and the actual behaviour in both contextual settings. Turkish students show a significantly higher level of entrepreneurial intention than their U.S. counterparts. They also show a stronger attitude for entrepreneurship, more favorable familial valuation and higher perceived behavioural control.

In an effort to understand the reasons of the discrepancy between a favorable entrepreneurial attitude but low entrepreneurial intention (mean difference significant at $p < 0.001$ for both U.S. and Turkey sample), we investigated the risk perceptions of the students as to entrepreneurship. Table 2 summarizes the results for both U.S. and Turkish sample.

Results reveal that risk perceptions of students in both samples are fairly high, with the U.S. students even higher (Mean U.S. = 3.83, Mean Turkey = 3.48; scale mid-point = 3).

Table 1 Means for Entrepreneurial intention, attitude, subjective norms and behavioural control

<i>Entrepreneurial intention</i>			<i>Attitude</i>		<i>Subjective norms</i>		<i>Behavioural control</i>	
Samples	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
U.S.(1)	2.65	.93	4.01	1.18	2.97	1.03	3.19	1.03
Turkey(2)	3.13	1.19	4.59	1.19	3.39	1.09	4.23	1.16
Δ (1)–(2)		$p < 0.001$		$p < 0.001$		$p < 0.001$		$p < 0.001$

Table 2 Risk perceptions of entrepreneurship

<i>How much risk do you think is involved in starting your own business?</i>	U.S. students (%)	Turkish students (%)
It would not involve any risk.	.7	1.7
It would involve a little risk.	1.4	10.0
The risk involved would be moderate.	21.5	43.8
It would involve a lot of risk.	68.1	28.6
It would involve too much risk.	7.6	14.5
I have no opinion.	.7	1.4

While 75.7 % of the U.S. students perceive a lot of and too much risk involved in starting own business, 43.1 % of Turkish students perceive a high or too high risk with entrepreneurship. 43 % of Turkish students consider starting their own business as moderately risky. This might account for the significant difference between the samples as to entrepreneurial intention. Pearson correlation analyses also showed that risk perception and entrepreneurial intention is negatively correlated for both samples ($r = -.232$, $p < 0.001$ for the U.S. sample and $r = -.354$, $p < 0.001$ for the Turkish sample). It seems that risk perception, among other factors, does not play a strong role in entrepreneurial intentions.

We also asked about the attractiveness of different career options for U.S. and Turkish students with the results shown in Table 3.

Our first set of hypotheses (H1a, H1b, H1c) describe the influence of subjective norms, attitudes, and perceived behavioural control on entrepreneurial intention and seek support for the applicability of the Theory of Planned Behaviour to entrepreneurial intention in culturally different contexts. Subjective norms have not always had a significant impact on entrepreneurial intention and thus have been excluded from the EIM by some authors (e.g., Krueger et al. 2000). However, considering that subjective or social norms could be expected to vary across cultures, and few studies have examined it cross-culturally, we have included these elements in our analysis. See Table 4.

The hypotheses were tested using hierarchical regression analysis. Prior to regression analyses, Exploratory Factor Analyses were conducted to test the underlying patterns of the measurement scales in Theory of Planned Behaviour Model. In two separate analysis for both datasets EFA results of attitude, perceived subjective norms, perceived behavioural control and entrepreneurial intention showed that all four scales were unidimensional. Cronbach's alphas were above the acceptable threshold (between .60 and .89).

In model 1, only the control variables were entered. For the U.S. sample, age had a significant impact on entrepreneurial intention ($\beta = 0.143$, $p < 0.05$). This means that older students have a higher entrepreneurial intention. The three independent variables

Table 3 Attraction to career options

<i>All things considered, what is your level of attraction towards each of the following professional options?</i>	U.S. students Mean	Turkish students Mean
Job with a salary in the public sector (e.g., a government agency)	3.80	3.57
Job with a salary in the private sector (e.g., a for-profit company)	4.81	4.09
Self-employed (e.g., working alone as a freelancer or contract worker)	3.76	3.35
An entrepreneur (business owner with employees/partners)	4.01	4.39

Differences between samples significant at $p < 0.001$

Table 4 Impact of attitude, subjective norms and perceived behavioural control on entrepreneurial intent

	U.S. sample		Turkish sample	
	Model 1	Model 2	Model 1	Model 2
Dependent variable				
Intention				
Control variables				
Age	0.143**	0.035	0.111*	0.051
Gender ^a	-0.083	- 0.055	- 0.282***	- 0.192***
Independent variables				
Attitude toward the behavior		0.232***		0.315***
Perceived subjective norms		0.300***		0.186***
Perceived behavioural control		0.355***		0.229***
R ²	0.028**	0.570***	0.096***	0.415***
Adjusted R ²	0.021	0.563	0.090	0.404

Notes: *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$; Gender^a: 1 male, 2 female

(attitude, perceived subjective norms and perceived behavioural control) were included in model 2. All three antecedent variables were found to have a positive significant impact on entrepreneurial intention at $p < 0.001$ level, explaining 56 % change in entrepreneurial intention. Perceived behavioural control made the biggest contribution on entrepreneurial intention ($\beta = .355$, $p < 0.001$). For the Turkish sample, age ($\beta = 0.111$, $p < 0.05$) and gender ($\beta = -0.282$, $p < 0.01$) had a significant impact on entrepreneurial intention. It seems that similar to the U.S. students as students get older, their entrepreneurial intention increases. Male Turkish students show a higher intention for entrepreneurship compared to female students. The inclusion of the three independent variables in model 2 reveals that all three variables - attitude, perceived subjective norms and perceived behavioural control - were found to have a positive significant impact on entrepreneurial intention at $p < 0.001$ level, explaining 40 % change in entrepreneurial intention. Attitude made the biggest ($\beta = .315$, $p < 0.001$) and subjective norms made the least contribution ($\beta = .186$, $p < 0.001$) on intention. The results suggest that Hypotheses 1a, 1b and 1c are supported. The results also bring evidence that Ajzen's Theory of Planned Behaviour model holds true in a collectivistic cultural context as well.

Personality factors and entrepreneurial intention

In order to confirm H2a, we tested whether the samples displayed different levels in the personality traits. Table 5 shows the differences between the means.

Results show that all students in both sample groups scored higher than the theoretical midpoint (3.5) of the personality scales, implying they all have the entrepreneurial traits. However, a closer look at the analysis yields a somewhat mixed pattern. On the one hand, U.S. students have a higher risk-taking propensity than the Turkish sample. Turkish students, on the other hand, scored higher in optimism, innovativeness and competitiveness. Thus, H2a is supported. However, although the differences in the personality traits are statistically significant, they are far from being impressive. In order to compare the means of personality traits between U.S. and Turkish students on

Table 5 Means, standard deviations and mean differences in Personality traits

Samples	<i>Optimism</i>		<i>Innovativeness</i>		<i>Risk-taking</i>		<i>Competitiveness</i>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
U.S.(1)	4.06	.83	3.68	.61	3.55	.76	4.12	.81
Turkey(2)	4.12	.87	3.97	.83	3.52	1.07	4.22	.83
Δ (1)–(2)	$p < 0.001$		$p < 0.001$		$p < 0.001$		$p < 0.001$	

entrepreneurial intention, we conducted an independent *t*-test analysis (Table 6). The results of the *t*-tests showed that higher optimism, innovativeness and risk-taking propensity are important entrepreneurial traits in the case of both samples. This implies that regardless of cultural differences, optimism, innovativeness and risk-taking propensity are universal qualities of entrepreneurship.

In order to see the differences between the strength of relationships across countries and find out whether the personality traits (*optimism, innovativeness, risk-taking propensity and competitiveness*) will be related to students' entrepreneurial intention, we conducted Pearson correlation for both the U.S. and Turkish samples (Table 7).

Results indicate that optimism, innovativeness and risk-taking propensity are all related with entrepreneurial intention for both U.S. ($r = .219$, $r = .191$ and $r = .277$ respectively) and Turkish samples ($r = .236$, $r = .311$ and $r = .394$ respectively). Competitiveness is not related with entrepreneurial intention for the Turkish sample. Thus, H2b is partially supported considering the two data sets.

Experiential factors, innovativeness and entrepreneurial intention

We also hypothesized that students' (in both cultures) experiential activities will be linked to their perceived innovativeness. Table 8 shows the means and correlations of these so-called creative catalysts with innovativeness.

Results show that Turkish students' involvement with various experiential activities is statistically higher than U.S. students. However, exposure to different perspectives and experiences seem to enhance innovativeness in both samples ($r = .282$, $r = .338$ respectively). Thus, H3a is confirmed.

Entrepreneurship education and entrepreneurial intention

To investigate the effects of having entrepreneurship education on a student's intentions towards starting their own business, we asked the students whether they have

Table 6 T-tests of significant differences between entrepreneurial traits

Personality traits	U.S. sample			Turkish sample		
	Entrepreneurial intention			Entrepreneurial intention		
	Mean	Mean	<i>t</i> -value	Mean	Mean	<i>t</i> -value
	Yes	No		Yes	No	
Optimism	4.17	3.98	1.963*	4.21	3.99	2.265*
Innovativeness	3.83	3.57	3.572**	4.08	3.55	6.080**
Risk-taking propensity	3.38	3.15	2.533*	3.85	3.09	6.403**
Competitiveness	4.19	4.08	1.167	4.18	4.25	.687

** $p < 0.01$; * $p < 0.05$; (2-tailed)

Table 7 Bivariate correlations between personality traits and Entrepreneurial intention

Personality traits	U.S. sample	Turkish sample
	Correlation (r)	Correlation (r)
Optimism	.219**	.236**
Innovativeness	.191**	.311***
Risk-taking propensity	.277**	.394**
Competitiveness	.118*	.081(ns)

**Significant at $p < 0.01$, * $p < 0.05$ level; ns non-significant

taken classes on entrepreneurship in their university education or any other similar courses. Table 9 summarizes the frequency of *Yes* or *No* answers as well as the means of and correlation with entrepreneurial intentions for both samples.

Results show that the majority of the students in the U.S. sample have not taken a class that discusses entrepreneurship in their university education. The majority of the Turkish students, on the other hand, have taken an entrepreneurship class but it does not seem to be related with entrepreneurial intent. However, almost half of the U.S. sample indicate they have taken other classes that might be helpful in starting a new business. Both U.S. and Turkish students who have taken classes that might be helpful in starting a new business expressed a higher intention to start a new venture. Thus, H3b is supported for both samples. However, their entrepreneurial intent was still low (below the 3.5 mid-point).

Having taken similar classes that prepare them for entrepreneurship seem to be related with both U.S. and Turkish students' intent to start a new venture ($r = -.155$, $r = -.221$ respectively). Thus, we can say that H3c is supported for both samples.

We also wanted to find out whether students in both samples feel the need for further entrepreneurial training and courses. Table 10 shows the items that measure such need for both samples.

Table 8 Means and bivariate correlations between experiential activities and innovativeness

	U.S. sample		Turkish sample	
	Mean	(r)	Mean	(r)
Experiential activities	3.76	.315**	4.28	.364*
Exposure to other cultures	3.22	.144*	4.46	.274**
Listening to music of other cultures				
Reading the books of foreign authors				
Watching foreign movies				
Exposure to new experiences	4.44	.259**	4.49	.364**
Trying new and different foods				
Meeting new people from different cultures				
Seeking out new experiences				
Spending time in the outdoors (hiking, camping)				
Exposure to art	3.23	.363**	3.43	.181**
Going to shows and galleries				
Viewing public art and artists				

**Significant at $p < 0.01$, *Significant at $p < 0.05$ level 2-tailed

Table 9 Entrepreneurship education and Intention

<i>Have you taken a class that discusses entrepreneurship in your university education?</i>							<i>Have you had any other classes that might be helpful in starting a new business?</i>						
Yes		No		Yes			No						
Samples	Intention		Intention		Correlation		Intention		Intention		Correlation		
	Mean	(%)	Mean	(%)	<i>p</i>	(<i>r</i>)	Mean	(%)	Mean	(%)	<i>p</i>	(<i>r</i>)	
U.S.	2.86	19	2.60	81	ns	-.111	2.79	51	2.50	49	**	-.155**	
Turkey	3.20	54	3.04	46	ns	-.071	3.40	49	2.87	51	***	.221**	

*** $p < 0.000$, ** $p < 0.01$, *ns* non-significant

Findings suggest that both U.S. and Turkish students need more training and education on entrepreneurship to start a new business.

Entrepreneurial family exposure and entrepreneurial intention

We conducted Independent samples *t*-tests (Table 11) in order to find out if prior or present exposure to entrepreneurial family would have an impact on students' entrepreneurial intention.

Results reveal the influence of parental role modeling to be a significant familial factor on entrepreneurial intention for both U.S. and Turkish students. Both the U.S. students and Turkish students whose immediate family members have started a business and have been successful have a significantly higher entrepreneurial intention than students with non-entrepreneurial parents. Thus, H3d and H3e supported.

Perceived economic and political conditions of the home country and entrepreneurial intention

As a social factor that influences students' intention to start a new business, we asked the students to evaluate their home countries' economic and political conditions as compared to the past and also projecting into the coming 5 to 10 years. Table 12 summarizes the results.

Results in Table 12 reveal that as to the present and future economic and political conditions of the home country, there seem to be significant differences between the U.S. and Turkish students. The U.S. students made somewhat favourable evaluations slightly above the 3.5 midpoint. The evaluations of the Turkish students, however, were quite unfavourable (below the 3.5 midpoint). They obviously do not think that the economic and political conditions of Turkey now are better nor will be better in the coming 5 to 10 years for starting a new business. The correlation analysis show that the perceptions of all students regarding the present and future economic and political

Table 10 Need for further entrepreneurial training and courses

Items	U.S students	Turkish students
	<i>Mean</i>	<i>Mean</i>
"I am interested in receiving entrepreneurial training as part of my university education"	4.15	4.59
"I would need more business-related education before I could start a new business"	4.68	4.67

Table 11 Entrepreneurial family exposure and Entrepreneurial intention

Items	U.S. students'			Turkish students'		
	Intention		<i>r</i>	Intention		<i>r</i>
	Yes (%)	No (%)		Yes (%)	No (%)	
"Have an immediate family member who has started a business?"	2.90 (44)	2.44 (56)	-.243**	3.34 (47)	2.93 (53)	-.170**
"Have an immediate family member who is currently successful as an entrepreneur?"	3.07 (31)	2.46 (69)	-.296**	3.54 (39)	2.86 (61)	-.276**

** $p < 0.01$

conditions of their home country are significantly related with their intention to start their own business. Thus, H4a and H4b are supported.

Cultural valuations and entrepreneurial intention

In order to find out how cultural valuations perceived by students as to entrepreneurial activity will impact on entrepreneurial intention and how they will differ between U.S. and Turkish students, we conducted one-sample t-tests and correlation analysis and Table 13 summarizes the results.

Results show that U.S. students consider their national culture more "entrepreneurially supportive" compared to the Turkish sample. They believe that the U.S. culture is highly favourable towards entrepreneurial activity. Thus, H5a is supported. Both the U.S. and Turkish students' perceptions of whether own culture values entrepreneurial activity, despite the risks, also play some role in their decision to start own business. Cultural valuation has a low positive correlation with entrepreneurial intention for both samples. Thus, we can conclude that H5b is also supported for both samples.

Regarding the effects of demographic variables on entrepreneurial intention, female students in the Turkish sample had a significantly lower intention for self-employment than male students (Mean male = 3.56, Mean female = 2.82, $p < .001$). It seems that Turkish female students do not favour an entrepreneurial career. Although American female students also showed lower entrepreneurial intentions compared to male counterparts, this difference was not significant. Age, on the other hand, correlated with entrepreneurial intention for both samples ($r = -.197$, $p < .01$; $r = -.131$, $p < .05$

Table 12 Economic and political conditions of the home country and Entrepreneurial intention

<i>"I think that the economic conditions of my home country now are better for starting a new business...."</i>			<i>"I think that the political conditions of my home country now are better for starting a new business...."</i>	
Samples	Mean	Correlation/ Intention	Mean	Correlation/Intention
U.S.(1)	3.74	.284**	3.62	.163**
Turkey(2)	2.89	.207**	2.52	.231**
Δ (1)–(2)	$p < 0.001$		$p < 0.001$	
<i>"I think that the economic conditions of my home country in the coming 5 to 10 years will be"</i>			<i>"I think that the political conditions of my home country in the coming 5 to 10 years will be"</i>	
Samples	Mean	Correlation/Intention	Mean	Correlation/Intention
U.S.(1)	4.08	.157**	3.68	.143*
Turkey(2)	3.18	.175**	2.85	.194**
Δ (1)–(2)	$p < 0.001$		$p < 0.001$	

Correlations significant at ** $p < 0.01$, * $p < 0.05$

Table 13 Cultural valuations and Entrepreneurial intention

Samples	Cultural valuation Mean	Correlation/ intention	<i>p</i>
U.S.(1)	4.11	.157	0.008
Turkey(2)	3.51	.122	0.05
Δ (1)–(2)	$p < 0.001$		

respectively). As students become older, their intention for starting their own business increased.

As one final analysis, in order to find out the combined effects of personality and contextual factors on entrepreneurial intention, we conducted linear regression analysis for both U.S. and Turkish data sets. In the initial analysis, it was observed that the contribution of some variables on entrepreneurial intention was insignificant (competitiveness, experiential activities, having an entrepreneurial family and future economic/political conditions). Thus, we excluded such variables and repeated the analysis. The results are shown in Table 14.

Results reveal that both “innovativeness” and “risk-taking propensity” statistically predicted entrepreneurial intention for both U.S. and Turkish students. “Optimism” significantly contributes on intention for the Turkish sample, but not for the U.S. sample. Competitiveness makes no contribution. As to the social factors, “having taken classes that might be helpful in starting a new business” and “having an

Table 14 Linear regression models for entrepreneurial intention for both sample sets

	U.S. sample		Turkish sample	
	β	<i>P</i>	β	<i>P</i>
Dependent variable				
<i>Intention</i>				
Independent Variables				
<i>Personality factors</i>				
Optimism	-	-	.14	.005
Innovativeness	.14	.009	.25	.008
Risk-taking propensity	.16	.003	.22	.000
Competitiveness	-	-	-	-
<i>Social factors</i>				
Experiential activities	-	-	-	-
Entrepreneurial education	-.10	.048	-.12	.015
Entrepreneurial family	-	-	-	-
Successful entrepreneurial family	-.26	.000	-.15	.003
<i>Societal factors</i>				
Economic/political conditions	.21	.000	.18	.000
Future economic/political conditions	-	-	-	-
Cultural valuation	.19	.000	-	-
Constant	2.722		1.213	
R^2	0.23***		0.28***	
Adjusted R^2	0.28***		0.26***	

*** $p < 0.001$

immediate family member who is *currently successful* as an entrepreneur?" statistically predicted entrepreneurial intention for both U.S. and Turkish students. Having an entrepreneurial immediate family member does not seem to be enough to predict entrepreneurial intention. The present economic and political conditions of the home country (but not the predicted future conditions in 5-10 years' time) made significant contributions on students' intent to start own business. The U.S. students' cultural valuation of entrepreneurial activity had a significant impact on their entrepreneurial intention. Such an impact is not observed for the Turkish sample.

Discussion and conclusions

This study sought to investigate the antecedents to entrepreneurial intention to start a business in two culturally different samples. In an attempt to compare the US and Turkish students in their intention to pursue a career as an entrepreneur, we found more similarities than differences.

An important finding of this study is that both U.S. and Turkish students showed relatively weak intention to start their own new venture. However, their personal attitudes toward becoming an entrepreneur were high. This led us to consider that several universal or culture-specific factors in both contextual settings might be responsible for this discrepancy between entrepreneurial attitude and intention.

U.S. students' significantly lower levels of entrepreneurial intention compared to Turkish students seem somewhat puzzling. Given past research that suggests Americans are more likely to pursue an entrepreneurial career, the results deserve closer attention. One explanation could be the perceived risks associated with new venture creation. U.S. students seem to prefer jobs with a salary in the private sector to becoming an entrepreneur. It may be the case that as Wennekers et al. (2005) argue more developed and wealthier countries provide more attractive private and public sector career options for graduates, leading to less entrepreneurial intentions.

Turkish students' low level of entrepreneurial intention can be explained by their rather unfavourable evaluations of the economic and political conditions of home country which seemed to discourage their entrepreneurial intentions. The findings draw attention to the importance of macro-level governmental improvements.

Turkish students' significantly higher level of entrepreneurial intent, however, can be explained by the GEM project which revealed that less developed countries with negative economic conditions such as low wages and high unemployment rates have recorded higher entrepreneurial activity than most developed countries (Bosma and Levie 2010). Iakovleva et al. (2011) and Davey et al. (2011) also concluded that respondents from developing countries/economies were more likely to envisage future careers as entrepreneurs and have stronger entrepreneurial intentions than those from industrialized countries. Given these facts, however, considering the overall low level of entrepreneurial intention of Turkish students, we cannot claim for certain that this is the case for our Turkish sample.

Turning to Ajzen's Theory of Planned Behaviour, and similar to prior research that investigated entrepreneurial intentions, the findings of this study support the positive associations between entrepreneurial intentions and subjective norms, attitudes, and perceived behaviour control (Table 14) in line with more recent research by Kolvereid & Isaksen (2006). Although the TPB model that we tested with the Turkish data yielded

a lower percentage of change ($R^2 = .40$) in explaining entrepreneurial intention compared to the U.S. data ($R^2 = .56$), we can still conclude that Ajzen's TPB model holds true in a collectivistic cultural context as well. Consistent with the results of Armitage & Conner's (2001) meta-analysis, however, subjective norms made the weakest contribution on entrepreneurial intention with the Turkish data. Considering the cultural properties of Turkey, this finding is interesting. It seems that some other factors are more influential on the entrepreneurial intention of Turkish students than the opinion of their family or close friends. Turkish students scored higher, however, on Ajzen's antecedents of entrepreneurial intentions. They showed a stronger attitude for entrepreneurship, more favorable familial valuation and higher perceived behavioral control. Iakovleva et al.'s (2011) also found that developing countries exhibited higher scores on Ajzen's antecedents of entrepreneurial intentions than developed countries.

Consistent with the trait approach, personality appears to be relevant to entrepreneurial intention. Both U.S. and Turkish students scored above average in innovativeness, risk-taking propensity, optimism and competitiveness, implying they all carry entrepreneurial traits.

When collapsed all together with the other contextual variables, however, innovativeness and risk-taking propensity emerged consistently across both data sets making significant contributions on entrepreneurial intent.

Although far from being impressive we found differences between samples as well. Consistent with the cultural properties of the country, the U.S. students had higher risk-taking propensity. Turkish students also perceived themselves as risk takers, however. In less developed countries with negative economic conditions such as low wages and high unemployment rates young people might be ready to take risks or shared risks (relying on familial ties, for example) to start own business.

One interesting finding was that Turkish students had higher levels of dispositional optimism compared to the U.S. students. This finding may sound somewhat inconsistent with Chang et al.'s (2001) contention that in general Westerners hold a more optimistic bias than Easterners. Although we may suspect that such properties as communalism and spirituality much associated with most Eastern cultures—or simply the young age of the respondents—might be responsible for such high levels of optimism, more research should be directed towards exploring entrepreneurial optimism with other samples in similar cultures. The linear regression analyses also showed that when collapsed with the other personality and contextual variables, optimism emerged as a predictor for entrepreneurial intent for the Turkish sample (but not for the US sample). It seems that for Turkish students, having an optimistic outlook is important in seeing the challenges of entrepreneurship as opportunities. We do not know if it is the case for Turkish students but excessive or irrational optimism and overconfidence are other important issues to be dealt with.

Another interesting finding was the higher innovativeness score of the Turkish students. Entrepreneurial orientation has long been associated with innovativeness, which is supposed to be more prevalent in individualistic, low uncertainty avoidance cultures (e.g., Anglo-American) than in collectivistic, high uncertainty cultures (Hofstede 1980). Our findings, however, suggest that innovativeness is equally likely in a collectivistic culture such as Turkey. Although we should be cautious in making generalizations with limited data, we may argue that the propensity to think creatively may well be a universal

trait and requires closer examination before concluding that it specifically relates to a particular culture or country. Innovativeness and creative thinkers may well be prevalent in different cultural contexts. Interestingly enough, Turkish students scored higher also in competitiveness despite placing high on Hofstede's (1980) dimension of femininity which suggests that Turkish culture values modesty, caring, quality of life and social relationships rather than focusing on competition, material success and ambition. The explanation for such a discrepancy may lie in the nature of the Turkish data, however. The Turkish sample was made up of students who study at one of the best and competitive universities of Turkey. Turkish education system is also competitive and students have to take several challenging university entrance exams to get accepted to such universities. Besides, more recent research shows that Turkey has become less hierarchical (Aycan et al. 2000), less uncertainty avoiding (Kabasakal and Bodur 1998) and moderately collectivistic (Fikret-Pasa et al. 2001). Overall, the results of the analysis show that, regardless of the country of origin, risk-taking propensity and innovation lead to higher levels of entrepreneurial intention. These two traits seem to be universal rather than specific to a particular culture.

As Hmieleski & Baron (2009) state the relationship between optimism and entrepreneurship may be complicated and needs further investigation, however. Competitiveness did not seem to be contributing on entrepreneurial intention in both samples. It appears that U.S. and Turkish samples do not differ much as to entrepreneurial traits.

We also investigated the role of social contexts in promoting creativity. Results showed that certain experiential activities, what we call creative catalysts, were linked to perceived innovativeness. Students' exposure to art and artistic events, different cultures and new experiences are likely to enhance cognitive diversity, thus contributing to their perceived creativity. Besides, engaging in activities such as individual outdoor challenges, traveling, spending time in the nature, and attending art events would provide students not only with diverse experiences, but opportunities to develop feelings of independence, self-reliance and resilience - much needed traits of entrepreneurship. As innovativeness and creativity are known to be related with the experiential activities, students should also be encouraged to get involved with such outdoor activities, new experiences and art events. Although such activities are more prevalent in some cultural contexts, they can be woven into high school and university curriculum.

The results regarding the influence of education on entrepreneurial intention revealed mixed results. Having taken a class that discusses particularly entrepreneurship did not make a significant influence on the intention of either U.S. or Turkish students. This finding may well suggest that, as Kirby (2005) argued, entrepreneurship programs around the world educate students *about* entrepreneurship rather than educating them *for* entrepreneurship. The majority of the U.S. students expressed they have not even taken such a course, which is an interesting finding considering that (at least graduate) education in entrepreneurship in the U.S. has flourished in the last decade. On the other hand, U.S. and Turkish students who have taken other classes that might be helpful in starting a new business expressed a higher intention to start a new venture. However, a close look to the means lower than the 3.5 mid-point reveal that their entrepreneurial intent is still low, for U.S. students even lower. The linear regression analyses with the inclusion of all factors showed that having taken classes that might be

helpful in starting a new business made significant contributions on entrepreneurial intent for both US and Turkish students.

The need for further entrepreneurial training and business-related education is well documented by the findings of our research. It may be the case that entrepreneurship education has not spread to other non-business educational disciplines, such as engineering or social sciences. Besides, the role of the course characteristics and teaching methods may need to be further investigated. The presentation of knowledge about entrepreneurship may not be sufficient to influence intentions. Rather than restricting entrepreneurship education to classes, universities should follow an integrated approach linking classroom teaching with real life experiences. Addressing the emotions and attitudes of students through experiential learning and practical experience, educational institutions should design their courses in a way that stimulates more experimentation and creative thinking as well. Rae and Carswell (2001) maintain that most programmes focus on relatively easily teachable management skills (e.g., finance and marketing) rather than not easily teachable (e.g., creativity, innovativeness, problem solving abilities) elements of the discipline. As innovativeness and creativity are known to be related with the experiential activities discussed in our study, students should also be encouraged to get involved with such outdoor activities, new experiences and art events.

Our results also revealed that parental role models appear to be another important element to increase entrepreneurial intention. The Pearson correlation analyses showed that exposure to entrepreneurship (parents starting a business) and the perceived success of their parents' experience was related to entrepreneurial intention for both U.S and Turkish students. Students in both samples with entrepreneurial family background and/or a positive view (success) of their family's business experience expressed a higher intention to start own business. This result is in line with several authors' findings (e.g., Liñán et al. 2005; Mueller 2006) that suggest that individuals coming from entrepreneurial families have higher tendencies to establish own businesses. This is an expected finding given that an entrepreneurial family provides youngsters with an opportunity to acquire certain business skills, confidence, experience and vision, all of which contribute to inclination to start a new business. However, the linear regression analyses indicated that exposure to a *successful* entrepreneurial family had a significant contribution on the entrepreneurial intent of both US and Turkish students. Rather than having an entrepreneurial family, positive parental entrepreneurial experiences seem to impact students' intentions positively towards business ownership.

Regarding the present and future economic and political conditions of the home country, Turkish students made rather unfavourable evaluations which seemed to discourage their entrepreneurial intentions. Overall, the correlation analysis shows that as the perceptions regarding the present and future economic and political conditions of their home country become more favorable, both U.S. and Turkish students' intention to start their own business increases. The results draw attention to the importance of providing a powerful socio-political environment to create entrepreneurship. The linear regression analyses which collapsed all factors indicated that present economic and political conditions of the home country had a significant contribution on entrepreneurial intent for both US and Turkish students.

The results regarding the influence of cultural valuations on entrepreneurial intention revealed that the U.S. students consider their national culture more “entrepreneurially supportive” compared to the Turkish sample. This is an expected finding as the U.S. culture is known to be conducive to entrepreneurial activities. The entrepreneurial intention of both the US and Turkish students, on the other hand, has positive correlations with their cultural valuation. It seems that students’ perceptions of whether own culture values and considers entrepreneurial activity worthwhile, despite the risks, has a relationship with their intent. However, all personality and contextual factors considered, positive cultural valuations of own culture had an important contribution on entrepreneurial intention for the US sample only. This could be due to rather low cultural valuations of Turkish students. It may be the case that Turkish culture is not highly favorable towards entrepreneurial activity or the entrepreneur’s role in the economy is generally undervalued in the country. This issue needs further investigation in a larger context.

Significantly lower intentions of Turkish female students than their male counterparts add evidence to previous empirical research that reveals almost twice as many men as women become entrepreneurs (Acs et al. 2005) and that these differences are consistent across countries. Gupta et al. (2009) in their study with business students in the United States, India, and Turkey, found that consistently both young men and women associate entrepreneurs with stereotypically masculine characteristics. Although the number of women entrepreneurs has increased dramatically in recent years (Mueller and Thomas 2000; De Bruin et al. 2006), it seems that entrepreneurship is still being regarded as a male-dominated field.

Overall, the findings of this study call for a holistic approach to understanding entrepreneurial intention. It seems that a combination of psychological traits in interaction with socio-cultural background and experiential factors has an important bearing on entrepreneurial intention.

Limitations of the study

Our study, like most studies on entrepreneurial intention, is not without limitations. First, we assessed students’ perceptions regarding their future entrepreneurial intent, and not entrepreneurs’ actual behaviours. However, as our focus was on the antecedents to entrepreneurial intention, using a sample of students is justified. We should also be cautious in assuming causality. The correlational design of our study does not allow for causal conclusions. Although there is a great deal of previous research establishing the reasonable connection between intentions and future behaviour, we should keep in mind that intentionality does not necessarily lead to actual behaviour. Prospective longitudinal research designs may follow up to see which participants actually start their own business.

Care should be taken to generalize the findings of this study to all U.S. and Turkish undergraduates since the research covered only one Turkish and one U.S. university. Data collected from one region in the United and Turkey may not be representative of the entire country as these two countries are heterogeneous with different subcultures. Data collection from different regions in each of the two countries may enhance the generalizability of our findings. Some of the similarities regarding the personality traits in

the findings may be attributed to the nature of our data. For example, the data from Turkey was made up of students who study in one of the most competitive universities of Istanbul, the largest and the most westernized city of Turkey. Such students may carry those personality traits mostly associated with individualistic cultures. We recommend that the findings of this study be validated with a large-scale randomly selected data from other parts of Turkey and the United States.

Personality traits are measured with only four constructs, which do not cover a student's entrepreneurial personality. The choice of four or five item personality measurements can be regarded as debatable and a potential weakness. Besides, other personality traits are ignored in this research, leading to a loss in the potential explanatory power of the dependent variables. There is also a number of contextual factors untouched but that may well influence students' intention for a start-up. Future research should expand this line of research to include other entrepreneurial personality traits and other contextual factors to provide a more complete theoretical framework for explaining entrepreneurial behaviour within and across cultural contexts.

Despite its limitations, this study offers valuable guidelines and insight for those academics, practitioners and government officials who may want to review the effectiveness of current systems of their country and make changes in order to foster the entrepreneurial mindset in individuals. This is particularly important in the context of a developing country such as Turkey seeking to create an entrepreneurial culture for further socio-economic growth and development.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

NO and NR collaborated on the project design. NO collected survey data in Turkey. NR collected survey data in the United States. NO conducted the statistical analysis and wrote the first draft of the manuscript with input on sections from NR. Both authors reviewed and revised the full manuscript. All authors read and approved the final manuscript.

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