

TESTING HYPOTHESES OF ENTREPRENEURIAL CHARACTERISTICS: A CROSS CULTURAL PERSPECTIVE

Serkan Bayraktaroglu¹

Rana Ozen Kutanis

Sakarya University

INTRODUCTION

The last decade has seen a strong current of renewed interest in entrepreneurship research and practice. This entrepreneurial revolution is widespread. Besides the very rapid growth of both the professional and academic entrepreneurship literature and entrepreneurial ventures world-wide, perhaps the most obvious evidence of this resurgent interest is the emergence of university courses on entrepreneurship. In 1993, over 400 colleges and universities in the USA offered courses in entrepreneurship education (Hood and Young, 1993). This is a significant increase from the late 1960s when only a handful of universities made formal entrepreneurship training available. Given the growing importance of entrepreneurship, there is practical value in being able to identify entrepreneurial characteristics. The objective of this study is to test hypotheses of entrepreneurial characteristics of two different cultures, namely the Chinese and Turkish cultures. In doing so, the study attempts to distinguish between those who are entrepreneurially inclined and those who are not on the basis of psychological characteristics.

This paper comprises of four major sections. The first section reviews the literature and develops the research hypotheses for the study. The second section discusses the research methodology employed, the third section presents the results and implications and finally, the fourth section summarises the findings, discusses the limitations of the study and suggests directions for future research.

¹ e-mail: serkanb@sakarya.edu.tr

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Despite the substantial interest and research in entrepreneurship and entrepreneurs, defining and understanding entrepreneurship and entrepreneurs remain difficult and challenging. Essentially, there is very little consensus on what entrepreneurship is and what an entrepreneur does. This study adopts the psychological characteristics pertaining to entrepreneurship, which views entrepreneurs as individuals with unique values, attitudes and needs which drive them and differentiate them from non-entrepreneurs.

As noted by Churchill and Lewis (1986), within the field of entrepreneurship research, more empirical studies involving characteristics of entrepreneurs have been conducted than have of almost any other kind. Similarly, Herron and Robinson (1993) reported that studies of various entrepreneurial characteristics have been conducted over the years with great frequency. This is not surprising and, in fact, should be expected, given that an understanding of psychological characteristics that are unique to entrepreneurs (*vis-à-vis* non-entrepreneurs) is a logical first step in studying entrepreneurship. The main psychological characteristics associated with entrepreneurship in the literature (i.e. need for achievement, locus of control, propensity to take risk, tolerance of ambiguity, self-confidence and innovativeness) and the hypotheses relating to them are summarised as follows:

H1: Individuals who are entrepreneurially inclined and those who are not have the same level of need for achievement.

H2: Individuals who are entrepreneurially inclined and those who are not have the same locus of control.

H3: Individuals who are entrepreneurially inclined and those who are not have the same level of risk-taking propensity.

H4: Individuals who are entrepreneurially inclined and those who are not have the same level of ambiguity tolerance.

H5: Individuals who are entrepreneurially inclined and those who are not have the same level of self-confidence.

H6: Individuals who are entrepreneurially inclined and those who are not have the same level of innovativeness.

RESEARCH METHODOLOGY

From the literature review, it can be seen that theoretical and empirical research in the academic and professional entrepreneurship literature has associated psychological characteristics with entrepreneurship. The objective of the study is to investigate if these psychological characteristics can adequately distinguish between those who are entrepreneurially inclined and those who are not (i.e. whether entrepreneurs and non-entrepreneurs have systematically different psychological characteristics). The research framework used in the study is adapted from the entrepreneurship model proposed by Martin (1984) and Gartner (1989). The model suggests, among other things, that certain entrepreneurial characteristics predispose entrepreneurs towards entrepreneurial activities and these characteristics make them different from non-entrepreneurs.

This study is a replication of a study done in Hong Kong (Koh, 1996). The same study was conducted on a sample of MBA students in Turkey. Hong Kong is considered an interesting and appropriate place to conduct entrepreneurship studies because of its highly regarded and reputed entrepreneurial spirit and success. Turkey may set a good example for the comparison. The main differences between Hong Kong and Turkey are mainly economic factors (e.g. free open market and voluntary exchange), non-economic factors (e.g. blocked upward mobility in political channels in the colonial environment) and psychological factors (e.g. the Chinese and Turkish culture, values and perspectives) have contributed significantly to successful entrepreneurship in Hong Kong. In addition, MBA students comprise an interesting and appropriate sample to study because of their unique characteristics. This is because MBA students in Turkey tend to be either

in a process of climbing the career path or intend to start up their own business after graduation. A research questionnaire is administered to 120 MBA students at Sakarya University in Turkey.

Questionnaire development

The survey instrument being used in the study is a self-administered, fixed-alternative questionnaire. Fixed-alternative questions are used to facilitate ease of scoring to ensure a high response rate. Such format also facilitates the coding and analysis of data. The questionnaire comprises two major sections. The first section measures the six psychological characteristics specified in the six hypotheses; namely, need for achievement (six items), locus of control (seven items), propensity to take risk (six items), tolerance of ambiguity (six items), self-confidence (six items), and innovativeness (five items). This section consists of 36 statements taken primarily from the entrepreneurial self-assessment scale. Respondents are asked to indicate their degree of agreement or disagreement with each statement on a five-point Likert scale, from strongly agree to strongly disagree.

The second section measures entrepreneurial inclination as well as selected demographic and family variables. To measure entrepreneurial inclination, respondents are asked to indicate their probability of starting a business in the next three years or so. Respondents who have a high or very high probability of starting a business are classified as entrepreneurially inclined; the others (i.e. those with a low probability of starting a business over the next three years or so) are classified as non-entrepreneurially inclined. That is, entrepreneurial inclination is measured as a dichotomous variable. This measurement is consistent with the definition of an entrepreneur as one who favours self-employment or going into a business of his/her own. Demographic and family information are also collected in the second section to develop a profile of the sample and verify that the two subgroups of entrepreneurially and non-entrepreneurially inclined are homogeneous with respect to demographic or family characteristics. This helps ensure that the results are not confounded by extraneous factors. For this purpose, questions on sex, age, marital status, number of siblings, birth order and entrepreneurial inclination of family members

(i.e. whether the family owns a business) are asked in section two of the questionnaire. Before administering, the questionnaire was pilot-tested on a small sample and minor revisions were made to improve its readability and format.

Descriptive statistics (e.g. means, standard deviations and frequency distributions) will be computed to develop a profile of the sample. Contrary to the original study, the multivariate analysis was not used as it requires either developing a new model or testing the model of the Hong Kong study. It was felt that this model would not be suitable for the Turkish culture. To verify that the entrepreneurially inclined and non-entrepreneurially inclined in the sample are homogeneous with respect to selected demographic and family characteristics, 2 tests of independence are conducted on entrepreneurial inclination and sex, age, marital status, number of siblings, birth order and entrepreneurial inclination of family members. To analyse the data and test the six null hypotheses specified in the study, both univariate and multivariate tests are conducted. At the univariate level, t-tests of significant differences are performed to investigate if respondents who are entrepreneurially inclined and those who are not differ significantly on the six psychological characteristics, point by point.

FINDINGS

120 usable responses were returned from a random sample of 150 MBA students in the Faculty of Economics and Administrative Sciences of Sakarya University, yielding a response rate of 80 per cent. Of the 120 respondents, 52 (i.e. 43.3 per cent) were found to be entrepreneurially inclined and 68 (i.e. 56.6 per cent) non-entrepreneurially inclined. It can be seen that, MBA students in Hong Kong have more entrepreneurial inclination than the Turkish MBA students. Descriptive statistics of the variables are presented in Table Ib for the total sample as well as the two subgroups of entrepreneurially and non-entrepreneurially inclined which are tabled separately. As can be seen, among the respondents 70 (41.7 per cent) are males, 87 (73.1 per cent) are below 25 years of age, 104 (75.93 per cent) are single, 76 (63.3 per cent) have less than

three siblings, 50 (42 per cent) are the eldest child, and 39 (32.5 per cent) come from entrepreneurially inclined families.

As for the six psychological characteristics, the mean scores range from 2.93 for locus of control to 3.50 for need for achievement. In the first research in Hong Kong, tolerance ambiguity had the minimum mean score, but in Turkey locus of control has the minimum mean score. The mid-point of each of the six scales is three on a five-point Likert scale, which ranges from one to five. At a significance level of 0.05, all the psychological characteristics are significantly above the mid-point of three with p-values of 0.0001, except for locus of control and innovativeness.

The objective of this study is to test hypotheses of entrepreneurial characteristics. To ensure that the results are not confounded by systematic differences of other extraneous factors, X^2 tests of independence are performed to investigate if significant differences with respect to demographic and family characteristics (i.e. sex, age, marital status, number of siblings, birth order and entrepreneurial inclination of family) exist between the two subgroups of respondents (i.e. those who are entrepreneurially inclined and those who are non-entrepreneurially inclined). The results are reported in Tables IIb and III. As shown, at a significance level of 0.05, none of the demographic and family factors investigated are significantly different between the two subgroups. The most significant factor is family entrepreneurial inclination, with a p-value of 0.076. Accordingly, the two subgroups of entrepreneurially inclined and non-entrepreneurially inclined respondents can be considered homogeneous with respect to sex, age, marital status, the number of siblings, birth order and family entrepreneurial inclination. The same results were obtained in the first research in Hong Kong.

Given the results, it is possible to test if entrepreneurial inclination is significantly associated with the six psychological characteristics identified in the study without the confounding effects of demographic and family variables. The mean scores shown in Table Ia and Ib are consistent with expectations reflected in the hypotheses and indicate that those who are entrepreneurially inclined have greater need for achievement, more internal locus of control, higher propensity to

take risk, greater tolerance of ambiguity, more self-confidence and greater innovativeness. To investigate the differences statistically at the univariate level, t-tests of significance differences are conducted. At a 0.05 significance level, the results in Tables II and III show that those who are entrepreneurially inclined have significantly higher propensity to take risk ($p = 0.0067$), greater innovativeness ($p = 0.0005$), and greater tolerance of ambiguity ($p = 0.0053$). Self-confidence has a p-value of 0.0892. The remaining two psychological characteristics, need for achievement and locus of control, are not significant at a 0.10 significance level.

The results show that the null hypotheses for propensity to take risk ($H3$), tolerance of ambiguity ($H4$) and innovativeness ($H6$) can be rejected at a 0.05 level of significance. As expected, those who are entrepreneurially inclined have a higher propensity to take risk, more tolerance of ambiguity and greater innovativeness. The findings are also consistent with previous findings reported in the entrepreneurship literature. The null hypotheses for propensity to take risk ($H3$), tolerance of ambiguity ($H4$) and innovativeness ($H6$) were also rejected at the end of the research in Hong Kong.

Given the growing importance of entrepreneurship, there is practical value in being able to identify entrepreneurial characteristics and to distinguish between those who are entrepreneurially inclined and those who are not. In particular, with knowledge of the factors (i.e. psychological characteristics) associated with entrepreneurial inclination, programmes can be initiated (for example, by governments) to develop and enhance these factors in order to encourage entrepreneurship. This may be desirable, since entrepreneurship can contribute significantly to the economy of a country. Further, the findings can be used as a career guidance tool for students or as a device for screening entrants into an entrepreneurship programme. By knowing their entrepreneurial inclination, students can make better and more informed career choices. Further, by distinguishing between the entrepreneurially inclined and the non-entrepreneurially inclined, institutions offering entrepreneurship programmes can make better selection of entrants into their programmes. In addition, the findings can serve as inputs into

entrepreneurship education. Previous research has suggested that psychological characteristics can be learnt or changed. Leading entrepreneurs and chief executive officers emphasized the importance of “teaching” psychological characteristics in entrepreneurship education to train successful entrepreneurs.

The objective of this study is to test hypotheses of entrepreneurial characteristics. In particular, the study investigates if entrepreneurial inclination is significantly associated with the psychological characteristics of need for achievement, locus of control, propensity to take risk, tolerance of ambiguity, self-confidence and innovativeness.

In interpreting the results of the study, a few limitations should be borne in mind. First, the study employs a self-report questionnaire. Thus, the possibility of response bias and non-response bias exists. In other words, other populations (e.g. non-MBA students or MBA students in other countries) may yield findings that are different from those reported in the study. Third, no conclusion on the causal relationship between psychological characteristics and entrepreneurial inclination can be inferred; only associations are addressed in the study. The limitations highlighted above also suggest possible directions for future research. In particular, future research can investigate the relationship between psychological characteristics and entrepreneurial inclination in a more complete research framework that includes other factors, such as financial, family and environmental support, precipitating events, pull-and-push factors, demonstration effects ... etc. Further, casual analysis can be attempted in future research to investigate relationships leading to the entrepreneurial decision. In this respect, it is interesting also to study factors associated with or leading to entrepreneurial success in addition to entrepreneurial inclination. With its strong current of renewed interest, entrepreneurship is set to be an even more important area for academic and professional research in the future.

Variable	Total sample	Inclination	
		Non-entrepreneur	Entrepreneur
<i>Means (standard deviations)</i>			
Need for achievement (H1)	3.52 (0.49)	3.46 (0.52)	3.61 (0.44)
Locus of control (H2)	3.31 (0.46)	3.28 (0.42)	3.36 (0.53)
Propensity to take risk (H3)	3.35 (0.44)	3.18 (0.46)	3.61 (0.23)
Tolerance of ambiguity (H4)	2.94 (0.51)	2.80 (0.46)	3.17 (0.50)
Self-confidence (H5)	3.40 (0.41)	3.33 (0.45)	3.52 (0.32)
Innovativeness (H6)	3.67 (0.50)	3.41 (0.41)	4.05 (0.33)
<i>Frequency distribution</i>			
Sex			
Male	40 (74.07%)	21 (65.63%)	19 (86.36%)
Female	14 (25.93%)	11 (34.38%)	3 (13.64%)
Age			
Below 30 years	31 (57.41%)	18 (56.25%)	13 (59.09%)
30 years and above	23 (42.59%)	14 (43.75%)	9 (40.91%)
Marital status			
Single	41 (75.93%)	24 (75.00%)	17 (77.27%)
Married	13 (24.07%)	8 (25.00%)	5 (22.73%)
Number of siblings			
Less than two	24 (44.44%)	12 (37.50%)	12 (54.55%)
Two or more	30 (55.56%)	20 (62.50%)	10 (45.45%)
Birth order			
First born	36 (66.67%)	24 (75.00%)	12 (54.55%)
Others	18 (33.33%)	8 (25.00%)	10 (45.45%)
Family			
Entrepreneur	26 (48.15%)	15 (46.88%)	11 (50.00%)
Non-entrepreneur	28 (51.85%)	17 (53.13%)	11 (50.00%)

Table Ia. Descriptive statistics of samples and variables for the Hong Kong MBA Students

Variable	Df	χ^2 value	p-value
Sex	1	2.920	0.088
Age	1	0.043	0.836
Marital status	1	0.037	0.848
Number of siblings	1	1.534	0.215
Birth order	1	2.455	0.117
Family entrepreneurial inclination	1	0.051	0.821

Table IIa: Results of univariate tests – χ^2 tests of independence

Sources: Koh, H. C. (1996) Testing Hypotheses of entrepreneurial characteristics: A Study of Hong Kong MBA Students: *Journal of Managerial Psychology*. 11(3) 12-25. p.20.

Inclination

Variable	Total sample	Non-entrepreneur	Entrepreneur
<i>Means (standard deviations)</i>			
Need for achievement (H1)	3.50 (0.38)	3.49 (0.38)	3.51 (0.38)
Locus of control (H2)	2.93 (0.58)	2.83 (0.50)	3.01 (0.62)
Propensity to take risk (H3)	3.14 (0.37)	3.12 (0.39)	3.17 (0.34)
Tolerance of ambiguity (H4)	3.28 (0.35)	3.25 (0.38)	3.32 (0.30)
Self-confidence (H5)	3.04 (0.51)	2.93 (0.50)	3.12 (0.51)
Innovativeness (H6)	2.95 (0.76)	2.88 (0.73)	3.05 (0.79)
<i>Frequency distribution</i>			
Sex			
Male	70 (41.7%)	36 (52.9%)	34 (65.4%)
Female	50 (58.3%)	32 (47.1%)	18 (34.6%)
Age			
Between 21-25 years	87 (73.1%)	49 (72.05%)	39 (75%)
25 years and above	33 (26.9%)	19 (27.95%)	13 (25%)
Marital status			
Single	104 (75.93%)	55 (75.00%)	17 (77.3%)
Married	16 (24.07%)	13 (25.00%)	5 (22.7%)
Number of siblings			
Less than three	76 (63.3%)	44 (62.8%)	32 (59.2%)
Three or more	44 (36.7%)	26 (37.2%)	22 (40.8%)
Birth order			
First born	50 (42.0%)	31 (46.0%)	19 (36.5%)
Others	70 (58.0%)	37 (54.0%)	33 (63.5%)
Family			
Entrepreneur	39 (32.5%)	27 (39.7%)	12 (23.1%)
Non-entrepreneur	81 (67.5%)	41 (60.3%)	40 (76.9%)

Table Ib. Descriptive statistics of samples and variables for the Turkish MBA Students

Variable	Df	χ^2 value	p-value
Sex	1	1.877	0.194
Age	1	0.078	0.835
Marital status	1	1.193	0.347
Number of siblings	1	0.407	0.566
Birth order	1	1.469	0.262
Family entrepreneurial inclination	1	3.714	0.076

Table IIb: Results of univariate tests – χ^2 tests of independence

Variable	Hong Kong		Turkey	
	t- value	p-value	t- value	p-value
Need for achievement (H1)	-1.0489	0.2991	-1.0568	0.3047
Locus of control (H2)	-0.6717	0.5047	-0.5716	0.6654
Propensity to take risk (H3)	-4.4289	0.0001	-4.5397	0.0067
Tolerance of ambiguity (H4)	-2.8317	0.0066	-3.7228	0.0053
Self-confidence (H5)	-1.6791	0.0991	-1.5682	0.0892
Innovativeness (H6)	-6.1337	0.0001	-5.2473	0.0005

Table III: Results of univariate tests – t-tests of significant differences

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