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ORIGINAL PAPER

Students from humanities and human sciences are basically the same aren't they? Cultural factors affecting entrepreneurship in Iran

Kerry M. Lee[1] · **Fatemeh Khoshnevisan**[2] · **Saeid Sharifi**[3]

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Abstract

In a third-generation university, concepts of creativity, innovation and entrepreneurship, help link the university with industry and society. These concepts, however, have not been uniformly distributed across all university disciplines. This paper, reviews the characteristics of a third-generation university, focusing on the capabilities of the humanities faculties to address the challenges and barriers of entrepreneurship. Identification of these notions is important for the development of the humanities in academic entrepreneurship. This research was conducted among 80 Iranian humanities entrepreneurs, using the Hofstede Model of National Culture and Entrepreneurial Tendency and Action questionnaires as data collection tools. Entrepreneurial tendency among those in the human sciences disciplines was greater than those in the humanities. Short-term orientation was only influential in the humanities group. However, individualism–collectivism and short-term orientation were influential to entrepreneurial tendency in both disciplines. While the power distance (high) was influential to entrepreneurial tendency in the humanities. The findings of this study showed significant entrepreneurial tendency differences between students from the humanities and human sciences. The findings also show that entrepreneurial tendency in the humanities is mostly influenced by cultural factors. This research has provided invaluable knowledge of the entrepreneurial differences from a cultural perspective in the third-generation university.

Keywords Third-generation university · Entrepreneurship · Human science · Model of national culture

Extended author information available on the last page of the article

Introduction

Before investigating the effect of cultural factors on academic entrepreneurship, it is important to understand the history of academic developments which have highlighted the need for university entrepreneurship.

The role of a university has evolved over time. Thousands of years ago institutions of higher learning existed in ancient Persia (Bazargan, 2006), Greece, Rome, South America (Aztec and Inca temple schools), Japan (in Tokugawa *han* schools), China (in Confucian schools), India (in Hindu *gurukulas* and Buddhist *vihares*), as well as Byzantium and the Islamic World (in *madrasas* for the mullahs and Quranic judges of Islam) (Perkins, 2006). However, it was not until 1088 when the Italian University of Bologna was opened, that the term 'university' was used. The term was based on the Latin *universitas magistrorum et scholarium* meaning community of teachers and scholars (Dori et al., 2016). Initially, the first universities were seen as a place to educate the elite and privileged. These first-generation universities were education based, with a purpose to train others and develop expertise especially with regards to religion.

In the seventeenth and eighteenth centuries, rather than solely disseminating information, universities began to undertake research and generate knowledge. By the late nineteenth century, these second-generation universities were research-based with their main role not only being research but also the production of science. A Second Academic Revolution took place in the second half of the twentieth century after World War II, in which entrepreneurship universities emerged as the third generation with the goal of training entrepreneurship and developing a relationship with industry (Ramezani et al., 2021). Universities began to research to create value rather than solely to discover new knowledge. These universities have been coined third-generation universities (Tajpour et al., 2020).

This value creation has led to commercialization of education, and in particular an entrepreneurial approach. Today, entrepreneurship is widely regarded as fundamental for building a modern society (Chiru et al., 2012). In order to develop an entrepreneurial approach, the university paradigm has undergone a change from simplicity and assurance, to complexity and uncertainty (Rasouli et al., 2020).

Entrepreneurship is a polarizing term. In part, this complex, context-specific discipline allows individual and groups to prosper by utilizing market opportunities (Hitt et al., 2011), yet it is not merely limited to business; there are also social and cultural entrepreneurs who address environmental and cultural issues (Gupta et al., 2020).

The goal of the third-generation university is to solve the problems of society and industry through innovation and entrepreneurship. For this reason, an increase in the number of citizens who are entrepreneurial, would ideally result in a marked increase in people choosing to become entrepreneurs. However, this is not the case. This is a serious challenge for academic entrepreneurship due to the *unbalanced development* of science and the differences in notions about entrepreneurship (Premand et al., 2016). The third-generation entrepreneur has generally

only come from the fields of engineering, medicine and science, with relatively few coming from the fields of philosophy, history, sociology, education, and other humanities (Abreua & Grinevich, 2014; Fazeli, 2016; Pilegaard et al., 2010).

Wissema (2009) argues that the demand for a third-generation university is: Firstly, as a result of the very high costs of scientific progress, and reduced budgets. Secondly, because globalization has led to competition in the three factions of students, academics and research contracts. Thirdly, universities are being expected to use knowledge more actively as new science and technology incubators. Moreover, there has been a need for a change in the business activities and management of the university, due to the general complexity and large increase in the number of students, which has led to bureaucracy, multidisciplinary research groups and an increase in the number of faculties. The role, of and within these entrepreneurial universities has changed; as has the role of university administrators, faculty, and the business community (Rubens et al., 2017).

In the past few years, adaptation of academic systems and the requirements of the European higher education field have been subject to significant changes. European countries have struggled to respond to social needs and expectations, to meet the demands of human capital, as well as provide synergies between social and economic well-being. While the traditional flow between higher education and the labor market has not addressed the significant proportion of youth who are unemployed (Eurostat, 2009). For this reason, various scholars and academics have argued that European universities should direct their academic programs to new social needs (Michavila, 2016).

Entrepreneurship Entrepreneurship is a common way of creating value in universities. It provides an accessible context for the requirements of a society and is a key strategy to gain awareness. Higher education is now faced with a complex worldview in which universities are required to rebuild their organizational mission (Rasouli et al., 2020). In many countries, higher education has led to entrepreneurship development patterns based on cultural and social capacities, as a result of increased trends regarding knowledge-based economic demands (Chanphirun et al., 2014). Often this economic approach has not seen changes in the humanities disciplines, which generally have a functional and applied focus. This contrasts with the increase in student numbers within the applied sciences to the detriment of those in the pure science fields. This reductive applied approach to entrepreneurship in the educational system seems to have led to the emergence of a low number of *self-employed*, even though the *overall employment* rate remains unchanged (Premand et al., 2016).

Many challenges, such as rising unemployment and underestimating the development of human values in the community, have led to a significant loss of the entrepreneurial capabilities in the humanities fields (Fazeli, 2017). Entrepreneurship in the human sciences focuses on solving social and community problems. There are many opportunities for entrepreneurship in these fields. This is particularly evident in the creative industries, where the creative economy is seen as an important part of global trade (United Nations Conference on Trade & Development, 2015). “Where oil was the primary fuel of the twentieth century economy, creativity is the fuel for the twenty-first century” (Newbigin, 2023, 12).

Abreua and Grinevich (2014) argue that the extensive literature on academic entrepreneurship has focused almost entirely on science and engineering, to the exclusion of the other disciplines, most notably the creative arts. They highlight four characteristics of an academic environment in the creative arts that strongly influence the nature of entrepreneurship: the practice-based nature of the research; the role of networks (particularly networks linked to teaching); the importance on nonmonetary rewards and the role of geography. Their results indicate that academic entrepreneurship in the creative arts is varied and extensive, and that it could be better supported by policy.

Ultimately, the future of these academic disciplines depends to a large extent on their active participation in technological (Fazeli, 2017) and economic development (Pilegaard et al., 2010). Economic growth can be fostered through university entrepreneurship (Pilegaard et al., 2010). This is a focus that poses a serious challenge to social and human sciences at the university, while evidence suggests that entrepreneurial activity in the humanities is overlooked or even discouraged in universities (Acrilind & Kayrose, 2003). A survey conducted in four European universities (University of Amsterdam, University of Antwerp, University of Ljubljana, and the University of Oxford) showed that the perception of academic entrepreneurship in science and technology is better than their counterparts in the social sciences (Kalar & Antoncic, 2015). In other words, the imbalance between the nature of entrepreneurship in the humanities and the basic sciences with technical and engineering and medical sciences is of paramount concern.

'Humanitarian entrepreneurship' is a newly coined term (Kusa, 2016), recently added to the plethora of existing yet ill-defined terms, such as 'social innovation', 'social economy', 'social enterprise', 'social business', 'social economic business' (Hockerts, 2015), 'social entrepreneurship' and 'not-for-profits' (Agrawal & Gugnani, 2014). Some researchers view humanitarian and social entrepreneurship in a positive fashion (Agrawal & Gugnani, 2014), while others view it negatively. Negative views are partially due to the commonly applied secular rather than faith-based approaches (Ager & Ager, 2015) as these are seen as exploitative because profits are derived from businesses solving major humanitarian issues (Kwitonda, 2017). For example, in many countries, families traditionally cared for the sick, the young and the old; however, now these actions are often undertaken by 'not-for-profits' as well as multimillion-dollar industries. While on the other-hand hybrid organizations, such as work-integration social enterprises, base-of-the-pyramid hybrids and fair-trade hybrids are examples of humanitarian enterprises which gain profits, while openly sharing knowledge for the benefit of others (Hockerts, 2015).

It is important to note that throughout this paper the term entrepreneurship will refer to the holistic nature of the discipline and not solely business start-ups or profit generation. 'Entrepreneurship in the humanities', will refer to the entrepreneurial activity of those who lecture or learn in the academic disciplines within the humanities, as distinct from 'humanitarian entrepreneurship', which generally refers to a company or organization focusing on solving a humanitarian problem or issue.

In the era of third generation universities, not all of the branches of study have grown equivalently in terms of entrepreneurship. This study considers the entrepreneurship aspects of different branches of knowledge and tries to address why the humanities have not kept pace with other disciplines.

Like many terms related to entrepreneurship a lack of consensus exists around the notions of 'social entrepreneurship.' For more information about social entrepreneurship read Gupta et al. (2020), who published a systematic review of 188 peer reviewed articles. Although notions of social entrepreneurs and social entrepreneurship is gaining popularity worldwide, it has received little attention in Iran (Babaei Fishani et al., 2020). In general, Western perspectives focus on a social entrepreneur who does not expect to have monetary gain but rather be a catalyst for social change (Barberá-Tomás et al., 2019). There is very little research focusing on the Islamic perspective, where "to seek for lawful income is obligatory according to the Islamic view" (Abd Muin et al., 2015, p.1).

The Iranian context

Historically entrepreneurship has not been a priority in Iran, however, it has a goal to be "the first economic, scientific and technological position in the region, as determined in its 1404 vision document" (Rasouli et al., 2020, p.51). Since then, between 2016 and 2018 Iran's world ranking of entrepreneurship grew from 80th to 72nd place (Ács et al., 2018; Hofstede Insights, 2019). If the cultural values which support entrepreneurship were strengthened within Iranian society, these figures could rise even further. Culture is believed to be one of the most significant factors that impacts innovation at the national and international levels (Gallego-Álvarez & Pucheta-Martínez, 2021).

Although the young Iranian population has grown there is still a strong reliance on technology imports, while the development of the humanities has gained little attention. Iran is a country with an extensive historical and civilization history, and a vast opportunity for growth of the humanities and creative industries. While the number of humanities students has increased at undergraduate level in recent years, student numbers at masters and Ph.D. levels remain low (The Research Center of the Islamic Consultative Assembly, 2009). It is important to note that the well-known issue of widespread unemployment in Iran is not related to one single academic discipline (Fazeli, 2017), but rather is a situation strongly influenced by cultural and political factors (Fazeli, 2016).

The Office of Cultural Studies of The Research Center of the Islamic Consultative Assembly (2009) considered the status of the humanities in Iran's universities to be much weaker than the technical, engineering and medical fields. According to the report, a comparison of the pre and post-revolutionary period in the field of human sciences reflects the recession of the humanities at the universities of the country (once ranked second in the Middle East). In Iran's 2018 national vision statement (Outlook of the Islamic Republic of Iran, 2025)

current statistics were provided which related to future thinking; while poor quality in higher education, especially in the humanities, was identified (Khoshnevisan, 2019).

Theoretical framework

Culture, as distinct from political, social, technological or economic contexts, has relevance for economic behavior and entrepreneurship (Shane, 1993; Shapero, & Sokol, 1982). Several studies have stressed the influence of cultural factors on entrepreneurship from different perspectives (Hayton et al., 2002). From an anthropology perspective, attention to cultural factors related to entrepreneurship provides interesting contributions to the understanding of entrepreneurship, especially through the study of social constraints (Pfeilstetter, 2021). A list of studies which have researched the relationship between organizational culture and academic entrepreneurship was created by Rasouli and Safar, in 2020.

Cultural values are defined as the collective programming of the mind which distinguishes the members of one human group from another and their respective responses to their environments (Hofstede, 1980). It is acknowledged that substantial variation exists in entrepreneurial activity between countries, with cultural and social norms emphasized as the major strength and weakness of entrepreneurial support structures (Escandon-Barbosa et al., 2022; Gallego-Álvarez & Pucheta-Martínez, 2021).

Much of the research in entrepreneurship that considers cultural variables has followed Hofstede (1980, 2001) seminal work; showing how culture is manifested in various forms, and how cultural values at individual or societal levels are influenced by national culture. Hofstede (1980) gathered data from 117,000 IBM employees across 14 countries. Hofstede (2001) did not specify the relationship between entrepreneurship and culture; however, his dimensions are useful in identifying the criteria of culture related to entrepreneurship (Gallego-Álvarez & Pucheta-Martínez, 2021). Hofstede (1980) describes results of a research project carried out between 1967 and 1973. Hofstede's "dimensions of culture" model emerged from this research and subsequent studies contributed to the development of this idea.

The environment or ecosystem which nurtures entrepreneurship has been well researched; in 2013 the World Economic Forum developed a framework (with eight pillars) to accompany the many other frameworks that exist, as outlined by Donaldson (2021). In 2019, the Global Entrepreneurship Monitor (GEM) developed a framework in investigate conditions linked with entrepreneurship dynamics which influence new business conception (GEM, 2019). Elkington's notion of the triple bottom line was developed into a framework for youth and women in 2020 by Orobia, Tusiime, Mwesigwa, & Ssekiziyivu. A year later, Klimas, et al. (2021) developed a conceptual framework of entrepreneurial failure. There is now a growing range of frameworks investigating the many facets of entrepreneurship (Arranz, et al., 2017). However, in general, Hofstede's "dimensions of culture" framework continues to be the most widely applied. The cultural dimensions model provides

a systematic framework for assessing the differences between nations and cultures. The six indices include, power distance, individualism, uncertainty avoidance, masculinity long-term orientation, and indulgence. These indices have been widely used for comparisons between countries and companies for the last forty years (Escandon-Barbosa et al., 2022).

Power distance refers to the strength of social hierarchy and the extent to which lower ranking members accept and expect unequal distribution of power. *Individualism and collectivism* refer to a hierarchical order. Loyalty in a collectivist culture is paramount, and this overrides most other societal rules and regulations. In a culture which is collective everybody has a place and justification for this is unnecessary. *Uncertainty avoidance* refers to people or countries which have rigid codes of belief and behavior and are intolerant of unorthodox behavior and ideas. *Masculinity* focuses on task orientation as opposed to person-orientation and generally refers to how much a society complies with its values and traditional male and female roles. *Long-term orientation* (short-term/normative versus long-term/pragmatic) refers to societal values and rules based on traditions. *Indulgence* as opposed to self-restraint refers to restraints or indulgence in satisfaction, gratification and pleasure and having fun in life or the suppression of gratification of needs by the use of strict social norms (Hofstede, 2016).

Ceteris paribus (all things being equal) the greater the cultural distance from the 'ideal type,' the lower the level of entrepreneurship (Hayton et al., 2002). Researchers assume that entrepreneurial activities appear mostly in cultures which are high in masculinity (task orientation), low in power distance (prefer distributed power), low in uncertainty avoidance, and high in individualism (Hayton et al., 2002; Nguyen et al., 2009). Mueller and Thomas (2001) found that entrepreneurial orientation was greatest in cultures which showed a combination of high individualism and low uncertainty avoidance.

Although it is evident that disciplines have their distinctive cultural characteristics, this consideration tends to be largely overlooked in research into, as well as policy-making within, higher education (Becher, 1994). While not fully mature, entrepreneurship shows all the signs of a field maturing from its increasingly internal orientation and the establishment of key areas of research through to an enhanced, discipline–specific, theoretical approach with a professional language of its own (Cornelius et al., 2006).

Diversity of educational backgrounds also offers a plausible explanation of differences among university students' entrepreneurial intentions (Wu et al., 2008). Higher educational institutions need to develop more flexible approaches focusing on different groups of students in accordance with their various educational backgrounds (Wu & Wu, 2008). Entrepreneurship research in the higher education context can be distinguished by disciplined-based needs, support for the categorization of disciplines into the framework of the profession-, industry-, or invention-based entrepreneurial ventures (Johnson et al., 2006). In other words, students in different disciplines exhibit different rates of entrepreneurial predispositions (Berglund et al., 2006; Holienka et al., 2015; Mesárošová, & Mesároš, 2013).

Empirical research into cultural influences on entrepreneurial behaviors has been undertaken over a number of decades (Mueller et al., 2001; Wennekers et al., 2005). Significant differences reflecting national culture have been found in entrepreneurial cognition (Donaldson, 2021; Liñán et al., 2009; Mitchell et al., 2002a, 2002b), yet refuted by others (Tang et al., 2008). Since these dimensions tend to be very broad and general, the usefulness of the framework needs to be questioned. Therefore, papers testing different frameworks, such as those of Schwartz (1999, 2011), Triandis (2018) and Inglehart (1997), have been especially welcomed.

This entrepreneurship research, investigates the major differences between the branches of humanities and human sciences. Human sciences and humanities, in spite of common aspects, are distinct and differ greatly in their field and disciplines, such as methodology, application and significance for society. Human sciences aim to expand our understanding of the human world through a broad interdisciplinary approach. This science encompasses a wide range of fields including sociology, psychology, anthropology and other disciplines related to human knowledge. This contrasts with the humanities which generally focus on a critical, analytical approach which includes philosophy, the classics, such as ancient and modern languages, literature, religion and art.

The basic assumption of this research is that the humanities and human sciences are not equally affected by cultural values and national culture. In fact, it could be assumed that due to the practical and objective aspects of entrepreneurship in the humanities, its impact is greater, and aspects of the human sciences that are abstract are less influenced by cultural values. It could be assumed that the humanities are more influenced by individual values, and these values can affect the mental aspects of individuals. In contrast, national culture and cultural values have social aspects and can control more objective aspects, while individual values tend to affect individual tendencies.

Research question

1. In Iran is there a difference between humanities and human science students' ability to address the challenges and barriers of entrepreneurship?
2. Are humanities and human science students in Iran affected equally by cultural values and national culture?

Sub-questions related to the commonly used tools to investigate students' ability to address the challenges and barriers of entrepreneurship.

1. What is the average Hofstede's cultural index and the entrepreneurial tendency and action among Iranian students in the humanities?
2. What if any, relationships exist between the Hofstede's cultural index and humanities students' entrepreneurial tendency and action?
3. Which of the Hofstede's Cultural Indices can predict humanities students' entrepreneurial tendency and action?

Methodology

Research method

This descriptive research was undertaken in 2018. Following the methodology of similar entrepreneurial studies (This descriptive research was undertaken in 2018. With the multitude of frameworks currently in use (as stated above) there are many contradictory findings about entrepreneurship characteristics (Arranz et al., 2017). For this reason, the commonly used Hofstede model was applied to assist transferability of findings. This research followed the methodology of similar entrepreneurial studies (Al-Jubari et al., 2018; Butz et al., 2018; Popov et al., 2019; Usman, 2019;). This research utilized questionnaires as the sole source of data collection. A paper copy of the Hofstede Model of National Culture Questionnaire (Hofstede, 2016) and the Entrepreneurial Tendency and Action were distributed to all participants.

Statistical population and sampling

The statistical population of this research included Iranian entrepreneurs of the human sciences (psychology, sociology, management, political sciences) and humanities (history, philosophy, art and literature) faculties. Participants were chosen from those working in the field of humanities and human sciences. Invitations to participate and questionnaires were distributed among people attending entrepreneurship workshops, seminars, specialized entrepreneurship meetings, and various research and development groups. The inclusion criteria included, publication or participation in research related to the humanities' or human sciences entrepreneurship, personal interest, recognition in the field of art, business, and the production of knowledge and value in the field of humanities or human sciences. Their selection of these courses suggested that these participants had an interest in setting up creative businesses within the humanities or human sciences field.

The original number of these people was unclear, and therefore, it was necessary to calculate the variance of the community. Cochran (1977) developed a formula to calculate a sample size which considers the maximum sample for an unlimited society, within this formula was used variance when society is unclear (Eq. 1). A preliminary questionnaire was distributed to this end. After calculating the size of the variance (0.052), the final number of people was estimated using the following formula (Eq. 1). Thus, using Cochran's sample size formula, 80 were estimated as an appropriate sample size.

$$n = \frac{t^2\sigma^2}{d^2}n = \frac{1.96^2 \times 0.052}{0.05^2} = 80 \quad (1)$$

Eq. 1 for estimating sample size, σ^2 *refers to the population variance, n refers to the sample size, d refers to the desired level of precision, while t refers to the critical value of the desired confidence level.*

Questionnaires were randomized and distribution was based on 57% for the human sciences and 43% for the humanities disciplines. Table 1 represents the distribution of participants from each of the academic disciplines in the research.

Data collection tools

In this research, two questionnaires were used (*The Hofstede Model of National Culture Questionnaire* and the *Entrepreneurial Tendency and Action Questionnaire)*. The questionnaires were distributed to members of the humanities and human sciences community. A preliminary distribution was conducted to measure the internal correlation of the questionnaires.

The two questionnaires were as follows:

The hofstede model of national culture questionnaire This questionnaire consisted of 42 questions and six dimensions (power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, pragmatic versus normative, and indulgence versus restraint). In this questionnaire, a Likert Scale of 1–5 was used for scoring (scale was "Never" (1), "Seldom" (2), "Sometimes" (3), "Often" (4), and "Very often" (5)').

Entrepreneurial tendency and action questionnaire (ETA) This tool includes 7 questions about desire to undertake entrepreneurship in the human sciences and humanities fields. The design of the questionnaire was based on the General Enterprising Tendency v2 Test (GET2 test), a survey method developed by Caird (1991) and Yilmaz and Sünbül (2009). Questions focused on value creation; including the creation of jobs and business, development of functional and applied activities in the humanities, introduction of humanities values, cultural and literary heritage, authentic and native arts, and the creation of critical awareness and transformation in the beliefs and values of society through dialogue. In this questionnaire, a Likert Scale of 1–5 was used for scoring (with a scale of "Never" (1), "Seldom" (2), "Sometimes" (3), "Often" (4), and "Very often" (5)). The Cronbach's alpha was estimated (0.81). The content validity of the tool was confirmed by 8 experts (Content Validity Ratio (CVR)) and its reliability via Cronbach's alpha was estimated for each dimension (as shown in Table 2).

To confirm the construct validity, factor analysis was conducted to show that the seven questions related to Entrepreneurial Tendency and Action Questionnaire were correlated. The extracted factors for Entrepreneurial Tendency and Action were higher than 0.4 and the Kaiser–Meyer–Olkin (KMO) coefficient is reported in Table 3. High values close to 1.0 generally indicate that the factor analysis is relevant to the data, while figures less than 0.5 indicate data which is less suitable. Significance levels for Bartlett's Test of Sphericity are very small with 0.05 being a level of significance which shows the useful nature of the data and for factor loads above 3 represents the correlation between the components of a structure (Cerny & Kaiser, 1977).

Table 1 Ratio of the Statistical Sample of the Research (after the research, the statistical sample was calculated)

Categories (University discipline)	Fields of study participants	The number of respondents in each discipline Figure in brackets denotes the percentage of that discipline)
Human sciences	Management	9 (20%)
Human sciences	Sociology	8 (17%)
Human sciences	Anthropology	8 (17%)
Human sciences	Psychology	7 (15%)
Human sciences	Political science	7 (15%)
Human sciences	Educational Science	7 (15%)
All Human sciences disciplines (After the research)		**46 (100%)**
Humanities	Literature	9 (26%)
Humanities	Philosophy	9 (26%)
Humanities	Art	6 (18%)
Humanities	History	6 (18%)
Humanities	Linguistics and semiotics	4 (12%)
All Humanities disciplines (After the research)		**34 (100%)**
Ratio of human sciences to total		**57%**
Ratio of humanities to total		**43%**
Total		80

Table 2 Reliability dimensions of Hofstede's model of national culture and entrepreneurial tendency questionnaire

No	Dimension	Reliability coefficient	Sig	*CVR (For any Item)
1	Power distance	0.87	.000	Up 0.8
2	Uncertainty avoidance	0.88	.000	Up 0.8
3	Pragmatic versus normative	0.8	.000	Up 0.8
4	Indulgence versus restraint	0.79	.000	Up 0.8
5	Masculinity versus femininity	0.78	.000	Up 0.8
6	Individualism versus collectivism	0.76	.000	Up 0.8
National culture total coefficient		0.85	.000	
Entrepreneurial tendency questionnaire		0.81	.000	Up 0.8

*Minimum values of CVR for 8 panelists equal to 0.75 (Lawshe, 1975)

CVR Content validity ratio, *Sig* Significance level p≦0.05

Table 3 KMO and Bartlett's test (Entrepreneurial tendency and action questionnaire)

Item question number	Communalities		*Component	
	Initial	Extraction	1	2
Q1	1.000	**.631**	**.785**	-.123
Q2	1.000	**.647**	**.707**	-.383
Q3	1.000	**.731**	**.786**	.336
Q4	1.000	**.638**	**.748**	-.280
Q5	1.000	**.466**	**.506**	-.458
Q6	1.000	**.759**	**.547**	.678
Q7	1.000	**.535**	**.686**	.253
Kaiser–Meyer–Olkin measure of sampling adequacy				**.782**
Bartlett's test of sphericity		Approx. Chi-Square		177.619
Sig	.000	Df		21

*Extraction method: principal component analysis

df Degrees of freedom. *Sig* Significance level p≦0.05

Data analysis

The data of this paper were analyzed using Pearson correlation coefficients as well as co-regression coefficients. Software SPSS 22 was used in the simultaneous regression test while the Akaike information criterion was used to confirm the fitting index of the model. The Akaike is a criterion for goodness of fit this criterion is based on the concept of entropy and suggests that the use of a statistical model can lead to a loss of information (Akaika, 1974; Burnham et al., 2004).

Results

In order to identify whether there was a difference between humanities and human science students' ability to address the challenges and barriers of entrepreneurship and whether humanities and human science students in Iran were affected equally by cultural values and national culture, findings from both the Hofstede Model Questionnaire and the Entrepreneurial Tendency and Action Questionnaire were combined and compared.

The extent to which each of cultural factors and entrepreneurship tendency in specific humanities and human sciences disciplines is shown in Table 4 by using the calculated average. The entrepreneurship tendency scores were determined by the score of entrepreneurship tendency and action (ETA). The average scores relate to questions that are calculated for each discipline.

When estimated averages are compared with 3 (average Likert's Scale), the results suggest that that tendency for entrepreneurship in the humanities is low and there is a major difference between the different disciplines of the humanities.

Table 4 Findings of research: the tendency to entrepreneurship score and dimensions of Hofstede model of national culture and the most important demographic variables (sorted by ETA)

Discipline	The most frequent gender	Average years of Specialized Experience (*SE)	Indicators of national culture (as determined by the Hofstede model questionnaire using a 1–5 Likert scale)						ETA
			PD	UA	IVC	MVF	PVN	IVR	
Educational Science	F	31–41	2.7	3.1	3.1	3.4	2.3	2.9	2.9
Art	M	31–41	2.7	2.4	3.4	3.2	2.2	3.4	2.6
Management	M	21–31	3.7	2.9	3	3.5	2.5	2.8	2.5
Sociology	M	21–30	3.3	3.1	2.5	3.4	3.1	3.5	1.9
Psychology	M	31–41	3.4	3.6	2.2	3.1	3.1	3.3	1.8
History	M-F	41–50	3.3	2.5	2.3	3.2	2.8	3	1.5
Philosophy	M	31–41	3.4	3.1	2.9	3.1	2.7	2.8	1.5
literature	M	31–41	3.4	3.1	2.1	3.1	2.4	3.5	1.4
Linguistics and Semiotics	M	31–41	3.4	3.3	1.7	3.4	2.8	3.6	1.4
Political Science	M	31–41	3.5	3.7	2.1	3.2	3	3.3	1.4
Anthropology	M-F	41–50	3.2	3.3	2.1	3.6	2.1	3	1.4
Human Sciences	M	31–41	3.3	3.3	2.5	3.4	2.8	3.1	2
Humanities	M	31–41	3.2	2.9	2.5	3.2	2.7	3.2	1.6

*SE: Average number of years of specialized experience. PD: Power Distance,

UA: Uncertainty Avoidance, IVC: Individualism verse Collectivism,

MVF: Masculinity verses Femininity, PVN: Pragmatic verse Normative,

IVR: Indulgence verse Restraint

ETA: Entrepreneurial Tendency and Action (as determined by the Entrepreneurial Tendency and Action Questionnaire using a 1–5 Likert scale)

Iranian humanities data, categorized according to tendency toward entrepreneurship, are visually represented in Fig. 1.

Figure 1 shows that management, arts, and educational sciences have the highest levels of entrepreneurship. Psychology and sociology are at moderate levels, followed by philosophy and history and the remaining disciplines demonstrating considerably less entrepreneurship. The impact of cultural factors on the level of entrepreneurship is shown in Table 5. Findings were collated and compared to answer the research sub-questions which focused on investigating relations between Hofstede's cultural index and the humanities students' entrepreneurial tendency and action as well the predictability of entrepreneurship through cultural dimensions.

Table 5 shows that indicators of power distance, uncertainty avoidance, pragmatic verse normative, and indulgence verse restraint have a negative relationship while indicators of individualism verses collectivism have positive relationships with the level of entrepreneurship in humanities. The results also show that only indicators of individualism verse collectivism and pragmatic verses normative can predict the degree of entrepreneurship in these disciplines. Table 5 represents the most important characteristics of entrepreneurship which we identified for the humanities.

Table 6 is developed to demonstrate the importance of the cultural factors affecting each of the entrepreneurship levels of the disciplines.

Table 6 shows that individualism and short-term orientation in the human sciences group is a boosting factor. While the short-term orientation (normative) and the power distance is a weakening and negative factor in the tendency toward

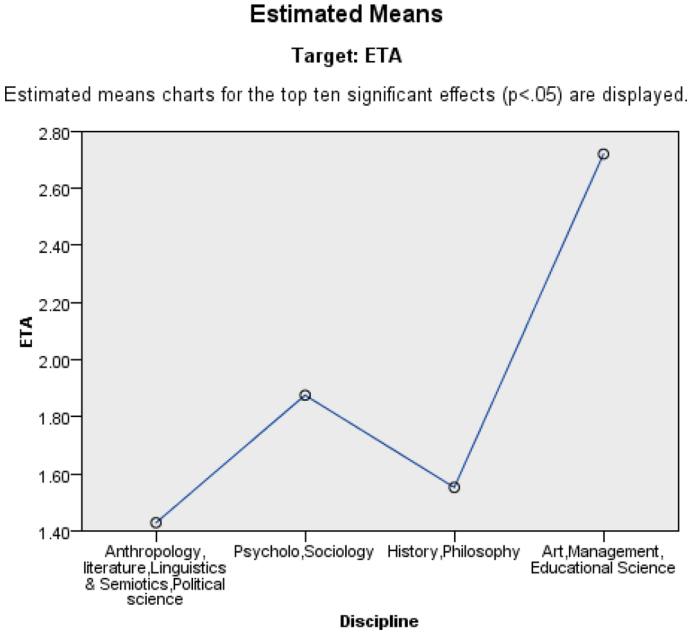

Fig. 1 Entrepreneurship tendency and action (ETA) for the humanities disciplines

Table 5 Correlation and prediction of cultural factors on entrepreneurship in humanities and human sciences students

Indicators of national culture	ETA correlation		ETA model effects		
	Correlation	Sig	Coefficient	Importance	Sig
Power Distance (PD)	−0.225	.044	–	–	–
Uncertainty Avoidance (UA)	−0.223	.04	–	–	–
Individualism (IVC)	0.480	.000	0.278	0.48	.000
Femininity (MVF)	0.064	.571	–	–	–
Normative (PVN)	−0.502	.000	−0.5	0.44	.000
Restraint(IVR)	−0.226	.043	−0.155	0.077	.111
Information Criterion	−95.888				
Model Selected Method	Forward Stepwise				
Adjusted R square	0.366				

PD: Power Distance, UA: Uncertainty Avoidance, IVC: Individualism verse Collectivism,

MVF: Masculinity verse Femininity, PVN: Pragmatic verse Normative, IVR: Indulgence verse Restraint

ETA: Entrepreneurial Tendency and Action Score (as determined by the Entrepreneurial Tendency and Action Questionnaire using a 1–5 Likert scale)

Sig: Significance level $p \leqq 0.05$

Table 6 Correlation and prediction of cultural factors on entrepreneurship in humanities and human science' disciplines at different groups of engagement in entrepreneurship

Group of engagement in entrepreneurship	Indicators of national culture	ETA model effects		
		Coefficient	Importance	Sig
Human sciences group*	IVC (Individualism)	0.633	0.392	.006
	PVN (Normative)	0.297	0.608	.001
	Information Criterion	−27.451		
	Model Selected Method	Forward stepwise		
	Adjusted R square	0.39		
Humanities Group*	IVC (Individualism)	0.228	0.282	.014
	PVN (Normative)	−0.513	0.608	.001
	PD (High)	−0.298	0.190	.010
	Information Criterion	−50.779		
	Model Selected Method	Forward stepwise		
	Adjusted R square	0.52		

PD: Power Distance, IVC: Individualism verse Collectivism, PVN: Pragmatic verse Normative,

ETA: Entrepreneurial Tendency and Action Score (as determined by the Entrepreneurial Tendency and Action Questionnaire using a 1–5 Likert scale)

Sig: Significance level $p \leqq 0.05$

*In the measurement of these variables, sex is the analysis weight

entrepreneurship in the humanities. Table 6 also identifies the impact of sex on entrepreneurial tendency and action.

Table 7 shows details of the average rating of the entrepreneurs and the scores of the national culture indicators in terms of sex segregation.

Table 7 shows that the means for entrepreneurial tendency and action of those in the humanities and human sciences faculties vary according to the participant's sex. This difference is higher in the human sciences and suggests that females in this group tend to have more entrepreneurial action. The findings also show in both groups, women are more individualized, and more likely to show short-term orientation (Normative) than men. In the humanities faculty, which had a significant of power distance score as shown in Table 6, the females' power distance is higher than males.

Discussion and conclusion

Entrepreneurship is one of the newest research fields in management. Most of the empirical research has been completed in the last decade, while other disciplines are more established and have significant long-term contributions to the field (Yao et al., 2016).

This research has shown results which should prove to be significant for the development of entrepreneurial studies. One of the key findings of this study was the difference in the nature of entrepreneurship in relation to a person's gender. Women from the humanities and human sciences were found to be more entrepreneurial that their male counterparts.

Table 7 The average entrepreneurial tendency and action based on the division of the human sciences and humanities by sex

Item	Human Sciences		Humanities	
	Sex			
	Male	Female	Male	Female
	Mean	Mean	Mean	Mean
PD	3.43	3.28	**3.27**	**3.35**
UA	3.29	3.34	2.92	2.93
IVC	**2.41**	**2.71**	**2.55**	**2.61**
MVF	3.41	3.43	3.12	3.40
PVN	**2.85**	**2.88**	**2.73**	**2.82**
IVR	3.29	3.00	3.24	3.38
ETA	**1.95**	**2.15**	**1.68**	**1.71**

PD: Power Distance, UA: Uncertainty Avoidance, IVC: Individualism verse Collectivism,

MVF: Masculinity verse Femininity, PVN: Pragmatic verse Normative, IVR: Indulgence verse Restraint

ETA: Entrepreneurial Tendency and Action Score (as determined by the Entrepreneurial Tendency and Action Questionnaire using a 1–5 Likert scale)

Another key finding was the difference identified between students in the humanities and human sciences. Human sciences students had more entrepreneurial tendency and action than humanities students. Using Hofstede's index, specific cultural factors were shown to influence students' tendency toward entrepreneurship; these being individualism, power distance and short-term orientation (normative).

Cultural factors were found to have a reduced effect on entrepreneurship for students from the humanities, while the tendency toward entrepreneurship by students from the human sciences is reinforced by cultural factors. One of the most important factors influencing entrepreneurship in the humanities was the power distance that is inevitably influenced by political factors in Iran. Attention to cultural factors such as reducing the power distance through increasing democracy, and public oversight in society or increasing social tolerance can greatly contribute to the development of entrepreneurship of the humanities.

The results of this study support and expand upon those that show the impact of cultural factors on entrepreneurial behavior (See: Donalson, 2021; Hayton et al., 2002; Liñán et al., 2009; Mitchell et al., 2002a, 2002b; Mueller et al., 2001; Nguyen et al., 2009; Wennekers et al., 2005).

Entrepreneurship may be high in cultures for a variety of reasons such as government support, historical experience, and social and cultural norms. Comparing cultural factors and entrepreneurship indicators in different countries can help to develop entrepreneurship research with a cultural theme. On this basis, it is suggested that future intercultural research be carried out, using Hofstede's intercultural studies. Hofstede's cultural indicators for other countries, such as Australia, Canada, and the United States as shown in Fig. 2, differ markedly from those in Iran. According to the Global Entrepreneurship Index, Iran's general level score was 80th in 2016 and 72nd in 2018 among the countries of the world (Ács et al., 2018; Hofstede Insights, 2019). Further research is needed to investigate these differences.

The cultural impact of entrepreneurship in Iran suggests individualism is a very important factor in the development of entrepreneurship. It is possible to compare the Hofstede culture indexes between countries with high individualism and entrepreneurship (Fig. 2). It is also possible to consider the cultural diversity features that

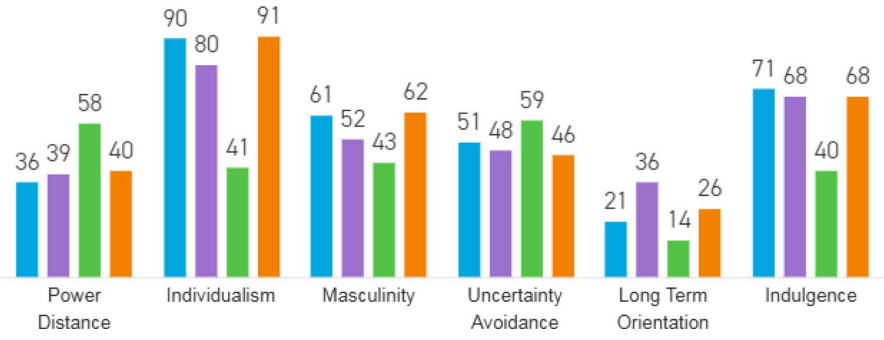

Fig. 2 The cultural factors and entrepreneurship indicators in Australia, Canada, Iran and the United States as determined by the Hofstede model. Blue, purple, green and orange, respectively, belong to Australia, Canada, Iran and the United States. (Hofstede Insights, 2019)

develop social tolerance as an important key to the development of cultural diversity and the creation of entrepreneurship. These results show that although entrepreneurship is a social issue (social subject), it also has a solid foundation in individualist cultures that enhance individual success.

Universities in Iran follow the political power system and have little independence. The power distance often becomes a negative factor in the development of entrepreneurship within the humanities. In Iran the culture of universities is very ambiguous and avoiding uncertainty is very low. This therefore does not allow students and alumni to easily develop new and creative activities.

Entrepreneurship, creativity and innovation in the humanities will have many benefits to society. First, there has been an expansion of what innovation refers to; it is now commonly used for non-economic change processes in public, private and non-profit organizations. Second, arts and humanities are not unique in their contribution to innovation: good teaching, research, dissemination and external relations are central contributions for all university disciplines. However, this does not mean that it is easy to promote innovation at universities in general and in arts and humanities in particular (Gulbrandsen et al., 2015).

Entrepreneurship development in Iran requires major changes at the local and global level. Research into global change must involve social, human, natural and technical sciences when creating the spaces of interdisciplinarity, its terms of reference and forms of articulation (Holm et al., 2013). Development of entrepreneurship in different fields, such as creative industries and cultural entrepreneurship in Iranian universities can be useful in combining ideas from other fields. Strengthening the government's support for artistic disciplines in the international arena through the development of arts education for adults and children can help develop entrepreneurship in the humanities. Strengthening interdisciplinary dialogue will also be very useful for the development of humanities based on discussion and production of epistemological ideas.

Strengthening individualism as well as long-term orientation to increasing entrepreneurship in the humanities is necessary. Increasing community capacity through multicultural education and creating a positive attitude toward the future through teaching instrumental rationality and emotional control methods and a focus on pragmatism in education and training from the elementary level can be beneficial for long-term orientation (pragmatic) sustainability.

International organizations working in the field of entrepreneurship, such as UNCTAD and WIPO, need to focus on the cultural contexts to guide business investments, especially in the humanities fields in developing countries. These results will also help international investors to develop humanities-based businesses. These groups need to know that the humanities are distinct from each other and cannot be equally effective in developing entrepreneurship. These findings also provide an important platform for the arts and educational sciences, such as schools and colleges, to develop social entrepreneurship policies. Due to its entrepreneurial capacities in the development of art in the world, Iran has the ability to invest in various artistic and cultural industries (Dana, 2007). But investing in these industries more than ever requires understanding the impact of entrepreneurs on macro-cultural variables.

Many questions remain from this research for practitioners and researchers in higher education. This research has opened up new topics for entrepreneurship in the field of higher education and academic entrepreneurship, and its results can contribute to the development of discussion in various fields of entrepreneurship, humanities and culture.

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Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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Authors and Affiliations

Kerry M. Lee[1] · Fatemeh Khoshnevisan[2] · Saeid Sharifi[3]

✉ Kerry M. Lee
k.lee@auckland.ac.nz

Fatemeh Khoshnevisan
fatemeh.khoshnevisan@yahoo.com

Saeid Sharifi
sa.sharifi@khuisf.ac.ir

[1] Department of Curriculum and Pedagogy, Faculty of Education and Social Work, The University of Auckland, Auckland, New Zealand

[2] Educational Management and Planning, School of Psychology and Educational Sciences, Allameh Tabataba'i University (ATU), Tehran, Iran

[3] Department of Cultural Management and Planning, Islamic Azad University Isfahan (Khorasgan) Branch, Isfahan, Iran