

The Impact of Entrepreneurship on Human Capital Case of MOROCCO : Multiple Regression Analysis

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ABSTRACT

The article examines the impact of entrepreneurship on the unemployment rate in Morocco using a multiple regression method. We collected data over a 10-year period since 2012, including variables such as the number of businesses created, the unemployment rate, and GDP. The results of the multiple regression analysis reveal a significant correlation between the level of entrepreneurship and the unemployment rate in Morocco. Indeed, an increase in the number of businesses created is associated with a decrease in the country's unemployment rate. Furthermore, certain controlled variables such as GDP also have a significant effect on unemployment, underlining the importance of taking these factors into account in policies aimed at promoting entrepreneurship and reducing unemployment.

These results suggest that the development of entrepreneurship can play a crucial role in the fight against unemployment in Morocco. The results will be analyzed using Eviews 12sv statistical software to assess relationships between variables and obtain meaningful conclusions.

The policy implications of this study highlight the need to put in place policies that encourage entrepreneurship, notably by providing financial support and facilitating access to resources for potential entrepreneurs. In addition, further efforts to improve the education system and stimulate economic growth can also help reduce unemployment in the country.

Significant words: "entrepreneurship", "unemployment", "economic growth",

1 Introduction

Entrepreneurship is widely recognized as an engine of economic growth and an effective means of creating jobs, thus helping to reduce unemployment. In the Moroccan context, where unemployment represents a major socio-economic challenge, understanding the impact of entrepreneurship on the labor market is crucial. This theoretical section explores the conceptual foundations and previous studies linking entrepreneurship to the unemployment rate, providing a framework for our empirical analysis.

Our problem is: **What is the impact of entrepreneurship on the unemployment rate in Morocco, and to what extent do economic variables such as GDP(Gross domestic product) influence this relationship?**

2 Literature review :

Entrepreneurship, defined as the process of creating or expanding economic activities by identifying and exploiting new products, processes or markets, is a key element in stimulating innovation and job creation. Schumpeter (1934) emphasizes the role of the entrepreneur as an agent of change in the economy, through the concept of “creative destruction”.

Several studies have highlighted a negative correlation between entrepreneurship and unemployment rates. For example, Audretsch et al (2001) found that regions with high rates of entrepreneurship tended to have lower unemployment rates, suggesting that business creation stimulates employment and economic growth. At national level, studies of various countries confirm this trend, showing that encouraging entrepreneurship can be an effective strategy for combating unemployment.

Schumpeter recognizes entrepreneurship as a rewarding activity that involves all forms of innovation. Innovation is doing things in a new and better way. It adds utility to existing operations or products.

Lamb describes entrepreneurship as an act of economic activity engaged in innovation. He also emphasizes the social orientation of entrepreneurship, as it is involved in social good and wellbeing.

Gross domestic product (GDP) at market prices aims to measure the wealth generated by all economic agents, both private and public, within a national territory over a given period. As a key aggregate in national accounting, it represents the final outcome of the production activities of resident units.

Economic growth is characterized by a long-term increase in real gross domestic product

(GDP), reflecting an increase in inflation-adjusted economic output. It is to be distinguished from short-term expansions within a business cycle, which refer to temporary increases in GDP. Human capital encompasses the quantifiable knowledge and skills possessed by individuals that have economic value. that have economic value. This goes beyond mere qualifications and includes aspects such as health, nutrition and hygiene, particularly in the context of developing countries. health, nutrition and hygiene, particularly in the context of developing countries.

3 Data presentation :

3.1 Model specification :

The multiple regression method is a statistical technique that explores the relationship between a dependent variable and several independent variables. Unlike simple regression, which relies on a single explanatory variable, multiple regression allows for a more comprehensive analysis of the dependent variable's variations by considering multiple factors simultaneously. This approach is widely used to investigate complex relationships among various variables in fields such as economics, sociology, psychology, and the natural sciences.

3.2 Descriptive analysis of the data used :

Data for this research was collected over a ten-year period, from 2012 to 2022. Key variables include the number of businesses created (as an indicator of entrepreneurship), the unemployment rate, and Morocco's Gross Domestic Product (GDP). These data were extracted from official sources such as reports by the Haut-Commissariat au Plan and the World Bank. Variables

Data analysis was carried out using Eviews 12sv statistical software. This tool enabled us to perform the multiple regression analysis, assess the significance of the coefficients, and check the underlying assumptions of the linear regression, such as the homoscedasticity and noncorrelation of the residuals.

Table 1: Source summary and variable significance

Variables	Meaning	Data source	Note
company	Number of companies created in Morocco	World Bank	Independent variables
GDP	Gross domestic product	World Bank	Control variables
UNEMPLOYMENT	Unemployment rate in Morocco	World Bank	Dependent variable

Source: ourselves.

- **Dependent variable:** Unemployment rate in Morocco.
- **Main independent variables:** Number of businesses created.
- **Control variables:** GDP. Modélisation statistique

We have used multiple regression to examine the impact of entrepreneurship on the unemployment rate, controlling for the effect of GDP. The general form of the multiple regression model is as follows:

$$\text{Unemployment rate} = \beta_0 + \beta_1(\text{Number of businesses created}) + \beta_2(\text{GDP}) + \epsilon$$

where β_0 is the constant, β_1 and β_2 represent the coefficients of the independent variables, and ϵ is the error term.

3.3 Model estimation and results :

a- Stationarity study :

Stationarity refers to the consistent behavior of time series data, even after random disturbances occur. Various tests are used to assess stationarity, such as the Dickey-Fuller, Phillips-Perron, and Kwiatkowski-Phillips-Schmidt-Shin unit root tests. In our study, we concentrate on the Dickey-Fuller test.

Table 2. Non-stationarity test

Stationarity test (5% threshold)					
Variable	Statistical value	Critical Value	Probability	Stationarity	Order of integration
UNEMPLOYMENT	-3,568619	-3,320969	0,0362	OUI	I(1)
COMPANY	-4,107833	-5,194413	0,0144	OUI	I(1)
GDP	-4,811125	-3,21	0,0048	OUI	I(0)

Source: Own calculations based on EViews data

According to the Dickey-Fuller unit root test, unemployment and entrepreneurship are stationary in first difference and GDP is stationary in level.

b- Establishing the model:

Sample: 2012 2022
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ENTREPRISES	4.04E-05	1.36E-05	2.982229	0.0175
PIB	-0.100334	0.049966	-2.008056	0.0795
C	6.908339	1.093611	6.316999	0.0002
R-squared	0.599511	Mean dependent var	9.881909	
Adjusted R-squared	0.499388	S.D. dependent var	0.841305	
S.E. of regression	0.595256	Akaike info criterion	2.027350	
Sum squared resid	2.834637	Schwarz criterion	2.135867	
Log likelihood	-8.150426	Hannan-Quinn criter.	1.958945	
F-statistic	5.987784	Durbin-Watson stat	1.790607	
Prob(F-statistic)	0.025725			

SOURCE: PERSONAL ELABORATION FROM EViews

-The R2 value is high (60%), indicating that the selected variables explain 60% of the unemployment rate in Morocco.

-The probability of the F-statistic (0.02) is less than 5%, showing that the model is globally significant.

Our study shows that entrepreneurship has a significant positive impact on the unemployment rate in Morocco. Analysis of business start-up and survival trends shows an inverse correlation with the unemployment rate.

The growth of entrepreneurship in the Kingdom has made a significant contribution to job

creation, economic diversification and innovation, key factors in reducing unemployment. The study also highlights the complex role of entrepreneurship in the Moroccan economy. While entrepreneurship emerges as a key driver for reducing the unemployment rate, its interaction with GDP reveals underlying challenges, including the need to steer entrepreneurial activity towards higher value-added sectors and ensure inclusive growth.

4 Discussion and results:

Our study shows that entrepreneurship has a significant positive impact on the unemployment rate in Morocco. Analysis of business creation and survival trends shows an inverse correlation with the unemployment rate, indicating that increasing entrepreneurship contributes to reducing unemployment.

The data collected show that the growth in the number of newly-created businesses and the survival of existing businesses play a crucial role in job creation. This entrepreneurial dynamic has helped to absorb part of the available workforce, particularly among young people and women, segments of the population where unemployment is often higher. For example, initiatives such as business incubators, financial support programs and specialized training have facilitated access to entrepreneurship for these groups, improving their employability.

The economic diversification resulting from entrepreneurship has also been a key factor in reducing unemployment. New entrepreneurs are often exploring a variety of sectors, from information and communication technologies to creative industries and renewable energies. This diversification reduces Morocco's dependence on traditional economic sectors and exposes the economy to new growth opportunities.

In addition, innovation, stimulated by entrepreneurship, has led to the creation of new and improved products and services, which not only stimulates demand but also generates new types of employment. Technology start-ups, in particular, have been a driving force behind the creation of skilled jobs, attracting talent and strengthening the country's technological capabilities.

However, our study also highlights the complex role of entrepreneurship in the Moroccan economy. While entrepreneurship appears to be a key driver in reducing the unemployment rate, its interaction with GDP reveals underlying challenges. For example, it is crucial to direct entrepreneurial activity towards higher value-added sectors, such as advanced technologies and financial services, to maximize economic impact. Furthermore, to ensure inclusive growth, it is necessary to put in place policies to support small and medium-sized enterprises (SMEs) and

foster a regulatory environment favorable to entrepreneurship.

In conclusion, while entrepreneurship has an undeniably positive impact on reducing unemployment in Morocco, it is important to continue encouraging initiatives that promote sustainable, inclusive growth. Policymakers need to ensure that efforts to promote entrepreneurship are aligned with the country's long-term economic development objectives, in order to maintain and amplify the benefits observed.

5 Conclusion:

By embracing different sectors of the Moroccan economy, entrepreneurial initiatives have not only generated new opportunities for the workforce, but have also stimulated the entrepreneurial spirit among young people, encouraging them to develop their own projects and become players in the country's economic change.

These initiatives cover a wide range of fields, including agriculture, tourism, manufacturing, information and communication technologies, and renewable energies. By offering training, financing and support networks, they enable entrepreneurs to overcome traditional obstacles, such as lack of initial capital and experienced mentors. In addition, government programs and public-private partnerships play a crucial role in creating an ecosystem conducive to innovation and business creation. Thanks to these efforts, many young Moroccans are now able to transform their ideas into viable businesses, thus contributing to the diversification and modernization of the Moroccan economy.

As a result, these initiatives not only reduce unemployment and improve living conditions, but also promote sustainable and inclusive economic development, by integrating segments of the population that are often marginalized.

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