

## Human Capital Investment As a Generator For Innovative Practices in Algerian Startups: Reality and Challenges

الاستثمار في الرأس المال البشري كمحرك للممارسات الإبتكارية  
في الشركات الناشئة الجزائرية: الواقع والتحديات

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**Abstract:** Emerging STARTUPS are considered to be one of the most significant drivers of economic growth for nations, as interest in them has become necessary due to their great role in national economic development, as they contribute economically to development while reducing unemployment in the social sphere. therefore the idea of human capital investment is a powerful opportunity to respond quickly to changes in the environment for creating the innovativeness. This paper investigates the role of human capital investment in achieving innovativeness in Algerian startups and concluding the challenges facing the business environment in the Greater South. The issue of startups is one of the most prominent topics in the Algerian business environment recently. It should be noted that Algeria was a little late in launching this type of project, especially in light of the technological delay, in addition to the weak government spending on scientific research and development.

**keywords:** human capital investment, innovativeness, start-ups.

**JEL Classification Codes:** J24 ; O31 ; M13.

**ملخص :** تعتبر الشركات الناشئة من أهم محركات النمو الاقتصادي للدول ، حيث أصبح الاهتمام بها ضروريًا نظرًا لدورها الكبير في التنمية الاقتصادية للدول ، حيث تساهم اقتصاديًا في التنمية مع تقليل البطالة في المجال الاجتماعي. ولذلك فإن فكرة استثمار رأس المال البشري هي فرصة قوية للاستجابة بسرعة للتغيرات في البيئة من أجل خلق الابتكار. تبحث هذه الورقة في دور استثمار رأس المال البشري في تحقيق الابتكار في الشركات الناشئة الجزائرية واستنتاج التحديات التي تواجه بيئة الأعمال في الجنوب الكبير حيث تعد قضية الشركات الناشئة من أبرز الموضوعات في بيئة الأعمال الجزائرية مؤخرًا. وتجدر الإشارة إلى أن الجزائر تأخرت قليلاً في إطلاق هذا النوع من المشاريع ، خاصة في ظل التأخر التكنولوجي ، بالإضافة إلى ضعف الإنفاق الحكومي على البحث العلمي والتطوير.

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## **1.Introduction:**

the concept of human capital investment is a valuable resource in start-up firms (McGuirk et al., 2015). It is conceivable that founders with a higher level of human capital are more able to effectively plan, solve problems, and adapt to environmental changes (De Cleyn et al., 2015). Indeed, some scholars found a positive relationship between the level of human capital and initial size (Furlan, 2019). Moreover, founders' human capital plays a significant role in signaling to external suppliers of capital that have less information about start-up firms (Ko & McKelvie, 2018). For these reasons, it is plausible that how start-up firms raise funds depends heavily on founders' human capital. However, to the best of our knowledge, only a few studies in the literature have examined the impact of founders' human capital, especially technological human capital, on the initial funding of start-up firms(De Cleyn et al., 2015).

Startups work hard to achieve their space in the market and must perform to survive and grow. We must note that a small firm is not a scaled-down version of larger firms. There are differences in terms of their structures, resources available, management practices, environmental response, and the way they compete in the market (Man et al., 2002). In a strongly competitive, dynamic, and volatile environment, firms must make efforts to gather information to improve their decisions. This can be a challenge for every business but a more marked one to startups struggling in the market (Foster et al., 2015).

Analyzing the role of startups in the development of innovative products and processes, we try to put together two issues related to the ability of startups to generate innovation. On the one hand, the use of knowledge management practices in the process surrounding the creation and development of high technology startups through human capital investment. To foster the establishment of new startups, it is necessary to define processes to create and maintain knowledge in these companies. As defined by Tsai and Li (2007), new companies must effectively use the available knowledge to formulate and implement development strategies. On the

other hand, the need to overcome critical factors that influence the development and sustainability of startup companies.

### **1.1 Statement of problem:**

Innovation may be the basis for starting a business. An entrepreneur may innovate something novel to some potential customers, or may use a technique that has not been used earlier, or maybe doing something that only a few other businesses are doing. In these ways, innovation may be a foundation for the startup. Much scholarship studies innovation. A stream of research focuses on innovation as a basis for starting a business (Colombelli & Quatraro, 2019) and from this perspective can be formulated research problem as follows: What is the reality of the efficiency of human capital investment on the emergence of innovate startup in Algeria?

### **1.2 Research questions:**

This article focusses to answer the following questions:

- what is the concept and the main characteristic of startups?
- what is the reality of the Algerian startups?
- what is the relationship between human capital investment and innovative practices in the startup?
- what are the main challenges facing the business environment in the Greater South?

### **1.3 Research objectives:**

This paper focus to delineate the role of human capital investment in achieving the innovativeness in Algerian startups and conclude the challenges facing the business environment in the Greater South.

## **2. literature review:**

### **2.1 What is a startup company?**

It is important to understand why some companies are considered to be high-growth start-ups and others are not. A start-up company is an entrepreneurial enterprise that is usually a newly developed, fast-growing company that seeks to satisfy market demand by creating an innovative product, service, method, or network around a sustainable business model. A start-up is commonly an enterprise designed to build and test a scalable business model quickly, such as a small corporation, a collaboration, or an

association. Startup firms usually work with very little capital to find a repeatable and profitable market model that can be globalized.

The start-up founding team must be a community of innovators, constantly searching for new opportunities, product or service features, and consumers, to test and execute their concepts as efficiently and cost-effectively as possible. (Mouzeli, 2017).

**2.2 Main characteristics of a startup company:**

Several success and efficiency metrics help to distinguish whether the market concept and the implementation plan can be viewed as the beginning of a start-up company. The most important features of a start-up business are the following. (Mouzeli, 2017):

**Table 01:** Main characteristics of a startup

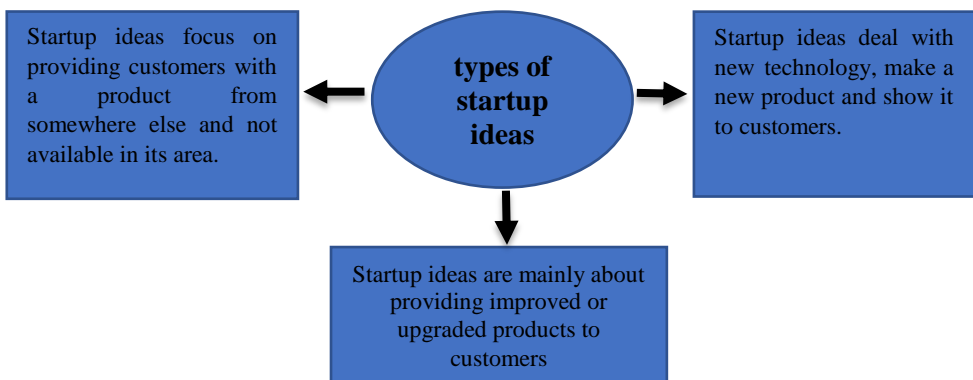
The characteristics	The definition
1. High growth potential	Your business idea is based on a shaky hypothesis, but you have indicated the need on the market. High growth is also potential is also related to quick implementation.
2. Scalability	Your business model is built up so that the product or service can be offered in many different markets at once. There might be some customizations in the customer accusation model.
3. High risk of failing	Your startup idea is unique or different/better than the competitive solutions on the market. There are startup companies that are following the success stories of other companies. In this case, the traction takes longer but some risks connected with sales and marketing can be reduced.
4. Lack of resources	Startup businesses often lack the capital (mostly time and money) so their target market is big. Your ultimate aim is to enter the revenue phase as efficiently and cost-effectively as possible.
5. A lot of uncertainties in the business	Startup companies are always lacking the resources (mostly time and money) because their target market is large. Your ultimate goal is to reach the revenue phase as quickly and cost-

	model	efficient as possible.
6.	Learning by doing mentality	There is no complete guide that helps to build up a successful startup company. Building the startup company is in constant change dictated by market conditions, investments, habits, development of technology, etc.
7.	Client-oriented approach	Reaching your target customers can be a harsh process but it needs to be done as soon as possible. Customers are willing to be part of the product development process and are eager to give you valuable feedback.
8.	Different growth funding schemes	To support the quick growth and fierce product development in a startup company, there is an option to use external money. This could be in the form of a loan, an investment, a grant, a crowdfunding solution. The main thing is to keep an eye on the financial resources and performance ratio.
9.	Importance of team/founders	The core team of a startup company is the biggest asset the company has. The value of a company can be only estimated by the performance of the team. This is the number one thing for external investors as well.

**2.3 Types of startup ideas:**

There are 3 types of startup ideas (Moore,2008) :

**figure 01:** Types of startup ideas



**Source:** Moore , 2008

**2.4 Startups theories:**

As mentioned earlier, startups are rarely considered as the main focus of theories in different domains. However, some theories could be implicitly considered as “startup theories” in the existing literature. This paper categorizes these theories in three main areas: (i) organization, (ii) management, and (iii) entrepreneurship (Salamzadeh & Kawamorita Kesim, 2015).

Organization theories focusing on startups Van de Ven et al. (1984) They were among the first researchers to consider three major approaches to the study of start-up development. They found entrepreneurial, operational, and ecological methods and concluded that prior studies had explored only one of these three approaches without mentioning the other. Since they have found out:

“The organizational approach argues the conditions under which an organization is planned and the processes followed in its initial development [phase, which] have important consequences on its structure and performance in later life”. But organizational philosophies remain silent on the topic of organizational evolution, or more precisely on start-up evolution. However, there is little research to examine the start-up process. Also, several of the current organizational science hypotheses and viewpoints are established to address organizational questions.

Management theories focusing on startups According to its general definition (getting things done through the other people, or coordinating the efforts of people toward common goals), management is about people. On the other hand, management theories are either “perspectives” or “descriptions of the relationships among organizational characteristics”. Thus, according to this opinion, while managers and leaders have little to do with start-ups in a corporate context, they have more to do with such organizations as individuals/teams that organize their activities against certain shared objectives. Also, management researchers and academics are becoming more involved in the study of start-ups. Any of the key management theories used in start-up analysis are corporate management, small business governance, human resource management, team

management, complexity theory, etc. However, these ideas are closely tied to start-up studies and often regard start-ups as their samples or events. (Davila et al., 2003).

Entrepreneurship theories focusing on startups In Van de Ven et al. (1984) view, “the entrepreneurial approach argues the characteristics of the founder and promoter of a new organization”. While this perspective retains a fundamental presumption about current hypotheses, there is an inadequate entrepreneurial emphasis on the phenomenon in question, i.e. start-ups. Although the founder is significant, other problems need to be discussed, defined, and clarified by entrepreneurship theories regarding start-ups. As Salamzadeh (2015) argues, Entrepreneurship theories on start-ups fall into two categories: macro-level theories, population ecology, and micro-level theories.

**2.5 The Reality of the startups in Algeria:**

**Table: 1.** Evolution of the number of projects funded by the National Agency for Youth Employment Support in Sector TIC.

The years	Number of projects funded in the TIC sector	The percentage of funded projects
<b>From creation until 2010</b>	6858	5
<b>2011</b>	451	1
<b>2012</b>	616	1
<b>2013</b>	591	1
<b>2014</b>	750	2
<b>2015</b>	655	3
<b>2016</b>	628	6
<b>Total</b>	10549	3

**Source:** Prepared by researchers, based on statistics from the National Agency for Youth Employment Support through the official website <http://www.ansej.org.dz/index.php/fr/nos-statistiques>. Through the above states, we note that the number of emerging startups funded by the national agency for support, youth employment in the TIC sector, has reached 10 549 startups until 2016, with a percentage of 3% of

the total percentage projects funded by the National Agency for Youth Employment Support.

Going back a few years, the concept of START-UP was ignored by the majority of Algerians. Today, thanks to the work of an organization evolving in the field of entrepreneurship (INJAZ El Djazair, ACSE for example) and the creation of multiple private or state start-up accelerators (SYLABS, ANPT, OOREDOO incubator ...); the number of start-ups created is increasing year after year.

However, world statistics show us another facet of the Algerian economy, that of our country's place in the world; Algeria is the 7th country in Africa which offers the best entrepreneurial environment, according to the site "global entrepreneurship index 2018", it occupies the 80th place in the world ranking and 14th at the regional level (the Middle East and North Africa ) according to the same site.

### **2.6 Startup Business Model in Open Innovation:**

To succeed in an innovative environment, start-ups must follow a transparent business model. This is because the world of the Fourth Industrial Revolution is marked by an innovative convergence of technology and the consumer in all IT-based sectors. (Yun, 2017) successful business growth is based on the creative and open combination of technology and the market through open innovation or an open business model. Open innovation is an open and innovative connection between technology and the consumer. If the person creating the technology varies from the person using the technology to manufacture the product or service and to sell it, the process is called open innovation. Moreover, market disruption, in which new combinations between technology and the market are continuously being created, involves the ongoing creation of innovative new combinations between technology and society. (Razavi, 2007).

### **2.7 Startup performance:**

Success is the capacity to accomplish goals in a planned or superior way. The definition of corporate success includes several viewpoints (e.g. shareholder versus employee), periods (e.g. long-term versus short-term),



and criteria (e.g. market share versus profit). In a review by these authors, three different types of approaches to measuring organizational performance are presented. The first concerns financial results, which is an outcome-based success measure that is known to be the narrowest definition of market performance. The second conceptualization covers the financial and institutional aspects of results, including non-financial indicators. (for example, product-market outcomes, such as market share, the introduction of new products, and marketing effectiveness and internal process outcomes. These operational factors may eventually contribute to financial performance (Gerschewski & Xiao, 2015).

### **3. Human capital theory:**

Based on Mulongo (2012) View the intellectual capital should be deployed at the micro and macro stages. At the micro-level, the idea implies that a person bears the expense of investing in education/training to acquire higher knowledge and skills that will improve their future business. This can include direct costs, such as school fees, spending on books and other non-pocket expenditures, or indirect costs, such as forfeited profits or psychic damages. Skills will not only produce revenue but will contribute to improved efficiency and higher compensation for owners. At the macro stage, on the other hand, entrepreneurial preparation and the development of innovative projects have today been responsible for disparities in competitiveness and overall technology. Furthermore, Crocker (2006), Findings concluded that human capital theory promotes the idea that social well-being is not only a function of the production of capital, wealth, and labor but rather an individual's expertise and skills. Human capital should be used to create more value structures between people and society at large. The human capital theory assumes that increased knowledge and expertise can contribute to greater economic advancement for both people and populations. Given that the society is now heading into a knowledge-based economy with a greater impact on knowledge and expertise than in previous years, entrepreneurship knowledge would be a welcome development for every society that wants to rise to the top. This view indicates that through expertise and skills, ready individuals and communities will be created

through the development of a start-up that can have a higher effect on people's well-being.

### **3.1 Impact of founders' human capital:**

It is plausible that the founders' human capital is essentially a resource for the creation of new firms. To date, numerous studies have examined the impact of human capital on firm size and performance in the early stage (Baptista et al., 2014). Start-ups led by high-capacity entrepreneurs are highly regarded in capital markets as entrepreneurs themselves becoming desirable tools that can represent high productivity. According to the principle of intellectual capital (Mincer, 1958), Start-up companies managed by founders with a higher level of human capital are expected to achieve better performance. The human capital of the founders increases their ability to find and leverage business opportunities and allows the founders to gain other utilization tools, such as financial and physical capital. Essentially, foreign capital providers have options to supply the capital to businesses with growth opportunities. As a result, foreign funding providers pay more attention to the intellectual capital of the entrepreneurs in their decisions to invest in start-up businesses. In the light of knowledge asymmetries between founders and external capital suppliers, such as banks and investors, founders' human capital acts as useful knowledge for external capital suppliers when suppliers make choices about whether or not to offer funds to founders and, if so, how many. In other words, the expertise of the founders appears to be useful not only in the production of new goods and services but also in the screening of projects for external capital suppliers. External capital suppliers can depend on information about founders due to limited information about start-up companies. It is also possible that the intellectual capital of the entrepreneurs is related to the initial investment. This also suggests that the initial financing of start-up businesses is decided organically by the intellectual capital of the entrepreneurs (Parker & Van Praag, 2006).

### **3.2 Startups, innovation, and resources:**

Startups are ventures in the process of discovering, developing, and implementing a viable and scalable business model to exploit market opportunities (Ehrenhard et al., 2017). Their survival chances can be greatly increased by innovation (Cefis & Marsili, 2006). Their innovation practices vary greatly from those of existing companies. Many reports have also investigated the effect of internal capital on the sustainability and innovation of start-ups. (Huang et al., 2012; Garnsey & Leong, 2008). While most studies have concluded that the initial resources do indeed affect the survival and growth potential of new projects, others have argued that it is not the mere ownership, but rather the utilization of the company's resources that determines its success. (Newbert et al., 2007), Our study casts light on the problem of how a startup exploits and renews the resources to innovate through capability exertion activities, thereby altering its business environment.

### **3.3 Innovativeness and the overall risk profile of startups:**

There are several additional theoretical explanations of why the innovativeness of start-ups can increase their risk profile and reduce the probability of survival. First, innovating start-ups accumulate less financial assets and thus have limited equity to be pledged as part of the funding process (Brown et al., 2012). This lack of leverage limits their access to external funding and, as a result, affects their ability to absorb negative sales shocks. Second, creativity shifts the potential risk profile of a business company by allocating income sources more complex and distorted (Scherer & Harhoff, 2000). Third, the R&D holdings of new projects are largely undifferentiated. Therefore, creative new projects can bear a non-negligible amount of idiosyncratic risks, so that the loss of a particular initiative can endanger the existence of the entire venture. Fourthly, creativity will also change the intertemporal dynamics of cash flows. Investments in engineering are also correlated with lengthy and unpredictable payback periods (Brown et al., 2012), This also reduces the probability that the company will be able to satisfy its loan and other payment commitments. Finally, developers who feel that they are extraordinarily creative may have a clear exit plan in mind (DeTienne et al.,

2015) and can, as a result, seek to increase their firm's risk profile to achieve the desired exit and associated rewards.

#### **4. conclusion:**

The issue of startups is one of the most prominent topics in the Algerian business environment recently. It should be noted that Algeria was a little late in launching this type of project, especially in light of the technological delay, in addition to the weak government spending on scientific research and development, which did not exceed 7% of the GDP in 2016, ranking 64th at the global level.

Concerning Algeria, and despite the presence of some limited initiatives in establishing start-up companies, there is still no pioneering experience, and it is also noted that most of the emerging companies are active in the field of e-marketing, and it is just a simulation of previous experiences in the world, As the case for the most successful startup nationwide(Oued-Kniss), (Ouedkniss.com, a website dedicated to advertisements, launched in 2006, which is a re-idea that has been applied in USA (amazon.com). Hence, we conclude the challenges facing the Algerian environment, especially the Greater South:

1. Despite the effective role that business incubators played in the world in supporting and promoting emerging contracting companies, they are still far from the advanced stages that some countries have reached.
2. In general, startups in Algeria know several deficiencies and face challenges that impede their development, and this is due to several reasons:
3. The novelty and limited idea of startups in Algeria.
4. The weakness of the human resource, its lack of qualification, and its lack of an adequate background on entrepreneurship in Algeria, which faces many difficulties and challenges, especially about the lack of creative and innovative ideas.

5. Weak financing, and lack of venture capital for investment.
6. Bureaucratic procedures, failure to keep pace with legislation and laws.
7. Lack of productivity and lack of conformity with international standards, which makes the Algerian product unable to enter major markets due to its weak competitiveness.
8. Weak government spending on scientific research, and the separation of the university and scientific research centers from the ground.
9. Technical backwardness, and failure to keep pace with developments in the global business environment (electronic payment and e-commerce).

### **5. Bibliography List:**

1. Baptista, R., Karaöz, M., & Mendonça, J. (2014). The impact of human capital on the early success of necessity versus opportunity-based entrepreneurs. *Small Business Economics*, 42(4), 831–847.
2. Brown, J. R., Martinsson, G., & Petersen, B. C. (2012). Do financing constraints matter for R&D? *European Economic Review*, 56(8), 1512–1529.
3. Cefis, E., & Marsili, O. (2006). Survivor : The role of innovation in firms' survival. *Research policy*, 35(5), 626–641.
4. Colombelli, A., & Quatraro, F. (2019). Green start-ups and local knowledge spillovers from clean and dirty technologies. *Small Business Economics*, 52(4), 773–792.
5. Crocker, R. K. (2006). *Human capital development and education*. Citeseer.
6. Davila, A., Foster, G., & Gupta, M. (2003). Venture capital financing and the growth of startup firms. *Journal of business venturing*, 18(6), 689–708.
7. De Cleyn, S. H., Braet, J., & Klofsten, M. (2015). How human capital interacts with the early development of academic spin-offs. *International Entrepreneurship and Management Journal*, 11(3), 599–621.

8. DeTienne, D. R., McKelvie, A., & Chandler, G. N. (2015). Making sense of entrepreneurial exit strategies : A typology and test. *Journal of Business Venturing*, 30(2), 255–272.
9. Ehrenhard, M., Wijnhoven, F., van den Broek, T., & Stagno, M. Z. (2017). Unlocking how start-ups create business value with mobile applications : Development of an App-enabled Business Innovation Cycle. *Technological forecasting and social change*, 115, 26–36.
10. Foster, K., Smith, G., Ariyachandra, T., & Frolick, M. N. (2015). Business intelligence competency center : Improving data and decisions. *Information Systems Management*, 32(3), 229–233.
11. Furlan, A. (2019). Startup Size and Pre-Entry Experience : New Evidence from Italian New Manufacturing Ventures. *Journal of Small Business Management*, 57(2), 679–692.
12. Garnsey, E., & Leong, Y. Y. (2008). Combining resource-based and evolutionary theory to explain the genesis of bio-networks. *Industry and Innovation*, 15(6), 669–686.
13. Gerschewski, S., & Xiao, S. S. (2015). Beyond financial indicators : An assessment of the measurement of performance for international new ventures. *International Business Review*, 24(4), 615–629.
14. Huang, H.-C., Lai, M.-C., & Lo, K.-W. (2012). Do founders' own resources matter? The influence of business networks on start-up innovation and performance. *Technovation*, 32(5), 316–327.
15. Ko, E.-J., & McKelvie, A. (2018). Signaling for more money: The roles of founders' human capital and investor prominence in resource acquisition across different stages of firm development. *Journal of Business Venturing*, 33(4), 438–454.
16. Man, T. W., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises : A conceptualization with focus on entrepreneurial competencies. *Journal of business venturing*, 17(2), 123–142.

17. McGuirk, H., Lenihan, H., & Hart, M. (2015). Measuring the impact of innovative human capital on small firms' propensity to innovate. *Research Policy*, 44(4), 965–976.
18. Mincer, J. (1958). Investment in human capital and personal income distribution. *Journal of political economy*, 66(4), 281–302.
19. Moore, C. W. (2008). *Managing small business : An entrepreneurial emphasis*. Cengage Learning EMEA.
20. Mouzeli, E. (2017). *Startup Systems Engineer's Instruction Manual*.
21. Mulongo, G. (2012). The Human Capital Theory in Education : Principles, critiques and current thinking. *Institute of Education, University of London*.
22. Newbert, S. L., Kirchoff, B. A., & Walsh, S. T. (2007). Defining the relationship among founding resources, strategies, and performance in technology-intensive new ventures : Evidence from the semiconductor silicon industry. *Journal of Small Business Management*, 45(4), 438–466.
23. Parker, S. C., & Van Praag, C. M. (2006). Schooling, capital constraints, and entrepreneurial performance : The endogenous triangle. *Journal of Business & Economic Statistics*, 24(4), 416–431.
24. Razavi, S. (2007). The political and social economy of care in a development context : Conceptual issues, research questions and policy options. *Trabajo y empleo*.
25. Salamzadeh, A. (2015). New venture creation : Controversial perspectives and theories. *Economic Analysis*, 48(3-4), 101–109.
26. Salamzadeh, A., & Kawamorita Kesim, H. (2015). Startup companies : Life cycle and challenges. *4th International conference on employment, education and entrepreneurship (EEE), Belgrade, Serbia*.
27. Scherer, F. M., & Harhoff, D. (2000). Technology policy for a world of skew-distributed outcomes. *Research policy*, 29(4-5), 559–566.
28. Tsai, M.-T., & Li, Y.-H. (2007). Knowledge creation process in new venture strategy and performance. *Journal of Business Research*, 60(4), 371–381.

29. Van de Ven, A. H., Hudson, R., & Schroeder, D. M. (1984). Designing new business startups : Entrepreneurial, organizational, and ecological considerations. *Journal of management*, 10(1), 87–108.
30. Yun, J. J. (2017). *Business Model Design Compass : Open Innovation Funnel to Schumpeterian New Combination Business Model Developing Circle*. Springer.
31. <http://www.ansej.org.dz/index.php/fr/nos-statistiques>.