

## **The impact of the knowledge economy on inclusive development in Morocco: Analysis and comparisons**

## **L'impact de l'économie de la connaissance sur le développement inclusif au Maroc : Analyse et comparaisons**

**EL MOUTAOUKIL Abdelkader**

Enseignant chercheur

Faculté des Sciences Juridiques Économiques et Sociales

Université IBN ZOHR, Agadir - Maroc

Laboratoire des études et recherches appliquées en sciences économiques LERASE

Centre International des Recherches Fondamentales Appliquées (CIRFA-EHESS, Paris)

**a.elmoutaoukil@uiz.ac.ma**

**OUMANE Sofyan**

Doctorant

Faculté des Sciences Juridiques Économiques et Sociales

Université IBN ZOHR, Agadir - Maroc

Laboratoire des études et recherches appliquées en sciences économiques LERASE

Centre International des Recherches Fondamentales Appliquées (CIRFA-EHESS, Paris)

**Sofyan.benlhoucine@gmail.com**

**Date de soumission** : 25/03/2021

**Date d'acceptation** : 16/05/2021

**Pour citer cet article** :

EL MOUTAOUKIL A. & OUMANE S. (2021) « The impact of the knowledge economy on inclusive development in Morocco: Analysis and comparisons», Revue Française d'Economie et de Gestion «Volume 2 : Numéro 5» pp : 325-345.

Author(s) agree that this article remain permanently open access under the terms of the Creative Commons

Attribution License 4.0 International License



## Abstract

This research paper is part of the development of economy; it presents the contribution of the knowledge economy development in Morocco. A new model adopts a development strategy based on four fundamental pillars: Economic Incentives and institutional regime, education and human resources, national research and innovation system and infrastructure of information technology and communication. Through this brief, we develop several types of analysis to assess the economic situation of Morocco in a comparative framework.

The objective is to assess the level of the four components of the knowledge economy in the context of developing countries (in particular, Morocco). To do this, this article proposes to examine first, the economic situation of Morocco in a comparative and descriptive framework. Then, the second step is to assess Morocco's capacity in terms of the knowledge economy. In the end, the final step deals with the link between the indices of the knowledge economy and development in the context of the Moroccan economy.

**Keywords:** knowledge economy; Development; Economic performance; Comparative analysis; Morocco.

## Résumé

Ce papier de recherche s'inscrit dans le cadre de l'économie de développement, il présente l'apport de l'économie de la connaissance sur le développement au Maroc. Un nouveau modèle adoptant une stratégie de développement fondée sur quatre piliers fondamentaux, à savoir : L'incitation économique et régime institutionnel, l'éducation et ressources humaines, le système national de la recherche et de l'innovation, et l'infrastructure des technologies de l'information et de la communication. A travers ce travail de recherche nous allons élaborer plusieurs types d'analyse afin d'évaluer la situation économique du Maroc dans un cadre comparatif avec les pays de la région MENA.

L'objectif est d'évaluer le niveau des quatre composantes de l'économie de la connaissance dans le contexte des pays en développement (en particulier, le Maroc). Pour ce faire, cet article propose d'examiner en premier lieu, la situation économique du Maroc dans un cadre comparatif et descriptif. Ensuite, la deuxième étape consiste à évaluer la capacité du Maroc en termes de l'économie de la connaissance. En fin, la dernière étape traite le lien existant entre les indices de l'économie de la connaissance et le développement dans le contexte de l'économie marocaine.

**Mots clés :** Economie de la connaissance ; Développement ; Performance économique ; Analyse comparative ; Maroc.

## Introduction

According to the conclusions of a large number of scientific works, the dynamics of the recently developed economies show us the role and contribution of the knowledge economy in their development process (Haudeville, & al., (2009). Alongside this dynamic, Morocco and other developing countries are lagging behind in the knowledge economy.

Unlike a number of Arab countries and the African countries, Morocco is among the emerging countries that have embarked on the implementation of a strategic growth policy, of economic and social development founded and based on knowledge.

Indeed, the rationale for this statement can be found when careful consideration is given to all or part of the medium and long-term strategic plans and programs of government policy.

The problematic that is well thought to be dealt with is centered on the central theme of political government.

On the basis of the fundamental and advanced work that has dealt with the knowledge economy as a lever of economic development, we will try throughout this stage of our research work to go further, going beyond classical thinking and standard based on research and enumeration of conditions and opportunities to implement a knowledge-based economy.

While in the course of this research, we will try to answer the following research question: Does insertion into the knowledge economy contribute to the inclusive development of Morocco?

The objective is to assess the level of the four components of the knowledge economy in the context of developing countries (in particular, Morocco).

To do this, this article proposes to examine first, the economic situation of Morocco in a comparative and descriptive framework. Then, the second step is to assess Morocco's capacity in terms of the knowledge economy. Finally, the last step deals with the link between knowledge economy indices and development.

### **1. General context and the economic situation of Morocco in comparison:**

#### **Limitation of the classic indices of economic performances**

According to traditional indicators, Morocco's position and economic situation is among low-income countries. Compared to other countries such as Tunisia, Egypt and Jordan, Morocco is one of the net importers of core resources such as oil and gas (World Economic Reform 2011) and (OECD 2017). While in terms of Gross Domestic Product, it is certainly at a disadvantage compared to African countries.

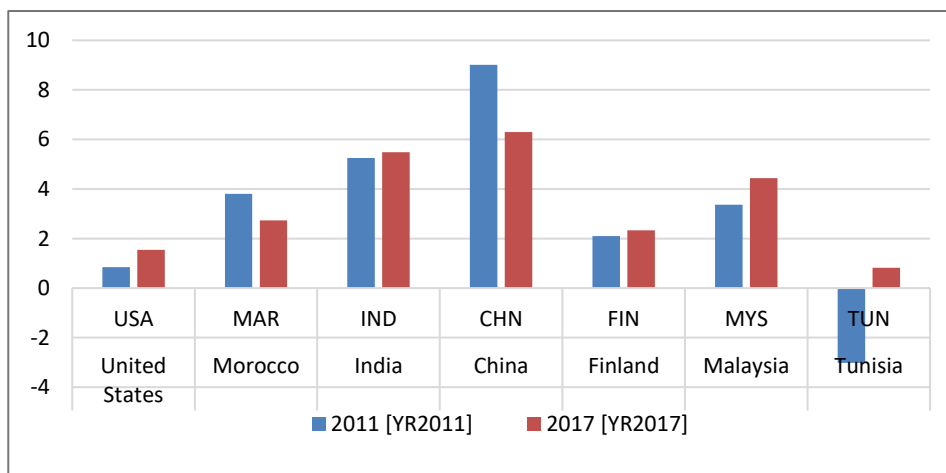
**1.1. The economic situation of Morocco (period 2011-2017): Morocco in comparison**

Following the socio-political movements, that Morocco in 2011, in particular, the transition of behavior of certain political parties in the context of the constitutional reform, the structure of Morocco has undergone a certain evolution between 2011 and 2017. However, this period is characterized by a delay in terms of economic development, and especially the dynamics of economic structures.

As Figure 1 shows, during this period, Morocco's GDP growth rate is very low. On average, the growth rate cannot exceed 4%. During this period, we also find that compared to states that have experienced strong growth today like India and China, Morocco had their same economic situation.

Indeed, this delay has negative effects on the various areas of economic and social development. This initially amounts to the limitation of resources that are generally dependent on the resources of agriculture, the latter has been marked by low productivity and constant contribution in terms of income. While this constant production fails to keep pace with the development and evolution of the world economy, this justifies a slow and relatively weak opening.

**Figure n°1 : GDP Growth (annuel %).**



**From database: World Development Indicators.**

Compared with neighboring countries such as Tunisia, during this period Morocco's economic structure fails to diversify the national economy, exceeding the limitation of resources solely related to agricultural revenues. While the countries closest to the industrialized economies

(such as Malaysia and Tunisia) showed agriculture is not very important to reassuring growth and rapid economic performance at the global level.

In addition, to highlight the other indices assessing the situation of economic and social development in Morocco, it should be noted mainly that the issue of inequality is still at the heart of the debate (El Aoufi & Hanchane, 2016). Among the major social and major problems that Morocco suffers, we find initially the problem of poverty. However, the government policies that were implemented during this period significantly reduce the poverty rate from 15.3% in 2001 to 4.8% in 2014. In this respect, noting also significant disparities and inequalities between regions, the problems of literacy (the adult literacy rate: 44% in 2016), the famous unemployment problem (between 8% and 11% between 2011 and 2017) and the low costs of investment in education (HCP, 2016, 2018)<sup>1</sup>.

The table below also shows the situation in Morocco by comparing the different measurement and comparison indicators according to the global classification of countries.

**Table 1: Morocco's economic performance.**

Series Name	2011	2017
GDP per capita (constant 2010 US\$)	2942,038817	3292,445138
GDP growth (annual %)	5,245697297	4,087506817
HDI Value	0,663	0,667
unemployment rate	8,91	9,33

**Data from database: World Development Indicators.**

According to this table, the indicators cited made it possible to evaluate the situation of Morocco between 2011 and 2017 in terms of evolution and comparison. These indicators are positioned at average stages. However, it is clear that they remain perfectly weak and insufficient in relation to the norms, conditions and criteria of emergence and economic development.

<sup>1</sup> HCP (2018). « *Les indicateurs sociaux du Maroc* ». Direction de la statistique, Editions du haut-commissariat au Plan.

## 1.2. The socio-economic situation of Morocco (period 2011-2017): Descriptive analysis

Geographically, Morocco is located in a region that is both politically disturbed (the political conflicts with Algeria and the failure of the AMU<sup>2</sup>), and at the same time economically has the beneficial opportunities for growth (exchanges and integration PSEM)<sup>3</sup>. During this period, Morocco has made a considerable effort to integrate international trade. The trade agreements that were concluded during this phase have allowed a commercial opening of the Moroccan economy and which continues to develop until it has resumed a growth rate of 3.8% per year throughout the period in question. These are trade agreements, the three most important of which are the Great Arab Free Trade Agreement (GAFTA), free trade agreements with the European Union and trade agreements with the United States.

The challenges of the growth of Morocco's national economy remain in its sectoral diversification and the modernization of production, exceeding the limitation of wealth creation by agriculture as the only variable with low benefit. This encourages the government of this political period to do the best to emerge new sectors of economic activity, namely the tertiary sector. While, of course, the latter has contributed significantly to a highly remarkable growth of over 55% in GDP, the benefits of offshoring of economic activities in the country, and other legal and institutional reforms.

This is still limited in relation to the achievement of prefixed objectives. The problem of creating new jobs was still a fundamental issue of all economic policies, knowing that demographically, Morocco is evolving with a considerable boom of young graduates (Andersson, & al., 2006).

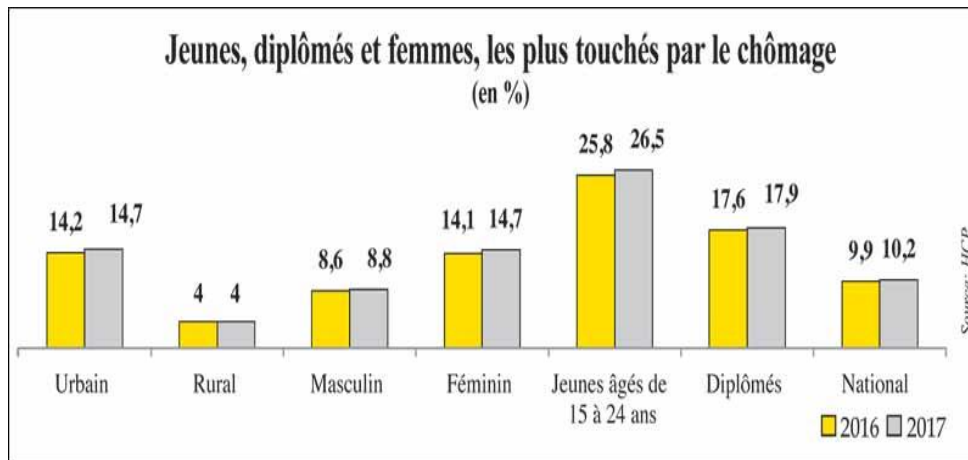
Indeed, over this period, Morocco has had a miraculous success thanks to a considerable effort to fight against unemployment. By promoting the attractiveness policies of Foreign Direct Investment (FDI) to accelerate economic growth and create jobs. Nevertheless, it is still insufficient to cure all the economic and social problems of the country. The unemployment rate is still high, especially in urban areas (14.7% in 2017). Without forgetting the question of gender in this context, women are the most affected by unemployment. But also the uneducated and non-educated youth.

---

<sup>2</sup> Arab Maghreb Union.

<sup>3</sup> Country of the south and east of the Mediterranean.

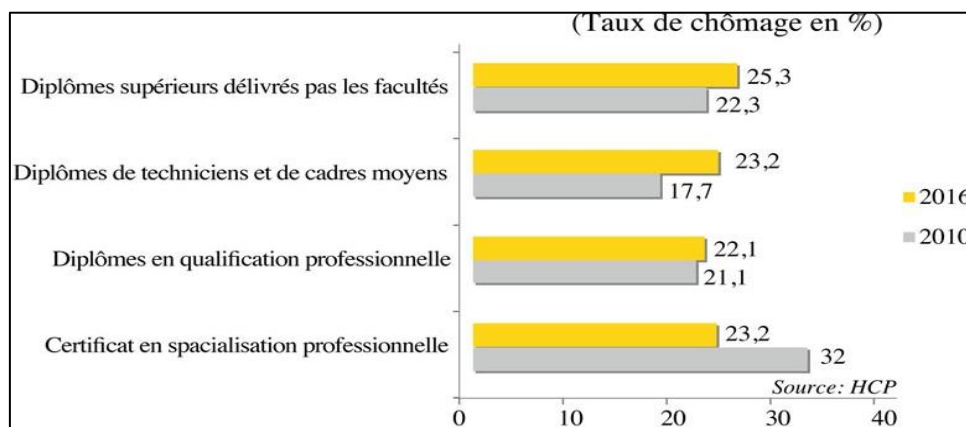
**Figure 2: Unemployment rate in Morocco**



**Haut-Commissariat au Plan (Direction de la Statistique).**

According to this figure, it can be seen that young people aged 15 to 24 are the most affected by unemployment, with an unemployment rate of almost 26.5%. As well as the unemployment rate of young people with a degree is estimated at 17.9%. Since the year 2010, the unemployment rate of young graduates is in a remarkable evolution between the years 2010-2016 (Figure n°3). Indeed, this issue of youth unemployment generates all the problems that have a social impact on society.

**Figure n°3: Annual national unemployment rate by diploma (2010-2016)**



**Haut-Commissariat au Plan (Direction de la Statistique).**

Therefore, according to all the constitutional reforms that Morocco has undergone during this period, as well as the social dialogue that has been conducted by the current government, the question of young people is still at the center of the debate. This requires the public authority

to look for other alternatives to limit or even overcome this problem. Indeed, to avoid all the damage of the social and political movements, the State must do a lot of work to stabilize the sustainable structure of the nation, this must be done in a framework of institutional and regulatory reforms to guide all actions towards socio-economic progress.

At the same time, the private sector in Morocco will have to be important in terms of accelerating growth and creating new jobs. According to national statistics, small and medium-sized enterprises (SMEs) have played a very important role in job creation. They employ more than 50% of industrial jobs. In addition, SMEs in Morocco are characterized by their flexibility and their ability to innovate better and more than large companies (Djeflat, 2012).

## **2. The capabilities of Morocco in terms of the knowledge economy: the evaluation of the performance of indices**

During this second part, we will try to highlight the different components of evaluation, evolution and performance of the knowledge economy.

According to statistics and studies carried out by international institutions, in this case the World Bank, Morocco has been classified as a middle-income country despite the importance of all reforms and the progress that has been made. during these three decades (KAM, 2012)<sup>4</sup> and (GKI, 2018)<sup>5</sup>. In the context of a comparative approach, we try to highlight the different indices of the knowledge economy, as well as the relationship between the indices of the knowledge economy and those of development in Morocco.

### **2.1. The knowledge economy Index (KEI) in Morocco: what empirical realities?**

According to the Knowledge Assessment Methodology (World Bank, 2012), Morocco as a middle-income country, still cannot surpass the MENA average in terms of GDP index. economy of knowledge, namely: 4.74. Indeed, Morocco has only an evolution of 0.07 compared to the year 2009. Whereas in 2012 the index of the knowledge economy is estimated at 3.45.

Despite the descriptive character of this index, it can be an indicator of evaluation and evolution. For Morocco, it is doubled during the period 1995-2012. By contrast, compared to other countries in the MENA region, it is still weak and insufficient.

---

<sup>4</sup> Knowledge Assessment Methodology.

<sup>5</sup> « PNUD » and « *Mohammed Bin Rashid Al Maktoum Knowledge Fondation* ».

According to the descriptive analyzes of Djeflat (2012), Driouchi (2006), this delay and weakness is mainly due to the limitation or even the failure of many indicators, namely: Education, scientific and technical higher education; the protection of property rights; tariff and non-tariff barriers; the human potential mobilized in R & D; imperfections of information asymmetry in the export of manufactured goods.

Indeed, the last point (the problems of asymmetries of information), is actually posed in the case of all developing countries, particularly in terms of Research and Development (R & D). The flow of information is very slow in relation to the demands of the acceleration of economic activity. So, in this case, things are very much tied in order to push an economy based on knowledge. The application of new knowledge necessarily requires a control system and the acceleration of the dissemination of useful information to be used in the process of innovation. The latter involves changes in the way products are manufactured or delivered to improve quality, but also introduce new aspects (Ben yakoub & Achelhi, 2020).

In addition, what is very important in this evaluation methodology, the role of education as a main pillar of the knowledge economy. According to KAM 2012, education remains problematic more than the other pillars that will be developed later in this work. It has a low score of 2.7 KEI, while Morocco has ranked third in MENA (Djeflat, 2010).

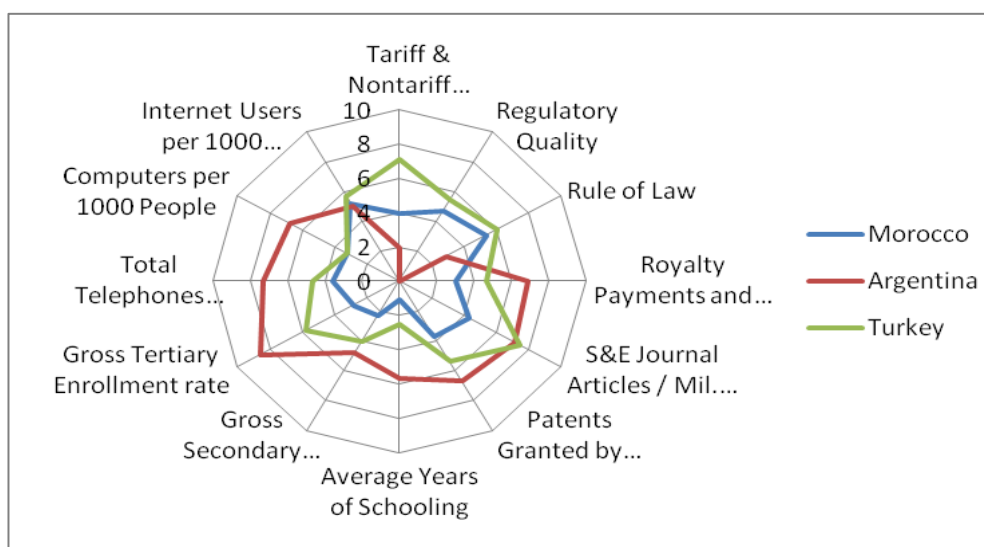
At the microeconomic level, Morocco should develop a policy of promoting young graduates and / or non-graduates with projects, which will allow them to develop the entrepreneurial spirit more correctly by integrating innovation as a new variable. . At the macroeconomic level, this trend must be the path towards building a society based fundamentally on the search for innovation, which says innovation initially says the acquisition and application of new knowledge.

Therefore, to help Morocco achieve advancements in the knowledge economy by increasing the Knowledge Economy Index (KEI), we recommend the idea of building a national technology platform. In this sense, it is necessary to strengthen an incentive system for innovation, particularly for national SMEs. This requires the adoption of new development strategies based primarily on the opportunities offered by today's high technology, but also the stimulation of partnerships and technological alliances with foreign companies taking advantage of technology transfer, and the transfer knowledge.

Therefore, this strategy will need to promote R & D at the national level, as well as the process of innovation to have strong opportunities for quick and beneficial integration into international trade, accessing markets and global opportunities.

In this logic, we compare the situation of Morocco with that of some emerging countries like Turkey and Argentina on the index of the knowledge economy (KEI) in 2012. As shown in Figure n° 4, technological aspects such as the use of the internet, tariff and non-tariff barriers, the quality of regulation and the role of the rule of law, are in the same situation in Argentina and Morocco. On the other hand, according to the other variables in figure 4, such as the number of scientific publications, the number of patents, the gross enrollment ratio in secondary and higher education, the number of telephone lines and the number of number of computers per 1000 people, Morocco is still characterized by a delay in this direction compared to Argentina. As for the comparison with Turkey, Morocco is lagging far behind all aspects of the knowledge economy index.

**Figure n° 4: Morocco in comparison in terms of the knowledge economy index (KEI).**



WBI, (KAM, 2012).

According to these results, Morocco should develop a political and economic strategy for integration into the knowledge-based economy. In this regard, the implementation of a number of real progress and measures are necessary, those are in fact the basic institutional factors, namely: Strengthening the system of protection of the regulations to create an attractive environment and welcoming; Improving and mobilizing human potential to meet the requirements of Research and Development; The reform of the university education system: the establishment of a basic technological platform; High level scientific publications. Indeed, Morocco has recently undergone remarkable developments in this direction, yet the analytical examination of the situation in Morocco shows that there are still deficits in

research and development (R & D), tariff and non-tariff barriers and higher education. Also a delay in the use of technological means that is actually in a less favorable situation. As a result, these shortcomings and delays may be factors in reducing the knowledge economy index.

## **2.2. The Technology Achievement Index (TAI)**

Due to the weak creation of technological infrastructures and the lack of today's high-technology technology diffusion and transmission systems, Morocco is among the countries ranked below the average of the technological achievements index. . Indeed this index does not manage to exceed 0,252 (TAI). According to the empirical studies carried out by Erreimi (2002), Driouchi (2006, 2012) and WBI (2009, 2012), the indices of evaluation of the technological achievements in Morocco as the distribution index of the creative patents and the index of royalties received, are the lowest in the region. This effectively amounts to insufficiency and indifference to scientific and technical research, but also to the limitation and difficulty of access to services and information.

Moreover, we can clearly see this delay in terms of technological achievements when analyzing the commercial and economic activity of national companies. Indeed, it is characterized by a lack of competitiveness in the creation and diffusion of technology. This leads us to recommend the importance of competition in technological creation, so automatically, Morocco should implement measures to encourage the competitiveness of companies in the field of technology. So this initiative can have a direct and indirect impact in creating jobs including skilled engineers and technicians in the field of technology.

To do this, it is necessary to encourage students in higher and technical education to enroll in new computer engineering courses or in the field of technology in general. Thus, to encourage the spirit of innovation and invention by distributing innovation prizes in technology, and the creation of companies by encouraging young people carrying innovative projects. Thus the creation of technopoles within or outside universities as research and development (R & D) institutions, in order to have potential for access to the fields of scientific and technical research in new technologies.

### **3. The capabilities of Morocco in terms of the knowledge economy: the evaluation of the performance of indices**

The central objective of this phase of this work is to look for the relationship between the knowledge economy and development. It is from the comparison and the link between the indices of the knowledge economy and those of development, we will show the links that exist between these two fields of indices. To do this, we first emphasize the analysis of the human development index and then the index of human poverty. In addition, the contribution of the creation of enterprises to put it as an explanatory variable having a central role in building a knowledge-based economy.

#### **3.1. The Human Development Index (HDI)**

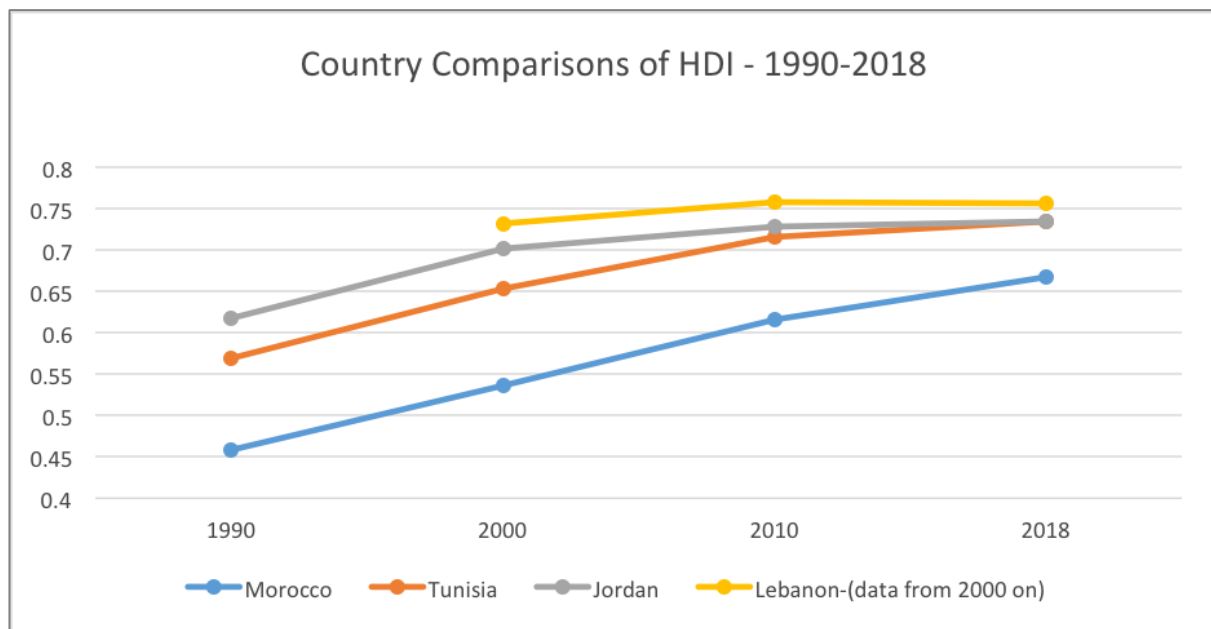
According to the latest Human Development Report (UNDP, 2018) Morocco ranks 123 in 2018 (Figure 5). The detail of this index shows that thanks to the new policy of the public health system (the expectation of birth at 76.1, the low homicide rate of 2.2 for a population of 100,000 h / year) , Morocco is in a certain level of security of the overall health of the country. However, it is lagging behind in terms of job creation, education and social justice.

With regard to the link between this index and knowledge, we are initially interested in the components of the index in terms of knowledge. This means that in the composition of the human development index directly related to knowledge is based on qualitative data on knowledge, namely: education and literacy, health and life expectancy, and GDP per inhabitants.

In this sense, the values of the latter and those related to education since 1990 are still low. According to the United Nations report, only a population of 20.7% of women compared to 30.2% of men who continue their secondary education or higher. So we see the low value of education as a determinant of the knowledge economy index. Finally, we also note that the PNEUD report recommends strengthening the use and diffusion of technologies in the labor market.

### 3.2. The Human Poverty Index (HPI)

Figure n° 5: The Human Development Index (HDI).



**United Nations Development Programme.**

The human poverty index is an index of measurement of the standard of living of the population on the national territory; it includes the three dimensions of the Human Development Index (HDI). According to the latest United Nations report (UNDP, 2018), the standard of living of 33% of Moroccan citizens lives in near-poverty of 12.6%, 15.6% of the population lives in poverty and 4.9% lives in extreme poverty. Indeed, this population lives in very unfavorable and vulnerable circumstances, namely the dissatisfaction of pearl needs needed such as water and health, as well as deprived of knowledge (HCP, 2016). This obviously explains the social exclusion of part of the population of all the necessities essential to normal life.

Despite all Morocco's efforts to address poverty by improving the human poverty index over the last two decades, the human poverty index is still in a modest situation with a significant change during this period. On the other hand, according to the latest report of the High Commissioner for Planning, Morocco has almost succeeded in fighting definitively against extreme poverty. It can even exceed the objectives set by the UN.

While today in Morocco, no one lives in a situation of extreme poverty (an income of less than 1 dollar a day). Nevertheless, it is still necessary to respond to the social needs of the

population, especially in the area of employment in the labor market, which is in fact the central question of any public policy in order to reduce or cope with socio-economic problems. of the Moroccan population.

### **3.3. Knowledge and business creation**

The creation of enterprises is an indispensable operation influenced by the two variables of the previous indices (the Knowledge Economy Index and the Technological Achievement Index). The use of these variables directly affects the creation of new businesses; it is an operational and technical need of the knowledge-based economy.

For example, for the effects of the Technology Achievement Index, the consumption of additional units of raw materials or the use of technological means in the production process may be an indicator of business creation. While for the Knowledge Economy Index, simply enrolling students in higher education institutions involves creating new businesses with new, innovative ideas. Therefore, the logic of the knowledge economy is real investment in education and training of the population as a determinant of business creation.

In this regard, Morocco has made remarkable efforts to promote business creation and entrepreneurship among young people. This was observed after the initiatives of the creation of the companies within the framework of the partnership of the regional centers of investment (CRI) and the foundation bank popular for the creation of enterprises, program "*Mokawalati*" led by the National Agency for the Promotion of Small and Medium Enterprises (ANAPEC) and the Technology Diffusion Network (RTD). Despite their structural failures and shortcomings, these initiatives have helped strengthen the spirit and action of business creation. But also the enrollment in a training process and technical support of project leaders <sup>6</sup>. While this approach requires a certain level of knowledge of entrepreneurship action, which explains the role of knowledge or knowledge in business creation.

In another sense, theoretically, this approach, which defends the need for business creation by influencing integration into a knowledge-based economy, leads to changes in the basic structures of organizational and systemic management of firms. Following this logic, the stake of the production activity of companies will change step by step. For companies, this perspective will become a resource creation process that will replace the traditional approach,

---

<sup>6</sup> Pre-accompaniment and post-support of the projects created by these national initiatives: (from the conception of the idea and the business plan to the implementation of business creation projects).

namely the allocation of resources. This will change by implication the behavior of entrepreneurs and business leaders, who will seek to improve the learning and production of knowledge as a new capital within their production units (Diani, 2002). Therefore, the company will become a systemic box of knowledge privileging the acquisition, the creation and the diffusion of the necessary knowledge in the process of production of the companies.

### **3.4. Knowledge as a Determinant of Development: An Empirical verification of Indices**

Knowledge has become a framework for analysis and reflection of all developed countries, but also for many developing countries. This comes down to the role of this new field of today's economy as a factor of development. Because of its importance in economic growth, knowledge has a direct impact on economic performance (Le Bas, 2006), thus having a direct effect on human development.

In the case of Morocco, this assertion of the role of knowledge is visibly observable when one analyzes a number of public policies of the Moroccan government in terms of human development. In this regard, the challenge of its policies is to implement a development strategy through an applied and knowledge-based approach.

According to the empirical analysis of the role of knowledge and the statistical relations of the economic indices (Driouchi & Zouag, 2006), knowledge plays the role of a catalyst in the system of the economy of Morocco. A very large number of statistical indices show that there is a relatively strong relationship between classical economic indices and knowledge indices. These in turn impact the aforementioned human development variables.

$$\text{GDP per Capita} = \text{Cst} + 0,19 * \text{KEI}$$

From this relationship indicating the degree of correlation, the coefficient associated with the knowledge economy index (KEI) and the gross domestic product per capita is estimated to be:

$$R^2 = 0.50$$

While empirically<sup>7</sup>, there is a kind of interdependence between the human development variable and the knowledge economy index (KEI). This places the index of the knowledge economy as an indispensable determinant of human development in Morocco. Starting from this assertion of the articulation between the variables of the knowledge economy and the indicators of the development, it is necessary to adopt a system of coordination in each public

---

<sup>7</sup> The details of the correlation among other variables in the HCP report

policy of the Moroccan government, taking advantage of all the advantages, which come from the knowledge economy.

Indeed, this is highly conditioned if Morocco insists once again on the fight against several factors influencing the dysfunction of the national economy, namely the bad practices of public and private administration such as corruption, in order to create a proper basis for the implementation of knowledge-based economic and socio-economic policies to limit social indicators such as: integration into the international economy, reduction of the unemployment rate and other socio-economic indicators. This generates a remarkable performance at the economic level, but also at the social level.

By following this approach, Morocco may have real opportunities to improve its positioning in terms of qualitative performance in the context of the knowledge economy as mainly: the increase in the levels of the index of technological achievements, but also the growth of the knowledge economy index. In this respect, we can clearly see the contribution of the adoption or insertion into the knowledge economy, which remains today an indispensable determinant in the development process of Morocco, but also of several emerging countries or developing countries.

#### **4. The positioning of Morocco in terms of the knowledge economy: comparative approach**

In the context of a comparative approach, we try to highlight the positioning of Morocco in terms of the knowledge economy. The analysis presented below is initially based on the comparison of the indices related to the assessment of the knowledge economy, as well as the human development index to analyze in parallel the development situation as an issue. of our research work.

We begin this analysis with the presentation and interpretation of the results of the knowledge economy index, which will allow us to measure the degree of maturity of Morocco in terms of the development of the knowledge-based economy. to countries (especially Arab countries). Then, in the same comparative logic, we will analyze the positioning of Morocco in terms of the index of technological achievements. Finally, we will finish this comparative approach by analyzing Morocco's development situation by comparing it with other countries.

#### 4.1. The positioning of Arab countries in the knowledge economy: what place for Morocco?

According to reports published by international organizations, including the World Bank, Morocco has certainly made progress in terms of the index of the knowledge economy. Compared with other MENA countries and especially Arab countries (Table 2), Morocco is the only country that has improved compared to the 2010 results.

**Table 2 : The Knowledge Economic Index (KEI).**

Indice de l'Economie du Savoir IKE (Classement 2013)											
#	Pays	Indice Global		Indice secondaire Fondamental		Indice secondaire Efficacité		Indice secondaire Efficience		Indice secondaire Innovation	
		Rang	Score	Rang	Score	Rang	Score	Rang	Score	Rang	Score
1	Qatar	23	7,00	24	7,60	12	7,54	16	6,93	26	5,88
2	Emirats Arabes Unis	25	6,88	20	7,64	15	7,49	22	6,81	31	5,52
3	Bahrein	29	6,55	25	7,59	19	7,36	27	6,65	78	4,43
4	Arabie Saoudite	31	6,48	37	7,15	21	7,31	35	6,24	38	5,16
5	Oman	35	6,34	32	7,28	33	6,78	33	6,27	49	4,98
6	Jordanie	51	5,86	41	6,91	53	6,23	71	5,67	59	4,66
7	Koweït	72	5,56	57	6,53	76	5,78	89	5,41	70	4,54
8	Maroc	73	5,55	60	6,52	64	5,96	94	5,36	83	4,36
9	Liban	83	5,41	75	6,13	60	6,01	111	4,95	65	4,61
10	Egypte	96	5,16	74	6,14	84	5,63	110	5,00	109	3,85
11	Algerie	116	4,37	96	5,56	116	4,46	116	4,38	116	3,03
-	Tunisie (2010)	43	6,02	37	6,98	39	6,28	44	6,03	77	4,81

**United Nations Development Programme.**

As assessed by Bouanane (2014), the Arab countries are characterized by a highly remarkable diversity in the Knowledge Economy Index (IKE). In 2013, they are ranked between the 23rd and the last place among 116 countries. From this perspective we distinguish between two main groups: 1- The group of Gulf countries member of the IOPEP (except Kuwait): Generally, these countries are distinguished among the countries that import manpower in the world. According to the KAM ranking of 2013, they are at the top of the ranking of twelve Arab countries (the top five places). 2- The group of oil importing countries (including Algeria and Kuwait): In contrast to the first group above, these countries do not import human resources. In terms of the knowledge economy index, they occupy below the 50th position globally, with the exception of Morocco, they fail to achieve progress in the economy of the economy. knowledge since the 2010 KAM ranking.

These variations in the index of the knowledge economy of these countries in question practically amount to the economic conditions that the world has known since the subprime crisis of 2008. But also to political and socio-political instability as we have seen in Egypt. While Morocco is the only country that has progressed with the five Gulf countries in terms of the index of the knowledge economy. This is a remarkable improvement compared to the Arab countries, since Morocco has managed to have the second best improvement after Saudi Arabia. However, the detailed and detailed analysis of this new classification shows that there are a number of common weak points in the twelve Arab countries. In fact, these weaknesses have a direct impact on the performance of the four factors of the Knowledge Economy Index (KIC).

For Morocco, the performance on innovation indicators is still lagging behind. Moreover, it is marked by an inappropriate environment for the research and development (R & D) process, especially scientific and technical research. It also comes down to the unfavorable position of the researchers mobilized in research and development, without forgetting that Morocco has been able to obtain remarkable scores in the publication and the scientific production.

#### **4.2. The positioning of Morocco in terms of The Technology Achievement Index**

With regard to the Technology Achievement Index (TAI), Morocco has seen changes towards integration into the knowledge-based economy. And this despite efforts in terms of preparations and digital achievements that appeared in the KAM 2013 ranking. Indeed, it is a question of an average evolution for the Arab countries mentioned previously in the context of our comparative analysis. As has been indicated, the various aspects of this index have not experienced the same pace of progression.

To compare the positioning of Morocco in terms of index of technological achievements with the Arab countries as well as the countries of the region, we use the data of the report HCP (2012). According to the latter, Morocco is unable to exceed the low level of the index of technological achievements (TAI) that has experienced since the 80s. Yet, in recent years, Morocco is approaching level a little favorable around 0.4 point. Thanks to these achievements, Morocco precedes Egypt, Tunisia and Turkey in this field in question.

#### **4.3. Morocco's positioning in terms of human development index**

According to the analyzes carried out, the knowledge economy is today a primordial and main element to reach the estimated level of development. In terms of comparing Morocco's

positioning in terms of the human development index, Morocco has evolved favorably in recent years. This comes down to the efforts of Moroccan governments in implementing strategic development policies. The effects of the latter seem more practical in increasing life expectancy at birth and the relative increase in education and training indices, but also in information and communication technology infrastructure.

However, compared to countries in the MENA region, Morocco remains in an unfavorable and weak position of overall performance. This is due initially to the negative effects of the problems discussed in this article, in particular literacy problems and school enrollment. Therefore, it is clear that these problems are directly related to the needs and requirements of insertion in the knowledge economy.

### **Conclusion**

Most of the work on the study of the contribution of the knowledge economy to the development of developing countries confirms the positive and crucial impact of this new economy on wealth creation, but also the role of innovation in job creation (CMI, 2012 & Foray, 2018).

This present study focused on the comparative analysis of the level of integration of a developing country (Morocco) and its impact on inclusive development needs. Indeed, the indicators and indices of the knowledge economy seem to be relevant for the achievement of the estimated performance in Morocco.

The previous descriptive analysis shows Morocco's insufficient level in terms of these indices, but also its performance in terms of economic, human and social development indices. With regard to comparisons with other countries in the MENA region, this study found the same low level of economic and social performance.

Therefore, it is strongly observed that Morocco is below the level estimated and requested to take advantage of the transition to the knowledge economy as a new lever for development. The analyzes carried out also obviously show the insufficiency of political and economic reforms, which explains why the situation of Morocco's economy is (currently) not sufficient to prepare for an effective and successful integration into the knowledge economy.

In addition, the preceding analyzes are limited by an evaluation of a few economic indicators of secondary data. This study opens scientific perspectives to new reflections on microeconomic analyzes of the pillars of the knowledge economy in well-defined contexts.

## BIBLIOGRAPHIE

**Anderson, T, Djeflat, A & De silva S-J. (2006)**, “*The innovation system and related policy issues in Morocco*”, Research report, International Organisation for Knowledge Economy and Entreprise Development (IKED).

**Azuélos, M. (2016)**, « L'économie de la connaissance aux États-Unis : concepts, institutions, territoires », vol. XIV-n°1 | 2016 ; Capitalisme, recherche et éducation : le modèle anglais revisité. <https://lisa.revues.org/8838>

**Banque mondiale (2012, 2014, 2018)**, « *Indicateurs du Développement dans le monde* », Washington.

**Ben Yakoub, S & Achelhi, H. (2020)**, Fondement théoriques et importance de l'innovation : Regards des auteurs au cours des années, *Revue Internationale du chercheur* « Volume 2 : Numéro 1 » pp : 160-184.

**CMI, (2012)**, « *Transforming Arab Economies: Travelling the Knowledge and Innovation Road* », CMI.

**Djeflat, A. (2002)**, « *National systems of innovation in the MENA region* » World Bank Institute Report, Washington.

**Djeflat, A. (2012)**, « *Les efforts du Maroc dans l'économie fondée sur la connaissance* », CMI.

**Diani, M. (2002)**, « *Connaissance et performance économique : une nouvelle vision de la firme dans une économie de la connaissance basée sur la connaissance* », Communication au Colloque Interdisciplinaire « Connaissance(s) et Incertitude », Aix-en-Provence 27 septembre 2002.

**Driouchi, A. (2006)**, « *Le savoir, levier du développement humain au Maroc* ». 50 ans de Développement Humain & Perspectives 2025,

**Driouchi, A. & Zouag, N. (2006)**, Eléments pour le renforcement de l'insertion du Maroc dans l'économie de la connaissance, HCP, Maroc.

**Diop, M. (2013)**, Essai sur l'apport de l'économie de la connaissance sur le développement économique : Etat des lieux et perspectives dans les pays en développement. Thèse doctorale.

**El Aoufi, N & Hanchane, S. (2016)**, *Les inégalités réelles au Maroc*, Economie critique.

**Erreimi, A. (2002)**, *Indice des réalisations technologiques*. Document de travail, Al akhawayn University –MBA.

**Fonds monétaire international, (2015)**, Rapport sur le Maroc, No. 15/43.

**Foray, D & Lundvall B, Å (1996)**, *Employment and Growth in the Knowledge- Based*

Economy. Paris.

**Foray, D. (2009)**, *L'économie de la connaissance*, La Découverte.

**Fonds monétaire international (2015)**, *Rapport de situation sur le Maroc 2014-2015*.

**Haddad, S. (2010)**, « *Institutions et politiques publiques de soutien du système d'innovation de Tunisie. État des lieux* », *Innovations*, 2010/3 n° 33, p. 137- 156.

**HCP (2018)**. « Les indicateurs sociaux du Maroc ». Direction de la statistique, Editions du haut-commissariat au Plan.

**Haudeville, B & Le Gueye, A & Gérardin, H & Brot, J. (2009)**, « Quelles articulation entre économie de la connaissance et développement », *Monde en développement*, n°147, PP, 7-12

**Haut-commissariat au plan, (2018)**, « *Les indicateurs sociaux du Maroc* ». Direction de la statistique, Editions du haut-commissariat au Plan.

**Haut-commissariat au plan & Banque mondiale. (2018)**, « *Pauvreté et prospérité partagée au Maroc du troisième millénaire, 2001-2014* ». Editions du haut-commissariat au Plan.

**LE BAS, C. (2006)**, « *Innovation, région et connaissance* », *Région et développement*, n° 24, 5-14.

**Ministère d'économie et des Finances. (2018)**, « *Synthèse du rapport économique et financier 2018* », Direction des Etudes et des Prévisions Financières

**OCDE. (2001)**, « *La nouvelle économie : mythe ou réalité ?* » rapport de l'OCDE sur la croissance, OCDE, paris.

**PNUD. (2012, 2013, 2015, 2018)**, *Rapports sur le développement humain*. Publications PNUD.

**World Economic Reform (2011)**, *Rapport annual*. WER.