
Human Development and Its Impact on Entrepreneurship

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Abstract

Entrepreneurship has an important role in the economic and social development of each country. Entrepreneurship creates prosperity, employment, and economic growth. Therefore, building a suitable business environment and promoting entrepreneurship is an important task of the government of each country. Among the factors affecting entrepreneurship, the human factor plays the most important role. In this article, the relationship between human development and entrepreneurship is confirmed through quantitative methods. The results of measuring the impact of human development on the entrepreneurship of countries in the world are also presented. Furthermore, the specific goal of this paper is to present two related indexes - the global entrepreneurship index and the human development index. The study also analyzes the relationship between entrepreneurship and human development through the assessment and comparison of these two important indexes. The study is based on data including 134 observed samples from the Global Entrepreneurship Report of the Global Entrepreneurship Monitor in 2019 and Human Development Report of United Nations Development Program in 2019. Besides, the implementation of analytical methods such as the graph method, regression method has proven to have a close relationship between the two indices. The results show that promoting human development contributes to entrepreneurship. Therefore, countries need to have policies that contribute to improving human development, which in turn can contribute to support and strongly promote the entrepreneurship of these countries. The results presented contribute to motivating studies that assess the impact of human development on entrepreneurship. The paper concludes with a discussion of the results and implications of the study at the end.

Keywords

Global entrepreneurship index, entrepreneurship, human development index

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Introduction

Nowadays, along with the economic development of countries, more and more enterprises are established and strongly developed. However, besides the advantages for development, there are also many risks and challenges of the economy, society, and business environment affecting enterprises (Priede-Bergamini, et al., 2019; Păunescu and Molnar, 2020). This requires enterprises to have strategies to change or respond to the increasing requirements as well as the changing external environment. From there, it can contribute to helping businesses survive and grow. The main factor for the growth of an enterprise is entrepreneurs (Mas-Tur and Soriano, 2014; Tu, et al., 2014). Today, entrepreneurs are hailed as a force contributing to economic growth around the world. Entrepreneurship is the main driving force for business development as well as socio-economic development.

Some researchers point out that the entrepreneurship characteristics of entrepreneurs are not only dependent on external social environments such as infrastructure, information technology, etc. (Ozaralli and Rivenburgh, 2016; Păunescu and Molnar, 2020) but are also influenced by the entrepreneur's internal factors (Păunescu, et al., 2018). These factors affect the individual



characteristics of the entrepreneur. Therefore, it is necessary to consider the influence of the human factor on entrepreneurship. Countries need to consider the impact of human development on entrepreneurship in a specific way, thereby choosing the right human development models, contributing to improving the characteristics of entrepreneurs. In addition, countries can accelerate economic growth as well as contribute to the survival and development of entrepreneurship and enterprises.

This paper provides a summary of relationships and the impact of human development on entrepreneurship. In addition, the identification of key trends and gaps between human development and entrepreneurship is also presented. After that, the research continues to generally assess the impact of human development on entrepreneurship based on an analysis of this relationship on surveyed countries around the world.

The research is conducted based on data collected from the Global Entrepreneurship Monitor (GEM) in 2019 as well as data collected from the Human Development Report of the United Nations Development Program (UNDP) in 2019. Finally, there are some conclusions and suggestions to improve research on the impact of human development on entrepreneurship. The paper is organized as follows: the first part refers to a brief literature review of the studies, the second part explains the methodology used by the authors in this paper and the third part includes the research results, while the last part concludes and discusses the research results of the paper.

Literature Review

The relationship between human development and entrepreneurship

Some studies show that there is an indispensable relationship among characteristics of the entrepreneur, entrepreneurial competency, business efficiency, and business success (Hastuti, 2020; Machmud and Hidayat, 2020). The research of Al Mamun and Fazal (2018) has determined that the entrepreneurial competency and characteristics of the entrepreneur are related to the business efficiency of enterprises. Entrepreneurs must pay special attention to improving their capabilities to boost their business efficiency and capacity. Besides, characteristics of the entrepreneur such as achievement need, extroversion, innovation, or risk-taking play a role in explaining the business success of an entrepreneur (Rauch and Frese, 2007). Also, the research on entrepreneurship shows that the personality traits of entrepreneurs influence entrepreneurship through entrepreneurial competency and business growth goals (Baum and Locke, 2004).

One of the factors that promote entrepreneurship is human development. Human development in different localities will impact differently on entrepreneurship. Some studies have concluded that most high-growth entrepreneurs tend to be concentrated around urban areas (Ács and Armington, 2006) or large research institutions (Audretsch and Lehmann, 2005). In addition, some factors of quality of life (such as education, healthcare, climate, entertainment, etc.) are also important in decisions about locations for business (Pittman, 2006). Furthermore, Croce (2019) discovered the differences in entrepreneurship among regions with different levels of urbanization, such as entrepreneurship in urban, remote, and rural areas.

Currently, there are many literature studies on the relationship between entrepreneurship and human development. Most studies confirm that human development and entrepreneurship are closely related (Georgiou, 2009; Gries and Naudé, 2011; UNDP, 2014; Ballesta, et al., 2020). Entrepreneurship has a positive impact on human development (Amorós and Cristi, 2010). In addition, Georgiou (2009) argued that entrepreneurship contributes to improving the human development index. Therefore, it can be said that entrepreneurship is positively related to the human development index.

Ballesta, et al. (2020) in their research has shown evidence that there is a relationship between entrepreneurship and human development. This evidence is given about the impact of entrepreneurship by the necessity for human development. Based on the results of econometric analysis by the regression method, Ballesta, et al. (2020) assumed that entrepreneurship has a strong impact on society and that this impact goes far beyond the impact of business on economic growth, including human development.

Gries and Naudé (2011) also formalized the role of entrepreneurship in human development. Gries and Naudé (2011) argued that the value of entrepreneurship will be reflected in whether people have the choice to become an entrepreneur or not. In particular, entrepreneurship is both a resource and a process, so that it contributes to the expansion of human abilities and other means, such as providing the ability to work, earn income and accumulate wealth. But being an entrepreneur can also be a valuable human activity (Gries and Naudé, 2011).

However, many studies have only researched the impact of entrepreneurship on human development, but few studies have researched the opposite effect of human development on entrepreneurship. Experts are debating how to predict and promote a person's entrepreneurial success (Hisrich, et al., 2007; Shane, 2008). Why do some individuals become successful entrepreneurs while others fail in business? Obschonka, et al. (2011) suggested that the development of entrepreneurship in general and entrepreneurial success, in particular, are related to related factors in the teen years and the interaction with personality in the growth stages of human development. Human development contributes to changes in people's perceptions, skills, and income, thereby promoting entrepreneurship (Obschonka, et al., 2011).

The research by Gries and Naude (2011) has argued that entrepreneurship develops only in environments conducive to the ability to take advantage of available opportunities. Gries and Naude (2011) also stated that the low level of human development at the national level may inhibit individuals from pursuing business opportunities. Besides, the proportion of the population that can be considered engaged in business activities is higher in developed countries than in less developed regions or countries (Ács and Amorós, 2008). Amorós and Cristi (2010) have experimentally demonstrated that entrepreneurship is related to human development and income inequality of these countries. In addition, the study of Obschonka, et al. (2011) investigated the success of the entrepreneur by testing a modeled path from the life cycle approach of human development. Obschonka, et al. (2011) found a person's business success tied to the entrepreneurial skills present when starting their own business. These skills in turn appear to be linked with both early development and phased personality characteristics (Obschonka, et al., 2011).

Furthermore, Maniyalath and Narendran (2016) examined the social determinants including Human Development Index (HDI) that predict entrepreneurship or not. The results show that the Human Development Index is one of the most independent and powerful predictors for female entrepreneurship and it is better than the national income factor (Maniyalath and Narendran, 2016). Furthermore, the analysis results in this study show that many of the socio-economic determinants such as national income per capita, HDI, GII, and the religious composition of the country, are related to female entrepreneurship. Therefore, Maniyalath and Narendran (2016) concluded that studies on the proportion of female entrepreneurship should take into account and adjust to human development index.

Human Development Index

Human Development Index (HDI) is an index that aggregates statistics of life expectancy, education (literacy rate, enrollment rate at different levels, and net attendance rate), income per capita, and some other factors in countries around the world (Stanton, 2007). A country has a higher HDI with higher life expectancy, higher education levels, and higher gross national income per capita (Stanton, 2007). HDI helps provide an overview of the development of a nation, with a focus on the individual characteristics of people. This index was developed by Pakistani economist Mahbub ul Haq and Indian economist Amartya Sen in 1990 (Stanton, 2007).

Human Development Index has been used by the United Nations Development Program to measure the development of a country through its Annual Reports of Human Development (Stanton, 2007). The Human Development Report has been published by the United Nations Development Program (UNDP) since 1990 in the form of independent discussions. These reports have an analytical and empirical basis for development issues, trends, and policy (Stanton, 2007).

Besides, HDI is a general measure of human development. The HDI takes values from 0 to 1 where 1 is the highest attainable level. It measures the average achievement of a country according to the following three criteria:



- Health: A long and healthy life, measured by average life expectancy.
- Knowledge: Measured by the average number of years of schooling and the expected number of years of schooling.
- Income: Living standard measured in GNI per capita.

Since 2010, there has been a change in the calculation of the Human Development Index (UNDP, 2010, 2013). The indicators of the above criteria are calculated using new formulas aimed to limit the inequality in assessment. In these reports, UNDP (2014) asserts that economic development is not necessarily ahead of human development. Instead, a country can enhance its citizens by promoting education, health, nutrition, and job skills, which in turn can lead to increased employment and development of people speaking in general (Ranis, et al., 2000).

Global Entrepreneurship Index

The Global Entrepreneurship Index is “*a composite indicator for the health of the entrepreneurship ecosystem in a given country*”. This index presents a quality assessment of entrepreneurship as well as the support for the startup ecosystem of each country. Besides, this index will determine the level of the country's entrepreneurship: “*the overall GEI score, scores for Individuals and Institutions, and the pillar level*” (Ács, et al., 2019). The Global Entrepreneurship Index is provided by Global Entrepreneurship Monitor (GEM). The GEM program explores and evaluates the role of entrepreneurship in national economic growth, and this program has developed a worldwide survey of entrepreneurship. Since the GEM project's inception in 1999, GEM has recently investigated entrepreneurship in more than 130 countries. The main purpose of the GEM project is to measure entrepreneurship in each country. All GEM data is published and collected from the website www.gemconsortium.org, as well as the research report of entrepreneurship by GEM. This database is widely used in entrepreneurship research by many different researchers (Filculescu, 2016; Harms and Groen, 2017) because this data allows for evaluation comparison between different countries of the world as well as in-depth analysis of factors affecting the entrepreneurship of each country. This helps to experimentally solve the characteristics of entrepreneurship activity at the national level.

The Global Entrepreneurship Index evaluates the growth entrepreneurship comprehensively through the following pillars: opportunity perception, startup skills, risk acceptance, networking, cultural support, opportunity perception, technology absorption, human capital, competition, product innovation, process innovation, high growth, internationalization, risk capital (Ács, et al., 2019).

The research results on entrepreneurship of the Global Entrepreneurship Report help leaders and researchers have an overview as well as the detail about the entrepreneurship of not only each country but also around the world. From there, researchers, leaders, and policymakers can propose solutions and policies to promote entrepreneurship in their own countries.

Research methodology

Research Goal

The research goal is to validate the hypothesis that human development influences in a positive way to the entrepreneurship, through evaluating and comparing two important criteria, the Global Entrepreneurship Index and the Human Development Index by using statistical analysis methods.

Data Collection

The entrepreneurship data in this study are collected based on GEM data in 2019. The total number of observed samples in the GEM data in 2019 is 137 observed samples corresponding to 137 different countries and regions. In addition, human development data is also collected based on data from Human development reports in 2019 of the United Nations Development Program (UNDP). The total number of countries and regions from the Human Development Report in 2019 included 189 countries and regions, corresponding to 189 observed samples collected.

Due to the difference in the number of observed samples between the two reports, we analyze and use the observed samples appearing in both reports. The total number of observed samples collected for

this study is 134 observed samples. The author will use 134 observed samples to analyze this study. The descriptive statistical results of the observed samples of entrepreneurship and human development collected from GEM and UNDP are presented in Table 1. The mean value of GEI is 33.8, which is rated at a medium level. Besides, the average value of the Human Development Index is 0.7495, which is rated at a high level.

Table no. 1. Descriptive Statistics

	Mean	Std. Deviation	N
GEI	33.811	19.2891	134
HDI	0.74951	0.148170	134

Source: Author's own research results.

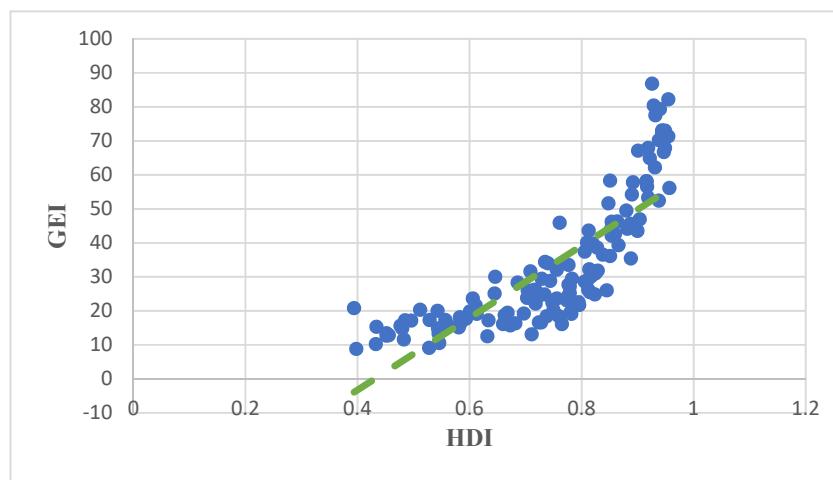
Data analysis

In this paper, the graph analysis and regression analysis method is used to analyze the impact of human development on entrepreneurship. Regression is an analytical method to consider the effect of the independent variable on the dependent variable when the value of the independent variable changes. In particular, the purpose of the study is to examine how human development affects entrepreneurship. If the Sig. value of the F-test is statistically significant (Sig. <0.05), meaning that the regression model is valid. Besides, if Sig. value of the T-test corresponding to the independent variable (HDI) is statistically significant (Sig. <0.05), the independent variable HDI has an impact on the dependent variable GEI. The steps of data processing, descriptive statistics, graph analysis, and regression analysis are performed using SPSS 23.0 software.

Results

The impact of human development on entrepreneurship

Firstly, the study uses graph methods to determine the type of connection between the two factors: entrepreneurship and human development. Through Figure 1, from the layout of the observation points on the graph, it can be observed that there exists a relationship between entrepreneurship and human development. The relationship between the two factors is a positive one. As the value of HDI increases, there is an increase in the value of GEI. Initially, the growth of GEI is quite low. If the value of HDI increases after 0.8 there is a strong increase in GEI, which is shown in Figure 1 correlogram.

**Figure no. 1. Correlogram between GEI and HDI in 2019**

Source: Author's own research results.



To analyze the statistical connection between the two variables HDI and GEI, the study uses Pearson Correlation coefficient. The statistical results are presented in Table 2. The result shows that HDI and GEI are closely and directly correlation (Pearson Correlation = 0.815). Furthermore, Pearson Correlation coefficient is also statistically significant with a significant level of 0.05 (Sig. = 0.000 <0.05).

Table no. 2. Correlations

		GEI	HDI
Pearson Correlation	GEI	1.000	0.815
	HDI	0.815	1.000
Sig. (1-tailed)	GEI	0.000	0.000
	HDI	0.000	0.000
N	GEI	134	134
	HDI	134	134

Source: Author's own research results.

To analyze the impact of Human Development Index (HDI) on Global Entrepreneurship Index (GEI), the research conducts a regression analysis based on the following model:

$$\text{GEI} = \beta_0 + \beta_1 \cdot \text{HDI} + \varepsilon \quad (1)$$

The analysis results (in Table 4) show that model (1) is valid with the significant level of 0.05 because of the Sig. value of the F-test is statistically significant (Sig. = 0.000 <0.05). Moreover, the results (in Table 3) also show that the variation of the HDI explains 81.5% from the variation of GEI (the value R² = 0.815). In addition, the results of the Durbin-Watson test show that the model does not have the autocorrelation phenomenon.

Table no. 3. Model Summary^b

Mode l	R	R Squar e	Adjuste d R Square	Std. Error of the Estimat e	Change Statistics					Durbin - Watson
					R Square Chang e	F Chang e	df 1	df2	Sig. F Chang e	
1	0.815 ^a	0.664	0.661	11.2253	0.664	260.717	1	13 2	0.000	0.812

a. Predictors: (Constant), HDI

b. Dependent Variable: GEI

Source: Author's own research results.

Table no. 4. ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1	32852.201	260.717	0.000 ^b
	Residual	132	126.007		
	Total	133			

a. Dependent Variable: GEI

b. Predictors: (Constant), HDI

Source: Author's own research results.

The results of the regression analysis based on the econometric model are estimated as shown in Table 5. In which, the results of regression values of independent variables and the dependent variable are shown as follows:

$$\text{GEI} = -45.690 + 106.071 \times \text{CPI} \quad (2)$$

In addition, the results show that the coefficient of the variable HDI is statistically significant with a significant level of 0.05 (Sig. = 0.000 <0.05). The analysis results also show that when the dependent variable HDI increasing by one unit will cause a grown of 106 units for GEI.

Table no. 5. Coefficients^a

Model	Unstandardized Coefficients		Beta	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
1	(Constant)	-45.690	5.018	-9.105	0.000	-55.616	-35.763
	HDI	106.071	6.569	16.147	0.000	93.076	119.065

a. Dependent Variable: GEI

Source: Author's own research results.

Abbreviations and acronyms

HDI – Human Development Index

GEI – Global Entrepreneurship Index

Conclusions

Human development is always an important goal of any nation and society. This is the ultimate goal for the development of a nation. From that human development, it can promote the development of other aspects, such as other national and social problems, including entrepreneurship. When a person wants to be an entrepreneur, they need skills, knowledge, vision, etc. It is necessary to enter into entrepreneurial activities or startup businesses. Human development contributes to promoting and creating a foundation to provide knowledge and skills necessary for people as well as for entrepreneurs. Therefore, enhancing human development will contribute to increasing and creating more opportunities for national entrepreneurial activities.

Research has confirmed this hypothesis. The results show that there exists a strong connection between the two indexes (human development index and global entrepreneurship index) through statistical analysis and mathematical analysis methods. Besides, human development has a positive impact on the entrepreneurship of the country. This influence is quite powerful. When Human Development Index increases by one unit, Global Entrepreneurship Index will increase by 106 units. In addition, the results of the graph method on the relationship between entrepreneurship and human development also show that for countries with low and moderate human development ($HDI < 0.8$), the impact level of human development on entrepreneurship is not high. However, for countries with a high level of human development ($HDI > 0.8$), human development will have a high impact on entrepreneurship. It makes sense for national policymakers to develop entrepreneurship and human development policies that match the realities of their own country.

Besides, this study also has certain limitations related to the nature and characteristics of the data used for analysis in this paper. The samples are based on global structured surveys and analyses conducted by GEM and UNDP. However, the number of samples used in the paper is limited, not covering all of the countries in the world. Furthermore, based on the available data, the study is also unable to analyze more details of the effects of human development on entrepreneurship.

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