

Financial and environmental resilience in times of crisis: a study of covid-19's effects on Moroccan environmental companies

*Mohammed Kahcha*¹, *Zakia Errabih*¹, *Salmane BOUREKKADI*²

¹ Sidi Mohamed Ben Abdellah University of Fez, Faculty of Legal, Economic, and Social Sciences, Laboratory LTSI, EST FEZ USMBA, Fez, Morocco.

² University of Poitiers, France

Abstract. The analysis of Moroccan companies' resilience is of extreme importance, especially in times of crisis. Covid-19 is an example that revealed the shortcomings and weaknesses of most Moroccan companies when it comes to crisis anticipation and management. In this paper, we have chosen to study the case of companies from two important industries in Morocco: agriculture and tourism. The aim is to investigate the level of preparation of these companies for the crisis, their reaction during the pandemic, and the lessons learned to be more resilient. The two case studies show a lack of preparation due to the sudden occurrence of the crisis, however, the impact was different between the two, due to the nature of the activity and the business size; one is a small local company (agriculture) and the other is the branch of a multinational one (hospitality). The study case results show that most of the companies' functions were impacted (procurement, production, sales, etc.). These companies' reaction was different as well, from acting on the inventories and managing the production (Agriculture Company) to optimizing human and financial resources and exploring swinging activities (Hospitality Company). Both got government support. The two companies agreed that the most important aspect of resilience is finance resilience which considers the wider definition of "generating value" that includes in addition to the turnover, the environment, the social and governance aspects (commonly known as ESG). According to the case study, for better resilience in the future, a greater awareness of the importance of financial & environmental resilience is key, and the use of performance metrics and indicators (KPIs) is the way, to allow close monitoring of the activity to be alarmed in advance and strategically anticipate big crises.

Index Terms— Financial resilience, environmental resilience, ESG (environment, social & governance), crisis, Covid-19, study cases, Moroccan environmental companies.

1 Introduction

The Covid-19 health crisis has heavily penalized the economies of most countries of the globe, and the closure and containment measures have created real obstacles to productivity, employability, and trade between and within countries.

Morocco has not escaped this wave, the Covid-19 crisis and its variants have greatly affected economic and social activity. At the level of companies, which represent the nerve of the national economy, surveys conducted by the High Commission for Planning (HCP) in 2020, show that the rate of companies that had to temporarily suspend their activities reached more than 54% at the peak of the crisis in April 2020 (HCP, 2021) [1]. These results show the severity of the crisis and the vulnerability of companies to unforeseen shocks, but also the capacity and resilience of some of these companies (46%).

In this context of Covid-19 and the various crises that may occur, the analysis of the resilience of Moroccan companies is of extreme importance. "In a changing environment, resilience contributes to the performance of the organization. Therefore, resilience deserves as much attention... (Altintas G. and Royer I., 2009) [2]. A resilient organization is one whose organizational system can anticipate and effectively manage risks through the adaptation of its actions so that core functions are performed in a stable and effective relationship with its environment (McDonald N., 2008) [3].

The finance function is one of the functions of the organization that is sensitive and vulnerable to unforeseen shocks. A recent HCP survey found that one in two companies report a decline in liquidity compared to its pre-crisis level (HCP, 2022) [4]. Covid-19 is an example that has above all revealed the managerial and financial shortcomings and weaknesses suffered by most Moroccan companies, which constitute a threat that each company must consider in its strategic planning.

For these reasons, the objective of this paper is to study, understand and analyse the capacity and degree of resilience of Moroccan companies in the face of the Covid-19 crisis both in their organizations and in their finances, highlighting how these companies were before the crisis, how they reacted to the crisis and what lessons they have learned to be more resilient after the Covid-19 crisis.

We will first dwell on the methodological path and the reason for choosing the case study as a means of research and then study the results obtained and discuss them to propose recommendations for better resilience.

2 Methodology

To the resilience in general and the financial resilience in particular of Moroccan companies in times of the Covid-19 crisis, we conducted exploratory research through the methodological tool "case study", while relying on a mixed approach (quantitative and qualitative), with a view to a deep understanding of the phenomenon.

2.1 Case study as a research tool

The case study method is useful when the objectives of the study are understanding, and analyzing recursive processes or causalities (F. Wacheux, 1996) [5]. That means when we want to elucidate the hows and whys of a phenomenon. It is therefore dependent on the nature, the context of the study, and the methodological choices of the researcher.

R. Yin (1984) [6] defines a case study as "an empirical investigation that studies a contemporary phenomenon within its real-life context". The study of financial resilience in times of the Covid-19 crisis is the study of a contemporary phenomenon in the context of continuous crisis.

2.2 The profile of the participants

The choice of the objects of the case study was made considering two main elements: the importance of the industry studied in the national and regional economy and the severity of the crisis impact.

In this perspective, the agricultural and tourism sectors have been chosen, both are key in the economic structure of the country and appear the most impactful because the first focuses mainly on export, which has suffered from the closure of borders and the second is based on the influx of foreign and domestic tourists, whose number has decreased drastically.

The following table summarizes the two companies covered by the study:

Table 1. Setting Word's margins

| Sector of activity | Agriculture | Tourism |
|---------------------|---|---------------------------------|
| Nature of activity | Production and marketing of agricultural products | Accommodation & eatery |
| Years in operation | 5 to 10 years | 5 to 10 years |
| Turnover | From 2 to 5 million DH | From 5 million to 10 million DH |
| Number of employees | From 100 to 200 | From 200 to 500 |

It has been agreed with the two participating companies to remain anonymous as to their names. Hence, concerning the ethics of scientific research and our commitment to these participants, we do not disclose their names, however, all other information benefiting the case study is shared and analyzed.

2.3 Data collection

Data collection and analysis are done through a mixed research approach, i.e., a method that combines a quantitative and qualitative research approach. The mixed approach allows a joint application of different epistemological paradigms and thus contributes to an accurate understanding of the object of research (Creswell and Plano Clark, 2011) [7]. Also, makes it possible to obtain more representative data (Yount K.M and Gittelsohn J, 2008) [8]. Data collection through the quantitative method is necessary for a better knowledge of the subject (Rogers et al. 1999) [9]. The tool used in this paper is the questionnaire, which was done with two companies from two different industries. This was consolidated by direct interviews with the managers of both companies.

3 Results

3.1 Risks and Constraints related to the Covid crisis

The two cases of Moroccan companies studied converged on the evaluation of the intensity of the impact of the crisis (3 on a scale of three for both companies). However, the two companies differ on the main risks and constraints related to the COVID-19 health crisis. These risks are of health, economic, commercial, and financial nature, but it depends on the sector. These constraints differ according to the sector and the nature of the activity of each company, as shown in the graphs below:

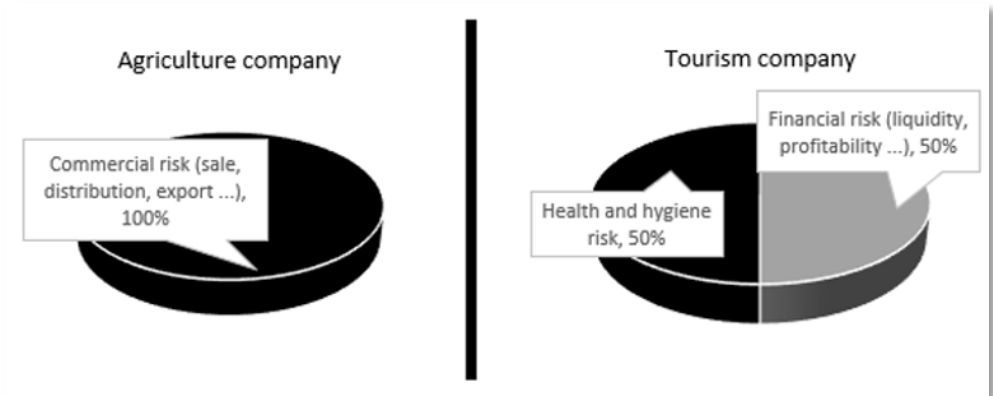
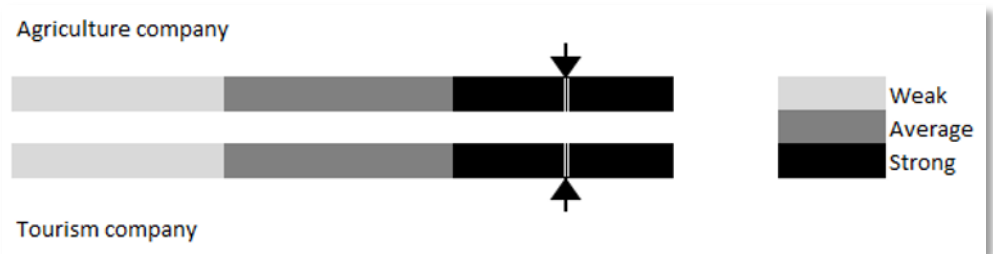


Fig. 1. Nature of faced risks in the studied companies.

The intensity of these risks is strong in both cases, due to numerous factors, especially the long run of the crisis and the impact on both locals and tourists, macro, and micro-



economy.

Fig. 2. Intensity of encountered risks.

The functions most affected by the crisis are different in the two cases, for the company operating in the agricultural sector, the crisis has strongly impacted all the functions, while for the company operating in tourism, it is rather the financial function and the commercial function, which were the most affected by the crisis.

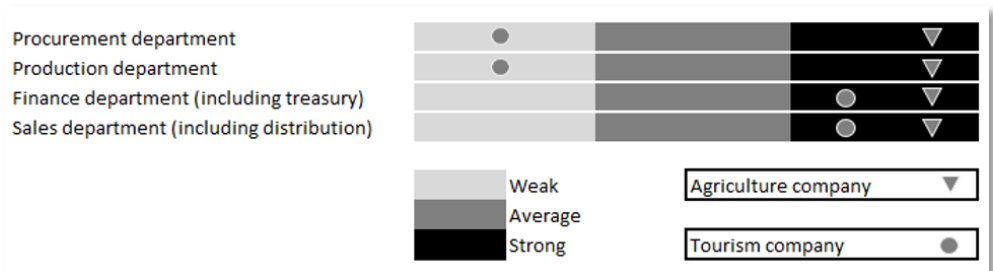


Fig. 3. Functions most affected by the crisis.

Both companies are aligned with the fact that they were not fully prepared to deal with the crisis given its sudden nature and the extension of its period, yet they have different views on the factors hindering the effective management of the crisis.

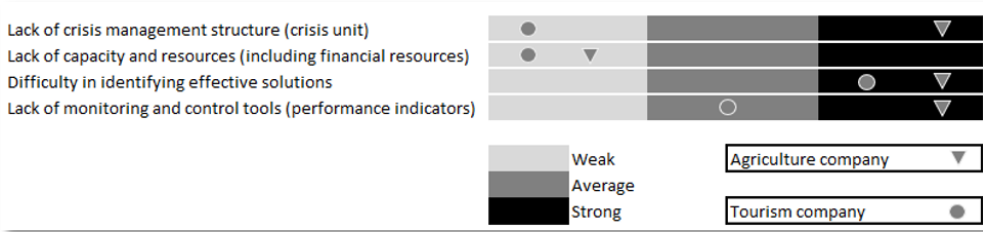


Fig. 4. Factors hindering effective crisis management.

3.2 The pre-crisis period: level of preparedness of Moroccan companies for the crisis

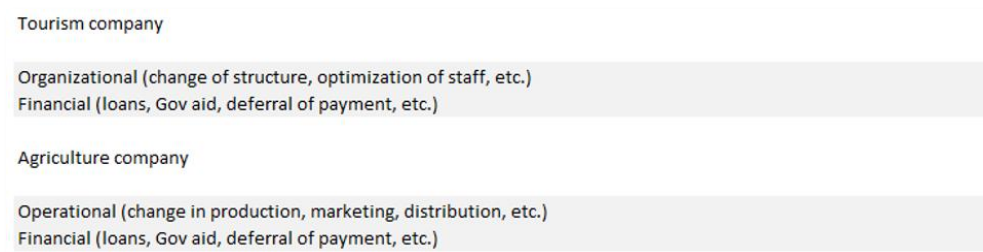
Both companies say they have a certain level of preparedness for the crisis because of some historical events. For the agricultural enterprise, these are the drought seasons that make companies operating in the sector build up reserves to be able to operate when the context is not favorable. For the tourism company, it is first the risk management practices that exist in the parent company (a subsidiary of a multinational group) and then the regional economic context that has made companies cautious in managing their expenses. The sudden and prolonged nature of Covid was not, however, something predictable for these companies.

The agricultural company admits that its performance monitoring system (financial indicators) was not as developed and the tourism company is trying to adopt the practices of its parent group in this regard but the two converge on that their performance monitoring system did not serve as a means of alert at the beginning of the crisis, which did not allow to react more quickly.

3.3 During the crisis: strategies and actions

Both companies have taken action to mitigate the effects of the crisis. The farm company acted instead on its stock level of raw material, in addition to the substantive reserves it had built up. It quickly began to gain additional supply at the beginning of the crisis. In addition to this, the company has tried to optimize its expenses and revenues to optimally manage its cash.

The tourism company has rather acted on its organization by trying to reorganize the shifts of the teams and reduce the number of staff to the optimal level. Furthermore, the company has chosen to optimize its expenses and seek loans for its operation from these shareholders. It benefited also from deferrals of payments of social charges and taxes by the



government.

Fig. 5. Actions taken during the crisis to contain the damage.

3.4 Post-crisis: lessons learned and the future resilience

The two companies agree on the importance of financial functions and the importance of financial resilience, which first requires the establishment of a system of performance monitoring (KPIs) capable of serving as an alarm in the event of a crisis.

For the agricultural society, the diversification of activities is the cornerstone to be able to equip itself against crises in the future, diversity of products (semi-finished / finished / services), business (individual/companies), market (local / export), and channels (off-line/on-line).

For the tourism company, it is rather the flexibility of human resources (contractual/internal) and the optimal management of financial resources (reduction of costs).

Both companies also consider establishing a critical and unavoidable risk and crisis management body (governance committee, steering committee, etc.).

It was also remarkable to hear from both companies that they attach particular attention to the wider meaning of "value generating" that does not limit to revenues/turnover but also environmental and social aspects, which is why they were worried about the future of their employees and the impact on the environment (both companies took actions to reduce their energy consumption for example as a mean to reduce costs).

4 Discussion

Resilience is a multidisciplinary term that is found in several disciplines, according to Chabaud and Begin (2010) [10], the notion of resilience refers to the ability to cope with the unexpected. COVID-19 was a major unexpected, some were able to cope or even use it as a growth driver, but most were penalized.

The two case studies show that the Covid-19 crisis has largely impacted Moroccan companies. The two companies said having a certain level of preparedness, but the crisis was so sudden, disastrous, and prolonged in time that it was impossible to escape it. The two companies surveyed admit that they do not have a developed performance analysis system to alert them in time and be able to act quickly. The impact of the Covid-19 crisis affected virtually all functions, but the finance function was the pivot. The risks associated with the crisis were extremely high and varied in nature and intensity depending on the nature of the activity of the case (the primary risk for the agricultural enterprise was commercial, and for the tourist enterprise the risk was hygiene and financial).

The key element of the resistance to the crisis for the agricultural business was the reserves of funds built up that made it possible to meet the financing constraints created by the Covid-19 crisis and to temporarily mitigate its effects. According to De. Rosnay. J., (1993) [11] "Producers and consumers have the possibility of storing in two large reservoirs, namely money (resulting from present or past labor): it is the creation of capital or knowledge: it is the creation of "knowledge capital". While for the tourism company, operational excellence (based on the reduction of operational risks, skills, and process optimization) was a solution to rebound the Covid-19 crisis, despite the devastating effects on the company's funds which forced it to resort to financing credits. Adding to these, the level of maturity of both companies (more than 5 years in operation) and the nature of the activity (agricultural and tourism industries are supported and predominated in the national economy) have largely contributed to the survival of these companies.

As a result, both companies recognize the importance of financial resilience in the total resilience of the company, as one of the lessons of the current crisis.

It is fair hence to conclude that the most important aspect of resilience in times of crisis is financial resilience, an organization's ability to withstand shocks, maintain its financial health, and keep its financial indicators at acceptable levels, for the simple reason that if the company has financial difficulties, it will affect all other levels: operational (no production, marketing, etc.), organizational (workforce reduction, change of structure to the minimum necessary, etc.), and social (dismissal, demotivation, etc.). This was relayed by the two companies that were the subject of the study.

Financial resilience is assessed via the famous financial ratios, companies that have this practice and the culture/mindset of monitoring their activities via performance indicators (KPIs) have a great chance of being more prepared to face crises. This is due to the ability of these companies to assess risks more quickly and act accordingly.

As an example, a profitability KPI (ratio/indicator) which indicates that the commercial margin gradually decreases from a week to another, will make the management wonder what are the reasons behind it and hence alarm them to act quickly to continue the operations (build up a safety stock of the raw material or on the contrary accelerate sales to free up stocks in case of need to reduce rent costs, etc...). The case of the agricultural company is illustrative of this, the company was able to mitigate the impact of Covid-19 at the beginning thanks to the control of the stock of raw materials and products, via careful control of the stock. Moreover, the company recognizes the importance of continuing this practice via more developed indicators.

Let us look at another example of the usefulness of analyzing financial indicators in resilience in times of crisis: the analytical study of KPIs/ratios by segment (distribution channel/location/business unit/product/etc.). These ratios can give valuable information on the trend of the segments, and therefore push companies to value the segments that are most resistant to the crisis (online sales, local/export, products/service, locations not affected by the lockdown, etc.) and make quick decisions about those that resist the least (stop a product, close a location, etc.). This example is valid for both the agriculture company and the tourism one. For the latest, the studied tourist company faced the issue of "technical unemployment" for the accommodation (rooms) while its eatery/restaurant (second segment) was still able to operate and generate income (takeaway meals), instead of limiting itself to lodging (overnight stays), the company could rely on the restaurant when rooms' turnover drastically decreased.

5 Recommendations for building financial and environmental resilience

The priorities of companies and especially their financial functions are no longer limited to the strictly financial framework but also cover strategic, organizational, and sustainability (ESG) aspects to rethink management processes and boost collective intelligence to be able to survive in times of crisis.

5.1 Risk Management

During periods of crisis and uncertainty, the main concern of financial functions, treasury, and risk management is to: minimizing the impact of the crisis, maintain business continuity, and getting out of periods of crisis even stronger

For this, and given the two case studies conclusions in this research, the priority is to manage three main risk categories:

5.2 Operational stability

It is the fact of having a strong capacity for dynamic planning to be able to analyze and react permanently to changes in the company's resources in very abrupt and sudden scenarios.

5.3 Liquidity and credit

Without real liquidity and forecast management, a company cannot guarantee business continuity, liquidity risk management is one of the most critical points and must be addressed in a period of crisis.

The need for real-time visibility into cash flow and short-term forecasting is essential. Anticipating the possible impacts of crises on liquidity is done by planning liquidity in the short term and the medium and long term, through an awareness of events that can affect liquidity such as loans, collection management, and therefore interaction with customers to be able to be paid on time. The management of uncertainties that may come from capital markets (exchange rate fluctuations, commodity exchanges, etc.) is another aspect of analysis to look at closely. Automation on every aspect that can be automated is a third component that is important because it will minimize overdue payments, have real-time liquidity, and facilitate interaction with customers.

5.4 Value Chain Management (Supply Chain)

The supply chain is severely disrupted because of the Covid-19 crisis, a disrupted value chain can have a strong impact on corporate finance (increase in tariffs and additional duties, new risks related to suppliers). This makes it essential to develop an agile sourcing strategy to face unforeseen events (reliability risk, credibility of new partners, and new business requirements).

5.5 Sustainability (ESG)

It is one of the most important aspects that help in times of crisis: looking after the environment not only because of corporate responsibility but also from an economic perspective (energy consumption for example, as well as looking after the social aspects of management (well-being of employees during the crises).

5.6 Factors promoting resilience

Factors promoting resilience in times of crisis, including financial resilience:

Strategy

The integration of crisis management strategies into strategic planning at the beginning is critical, as well as the multiplication of scenarios and strategic alternatives in coherence with all the strategies of the organization. Pearson & Mitroff, (1993) [12] strongly recommends ensuring that "crisis management is integrated into strategic management. Diversify the strategy portfolio. Train and stimulate seizures."

Structure

The creation of a body in charge of the crisis or a unit dedicated to it allows a rapid adaptation to events. According to Roux-Dufort C, (2003) [13], "the crisis unit is also often considered a miracle solution in response to the crisis" and adds that for the crisis unit to be effective "two conditions must be met in the management of the crisis: - it must be constituted before the crisis and not improvised for the occasion. – it must be experienced otherwise it may lead the company to a worse confusion at the time of the crisis" Communication flows in times of crisis are also extremely important, according to Marcus and Goodman (1991) [14], in times of crisis it is necessary to "be proactive in communication rather than reactive".

Resources and Skills

The ability to manage crises requires reserve resources, qualified resources, and effective HRM processes that include sustainability (social of ESG). According to Reilly A.H (1993) [15] "implementing a plan to deal with the crisis depends on valid and available resources". In case of insufficiency of these resources and skills, it will be necessary to be able to find them.

Culture

It is not easy to manage potential crises without cultural awareness. Crisis management must be a component of the company's culture. According to Lagadec P, (1991) [16] "in a crisis, it is a question of reinjecting meaning, defining values and references, formulating norms and frameworks of appreciation" and adds (1996) [16] "finally establishing a basic culture of the crisis"

Environment

Business intelligence and continuous monitoring of the company's internal and external environments are important, according to Pearson & Mitroff (1993) [12] it is a question of using "regularly studying environments and setting up alert systems". Lagadec P, (1996) [17] considers that there is a risk of having "a late alert, for lack of capacity for early monitoring and decryption" of the environment. The environment also includes the ecological part of it, choosing a non-polluting solution is not only ethically beneficial but also strategically and economically worth considering (renewal energies, etc.)

6 Conclusion

The unexpected of yesterday has become a reality today, which Moroccan companies must consider and arm themselves to face in case of a sudden reoccurring.

Moroccan companies have suffered, and some are still suffering from the covid crisis, especially in key sectors such as agriculture and tourism. Their ability to mitigate the effect of the crisis lies in their learning culture and not to repeat the same mistakes of the past.

The most impacting of these errors is the neglect of two important aspects: a system for measuring and monitoring financial performance and

the absence of inadequacy of the integration of the notion of risk into the three levels of management: strategic, tactical, and operational.

On the first aspect, performance measurement and monitoring systems are necessary in times of crisis. The crisis is always a unique opportunity to evaluate and update Business Continuity Planning (BCP). Guaranteeing mastering the key functions and avoiding any disruption to the business lay in the analysis of the company's performance indicators on production, payment, marketing, cash-in/cash-out deadlines, etc.

On the second aspect, if risk management is not a culture and a widespread practice in an organization, it is not possible to be protected against it. Defining the scenarios of possible failures, defining also (via the preceding aspect - performance analysis) the acceptable levels of indicators/KPIs, and evaluating the various viable options to deal with them is the golden trio to respond positively to a crisis and turn it in the company's favor.

These two aspects will not be fully beneficial if companies are not considering sustainability in their plan. It was encouraging to hear from studied Moroccan companies that they care about the social and environmental aspects as levers for both corporate responsibility and as means for more efficiency, especially in times of crisis. During Covid time, the world's attention to ESG issues has increased (Savio R., D'Andrassi E., and Ventimiglia F., 2023) [18]. However, the two companies, like many others, lack plans to concretize good intentions into doable actions.

The important "environment" topic will be the subject of a coming publication on the management of toxic waste.

It is common to say that the only constant in today's business context is change, many looked at this as pure theory before confronting the reality of Covid, which is certainly a great threat but also an opportunity to improve and come out stronger!

References

1. High Commission for Plan (HCP), Effect of Covid-19 on business activity, 3rd survey, January (2021).
2. Altinas G. & Royer I. (2009)
3. McDonald N., Organizational Resilience and Industrial Risk, Resilience Engineering concepts and precepts, (2008)
4. High Commission for Plan (HCP), Effect of Covid-19 on business activity, 4th survey, January (2022).
5. Wacheux F, Qualitative Methods and Management Research, Paris, Economica, (1996)
6. Yin R.K, Case Study Research, Design and methods, London, Sage, (1984)
7. Creswell J.W, and Plano Clark V.L, Designing and conducting mixed methods research, London, Sage, p457, ()
8. Yount K.M, and Gittelsohn J., "Comparing reports of health-seeking behavior from the 'Integrated Illness History' and a standard child morbidity survey, Journal of Mixed Methods Research, n°2 (1), p.23-62, ()
9. Rogers S.M., Gribble J.N. Turner C.F., and Miller H.G," "Computer-Administered Self-Interviews and Sensitive Behavior Measurement," Population, No. 54 (2), p.231-250, ()
10. Chabaud D. & Begin L., Organizational Resilience. The case of a family business, French Journal Revue Française de Gestion (2010)
11. De Rosnay J., Le macroscope, Seuil, (1993)

12. Pearson C.M and Mitroff I.I., From crisis-prone to crisis prepared: A framework for crisis management, *Academy of Management Executive*, 7(1), pp.48-59, (1993)
13. Ennima, S. et al. , Intelligent system and optimal minimisation of energy consumption on the attitude control of a vtol uav hexacopter based on fractional control laws , *Journal of Theoretical and Applied Information Technology*this link is disabled, 2021, 99(12), pp. 2780–2791
14. Marcus A. and Goodman S., Victims, and Shareholders: The Dilemmas of Presenting Corporate Policy During a Crisis, *The Academy of Management Journal*, 34, 2, 281–305, (1991)
15. Reilly A.H., Preparing for the worst: the process of effective crisis management, *Industrial & Environment Crisis Quarterly*, 7(2), p.115-143, (1993)
16. Lagadec P., Crisis management: tools for reflection for decision-makers. *Ediscience International*, (1991)
17. Lagadec P., A new field of responsibility for leaders. *Revue Française de Gestion*, (108), p.100-109, (1996)
18. Savio R., D'Andrassi E., and Ventimiglia F., A Systematic Literature Review on ESG during the COVID-19 Pandemic, *Research Gate*, p.1, (2023)