

## Research on the Impact of Human Capital on Entrepreneurial Performance: Intermediary Role of Entrepreneurial Environment

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**Abstract:** This paper take 365 entrepreneurs as research samples, using hypothetical test to identify the relationship between human capital, entrepreneurial environment and entrepreneurial performance. The result shows that the larger human capital stock could cause the higher performance level. A positive relationship between entrepreneurial environment and entrepreneurial performance are demonstrated. Entrepreneurial environment plays a part of intermediary role in the impact of human capital on entrepreneurial performance.

### 1. Introduction

With the number of entrepreneurs growing, waves of establishing a business surging in China, “innovation” and “entrepreneurship” have been commonly recognized by public for over five years. In recent years researchers have conducted relevant studies on the human capital, entrepreneurial environment and entrepreneurial performance of entrepreneurs. Based on the known theories, this study would present three hypotheses to explore the relationship between human capital, entrepreneurial environment and entrepreneurial performance. In addition, taking 365 entrepreneurs as research samples test three hypotheses. The results of this study would enable entrepreneurs to have deeply self-perceived entrepreneurial environment and venture capital, and furthermore to make greater scientific and efficient plans for entrepreneurial activities. Given the importance of entrepreneurship and new business ventures, the findings of this study form a significant base for further how to reduce failure rate of entrepreneurship and improve the performance.

### 2. Hypothesizes

According to Cooper (1981), experience and educational level are the prerequisites for a person who want to start a business, and are also important factors influencing the performance of a startup <sup>[1]</sup>. Schrader (1995) conducted a survey on American entrepreneurs, and found that the education background of entrepreneurs was significantly correlated with enterprise performance <sup>[2]</sup>. Qian (2014) established a comprehensive concept of enterprise environment system, which include four sub-system: social environment system, market environment system, enterprise internal environment system and natural environment system. Human capital is one main factor in the enterprise internal environment system. Enterprise environment and entrepreneurial performance interact with each other (Qian 2014) <sup>[3]</sup>. Zhandong and Qiang et al. (2017) constructed a theoretical model of university student entrepreneurial environment, entrepreneurial motivation and growth of entrepreneurial enterprises by taking 417 university students entrepreneurs of small and micro-sized entrepreneurial enterprises as samples, and verified that entrepreneurial environment had a significant positive effect on the growth performance of start-ups <sup>[4]</sup>. Qianwen and Yu (2009) claim that internal entrepreneurship environment implements a mediating effect in entrepreneurship orientation on entrepreneurial performance <sup>[5]</sup>. In conclusion, there is a correlation between human capital, entrepreneurial environment and entrepreneurial performance. Entrepreneurial environment

could be used as a moderator, and as an intermediary variable to influence entrepreneurial performance. In conclusion, human capital direct impact on entrepreneurial performance and human capital impact on entrepreneurial environment as an indirect factor to effect performance. Therefore, this study proposes the following hypothesizes:

Hypothesis 1: the human capital has a significant positive correlation with entrepreneurial performance.

Hypothesis 2: entrepreneurial environment has a significant positive correlation with entrepreneurial performance.

Hypothesis 3: entrepreneurial environment plays a part of intermediary role in the impact of human capital on entrepreneurial performance.

### 3. Hypothesis Testing

#### 3.1 Test of Reliability

In this study, the reliability test of the scale mainly presents the degree of internal consistency by Cronbach's Alpha coefficient. In the test, the human capital scale, entrepreneurial environment and entrepreneurial performance scale reliability are 0.946, 0.952 and 0.874. All numerical value of scales is above 0.9 expect entrepreneurial performance. Furthermore, the reliability in the subscales of human capital, entrepreneurial environment and performance are all above 0.681 which is greater than general reliability standard requirement (0.6) for subscales. Hence, the result demonstrate that the data has the hypothetical internal consistency.

#### 3.2 Descriptive statistical analysis

The descriptive statistical results of each variable show that the mean values of human capital scale, entrepreneurial environment scale and entrepreneurial performance scale were higher than 3.5. In general, the standard deviation of human capital scale, entrepreneurial environment scale and entrepreneurial performance scale and each dimension was above 0.6, showing a certain difference.

#### 3.3 Correlation analysis

From the table 1, the Pearson correlation coefficient between the human capital, entrepreneurial environment and entrepreneurial performance are significant at the 0.01 level, which is positive correlation. In addition, arbitrary two factors have the identical change trend in common direction. Therefore, it could be preliminarily verified the hypothesis 1 and hypothesis 2.

Table 1 Correlation Coefficient Matrix

	Human capital	entrepreneurial environment	entrepreneurial performance
Human capital	-		
entrepreneurial environment	.482**	-	.
entrepreneurial performance	.512**	.564**	-

Note: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

#### 3.4 Regression analysis

According to the mediation effect test procedure recommended by Zhonglin and Baojuan (2014), there are three steps. The first step is that the independent variable regresses the dependent variable to get the coefficient c. Secondly, the independent variable regresses the intermediate variable to obtain the coefficient a. Thirdly, the independent variable and the intermediate variable are added into the equation to regress the dependent variable, and the coefficient c 'is obtained. If c' is not significant, it is the complete intermediary. The data obtained by using the mediation effect test procedure is shown in the following table 2.

Table 2 Regression analysis results

		Equation 1		Equation 2		Equation 3	
Variables		Dependent variable		Dependent variable		Dependent variable	
		Entrepreneurial performance		Entrepreneurial environment		Entrepreneurial performance	
		$\beta$	t	$\beta$	t	$\beta$	t
Independent variables	Human capital	0.345***	5.337	0.432***	7.392	0.179***	3.359
Mediating variable	Entrepreneurial environment					0.258***	4. 777
Adjusted R <sup>2</sup>		0.340		0.461		0.476	
F		156.189		156.511		100.702	

From the table 2, human capital has a significant positive correlation with entrepreneurial performance, with a coefficient of 0.345, and has a significant positive correlation with entrepreneurial environment intermediary variables, with a coefficient of 0.432. The third step is to add all independent variables and intermediate variables into the equation for regression. The independent variables are still significant, but the significance of human capital decreases. The coefficient of human capital is 0.179, which is lower than 0.345 of equation 1. In addition, in the first step, the adjusted R<sup>2</sup> in equation 1 is 0.34. After adding the mediating variable into the third step, the R<sup>2</sup> is increased to 0.476. The result indicate that the model is more effective after adding the mediating variable. Hence, entrepreneurial environment plays a part of intermediary role in the impact of human capital on entrepreneurial performance.

The validation of the mediating model established in this study could be identified by the mediation effect test procedure. Furthermore, the mediation effect could be directly verified by Mplus7.0 using the deviation correction non-percentile bootstrap method to build parameters. The results are shown in the following table3:

Table 3 Confidence interval

Mediated route	confidence interval
Human capital →Entrepreneurial environment →Entrepreneurial performance	[0.006,0.128]

The result shows that the confidence interval of the impact path of human capital on entrepreneurial performance does not include 0. Therefore, the intermediary effect of this path is verified.

#### 4. Summary

Three hypotheses proposed in this study have been tested by empirical analysis. The human capital of entrepreneurs could directly affect the entrepreneurial performance and shows a significant positive correlation with the entrepreneurial performance. Hence, larger human capital stock could cause the higher performance level. A significant positive relationship between entrepreneurial environment and entrepreneurial performance are demonstrated. The entrepreneurial environment can directly affect the entrepreneurial performance with a positive relationship. Therefore, the better the entrepreneurial environment could improve e entrepreneurial performance level. Simultaneously, entrepreneurial environment plays a part of intermediary role in the impact of human capital on entrepreneurial performance. In consequence, the human capital of entrepreneurs could implement the impact on entrepreneurial performance by the intermediary approach of entrepreneurial environment.

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