

Contribution of innovation in establishment of the moroccan economy post Covid19

La contribution de l'innovation au rétablissement de l'économie marocaine post-covid19

MOKHTARI Abbas

Research Professor

Multidisciplinary Faculty of Nador

Mohamed Fst University of Oujda - Morocco

Small and Medium-Sized Enterprises Research Team

mokhtari.abbas@yahoo.fr

ROUBIA Sahar

PhD Student

Multidisciplinary Faculty of Nador

Mohamed Fst University of Oujda - Morocco

Small and Medium-Sized Enterprises Research Team

Roubsahar01@gmail.com

Date de soumission : 06/11/2020

Date de soumission : 23/03/2021

Pour citer cet article :

MOKHTARI A. et ROUBIA S. (2021) « Contribution of innovation in establishment of the moroccan economy post Covid19 », Revue Française d'Economie et de Gestion « Volume 2 : Numéro 4 » pp : 192-209.

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

Attribution License 4.0 International License



Abstract

"First and foremost, it is important to initiate an ambitious economic recovery plan to enable the production sectors to recover, increase their capacity to create jobs and preserve sources of income." Speech of His Majesty King Mohammed VI, may God assist him, on the occasion of Throne Day, Wednesday, July 29, 2020. On December 31, 2019, the World Health Organization alerts the world on the new pandemic of Covid-19 which Morocco has had to face. A major economic challenge is triggered by the health crisis and weakens the national economy more and more. Faced with this situation, the vector of innovation proves its importance by presenting a great potential allowing the country to bounce back from the economic crisis. Consequently, many institutes and organizations -including universities- have mobilized their resources and efforts in order to amplify the innovation strategy and support the creation of innovative companies in order to absorb the negative effects of the pandemic on the national economy. The innovation-economic crisis relationship has several interpretations, however, we seek to explain through this article, the impact of Covid19 on innovation in Morocco while interpreting the behavior of Moroccan innovative companies in times of crisis, and this based on a case study with a sample of Moroccan innovative companies.

Keywords : Innovation ; innovative company ; economic crisis ; academic contribution ; covid-19.

Résumé

« Au premier chef, il importe d'initier un plan ambitieux de relance économique pour permettre aux secteurs de production de se remettre d'aplomb, d'accroître leur capacité à créer des emplois et à préserver les sources de revenu. » Discours de Sa Majesté le Roi Mohammed VI, que Dieu L'assiste, à l'occasion de la Fête du Trône, le mercredi 29 juillet 2020. Le 31 Décembre 2019, l'Organisation Mondiale de la Santé alerte le monde sur la nouvelle pandémie de la Covid-19 à laquelle le Maroc a dû faire face. Un grand défi économique se déclenche suite à la crise sanitaire qui fragilise l'économie nationale de plus en plus. Face à cette situation, le vecteur d'innovation prouve son importance en présentant un grand potentiel permettant au pays de rebondir à la crise économique. Ainsi, nombreux sont les instituts et organismes –notamment les universités- qui ont mobilisé leurs ressources et efforts afin d'amplifier la stratégie d'innovation et soutenir la création des entreprises innovantes afin d'éponger les effets néfastes de la pandémie sur l'économie nationale. La relation innovation-crise économique comporte plusieurs interprétations, toutefois nous cherchons à expliquer à travers le présent article, l'impact de la Covid19 sur l'innovation au Maroc tout en interprétant le comportement des entreprises innovantes marocaines en temps de crise, et ce en se basant sur une étude de cas avec un échantillon des entreprises innovantes marocaines.

Mots clés : Innovation ; entreprise innovante ; crise économique ; contribution universitaire ; covid-19.

Introduction

No one would have believed that an infectious respiratory disease will change the world in 2020. The covid-19, which probably appeared in Wuhan in December 2019¹, has caused an unprecedented health crisis that has led to a global economic crisis. The speed of spread of the virus as well as its mutational nature has forced governments to implement preventive measures including closing borders between countries and proclaiming a global containment in several countries. These preventive measures have had serious repercussions on economies following the marked fluctuations in market supply and demand and thus the paralysis of the world economy. According to the IMF², the health crisis has led to a 3 percent decline in the world economy in 2020 and uncertain prospects for recovery in 2021, depending largely on the evolution of the pandemic and the effectiveness of measures to contain the deplorable situation created by the crisis.

The pandemic has highlighted the failures of the system in which we live, and even an anticipation of containment in Morocco could not prevent the spread of the coronavirus. The novelty of the virus as well as the lack of sufficient scientific knowledge aggravated the crisis and made it increasingly difficult to manage. The consequent negative repercussions of the crisis require the deployment of a colossal effort in all areas to find new solutions. The history of global crises has allowed researchers and economists to consider covid-19 as a stimulus for the development and evolution of our country. The recent crisis has highlighted the primordial role of scientific research and innovation, two parameters that must be exploited in the short term to defeat the challenges of the health crisis, as well as in the long term to map out the post covid-19 strategy.

Innovation is first and foremost essential to revive the Moroccan economy, it will therefore alleviate the economic shock by offering remedies and alternatives to adapt to the changes resulting from the health crisis. Whether in medicine, modeling or data analysis, research and innovation have helped fight the epidemic. It is in this sense that the Moroccan government has launched collaborations between different economic actors, universities and line ministries to support innovation in relation to covid-19 while enlarging research and development programs.

¹Zhu N., Zhang D., Wang W., Li X., Yang B., Song J., et al. A (2020), « novel coronavirus from patients with pneumonia in China », 2019 N Engl J Med, 382 (8), pp. 727-733.

² INTERNATIONAL MONETARY FUND (2020), « World Economic Outlook, April 2020: The Great Lockdown », WORLD ECONOMIC OUTLOOK REPORTS.

The 'innovation-economic crisis' relationship has several interpretations, however we seek to explain through this article, the impact of Covid19 on innovation in Morocco while interpreting the behavior of Moroccan innovative companies in times of crisis. This research complements the research carried out since the beginning of the crisis, while highlighting the role played by innovation and innovative firms in particular in the fight against covid19. The question that supports this concern is : How will innovation contribute to the recovery of Morocco's post-pandemic economy ? starting from this research issue, our objective will be to answer these two hypotheses:

- H1 : The covid-19 crisis served as an accelerator for the national innovation system.
- H2 : Innovation will enable the national economy to mitigate the consequences of the pandemic.

We will opt for a scientific approach, in this case a qualitative and a quantitative analysis remain essential to decorticate the subject. The study protocol will therefore consist of a confirmatory quantitative study that will be guided by an exploratory qualitative study. Therefore, we will first conduct an exploratory study to refine our problem, followed by a quantitative study to verify the hypotheses and respond to the problem. The present article will consist of two parts, the first one including a literature review to analyze the concepts evoked in the research and explain the links between them. As well as second part which will consist of an empirical study conducted on the basis of interviews and distributed questionnaires conducted with economic actors, statistical data and official documents, and through which we will highlight the results obtained and their discussions.

1. LITERATURE REVIEW : INNOVATIVE COMPANIES FACED WITH THE HEALTH CRISIS

1.1. Outline of the concept of « innovative companies »

Defined as one of the four main paradigms of entrepreneurship proposed by Verstraete (2002), innovation refers to everything that is new, creative and transformative. It refers to the introduction of new ideas or procedures to bring a new product or service to market. It was first introduced into the economic vocabulary by Schumpeter in 1939, considering that innovation is strongly linked to the phenomenon of entrepreneurship as long as it ensures technical and economic progress.

Numerous research projects have associated the creation of innovative companies with the introduction of new technologies aimed at improving products, processes or organizational methods. Since the early 1990s, researchers have been interested in The study of the concept

of the creation of innovative companies under different terminologies including spin-off, spin-out, university spin-off or more commonly start-ups. The Agency for Business Creation has tried to define the concept of innovative companies as "a company that is innovative either by its sector of activity, its marketing methods or its development mode, and experiencing rapid growth, in terms of turnover and capital" (APCE, 2000). Ayadi et al (2005) in turn propose a more comprehensive definition of an innovative firm as "a young, (less than ten years old), medium-sized firm that uses or invests significantly in emerging or fast-growing technological innovations as a key element in its development, production, delivery or service process"³. From the definitions presented, we note that innovative companies are distinguished from traditional small and medium-sized enterprises by the existence of a form of technological innovation in their sector of activity and which offer innovative processes or products. Albert and Mougenot (1988) emphasized a new differentiating characteristic of innovative firms, which is therefore any firm that exploits the scientific results resulting from research, but which also faces a double uncertainty, on the one hand a technical/technological uncertainty which is manifested in the effort that the innovative firm must make to acquire the human and technical factors necessary for its operation, and on the other hand a competitive uncertainty insofar as the market's reaction to innovation cannot be predicted⁴. Also, Hedlund (1994) has identified the innovative firm as an entity that adheres to changing conditions and proposes solutions to problems and unpredictability, unlike other firms, which tend to develop in a stable environment⁵.

It follows from the particular nature of innovative firms that they are unique in the process of their creation, particularly in terms of the need for financing resources and dependence on new technologies and research transfer, as well as in terms of team entrepreneurship and the presence of partnerships with other social actors⁶(Haddad, 2013). Given that the creation and development of innovative companies takes place in an uncertain environment, the innovative nature of this type of company does not allow project leaders to have visibility of the market's reaction to the proposed product or its acceptability by consumers. The process of creation of

³Ayadi A., Arlotto J. et Jordan P. (2005), « Freins et performances de l'entrepreneuriat dans les entreprises innovantes : Une étude exploratoire », *Actes du 4e Congrès de l'Académie de l'Entrepreneuriat*, 24-25 novembre 2005, Sénat, Paris.

⁴ Allegret J.-P. et Dulbecco P. (1998), « Le comportement de la firme innovante, structure de gouvernance et mode de financement », *Revue d'économie industrielle*, 84, 7-26.

⁵ Hedlund G. (1994), « A Model of Knowledge Management and N-form Corporation », *Strategic Management Journal*, 15, 73-90.

⁶ Haddad S. (2013), « The process of creating innovative enterprises in Tunisia: results of an exploratory study », *Revue internationale P.M.E.*, 26 (1), P.13-44.

innovative firms was considered as particular following the studies of Samuelsson (2001) which showed during a study carried out on a sample of 233 innovative firms that the process of these firms is longer and less linear than that of traditional firms. Indeed, it is almost impossible for innovative companies to imitate other companies, innovation requires them to find their own paths of development as they offer new products/services on the market. The literature on the process of creating innovative firms has focused on the following specificities :

- The sectors of activity in which innovative companies operate are not only unstable, but also uncertain such as the high-tech sector, computer science, telecommunications... ;
- Innovative companies aim at exploiting the scientific results of research, which requires a significant investment in terms of research and development ;
- The peculiarity of innovative companies is the introduction of innovations on the market, which impacts the demand for traditional products and creates new markets.

1.2. Crises, a fruitful field for innovation

Whether they are health, political or financial in origin, global economic crises represent 'a process of brutal economic downturn that follows, in a business cycle, a phase of depression to a phase of expansion'⁷ according to the economic and financial dictionary. The last century was marked by several global crises, including the Great Depression of 1929, the global economic crisis caused by the 1973 oil shock, the global economic crisis of 2008 and recently the global health crisis, which led to an economic crisis that has just begun as a result of the repercussions of containment, the closing of borders between countries and the partial halt of economic activity worldwide. As soon as these crises impact the economies of nations, they call into question the traditional economic equilibrium and this, by constituting a breeding ground for innovation. The changes caused by crises do not only allow us to deduce their destructive aspect but can also be sources of opportunities. This logic is reproached to the concept of "creative destruction" presented by Schumpeter (1911), which consists of obsolete companies having to go bankrupt and give way to innovative companies, which propose new markets, new products or new processes. Consequently, innovative firms reveal a double potential, on the one hand through the creation of value resulting from the creation and/or development of new products and processes, and on the other hand through the strong growth that the innovative firm evokes from its inception.

⁷ Economic and financial dictionary, 6th edition, seuil, Paris, P.494.

Innovation is an element that allows the entrepreneur to increase his turnover and obtain the maximum possible market share, it does not only consist in introducing the machine to the workshops but to obtain a temporary competitive advantage on the market. Donckels (1985) considers that there are five areas in which companies can be innovative : products, processes, markets, raw materials and organizational forms⁸. This distinction implies that any change that can be carried out by the firm in one of these fields falls within the innovation strategy box, therefore innovation is not limited to changes in finished products or the production chain, but rather any action introduced by the firm that enables it to gain a competitive advantage over its competitors. In turn, VanCaillie and Lambrecht consider that the key driver of innovation is the consumer, however, competition can in turn encourage companies to innovate. Innovation creates a shift in market forces, making companies increasingly vigilant about the innovation strategies adopted by their competitors. The main objective of innovation is to develop quality products, hence Bruyat's observation that "The creator will create his company from a new way of doing things or from a new product for which he has the know-how. Uncertainty lies, classically as far as innovation is concerned, in the adoption and valorization of the novelty by the environment and in the hazards of the technical and industrial development of the project"⁹.

Noailles (2011) considers that innovation is the result of a set of favourable systemic factors to define innovation policy, the entrepreneur who is innovative does not play a considerable role in defining innovation but it is an action that implicitly responds to structural factors. These factors are research and financing, and as these two factors are consolidated, the output in innovation increases. Innovation is part of a complex process since it integrates social, economic and technical dimensions, hence its link with all the variants of the company's ecosystem. Likewise, we cannot study innovation without mentioning design, which is a fundamental element of innovation. The design of new ideas into prototypes gives concrete expression to the notion of creation that results from research and development activity. This mission of creation, which is in line with the opportunity paradigm, allows the entrepreneur-innovator to benefit from an overall economic gain resulting from the exploitation of the good

⁸ Donckels R. (1985), **New entrepreneurship : lessons from the past, perspectives for the future**, Entrepreneurship : Critical Perspectives on Business and Management, Volume 4, ROUTLEDGE, p. 80.

⁹ Bruyat C. (2001), « Une modélisation du processus d'engagement dans un projet de création d'entreprise », *Revue de l'entrepreneuriat*, 2001/1 Volume 1, P. 25 à 42.

business deal. This allows the entrepreneur-innovator not only to obtain more market share, but also to widen the proportion of gain relative to each market share.

The innovation action can relate to several parameters, in particular the means of financing, which consists in making an innovative choice that allows the company to conduct its innovative project independently, and to exploit the resources it provides optimally. In order to finance innovation in time of crisis, the firm can resort to the choice of national financing programs, otherwise the mobilization of the firm's internal financial resources costs little and reduces the risk of failure, but it requires a large self-financing capacity which remains difficult to achieve when it is a firm that has just launched itself on the market. However, raising funds internally presents a relevant choice over external financing, given the uncertain nature of innovation and the fact that financing institutions may be restricted in financing a risky investment project. Public funding of innovation presents an interesting offer of financing for innovative projects, it is rather a public support that allows companies that believe they are entering the market to go beyond the research and development phase and reduce the risk of abandoning innovative projects as well as increase innovation and its diffusion. This type of financing requires several conditions that companies must meet, including the nature of the innovation project, its originality and the need it satisfies. Innovating also involves other parameters, technical standards in turn can incorporate the basis of innovation, in fact being able to extract from the existing one a new product that includes advanced standards and related features, but is completely new to the market. In short, innovation is multifaceted, it expresses "the transformation of an idea into an economic object, which unfolds in a random way, always using the same ingredients of thought, invention, innovation, financing and production"¹⁰.

The economic upheaval caused by crises threatens companies. At the financial level, the crisis situation leads to a drop in turnover, an increase in expenses, resulting in a drop in Net Income and a financial imbalance for companies. On other levels, crises represent a threat to companies that calls into question their sustainability. The potential of innovation to help companies get out of the crisis can be seen at the micro and macro levels. The innovative company in a crisis situation finds itself in a temporary monopoly situation that allows it to achieve strong growth on the market and thus alleviate the consequences of the financial

¹⁰ Noailles P. (2011), « De l'innovation à l'innovateur pour une approche structuraliste de l'innovation », *La Revue des Sciences de Gestion*, Direction et Gestion n°247-248 -Stratégie, Janvier-Avril 2011, p. 19.

shock created by the failure of traditional companies that are unable to cope with the crisis. Innovation not only creates value in times of crisis, but also new jobs. In times of crisis, innovation triggers a process of adaptation and learning about new things in the workforce by creating new jobs. Andreff (2012) considers that the innovation cluster¹¹ created by the introduction of the new process or product on the market does not only impact economic growth and employment but also the transfer of knowledge and technology. At the micro-economic level, the financial performance indicators of innovative companies emit positive growth signals, which increases its financial value. Its strong market presence allows it to create its own ecosystem and to strengthen the feeling of confidence with consumers. The commitment of companies to quickly find concrete solutions to overcome the constraints of crises gives them a strategic advantage over the rest of the companies on the market. Crisis is equivalent to change, therefore a genesis of innovative ideas is necessary to bounce back from the crisis. The peculiarity of innovative companies is manifested in the creation of a technological innovation that satisfies a new need, this allows these companies to evolve on markets that are not very competitive. The health crisis that has affected all aspects of people's lives has allowed entrepreneurs to discover new horizons of development through innovation and research and development.

2. IMPACT OF COVID-19 ON INNOVATIVE COMPANIES

This part of the study consists first of all in exposing the methodology adopted in our study, the variables treated and their descriptive/qualitative analysis. Then, we will proceed to the presentation and discussion of the empirical results.

2.1. Research Methodology

Innovation is a complex phenomenon that requires in-depth analysis for its understanding. Through this article, we try to study the impact of Covid-19 on innovation while interpreting the behavior of Moroccan innovative companies in times of crisis. For fear of reproducing unreliable information, we opted for a hybrid approach which consists in combining both the qualitative and quantitative methods in order to produce more relevant information. With regard to the methods of data collection and analysis, observation was at the origin of the study, it allowed us to ask the research question on which the study is based. Then, we based

¹¹Andreff W. (2012), « Un monde en mutation : la crise, moteur de l'innovation et de la création », *Université du Littoral Côte d'Opale*, Boulogne sur mer, p. 15.

ourselves on the documentary study which allows us to take stock of the major concepts evoked in the study, as a consequence it constitutes a means of consolidating the information gathered from the interviews. The interviews in turn served us as the main source of data, through four interviews of an average duration of two hours carried out according to an interview guide.

Carrying out a qualitative study allows to determine the specificities of the innovation ecosystem in Morocco, to understand the causalities of the phenomenon as well as its repercussions and to shed light on the behavior of the various bodies acting on the subject of innovation in Morocco ("the why?"). In the same framework, the qualitative study allows to refine the problematic and the hypotheses previously posed and to underline the importance of the existing theoretical variables. At the level of the qualitative study, we have carried out a case study of the activity of four organizations dedicated to the encouragement of innovation in Morocco especially the academic contribution, namely :

- The City of Innovation in Rabat ;
- The National Center for Rapid Prototyping of ENSAM;
- The Moroccan Center for Innovation and Social Entrepreneurship ;
- University Technology Campus of Mohamed First University.

The sample for the qualitative analysis was reduced to those organizations. Therefore, semi-structured interviews were conducted using an interview guide. Two major themes guided the interview, the first dealt with the contribution of these organizations to the promotion of innovation and their role in the process of creating innovative companies, and the second dealt with their contribution to the support of innovation and the valorisation of research in the context of Covid19.

The passage to quantitative study was necessary in the sense that it allows to measure the impact of Covid19 on innovation in Morocco in a quantified way ("the how?"). The main objective of the quantitative study is to verify the hypotheses and to widen the angle of analysis. It was carried out through a questionnaire circulated to the innovative companies in Morocco and composed of two parts: The first one, allowed us to identify the companies sampling base through their innovative activities. At this level, the questions consist in analyzing the perception of the concept of innovation among young entrepreneurs and their commitment to research and development. The second in turn, allowed us to study the evolution of the financial situation of innovative companies through their size, turnover and

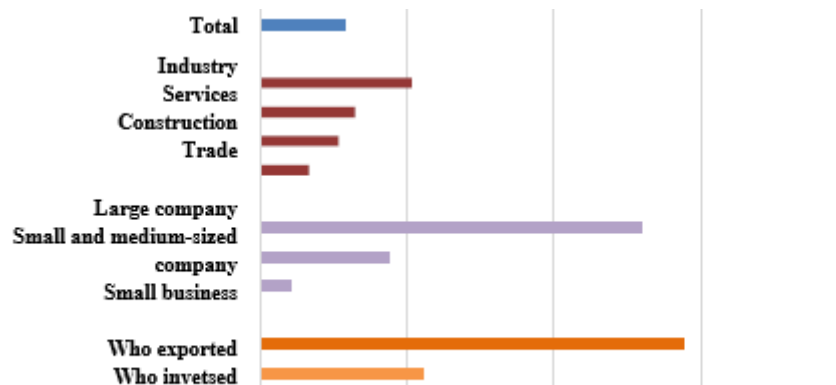
added value realized in the years 2019 and 2020 to have a vision on the financial evolution of these companies during this crisis.

2.2. Key Findings and Discussion

Since the beginning of the decade, Morocco has been interested in developing a process of innovation through the global reform of the national education and research system. 20 years later, the government is facing a chronic crisis in which innovative companies and research valorization structures have proved their great usefulness. Indeed, the creation of innovative companies has never been so topical after having proved their great capacity to adapt to market fluctuations as well as their high qualification for the creation of new outlets and the proposal of inevitable solutions to remedy the fallout of the health crisis.

According to the National Survey of Enterprises carried out by the Office of the Higher Planning Commission in Morocco, 6 percent of Moroccan companies have conducted research and development activities for the year 2019, broken down as follows :

Figure N°1 : Research and development activities in 2019.



Source : National Business Survey, The Higher Planning Commission in Morocco, 2019.

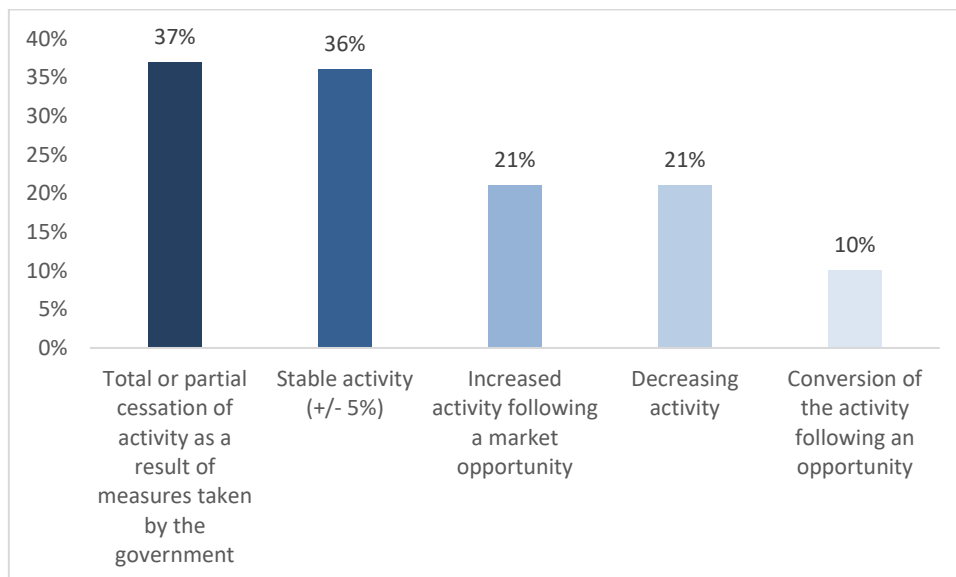
The Global Innovation Index published on September 2, 2020, ranks Morocco 75th on a list of 131 economies assessed by gaining 16 places compared to the year 2019. The efforts made by the kingdom in the field of innovation is reflected in the level of investment allocated to

innovative sectors in products and services, particularly through cooperation in patents and exports of technical services information and communication¹².

The survey we conducted was distributed to a large vector of innovative companies in Morocco, of which about twenty responded. Geographically, the surveyed population is distributed over the national territory with a high concentration of its companies in the region of Greater Casablanca and Rabat-Salé-Kenitra, including seventeen companies created before January 2020 and three during this year. The companies surveyed are active in various sectors including high-tech, education and technology, digital, communication, 3D and renewable energy and of which 78 percent have achieved in 2019 a turnover of over 100,000 Dhs and 41 percent an added value of over 50 percent for the same year.

The companies surveyed are small (with a staff of no more than 20 employees) and consider innovation to be at the heart of their concerns. 84.2 percent of these innovative companies claim to be directly impacted by covid-19 whether in terms of ceasing activity following government measures. However, 36 percent of the innovative companies surveyed were not impacted by the health crisis by claiming a more or less stable activity.

Figure N°2 : Impact of the health crisis on the innovative companies surveyed.



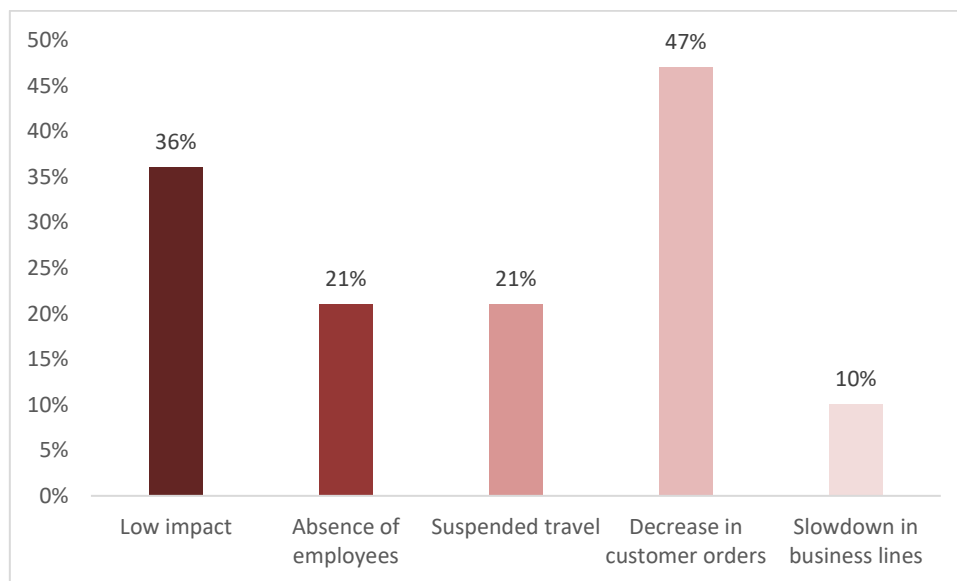
Source : Elaborated by us.

According to a survey by the Higher Planning Commission, 57 percent of Moroccan companies have called for permanent or temporary cessation of activity because of the

¹²<http://www.ompic.ma/fr/actualites/lindice-mondial-de-linnovation-global-innovation-index-gii-2020> (consulted on 20/10/2020).

pandemic. This rate remains relatively high compared to innovative companies that have suffered this cessation on certain lines of business only, this is due to the great ability of its companies to adapt their activity to the crisis context, hence 21 percent who seized an opportunity on the market. The scope of an extraordinary vision by innovative companies allowed them to propose solutions adapted to the situation, in particular the offer of remote products and services (the case of companies offering equipment for distance learning, video surveillance or access control systems) as well as 3D equipment to supply the market for producing protective masks and visors. However, 36% of innovative companies indicate the stability of their activity, which is primarily due to the nature of their business (generally companies innovating in big data and high-tech).

Figure N°2 : The impact of the health crisis on the activity of innovative companies.



Source : Elaborated by us.

Several have been the repercussions of the health crisis, the graph above explains how the measures taken to deal with the spread of the virus have impacted the activity of innovative companies. The reasons presented are various, including the absence of employees, the suspension of travel and the economic slowdown, however the decline in customer orders is the main cause of the companies' losses. In response to the introduction of innovative processes to deal with the health crisis, 63 percent of the companies surveyed claimed to have

opted for actions such as refurbishing premises in a way that respects social distancing, teleworking and daily disinfection of premises.

The last century has been marked by other epidemics, however the management of the coronavirus pandemic has been a great challenge for governments since its global spread in early 2020. Lack of vision, lack of vaccine, and lack of a clear treatment protocol made managing the crisis increasingly difficult and forced several states, including Morocco, to declare a state of emergency and move to containment. Today, seven months after Morocco declared a state of emergency, the post-covid19 situation still appears unclear and requires a great deal of attention to support companies in their recovery. The new management rules imposed by the crisis require an innovative effort to be able to introduce new habits and practices enabling companies to adapt to the new situation.

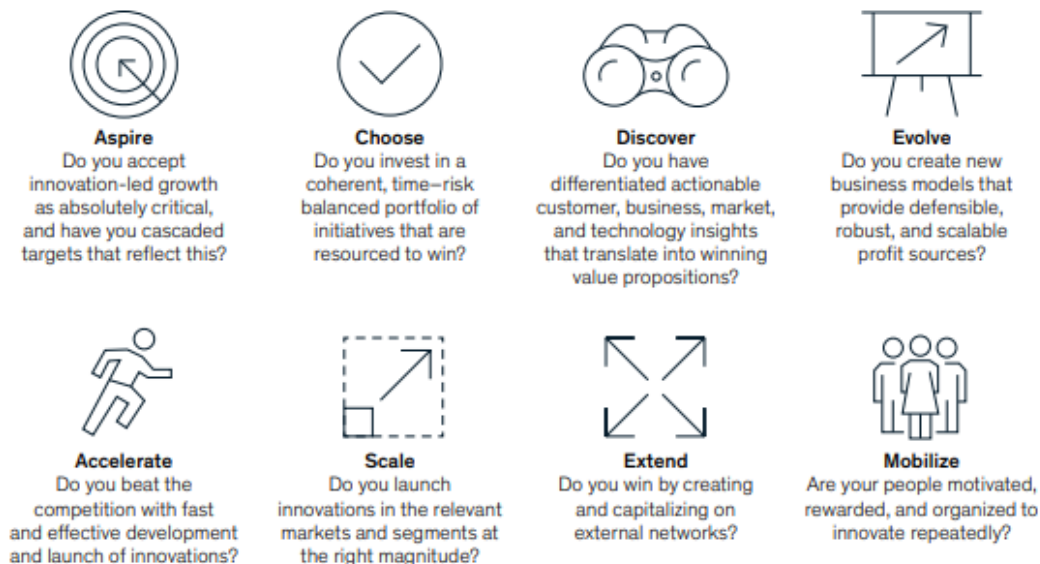
The health crisis has implied a radical change in the behavior of individuals as consumers through the creation of new needs in the market, allowing companies to enter new markets while offering innovative products that meet these needs. Also, the health crisis has led to changes in working methods and thus the admission of new processes.

❖ Covid-19 and innovation :

The Covid-19 crisis has highlighted the disastrous situation of the sanitary system in terms of lack of materials and equipment for the fitting out of premises. The Moroccan government has therefore become aware of the need to increase the budget allocated to research in this priority area and to support companies offering products that meet the need in this market. In collaboration with the Campus of Higher School of Arts and Crafts and the Faculty of Science of Rabat, innovative solutions to combat Covid-19 have been initiated, particularly in the design and manufacture of ISO 5356-certified respiratory assistance equipment (used to constitute several types of appropriate respiratory system), non-invasive first-aid respiratory prototypes (using an insufflator bag), and the implementation of a new immunological technique for early diagnosis of Coronavirus infection¹³.

¹³ <https://www.letpub.com/index.php?journalid=1748&page=journalapp&view=detail> (Consulted on 23/10/2020).

Figure N°3 : The Eight Essentials of Innovation serve as an important guidepost for navigating the covid19 crisis.



Source : Innovation in a crisis : Why it is more critical than ever, McKinsey And Company, June 2020.

McKinsey and Company (June 2020) presented in their report on innovation in the crisis how innovation can be used as a guide to address the impact of the pandemic. Innovative companies, in order to seize the opportunity presented by the crisis, must define exactly what the market needs and accelerate its action in order to benefit from the competitive advantage provided by innovation. No one thought that the year 2020 will be marked by a health crisis that will radically change lifestyles around the world. The containment and measures taken to limit the spread of the virus have had a serious impact on people's behavior, particularly in terms of consumption. The design and manufacture of visors for additional protection to masks and the distribution of pedal-operated hydroalcoholic gels to reduce the risk of infection during use.

❖ Covid-19 and Process innovation :

The peculiarity of the crisis context is the urgency, the entrepreneurs have been forced to adapt their production models to the current needs and propose in the short term inevitable solutions to the changes caused by the sanitary crisis. The implementation of containment has in turn induced the adoption of new production and marketing processes and procedures,

whose benefits / success achieved by e-commerce platforms in 2020. In terms of production, and in order to avoid waves of contamination within industrial units, the government has supported research and development and innovation channels to diversify sources of raw materials and processes in a way that will reduce human contact and thus reduce the remaining infection or creation of epicenter for the virus. An adaptation of the working environment and means through innovative processes has also been imposed, telework has proven its effectiveness for companies and has required innovation in terms of remote management methods and work processes. The equipment of workplaces to comply with barrier measures to curb the spread of the virus has similarly induced the introduction of new processes, particularly the daily sterilization of workplaces, the rearrangement of premises to respect social distancing and the decrease in their occupancy capacity.

To address the economic consequences of the Covid-19 crisis, innovation programs have used a combination of existing technologies to produce goods and services that are not only innovative and respond to current needs, but are also efficient, fast and restore consumer confidence in local products. In the short term, maintaining the activity of innovative companies helps to boost economic activity, and research and development programs help to integrate new technologies into the activity of these companies. However, in the long term it will be necessary for the government to mobilize significant funds for technological advances, while promoting research and winning in terms of calls for projects and cooperation at the national and international level.

Conclusion

Towards the end of this work, which had as a research question "The contribution of innovation to the recovery of the Moroccan economy post-covid19 ", an assessment of this study seems important to us. We have retained for this research the contribution of innovation during the health crisis and the potential it offers to get out of the crisis. In this sense, we have developed a review of the literature that allows us to clarify the basic concepts of our research, namely the concept of innovation and the concept of innovative firms. To launch thereafter the empirical study in order to unveil the relationship between innovation and crisis and the role played by the latter as a development stimulus to revive the national economy.

The health crisis has shown the importance of strengthening the innovation system in Morocco, whether in health or other areas, through the valorization of research and investment in research and development. Also, the regulation of innovation is also necessary

in Morocco. A combination of measures deployed to mitigate the economic and social consequences of the pandemic is necessary. Health and education are priorities, but other social components must also prepare for the new life form. Through this work, we were able to verify the previously mentioned hypotheses. The health crisis has indeed accelerated innovation and highlighted its important role that must be taken into consideration in the implementation of Morocco's post-covid strategy. Also, innovative companies are becoming market leaders as they have adapted to this crisis and are committed to overcome its consequences and supply the market with innovative products and services.

The Covid-19 crisis has shown Morocco's ability to innovate and to manufacture high value-added products quickly and efficiently. The present work has made it possible to detect the potential available to innovative companies in Morocco, as well as the colossal work carried out by the various in the innovation process from the design and prototyping phase under the supervision of ministerial departments to the production and marketing phase by innovative companies. In order to prepare for the post-covid recovery, innovation must be included in other industrial fields in which Morocco has a certain expertise. The textile, automotive, and aeronautical sectors, for example, have strong potential for innovation, especially since Morocco already has a significant comparative advantage in this area.

BIBLIOGRAPHIE

- ◆ Allegret J.-P. et Dulbecco P. (1998), « Le comportement de la firme innovante, structure de gouvernance et mode de financement », *Revue d'économie industrielle*, 84, 7-26.
- ◆ Andreff W. (2012), *Un monde en mutation : la crise, moteur de l'innovation et de la création*, Université du Littoral Côte d'Opale, Boulogne sur mer, p. 15.
- ◆ Ayadi A., Arlotto J. et Jordan P. (2005), « Freins et performances de l'entrepreneuriat dans les entreprises innovantes : Une étude exploratoire », *Actes du 4e Congrès de l'Académie de l'Entrepreneuriat*, 24-25 novembre, Sénat, Paris.
- ◆ Bruyat C. (2001), « une modélisation du processus d'engagement dans un projet de création d'entreprise », *Revue de l'entrepreneuriat*, 2001/1 Volume 1, P. 25 à 42.
- ◆ Donckels R. (1985), « New entrepreneurship : lessons from the past, perspectives for the future », *Entrepreneurship : Critical Perspectives on Business and Management*, Volume 4, ROUTLEDGE, p. 80.
- ◆ Haddad, S. (2013), « The process of creating innovative enterprises in Tunisia : results of an exploratory study », *Revue internationale P.M.E.*, 26 (1), P.13–44. Hedlund G. (1994),

« A Model of Knowledge Management and N-form Corporation », Strategic Management Journal, 15, p.73-90.

- ♦ Noailles P. (2011), « De l'innovation à l'innovateur pour une approche structuraliste de l'innovation », La Revue des Sciences de Gestion, Direction et Gestion n°247-248 - Stratégie, Janvier-Avril 2011, p. 19.
- ♦ Zhu N., Zhang D., Wang W., Li X., Yang B., Song J., et al. A (2020), « novel coronavirus from patients with pneumonia in China », 2019 N Engl J Med, 382 (8), pp. 727-733.
- ♦ <http://www.ompic.ma/fr/actualites/lindice-mondial-de-linnovation-global-innovation-index-gii-2020> (Consulted on 20/10/2020).
- ♦ <https://www.letpub.com/index.php?journalid=1748&page=journalapp&view=detail> (Consulted on 23/10/2020).