

## Impact of Entrepreneurship on Employment in Morocco: Multiple Regression Analysis

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## ABSTRACT

Entrepreneurship is recognized as a fundamental pillar in the dynamics of employment, including in Morocco. This study investigates the impact of entrepreneurship on the Moroccan labor market using a multiple regression econometric approach, drawing on a rigorous selection of research from leading sources in the field. The results of this analysis categorically confirm that entrepreneurship plays an essential role in job creation in Morocco by stimulating the creation of new businesses and meeting the demand for skilled labor. However, this positive effect can be influenced by various factors such as the local economic context, national policies, and the specific characteristics of the Moroccan market.

On the one hand, entrepreneurship offers a glimmer of hope to individuals facing challenges in the Moroccan job market, thus contributing to economic growth through innovation and value creation. On the other hand, the obstacles inherent in setting up a business in this context, such as instability and the associated risks, can lead to fluctuations in the employment landscape, with potentially devastating consequences for some less privileged entrepreneurs. To promote an ecosystem conducive to entrepreneurship and sustainable job creation in Morocco, strategic government action is required, notably through policies aimed at facilitating access to financing, supporting the development of local entrepreneurial skills, and simplifying country-specific administrative regulations.

In summary, this analysis highlights the importance of understanding the complex dynamics between entrepreneurship and employment, particularly in the Moroccan context. It also underlines the crucial role of national public policies in stimulating economic growth and employment through entrepreneurship in Morocco.

**KEYWORDS:** Entrepreneurship, employment, multiple regression, Morocco, economic development, Econometric analysis

## 1 Introduction

Entrepreneurship is a key driver of economic growth and job creation worldwide. Rooted in Schumpeterian theory, entrepreneurs are seen as catalysts for innovation and agents of economic progress. This recognition has prompted countries like Morocco to make entrepreneurship the cornerstone of their economic development.

This article looks at the link between entrepreneurship and employment in Morocco. It seeks to understand how entrepreneurial efforts influence job creation in the Moroccan economic landscape. Despite the existing literature extolling the virtues of entrepreneurship for economic growth, further exploration of its impact on employment dynamics in Morocco is warranted.

This context raises the following question: *How does the level of entrepreneurial activity specifically influence the extent of job creation in Morocco?*

What are the specific ways in which entrepreneurship impacts job creation in Morocco?

How do fluctuations in gross domestic product (GDP), gross fixed capital formation (GFCF), and the education level of the Moroccan population specifically affect the dynamics of employment in the country?

On the basis of these questions, we put forward the following hypotheses:

- Entrepreneurial activity influences job creation in Morocco through specific mechanisms.*
- Fluctuations in GDP impact the dynamics of employment in Morocco.*
- Gross fixed capital formation plays a positive role in supporting job creation.*
- The school enrolment rate of the Moroccan population is associated with job creation.*

Methodologically, this study uses multiple regression analysis to dissect the complex relationship between entrepreneurship and employment. By closely examining various independent variables - principally entrepreneurial activity - this method highlights their collective influence on employment levels. Through this analytical lens, our aim is to provide nuanced insights into the role of entrepreneurship in structuring employment outcomes in Morocco.

Before venturing into the empirical analysis, this article lays a solid theoretical foundation by elucidating the conceptual framework of the study. It then defines the methodological approach, focusing on multiple regression analysis as the tool of choice for examining the data. Through this scholarly work, we aspire to enrich the discourse surrounding the dynamics of entrepreneurship and employment, thereby informing policy development and guiding practitioners in Morocco.

## 2 Literature review :

Entrepreneurship is recognized as a crucial catalyst for economic growth and job creation in Morocco. A large body of research has examined this sophisticated interconnection, revealing the multiple ways in which entrepreneurship influences economic growth and fosters the creation of employment opportunities.

Jean-Baptiste Say, Joseph A. Schumpeter, and Richard Cantillon are the leading figures in the foundations of the economic theory of entrepreneurship. The academic work they produced gave rise to a set of theories from which we derive the entrepreneurial equation presented below. Cantillon sees the entrepreneur as the economic agent who takes the risks inherent in the market economic system. According to Say, the entrepreneur is the link between the researcher who creates knowledge and the worker who applies that knowledge in industry. Schumpeter, for his part, defines the entrepreneur as the driving force behind the evolution of technology and industry, creating new configurations of factors of production (Janssen, 2009).

Israel Kirzner, Friedrich Hayek and Ludwig von Mises then challenged the Walrasian idea that the market is transparent, redefining the entrepreneur as a seeker of opportunities rather than a creator. This view highlights the changing role of entrepreneurs in the evolving context of industrial capitalism (I. Kirzner, 2005).

Far from the heroic era of the first industrial revolution, when icons such as Rockefeller, Bich, Ford, Gates, Zuckerberg, Brin and Page were admired for building industrial empires from scratch, today's entrepreneurs operate in a different context. In a world largely dominated by large corporations, the entrepreneur seeks to break into untapped market niches, with the aim of accumulating wealth and disrupting traditional structures (Boutillier & Uzunidis, 2015).

From the 1980s onwards, there was a new craze for entrepreneurship, whereas some twenty years earlier, Alain Touraine (2000) had already stressed that social change does not come from the masses, but rather from minority social groups. The emergence of innovative entrepreneurs since the early 1980s could indicate a profound transformation of capitalism, incorporating values such as autonomy, creativity and individual fulfilment, inherited from the social movements of the late 1960s (Comeau, 2000).

Despite this increased interest, defining precisely what an entrepreneur is remains a challenge. According to Ludwig von Mises, although an individual can take on various roles such as entrepreneur, owner, capitalist or worker, the specific function of the entrepreneur is to decide on the allocation of productive resources. The entrepreneur's primary objective is selfish: to enrich his or her own interests. However, this quest is constrained by market forces, as Von

Mises points out.

On the other hand, entrepreneurial action can be seen as the ability to spot opportunities for profit that others have not yet identified. According to Kirzner, this theory rejects the idea of profit maximisation, preferring instead to see entrepreneurs as individuals on the lookout for opportunities. Opportunities for profit arise in disequilibrium, not in equilibrium. Thus, the entrepreneur according to Kirzner is often seen as cautious in identifying and employing these opportunities, illustrating what he describes as ‘entrepreneurial alertness’ (Schmitt & Janssen, 2012).

If entrepreneurship is a path open to all, what are the drivers that encourage individuals to embark on this path? Mark Casson identifies four potential reasons and seeks to pragmatically assess the chances of success for each. Of these, only the fourth seems to offer any potential for success. In this case, the individual acts as his or her own ‘employer of last resort’, albeit with limited prospects of success (Muiruri, 2018, pp. 181-186).

In addition, various studies have highlighted the crucial importance of public policy in promoting entrepreneurship and creating a business-friendly environment. According to the literature, regulatory reforms aimed at simplifying administrative procedures, reducing barriers to market entry and facilitating access to finance are essential elements in supporting the growth of entrepreneurship in Morocco.

However, despite these positive effects, challenges remain. A recent study highlighted the need to improve entrepreneurial education and professional skills to strengthen Morocco's entrepreneurial ecosystem and foster more inclusive economic growth.

In fact, the entrepreneurial approach represents a crucial lever for economic growth, as well as being a significant driving force for personal fulfilment. Entrepreneurial initiative can be individual, but it can also take on a collective dimension through federative employment arrangements. By way of illustration, clusters, by fostering innovative research even in times of crisis, generate collective added value for their members, who work closely together on joint projects or seek solutions through labour lending or cooperation networks, whatever the size of their business. This is particularly noticeable in sectors such as the automotive industry, which is facing difficulties as a result of the crisis, and where these collaborative dynamics are manifesting themselves in a significant way, as illustrated by the example of the LUTB (Lyon Urban Trucks and Bus) competitiveness cluster.

In short, entrepreneurial initiative occupies a key position in boosting economic growth and

generating jobs in Morocco. To reap the full benefits of entrepreneurship, it is vital to develop effective public policies and strengthen entrepreneurial skills at all levels of Moroccan society (Nobre, 2012).

In Morocco, Small and Medium-sized Enterprises (SMEs) are pivotal to the country's economic landscape, particularly in terms of job creation and GDP contribution. It is essential to better understand the factors that influence the establishment and growth of SMEs to strengthen economic resilience. A study focusing on Moroccan entrepreneurs found that their primary motivations for self-employment were economic, driven by financial goals rather than personal aspirations such as independence. Success in entrepreneurship was closely tied to personal attributes like business training, field experience, and marketing skills. However, key challenges identified by Moroccan entrepreneurs included the lack of qualified personnel, fierce competition, and an unstable economic environment (Robichaud, Cachon, Assaidi, & Ahmed, 2023).

### **3 Data presentation :**

#### **3.1 Model specification :**

The multiple regression method is a statistical approach that examines the correlation between a dependent variable and several independent variables. Unlike simple regression, which is based on a single explanatory variable, multiple regression enables a more in-depth analysis of the variation in the dependent variable by taking several factors into consideration simultaneously. This method is commonly used to examine complex relationships between various variables in fields such as economics, sociology, psychology and the natural sciences.

#### **3.2 Descriptive analysis of the data used :**

Annual data (in US dollars) collected in Morocco between 2006 and 2022 are used for this research. The selection of this period depends on the availability of statistical data from the World Bank and the Haut-Commissariat au Plan (HCP), which contributes to the harmonisation of the units of measurement used.

We have chosen a model restricted to four variables. The economic literature proposes various econometric models, the results of which depend on the assumptions and data used.

Our methodology is based on an econometric analysis of time series by multiple regression, using EVIEWS software. We begin by testing the stationarity of the series using the unit root test, and then proceed with the multiple regressions.

The variables incorporated in this model aim to address the question of the contribution of entrepreneurship to the level of employment in Morocco. The choice of these variables stems both from economic theory and from considerations related to the available data. The variables selected are: GDP per capita, entrepreneurship, secondary school enrolment, GFCF and the employment rate.

**Table 1. Source and meaning of variables**

Variables	Significance	Data source	Notice
EMPLY	Employment rate	World Bank	Dependent Variable
ENTREP	Number of companies created	World Bank	Variable of Interest
PIB (GDP)	Gross domestic product	World Bank	Variable of Interest
FCBC (GFCF)	Gross fixed capital formation	World Bank	Variable of Interest
SCOL	Secondary school enrolment rate	HCP	Variable of Interest

**Source : Ourselves**

In order to explore a possible non-linear relationship between employment and entrepreneurship, we consider the use of the following production function:

For each year  $t$  from 2006 to 2022, we have :

$$EMPL = f(ENTRP, FBCF, PIB, TXSCOL)$$

$$EMPL_t = \beta_1 + \beta_2 ENTRP_t + \beta_3 FBCF_t + \beta_4 PIB_t + \beta_5 TSCO_t + \varepsilon_t \quad (1)$$

Where:  $\beta_i$ : The coefficients to be estimated

$\varepsilon_t$ : The error term

Furthermore, we introduce the logarithm, which leads to the transformation of equation (1) into the following form:

$$\text{Log}(EMPLY_t) = \beta_1 + \beta_2 \text{Log}(ENTRP_t) + \beta_3 \text{Log}(PIB_t) + \beta_4 \text{Log}(SCOL_t) + \beta_5 \text{Log}(FCBC_t) + \varepsilon_t \quad (2)$$

In this context, the employment rate acts as the independent variable, while entrepreneurship, GDP, GFCF and secondary school enrolment serve as explanatory variables.

### 3.3 Model estimation and results :

#### a- Stationarity study :

The notion of stationarity refers to the infinite persistence of time series following random disturbances. Several stationarity tests are available, including the Dickey-Fuller, Phillips-Perron and Kwiatkowski, Phillips, Schmidt and Shin unit root tests. For our study, we focus on the first test, the Dickey-Fuller test.

The hypotheses are as follows: H0 indicates the presence of a unit root (non-stationary), while H1 indicates the absence of a unit root (stationary). The results are presented in a summary table.

**Table 2. Non-stationarity test**

Stationarity test (5% threshold)					
Variables	Value Statistics	Critical Value	Probability	Stationary	Order of integration
EMPLOY	-3,9810	-3,7597	0,0348	Oui	I(0)
ENTRP	-5,0662	-3,7597	0,0058	Oui	I(1)
PIB	-3,2353	-3,1199	-0,0411	Oui	I(1)
FCBF	-5,1143	-3,7597	0,0053	Oui	I(0)
SCOL	-4,7734	-3,0988	0,0026	Oui	I(2)

**Source: Own calculations based on EVIEWS data**

The conclusions drawn from the Dickey-Fuller unit root test reveal that the employment rate and GFCF are stationary at the same level. As for the entrepreneurship (ENTRP) and GDP variables show stationarity after first differentiation, while the first differentiation, while the secondary school enrolment rate (TXSCOL) requires additional differentiation to achieve stationarity. This divergence in the order of integration of the variables suggests that they cannot be cointegrated according to the principles of Granger's econometric theory.



**b- Establishing the model:**

Estimate command:

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LS EMPLY ENTREP FBCF PIB SCOL C

Estimation equation:

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Substitution coefficients:

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$$\text{EMPLY} = 0.0801956299779 * \text{ENTREP} + 0.112306256406 * \text{FBCF} + 0.0735598810515 * \text{PIB} - 0.0388799135066 * \text{SCOL} + 0.261117481793$$

**Table 3: Results of the Estimated Model Analysis**

Variable	Coefficient	Std.Error	t-Statistic	Prob.
SCOL	-0.038880	0.290943	-0.133634	0.8959
PIB	0.073560	0.193211	0.380723	0.7101
FBCF	0.112306	0.112586	0.997512	0.3382
ENTREP	0.080196	0.032227	2.488461	0.0285
C	0.261117	0.766364	0.340723	0.7392
<b>R-squared</b>	0.827257			
<b>F-statistic</b>	14.36682			
<b>Prob(F-statistic)</b>	0.000158			

**Source: Personal elaboration from EViews**

The findings highlight promising results for modelling the Moroccan labour market. A solid adherence (83%) of the variables to the model reflects a substantial explanation of employment dynamics in the country. Moreover, the p-value associated with the F statistic, less than 5%, reinforces the overall robustness of the model.

The study also reveals the significant impact of entrepreneurship on the Moroccan employment rate, underlining the crucial importance of entrepreneurial development in promoting employment. This finding underlines the need for public policies and initiatives to support and encourage entrepreneurship as a key driver of economic growth and job creation in Morocco. On the other hand, variables such as the secondary school enrolment rate, gross domestic product and gross fixed capital formation do not appear to play a significant role in the model,

highlighting the complexity of the factors influencing the labour market and underlining the need for further analysis to fully understand the underlying mechanisms.

#### **4 Discussion and results:**

Analysis of the coefficients reveals results in line with economic expectations. Indeed, the coefficient attributed to entrepreneurship shows a positive trend, which corroborates the theoretical hypotheses advocating a positive link between entrepreneurship and economic growth. However, despite this favourable trend, the effect of entrepreneurship on the employment rate.

However, despite this favourable trend, the effect of entrepreneurship on the employment rate seems moderate, with an increase of barely 0.080196 points in the employment rate for each point of growth in the number of businesses created in Morocco. This finding highlights the need for a more in-depth analysis of the mechanisms underlying this effect.

Furthermore, the coefficient associated with gross domestic product is also positive, indicating a strong correlation between overall economic growth and the employment rate. This finding highlights the importance of economic growth in promoting employment in Morocco, underlining the need for economic policies focused on stimulating growth.

On the other hand, gross fixed capital formation has a positive but insignificant effect on employment, with an estimated 0.112306 percentage point increase in the employment rate for each percentage point increase in GFCF. However, the lack of relevance of this variable suggests that domestic investment does not play a decisive role in promoting employment in Morocco, which could be attributed to an economic environment that is not very conducive to the growth of domestic companies.

Finally, the coefficient associated with the secondary school enrolment ratio (SCOL) is negative and insignificant, which runs counter to economic expectations. This unexpected observation suggests that an increase in the secondary school enrolment rate is associated with a decrease in the employment rate, although this relationship is not statistically significant. These results underline the importance of an in-depth analysis of the determinants of employment in Morocco and the need for targeted educational and economic policies to promote employment growth in the country.

## **5 Conclusion:**

Entrepreneurship in Morocco plays a crucial role in stimulating economic growth and job creation. Indeed, the entrepreneurial drive of Moroccan players is helping to boost the national economy by encouraging innovation, investing in new projects and developing innovative business activities. This entrepreneurial drive stimulates market demand, which in turn supports the country's economic growth.

In addition, the creation and expansion of businesses generates a growing need for labour, leading to the creation of jobs both directly, within companies, and indirectly, in ancillary sectors and related services. This generation of jobs helps to reduce the unemployment rate and provides employment opportunities for young graduates and people looking for work.

Entrepreneurship also fosters innovation and competitiveness in the marketplace, which can lead to an overall improvement in productivity and more sustainable economic growth in the long term. By offering innovative solutions to economic challenges and promoting competition, Moroccan entrepreneurs help to strengthen the resilience and sustainable development of the national economy.

In short, entrepreneurship in Morocco has undeniable positive effects on economic growth by stimulating employment, encouraging innovation and strengthening competitiveness. These aspects are essential to support Morocco's long-term prosperity and development.

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