

**The digital transformation of regulated companies in an era of
adversity:
Empirical study of the impact of digital maturity on organizational
resilience from a financial performance perspective
– The case of financial companies in Morocco**

**La transformation digitale des entreprises régulées à l'ère de
l'adversité :
Etude empirique de l'impact de la maturité digitale sur la
résilience organisationnelle dans une perspective de performance
financière
– Cas des entreprises financières au Maroc**

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Abstract

An uncertain and complex economic and financial environment is forcing companies to act quickly and constantly to reinvent their strategies. In this context, digital transformation has become an essential and inevitable step in adapting to market changes and remaining competitive, while resilience has emerged as a key asset enabling companies to successfully respond to external pressures. This study examines the link between digital maturity and organizational resilience, as well as their influence on the financial performance of companies in the Moroccan financial sector, which face constant disruption. The results of this study highlight that digital maturity and organizational resilience are essential dynamic capabilities, particularly in a context marked by environmental turbulence, and as such actively contribute to improving financial performance.

Keywords: Digital transformation, digital maturity, organizational resilience, financial performance, environmental turbulence, financial companies.

Résumé

Un environnement économique et financier incertain et complexe oblige les entreprises à agir rapidement et à réinventer leurs stratégies en permanence. Dans ce contexte, la transformation digitale s'est imposée comme une démarche incontournable et inéluctable pour s'adapter aux mutations du marché et rester compétitif tandis que la résilience est apparue comme un atout essentiel pour permettre aux entreprises de répondre avec succès aux pressions de l'environnement externe. La présente étude examine le lien entre la maturité digitale et la résilience organisationnelle ainsi que leur influence sur la performance financière des entreprises du secteur financier marocain, confrontées à des perturbations perpétuelles. Les résultats de cette étude font ressortir que la maturité digitale et la résilience organisationnelle sont des capacités dynamiques essentielles pour faire face à un paysage changeant et rester compétitif, surtout dans un contexte marqué par une turbulence environnementale. À ce titre, les deux concepts contribuent activement à l'amélioration de la performance financière.

Mots clés : Transformation digitale, maturité digitale, résilience organisationnelle, performance financière, turbulence environnementale, entreprises financières.

Introduction

In a world marked by unpredictable change, financial sector companies are operating in an increasingly turbulent environment, forcing them to face numerous, often unprecedented and diverse risks that threaten the continuity of their activities and test their resilience. Given the multiple challenges and implications, the resilience of financial companies is therefore a subject that deserves in-depth examination.

While resilience has become a prerequisite for the smooth running and survival of businesses, innovation has become a strategic imperative to adapt to market changes and remain competitive. Given that numerous studies highlight the digital maturity of the financial industry compared to other sectors, research into its digital transformation seems relevant in view of its importance to the economy, its intrinsic characteristics and its significant evolution.

On the other hand, companies operating in the financial industry face growing challenges in consolidating their financial performance, due to the difficulty of maintaining a competitive advantage in such a changing environment. In this regard, examining performance from an exclusively financial perspective is of paramount importance to understand its mechanisms and drivers.

Despite the interest in the three areas of research mentioned above and the multiplication of related research, their interconnections remain largely unproven empirically. This raises a major question: To what extent does digital maturity contribute to strengthening the organizational resilience of financial companies and improving their financial performance?

This study aims to understand how digital maturity can help companies thrive or sustain themselves in times of adversity by boosting their organizational resilience, as well as to understand the role played by these two capabilities in promoting sustainable financial performance.

1. Literature review

1.1. Digital maturity – Multidimensional configuration

Although some authors consider digital transformation to be a voluntary initiative (Dudézert, 2018), a deliberate evolution (Mazzone, 2014) or a process that companies strategically launch and actively shape (Besson & Rowe, 2012), others emphasise its inevitable nature, which is currently affecting all companies (Henriette & al., 2015; Verhoef, 2021). As a result, digital transformation is no longer a choice or a simple option but clearly signals the need to adapt to the digital landscape as an essential step for business survival (Ferreira & al., 2019; Konopik & al., 2022).

To help companies define their roadmap for digital transformation, several authors emphasise the usefulness of a multidimensional approach as an appropriate and representative means (Valdez-de-Leon, 2016; Chanias & Hess, 2016; Zaoui & Souissi, 2020). Models have been developed in recent years to understand the concept of digital maturity and its prerequisites. Thus, to identify the common factors that explain the degree of success of companies in their digital transformation, we compare the most widely used digital maturity models in the literature on the subject (see table below).

Table N°1: Summary of the main digital maturity models

Reference	Number of dimensions	Maturity levels	Scope of application
O’Hea (2011)	5	5	General
Westerman & al (2012)	2	4	General
Catlin & al (2015)	3	-	General
Berghaus & Back (2016)	9	5	General
Gill & Van Boskirk (2016)	4	4	General
Valdez-de-Leon (2016)	7	6	Specific (Services)
Schumacher & al (2016)	9	5	Specific (Manufacturing)
De Carolis & al (2017)	4	5	Specific (Manufacturing)
Remane & al (2017)	2	5	General
Blatz & al (2018)	6	3	Specific (SMEs)
Canetta & al (2018)	5	-	Specific (Manufacturing)
Colli & al (2018)	5	6	Specific (Manufacturing)
Isaev & al (2018)	7	4	Specific (Services)
Rossmann (2018)	8	-	General
Gurbaxani & Dunkle (2019)	6	4	General
Bandara & al (2019)	7	5	Specific (Banking)
Aslanova & Kulichkina (2020)	5	4	General

Source: Personal elaboration

An examination of the main digital maturity models found in the literature reveals diversity in terms of the methodology adopted (particularly regarding data collection, analysis and presentation), the field of application (general or specific to a particular sector, mainly focused on the industrial sector) and content (i.e. the representative dimensions identified). For the purposes of this research, we have chosen the digital maturity measurement model proposed by Westermann & al. (2012), which combines two dimensions: digital capabilities and transformation management capabilities.

Indeed, analysis of existing digital maturity models shows that the model selected is more comprehensive (covering all the dimensions mentioned in the literature), applicable to a wide range of contexts (general in scope) and facilitates comparative analysis (with a definition of maturity levels and corresponding items). Furthermore, the model in question adopts the

prevailing research trend, taken into account by several authors such as Valdez-de-Leon (2016), Poruban (2017), Isaev & al (2018), Rossmann (2018) and Teichert (2019), which assumes that the development of a set of organizational capabilities leads to greater digital maturity, distinguishing between digital capabilities and managerial capabilities for digital transformation.

1.2. Resilience and performance – Plurality of foundations

1.2.1 Organizational resilience in times of crisis

For several years now, numerous exceptional events have highlighted the vulnerability of companies to large-scale events that could pose a major threat to their business continuity. It is in this context that organizational resilience has become a central concern in strategic management literature as an important concept for companies to manage increasing uncertainty and ensure their sustainability.

The organizational literature highlights two main conceptions of organizational resilience (Abdullah & al., 2013; Akgün & Keskin, 2014; Proag, 2014), namely the passive and active perspectives.

The passive perspective considers resilience to be a company's ability to manage a disruptive event (Börekci & al., 2015). This concept focuses on bouncing back from adverse conditions (Sutcliffe & Vogus, 2003) and on the ability to maintain a desirable level of functioning (Mallak, 1998; Coutu, 2002; Gittel & al., 2006). It suggests an ability to restore the state prior to the event (Bhamra & al., 2011) without suffering significant losses or damage (Sawalha, 2015).

Unlike the passive perspective, the active perspective of resilience goes beyond survival in the face of difficulties. It focuses on the fact that an organisation is likely to grow by taking on challenges thanks to its ability to transform itself and take advantage of unexpected changes (Gilbert & al., 2012; Abdullah & al., 2013). This aspect focuses on identifying potential opportunities combined with the development of new capabilities (Weick, 1988; Coutu, 2002; Lengnick-Hall & Beck, 2005) to seize an opportunity to embark on a new, even more advantageous trajectory (Darkow, 2019).

1.2.2 Financial performance in the light of increased competition

In the field of management, performance has always been an ambiguous concept, rarely defined explicitly and characterised by divergent perceptions and interpretations among corporate stakeholders. Historically, according to Amaazoul (2018, p.21), in the 1960s, company performance focused on productivity (knowing how to produce), then ten years later shifted to

the commercial function (knowing how to sell: profitability), moved on to the financial markets in the 1970s (knowing how to borrow and use financial leverage: profitability), focusing in the 1980s on the Human Resources function (managing human capital as a resource: return), and in the 1990s on the concept of social responsibility (managing stakeholders and participating in the achievement of sustainable development objectives: global performance).

In line with the growing importance attached to organizational resilience of companies, the concept of performance, particularly its financial aspect, is of key importance as a determining factor for the survival of companies, especially in highly competitive markets.

A company's financial performance refers to " the extent to which a company achieves its financial objectives relative to its main competitors " (Cao & Zhang, 2011, p.167). According to Guérard (2006), it can also be defined as the achievement of good profitability and satisfactory growth, enabling the creation of value for shareholders.

Similarly, for Adair & Berguiga (2010), financial performance is essentially associated with financial and operational self-sufficiency, as well as achieving profitability that maximises staff efficiency and productivity.

As reported by Sahut & Lantz (2003), financial performance is generally linked to the value, results, return or accounting aspects of the company. Thus, this performance can be defined as the company's ability to cover all its expenses with its products and generate a margin to finance its growth and development projects.

2. Digital maturity, organizational resilience and financial performance – Modelling attempt

The objective of our study is to examine the correlation between the concepts of digital maturity, organizational resilience and financial performance. Drawing on the theories deployed and the conclusions of previous research, which we analyse in turn, we establish a theoretical framework appropriate to our study and thus propose our research hypotheses.

2.1. Theoretical background of the study

2.1.1 Task-technology fit Theory

Given that interactions between factors such as technology, users, systems, tasks and processes are too complex, measures have been proposed to quantify the impact and value created by technology, including the theory of Task-technology fit. The basic principle of this theory states that results depend on how well the technologies used and the tasks to be performed are matched to each other. This idea stems from contingency theory, which posits that organizational

effectiveness depends on the match within the organisation between certain of its characteristics and the specific circumstances it faces.

Thus, the study conducted by Goodhue & Thompson (1995) demonstrates that for a technology to have a positive impact, it is essential that the task be suited to the technology in question. Consequently, when the technology corresponds to the specificities of the task it is intended to support, it should result in optimised performance.

2.1.2 Socio-technical Theory

According to socio-technical theory, the organisation of work depends not only on technology or human behaviour, but on the interaction between these two factors. As Hatch & Cunliffe (2009, p.67) pointed out: " behaviour and technology are interrelated, and [...] any change in technology will affect social relations, attitudes and feelings towards work, which in turn will affect the contributions of technology ".

The concept of digital maturity is considered a socio-technical process combining technical and social components that interact to achieve a common goal (Sony & Naik, 2020). In this sense, researchers have revealed that most studies on digital transformation or digital maturity focus on the technical aspects of the change operated (Sony & Naik, 2020), and others have called for research on socio-technical perspectives, such as Davies & al. (2017).

2.1.3 Resource-based Theory

Resource-based theory (RBV) asserts that companies possess resources that enable them to achieve superior performance and gain a competitive advantage (Barney, 1991). Consequently, considerations regarding the role of technology in optimising companies' performance suggest that technology does not have a direct and univocal effect on performance, but rather a complementary effect with other organizational resources (Wade & Hulland, 2004; Neirotti & al., 2017).

For example, Powell & Dent-Micallef (1997) concluded that companies achieve superior performance when technologies and human resources are used in a complementary manner, and Benjamin & Levinson (1993) emphasised that performance is influenced by how technologies are integrated with organizational, technical and commercial resources. Furthermore, Ravichandran (2018) analysed complementary capabilities within the framework of RBV, such as human capital and IT partnerships, demonstrating that "complex sets of IT-related resources, skills and knowledge, exercised through business processes, enable companies to coordinate their activities and use IT assets to deliver the expected results " (Stoel & Muhanna, 2009, p.189).

As a result, RBV can serve as a framework for examining issues related to digital maturity by combining its two components (digital capabilities and transformation management capabilities) to identify its impact on companies' financial performance.

2.1.4 Dynamic Capabilities Theory

According to Melville & al. (2004) and Bhatt & Grover (2005), information technology resources, whether technological or human, are combined to create unique capabilities that improve a company's performance and provide it with a competitive advantage. While RBV facilitates understanding of the correlation between resources and performance, this correlation may nevertheless provide only a temporary advantage that can weaken over time, especially in the field of technology, where the speed and adoption of innovation make it difficult to maintain an inimitable advantage.

In this context, the constant change in the environment has called into question the initial proposals of the RBV, which were considered static and neglectful of the influence of market dynamics, leading to a rethinking of the adaptability of traditional economic models in the face of increasing volatility. This is why dynamic capabilities, which encompass the evolving nature of resources and capabilities, were introduced to improve RBV (Helfat, 1997; Teece & al., 1997).

Karimi & Walter (2015) focus on the role of dynamic capabilities in responding to digital disruption with a case study of the newspaper industry, while El Sawy & al. (2010) describe digital transformation as a disorderly, complex and chaotic phenomenon consisting of a simultaneous increase in environmental turbulence, the speed of organizational change and the greater omnipresence of digital technologies. Due to its continuous evolution, digital maturity can be assimilated to a process of building dynamic capabilities for the continuous strategic renewal of companies.

Furthermore, organizational resilience has been examined in several studies based on the resource-based view (RBV) approach (e.g. Lengnick-Hall & al., 2011; Winnard & al., 2014; Tognazzo & al., 2016; Branicki & al., 2017). However, as resilience is closely linked to external pressures, RBV, as a static theory, cannot, on its own, highlight its complex nature. As a dynamic process, resilience can be optimised over time by strengthening the company's capabilities (Sutcliffe & Vogus, 2003; Tasic & al., 2020).

Based on these considerations, the dynamic capabilities theory provides an appropriate framework for examining whether digital maturity could be leveraged to facilitate organizational resilience and consolidate financial performance. It addresses the limitations of

the traditional resource-based view, which overlooks dynamism, environmental contingencies and the roles of managers.

2.2. Theoretical framework and formulation of hypotheses

We formulated our hypotheses after a detailed analysis of the literature that highlights the key concepts of our study. We describe them briefly in the following paragraphs.

2.2.1 Digital maturity and organizational resilience

The recent COVID-19 health crisis has certainly posed major challenges for the survival and growth of companies, but it has also highlighted the important role of digital transformation. According to Nachit & Belhcen (2020), by adopting digital transformation, many Moroccan companies have managed to maintain their operations and respond to the crisis.

Research by Viana & al (2023) explored the link between the degree of digital maturity and the resilience of micro-enterprises in Iberia immediately after the COVID-19 pandemic and concluded that those with more advanced digital maturity demonstrated a higher degree of resilience. According to Robertson & al (2022), small and medium-sized retail businesses that have achieved digital maturity show a higher degree of organizational resilience, i.e. a set of adaptive skills that enable an entity to detect, assimilate and manage unexpected events.

The findings of the analysis by He & al (2023) attest to the critical importance of investing in digital technologies to equip organisations with the tools and resources they need to strengthen their resilience. These results also demonstrate that the capacity associated with transformation management provides the organisation with a vision, governance and culture oriented towards change, thereby strengthening the organisation's resilience at both the individual and systemic levels.

In the same vein, Oh and Teo (2006) attempted to capture the influences of digital technology and managerial proactivity on strengthening organizational resilience, focusing on the context of multi-channel retail organisations. Based on a survey of 125 networked retail companies, they found that advanced technological skills and proactive management both contribute significantly to enhancing organizational resilience.

Therefore, based on the above arguments, we hypothesise that:

Hypothesis 1: Digital maturity has a positive impact on the organizational resilience of companies.

2.2.2 Digital maturity and financial performance

Digital transformation has a profound influence on the development trajectory of companies. According to Melville & al (2004), digital resources (whether technological or human) generate economic value for a company by offering operational efficiency, which manifests itself in optimised performance (such as increased sales and profitability).

Another case study is provided by Bharadwaj (2000), who, based on the resource-based approach, conducted an empirical analysis to establish the relationship between technological resources (including IT human resources and technology-related intangible assets) and the performance of United States publicly traded companies. The findings show that companies with strong technological capabilities performed better financially.

Westerman & al. (2012) studied the financial performance of 184 listed companies in the United States to assess the influence of digital maturity (which includes digital capabilities and other organizational skills related to transformation management) on financial performance. In this regard, companies that are well developed in either of these two areas outperform their industry peers in terms of financial performance, including revenue generation, profitability and market value.

Based on research conducted on 1,900 companies in Europe and the United States, Grebe & al (2018) confirmed that consolidating digital maturity led to a significant improvement in competitive advantage across various performance metrics, such as time to market, profitability, product quality and customer satisfaction.

A comparative study conducted by Eremina & al (2019) on the digital maturity of listed companies revealed a positive correlation between this maturity and various financial indicators, such as increased sales. Furthermore, Weill and Woerner (2015) observed that companies that are heavily involved in digital ecosystems outperform their counterparts in the same sector in terms of performance.

According to research carried out by Bughin & al (2017), based on their digital intelligence or maturity index, digital leaders can cope with digital pressure and have scores that are strongly correlated with growth in financial indicators, particularly margins and turnover.

Thus, given that most studies indicate a positive relationship, hypothesis 2 was developed:

Hypothesis 2: Digital maturity has a positive impact on companies' financial performance.

2.2.3 Organizational resilience and financial performance

Some studies linking organizational resilience and business performance have produced controversial results. In this regard, although the literature on crisis management indicates that resilience capacity influences companies' performance (Mallak, 1998; Hamel & Valikangas, 2003; Lengnick-Hall & al., 2011; Lawes & Kingwell, 2012; Fatoki, 2018; Yu & al., 2019; Suryaningtyas & al., 2019; Fathi & al., 2021; Dovbischuk, 2022; Pratono, 2022; Garrido-Moreno & al., 2024), some authors note the absence of a direct and significant impact (Hallak & al., 2018; Hamsal & al., 2022).

Among recent empirical research confirming the relationship between organizational resilience and company performance (in all its forms) is Dovbischuk (2022), who observed that a higher level of resilience was positively associated with better company performance. A study by Fathi & al. (2021) analysed the link between organizational resilience, strategic foresight, competitive advantage and the performance of pharmaceutical companies and found that organizational resilience has a positive and significant influence on the performance of these companies.

Empirical research undertaken by Yu & al. (2019) pointed out the positive impact of supply chain resilience on the financial performance of Chinese manufacturing companies. Pratono & al. (2022) also provided empirical validation showing that organizational resilience has the most significant impact on companies' competitive advantage, as assessed by their financial performance.

However, in contrast to the above-mentioned research, Hallak & al. (2018) explored the relationships between resilience, creative self-efficacy, business innovation and performance in the restaurant industry. They determined that organizational resilience has no direct impact on companies' performance.

Furthermore, the study conducted on the hotel industry by Hamsal & al (2022) during the COVID-19 pandemic supports the findings of Hallak & al (2018) and indicates that organizational resilience has no significant impact on either financial or non-financial performance.

Given the inconclusive evidence regarding the relationship between organizational resilience and performance, particularly financial performance, we propose the following hypothesis:

Hypothesis 3: Organizational resilience has a positive impact on companies' financial performance.

3. Exploratory qualitative study and proposal for a conceptual model

For this work, we focus our analysis on the financial sector in Morocco by studying two key areas of financial services, namely the banking and insurance sectors, which alone account for 70% of the overall balance sheet of the national financial system according to the annual report on financial stability for 2024 in Morocco.

We have chosen to focus on these companies because we are interested in studying:

- The digital maturity of these regulated companies undergoing digital transformation.
- The resilience of these financial companies given their systemic nature, their role in the national economy and their social importance.
- The financial solidity of these companies considering the multiple risks to which they are exposed.

3.1. Qualitative study methodology

Qualitative studies aim to explore the various mechanisms characterising a specific phenomenon, clarifying its components in relation to a particular context (Giannelloni & Vernet, 2015). In this sense, our qualitative research is characterised by a comprehensive approach in a specific context, i.e. the Moroccan financial sector.

3.1.1 Data collection

As a tool for collecting qualitative data, interviews facilitate analysis of the meaning that actors give to their practices and the events they encounter, their value systems, their representations and their interpretations of different types of situations. According to Blanchet (2007), interviews are used to contextualise results previously obtained through questionnaires, observation or documentary research. It therefore enables the interpretation of data that has already been produced.

As part of our qualitative survey, we decided to use a widely used investigative tool, the semi-structured interview, due to its advantages in terms of deployment, particularly in relation to data availability, the cost of data collection and the time budget allocated.

3.1.2 Selection of respondents

To this end, we used a reasoned sampling strategy for our study population, targeting key informants who constituted a rich source of information based on several criteria (experience, knowledge and scope of intervention). In this regard, our unit of analysis consists of professionals from institutions operating in the banking and insurance sector who are involved in one or more of the topics covered by our research.

Of the five participants initially contacted, two agreed to participate in the interview. The list of financial companies included in our qualitative study is presented in the table below.

Table N°2: Characteristics of the qualitative study sample

<u>Enterprise</u>	<u>Gender</u>	<u>Experience (years)</u>	<u>Entity/scope</u>	<u>Sector</u>
A	Male	6	Information systems management	Banking
B	Male	15	Executive Management	Insurance

Source: Personal elaboration

To conduct interviews with the selected individuals, we developed an interview guide that addressed the previously defined research hypotheses. According to Tessier (1993, p.168), "the interview guide is a written document that allows essential elements to be addressed with the interviewee and contains either specific questions or topics to be covered, including clearly defined sub-topics and reference points".

Prior to questioning the participants, the interview guide was submitted to respondents corresponding to the pre-established corpus. The purpose of this test was to adjust the interview guide based on any inconsistencies observed (sequence and precision of questions, terms used, introduction of new questions, etc.). The interview guide is divided into three main parts: (i) digital maturity and its contribution to organizational resilience, (ii) digital maturity and its relationship with financial performance, and (iii) organizational resilience and its link to financial performance.

Using the selected sample, we conducted semi-structured interviews via videoconference, each lasting 40 to 50 minutes, with the individuals concerned during the month of July 2025. To conduct our interviews, we used French as the language of communication, as this is the language used by the informants given their level of fluency, without any need for translation of the exchanges.

3.1.3 Data processing

Indeed, for the planned data collection, many experts recommend making audio recordings of the interviews. This allows for the faithful preservation of the verbatim by transcribing the survey participant's comments in full. However, in our situation, the people we approached firmly refused to be recorded. Therefore, to avoid the risk associated with retaining information, we opted to take notes during these interviews.

Our approach is in line with the research of Savall & Zardet (2004, p.210), who state that "exhaustive notetaking is preferable to magnetic recording. The latter often creates suspicion about the anonymity of the interviews and the risk of misuse of the interviews, thereby reducing

confidence and, as a result, the fluidity and spontaneity of expression. Furthermore, taking exhaustive notes forces the researcher to concentrate on this task, which encourages them to limit their own speaking time, thereby maximising their interlocutor's ".

The analysis of the semi-structured individual interviews was carried out using Nvivo software for content analysis. According to Thiétart (2014, p.552), this type of analysis "is based on the assumption that the repetition of units of discourse analysis (words, sentences, paragraphs) reveals the interests and concerns of the authors of the discourse ".

Following the transformation of the data by establishing nodes and defining categories, we set up a thematic analysis matrix, given the prevalence of this type of analysis in organizational research (Dougherty & Bowman, 1995).

3.2. Results of the qualitative study and proposal for a conceptual model

3.2.1 Results of the qualitative study

Examination of the verbatim transcripts collected at the end of the interviews enabled us to identify recurring words in the participants' discourse, primarily digital technologies (in relation to investment in digital capabilities) and managerial approaches associated with digital transformation management (particularly leadership capabilities), but also expressions such as preparation (planning for crises), adaptation, resilience and financial performance. This leads us to conclude that the various variables highlighted above in our theoretical framework seem relevant to include in our conceptual model.

The figure below shows the word cloud, a form of semantic synthesis in which the main concepts are assigned a size proportional to their relevance in the content of the semi-structured interviews.

Figure N°1: Cloud of most frequent words



Source: Nvivo

Following the analysis of frequently used words, using the condensed matrix produced by Nvivo software, we were able to extract comments from interviewees to compare them according to research themes.

When discussing the relationship between digital maturity and organizational resilience, the interviewees agreed on the combined effect of digital capabilities and associated managerial capabilities on effective crisis response, thereby contributing to improved organizational resilience in financial companies. Indeed, one interviewee stated that " advances in our online platforms and mobile payment systems optimise operational procedures, reduce expenses and strengthen our resilience by making them more flexible in response to changing market dynamics ". For their part, transformation management capabilities were highlighted by both interviewees, with one of them emphasising their importance: "For us, digital is not just a question of technological tools or social media presence. It is about fundamentally and continuously restructuring processes, practices and culture to become more open, agile and innovative, so that we can seize opportunities and respond to the challenges posed by our environment".

About the contribution of digital maturity to the financial performance of financial institutions, respondents indicated that profitability parameters have increased in recent years due not only to the usual economic factors, but also to digital maturity, which continues to play a crucial role in this area by generating a double effect on financial performance. Firstly, they confirm that despite its costs, savings are being made in terms of digital maturity: "We see digital as a lever for development rather than a threat. Digital transformation is not a risky investment and, if carefully planned, its cost is more than offset by the opportunities it offers. The impact is almost obvious to me because digital maturity means increased efficiency, cost control and improved customer satisfaction." The other aspect raised, highlighting the role of digital maturity in improving financial performance, concerns revenue growth through financial inclusion and "that successful technology integration can promote customer acquisition, retention and loyalty, resulting in increased sales and superior financial performance for the company".

Regarding the role of organizational resilience in promoting consistent financial performance, interviewees focused on the impact of the specific context of the COVID-19 pandemic, noting that the contribution is evident given that: "The spread of COVID-19 has reduced the scale of consumer financing and increased the vulnerability of financial institutions by raising operational risk and reducing profitability".

In addition to the elements identified, the interviews revealed a new variable, namely environmental turbulence, which we added to the theoretical model initially suggested. Indeed, both interviewees repeatedly insisted on the need to consider the turbulent and rapidly changing environment surrounding the global and national financial ecosystem. One of the interviewees stated that "in a financial context marked by environmental turbulence, resilience is a key and existential objective of our business". This environmental context not only has a substantial impact on the degree of digital maturity, but also determines the effectiveness of crisis response measures, in this case resilience. This notion was also highlighted by the other respondent, who stated that "the digital revolution is a recent development for us, but one that will intensify in the coming years, in my opinion due to the environmental turbulence caused by changes in our business, particularly in terms of technology, competition and relationships".

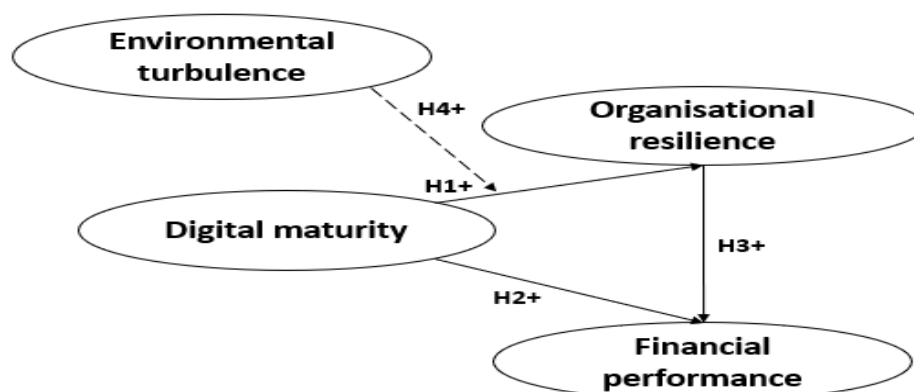
3.2.2 Proposal for a conceptual model

Alongside the interviews conducted, and as explained above, both interviewees highlighted the importance of environmental turbulence, which impacts not only the digital maturity of the company, but also its ability to cope effectively with adversity. Thus, hypothesis 1, which assumes a positive link between digital maturity and organizational resilience, could be affected by the moderating variable related to the degree of environmental turbulence. Based on our qualitative research, we formulate our fourth research hypothesis as follows:

Hypothesis 4: Environmental turbulence positively moderates the relationship between digital maturity and companies' organizational resilience.

Considering the four hypotheses developed, the research model has been readjusted as illustrated in the figure below.

Figure N°2: Conceptual model of the research



Source: Personal elaboration

Conclusion

In recent years, the world has faced a series of major crises, leading to profound changes in the economic, social and financial landscape. These changes have resulted in high levels of uncertainty and the emergence of new complex risks that need to be anticipated and managed. Against this backdrop, the aim of this study is to provide a theoretical analysis and qualitative study of the level of association between digital maturity, organizational resilience and financial performance among companies in the banking and insurance sectors in Morocco.

❖ Theoretical contributions and managerial implications

Theoretically, our study falls within an emerging field of research in Morocco and addresses a contemporary topic, namely digital maturity. Indeed, we noticed a lack of research on the key success factors of digital transformation within large traditional companies, particularly those subject to specific regulatory frameworks. As a result, we have contributed to the literature on this topic by analysing digital maturity capabilities and study their impact on both organizational resilience and financial performance.

Furthermore, our findings expand on the theory of dynamic capabilities by revealing that digital maturity and organizational resilience are essential capabilities that enable companies to respond effectively to external pressures. We thus enrich the theoretical corpus on the subject by offering a direct and detailed overview of the links between the three concepts mentioned above. At the same time, we have incorporated the intermediate (moderating) variable of environmental turbulence into our conceptual model, which has facilitated a detailed explanation of the relationship between digital maturity and organizational resilience.

From a managerial perspective, our findings could initially help draw attention to the issue of organizational resilience and digital maturity in the face of uncertainty that is already at work. Furthermore, the model developed can provide practitioners with an organised approach to developing digital maturity support capabilities and helps them understand the impact of these aspects on improving organizational resilience and financial performance, particularly in times of crisis.

This study also provide evidence to public decision-makers and regulatory authorities in the sector in question, who could consider increasing their efforts to raise awareness among regulated financial institutions in order to strike a balance between, on the one hand, the development of technological innovations, given their contributions to resilience and performance, and, on the other, the control of the risks inherent in the use of these new technologies.

❖ Limitations and future research

Like all research, our work has limitations that must be considered when interpreting the results, thus creating opportunities for future studies.

First, to answer our research question, we conducted qualitative research by interviewing stakeholders in the Moroccan financial sector. It would therefore be appropriate in future research to test the validity of the proposed model and the hypotheses formulated by means of a confirmatory quantitative survey of this sector, which would allow the results to be generalized.

Secondly, due to the predominantly practical nature of the digital maturity models analysed, the comprehensiveness of the literature review on digital maturity remains questionable. In future studies, it would be appropriate to enrich the suggested conceptualisation of digital maturity with other representative or emerging dimensions from the literature.

Thirdly, this study focuses on only one aspect of business performance, namely the financial aspect. Future studies could therefore include other dimensions of performance, such as non-financial performance, or even examine global performance, which combines environmental, social and governance performance, in a context marked by a gradual transition towards green finance.

Fourthly, regarding organizational resilience, numerous studies highlight that the concept does not constitute an absolute capacity but is largely dependent on the nature, scale and implications of the context or adversity that has arisen. It would therefore be desirable to subsequently test the organizational resilience of companies in a specific context (e.g. a particular crisis), in a dynamic sector such as the financial sector like tourism or in specific companies such as SMEs.

References

Papers

- Abdullah, N. A. S., Noor, N. L. M., & Ibrahim, E. N. M. (2013, November). Resilient organization: Modelling the capacity for resilience. In 2013 International Conference on Research and Innovation in Information Systems (ICRIIS) (pp. 319-324). IEEE.
- Adair, P., & Berguiga, I. (2010). Les facteurs déterminants de la performance sociale et de la performance financière des institutions de microfinance dans la région MENA: une analyse en coupe instantanée. *Région et développement*, 32, 91-119.
- Akgün, A. E., & Keskin, H. (2014). Organisational resilience capacity and firm product innovativeness and performance. *International Journal of Production Research*, 52(23), 6918-6937.
- Amaazoul, H. (2018). Synthèse des principales approches définitoires du concept de performance en sciences de gestion. *Revue de Consolidation Comptable et de Management de la Performance*, (2).
- Aslanova, I. V., & Kulichkina, A. I. (2020, May). Digital maturity: Definition and model. In 2nd International Scientific and Practical Conference "Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth" (MTDE 2020) (pp. 443-449). Atlantis Press.
- Bandara, O., Vidanagamachchi, K., & Wickramarachchi, R. (2019, March). A model for assessing maturity of industry 4.0 in the banking sector. In *Proceedings of the international conference on industrial engineering and operations management* (Vol. 2019).
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Benjamin, R. I., & Levinson, E. (1993). A framework for managing IT-enabled change. *Sloan Management Review*, 34(4), 23-33.
- Berghaus, S., & Back, A. (2016). Stages in digital business transformation: Results of an empirical maturity study.
- Besson, P., & Rowe, F. (2012). Strategizing information systems-enabled organizational transformation: A transdisciplinary review and new directions. *The journal of strategic information systems*, 21(2), 103-124.
- Bhamra, R., Dani, S., & Burnard, K. (2011). Resilience: the concept, a literature review and future directions. *International journal of production research*, 49(18), 5375-5393.
- Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS quarterly*, 169-196.
- Bhatt, G. D., & Grover, V. (2005). Types of information technology capabilities and their role in competitive advantage: An empirical study. *Journal of management information systems*, 22(2), 253-277.
- Blanchet, A. (2007). *L'enquête et ses méthodes: l'entretien*. Armand Colin.
- Blatz, F., Bulander, R., & Dietel, M. (2018, June). Maturity model of digitization for SMEs. In 2018 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC) (pp. 1-9). IEEE.
- Borekci, D., Rofcanin, Y., & Gürbüz, H. (2015). Organisational resilience and relational dynamics in triadic networks: a multiple case analysis. *International Journal of Production Research*, 53(22), 6839-6867.
- Branicki, L. J., Sullivan-Taylor, B., & Livschitz, S. R. (2017). How entrepreneurial resilience generates resilient SMEs. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1244-1263.
- Bughin, J., Catlin, T., Hall, B., & Van Zeebroeck, N. (2017). Improving your digital intelligence. *MIT Sloan management review*.
- Canetta, L., Barni, A., & Montini, E. (2018, June). Development of a digitalization maturity model for the manufacturing sector. In 2018 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC) (pp. 1-7). IEEE.
- Cao, M., & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. *Journal of operations management*, 29(3), 163-180.
- Catlin, T., Scanlan, J., & Willmott, P. (2015). Raising your digital quotient. *McKinsey Quarterly*, 3, 30-43.
- Chaniyas, S., & Hess, T. (2016). How digital are we? Maturity models for the assessment of a company's status in the digital transformation. *Management Report/Institut für Wirtschaftsinformatik und Neue Medien*, (2), 1-14.
- Colli, M., Madsen, O., Berger, U., Möller, C., Wæhrens, B. V., & Bockholt, M. (2018). Contextualizing the outcome of a maturity assessment for Industry 4.0. *Ifac-papersonline*, 51(11), 1347-1352.
- Coutu, D. L. (2002). How resilience works. *Harvard business review*, 80(5), 46-56.
- Darkow, P. M. (2019). Beyond "bouncing back": Towards an integral, capability-based understanding of organizational resilience. *Journal of Contingencies and Crisis Management*, 27(2), 145-156.
- Davies, R., Coole, T., & Smith, A. (2017). Review of socio-technical considerations to ensure successful implementation of Industry 4.0. *Procedia Manufacturing*, 11, 1288-1295.
- De Carolis, A., Macchi, M., Negri, E., & Terzi, S. (2017). A maturity model for assessing the digital readiness of manufacturing companies. In *Advances in Production Management Systems. The Path to Intelligent*,

Collaborative and Sustainable Manufacturing: IFIP WG 5.7 International Conference, APMS 2017, Hamburg, Germany, September 3-7, 2017, Proceedings, Part I (pp. 13-20). Springer International Publishing.

- Dougherty, D., & Bowman, E. H. (1995). The effects of organizational downsizing on product innovation. *California Management Review*, 37(4), 28-44.
- Dovbischuk, I. (2022). Innovation-oriented dynamic capabilities of logistics service providers, dynamic resilience and firm performance during the COVID-19 pandemic. *The International Journal of Logistics Management*, 33(2), 499-519.
- EL AMRI, A., OULFARSI, S., EDDINE, A. S., EL KHAMLI, A., HILMI, Y., IBENRISSOUL, A., & BOUTTI, R. (2022). Carbon Financial Market: The Case of the EU Trading Scheme. In *Handbook of Research on Energy and Environmental Finance 4.0* (pp. 424-445). IGI Global.
- EL KEZAZY, H., & HILMI, Y. (2022). Towards More Agile Management: Literature Review of Information Systems as the Pillar of Management Control. *Revue Internationale du Chercheur*, 3(4).
- EL KEZAZY, H., & HILMI, Y. (2023). Improving Good Governance Through Management Control in Local Authorities. *International Review of Management And Computer*, 7(3).
- EL KEZAZY, H., & HILMI, Y. (2023). L'Intégration des Systèmes d'Information dans le Contrôle de Gestion Logistique: Une Revue de Littérature. Agence Francophone.
- EL KEZAZY, H., HILMI, Y., EZZAHRA, E. F., & HOCINE, I. Z. H. (2024). Conceptual Model of The Role of Territorial Management Controller and Good Governance. *Revista de Gestão Social e Ambiental*, 18(7), e05457-e05457.
- El Sawy, O. A., Malhotra, A., Park, Y., & Pavlou, P. A. (2010). Research commentary—seeking the configurations of digital ecodynamics: It takes three to tango. *Information systems research*, 21(4), 835-848.
- Eremina, Y., Lace, N., & Bistrova, J. (2019). Digital maturity and corporate performance: The case of the Baltic states. *Journal of open innovation: technology, market, and complexity*, 5(3), 54.
- Fathi, M., Yousefi, N., Vatanpour, H., & Peiravian, F. (2021). The effect of organizational resilience and strategic foresight on firm performance: competitive advantage as mediating variable. *Iranian Journal of Pharmaceutical Research: IJPR*, 20(4), 497.
- Fatoki, O. (2018). The impact of entrepreneurial resilience on the success of small and medium enterprises in South Africa. *Sustainability*, 10(7), 2527.
- Ferreira, J. J., Fernandes, C. I., & Ferreira, F. A. (2019). To be or not to be digital, that is the question: Firm innovation and performance. *Journal of Business research*, 101, 583-590.
- Garrido-Moreno, A., Martín-Rojas, R., & García-Morales, V. J. (2024). The key role of innovation and organizational resilience in improving business performance: A mixed-methods approach. *International Journal of Information Management*, 77, 102777.
- Giannelloni, J. L. & Vernet, E. (2015). *Etudes de marché*. Vuibert.
- Gibert, P. (1980). *Le contrôle de gestion dans les organisations publiques*, Paris, Les Éditions d'organisation.
- Gill, M., & VanBoskirk, S. (2016). The digital maturity model 4.0. *Benchmarks: digital transformation playbook*.
- Gittel, J. H., Cameron, K., Lim, S., & Rivas, V. (2006). Relationships, layoffs, and organizational resilience: Airline industry responses to September 11. *The Journal of applied behavioral science*, 42(3), 300-329.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS quarterly*, 213-236.
- Grebe, M., Rüßmann, M., Leyh, M., & Franke, M. R. (2018). Digital maturity is paying off. *Boston Consulting Group*, 34.
- Guérard, S. (2006). *Regards croisés sur l'économie mixte: Approche pluridisciplinaire-Droit public et droit privé*. Editions L'Harmattan.
- Gurbaxani, V., & Dunkle, D. (2019). Gearing up for successful digital transformation. *MIS Q. Executive*, 18(3), 6.
- Hallak, R., Assaker, G., O'Connor, P., & Lee, C. (2018). Firm performance in the upscale restaurant sector: The effects of resilience, creative self-efficacy, innovation and industry experience. *Journal of Retailing and Consumer Services*, 40, 229-240.
- Hamel, G., & Valikangas, L. (2003). Why resilience matters. *Harvard Business Review*, 81(9), 56-57.
- Hamsal, M., Abidinagoro, S. B., Zulkarnain, A., Leonandri, D. G., & Ichsan, M. (2022). The impact of organizational resilience on hotel performance during pandemic COVID-19. *Global Business & Finance Review*, 27(1), 1.
- Hatch, M. J., & Cunliffe, A. L. (2009). *Théorie des organisations: de l'intérêt de perspectives multiples*. De Boeck Supérieur.
- He, Z., Huang, H., Choi, H., & Bilgihan, A. (2023). Building organizational resilience with digital transformation. *Journal of Service Management*, 34(1), 147-171.

- Helfat, C. E. (1997). Know-how and asset complementarity and dynamic capability accumulation: the case of R&D. *Strategic management journal*, 18(5), 339-360.
- Henriette, E., Feki, M., & Boughzala, I. (2015). The shape of digital transformation: A systematic literature review.
- HILMI, Y. (2013). L'audit interne au Maroc : Degré d'intégration et spécificités de l'entreprise. *Revue Marocaine de Recherche en Management et Marketing*, 0(8). doi:<https://doi.org/10.48376/IMIST.PRSM/remarem-v0i8.3502>
- HILMI, Y. (2014). Degré d'intégration de l'audit interne et performance des entreprises marocaines/cas de la région de rabat-sale-Zemmour-Zaïr.
- HILMI, Y. (2024). Cloud computing-based banking and management control. *International Journal of Automation and Digital Transformation*, 3(1), 86-92.
- HILMI, Y. (2024). Contrôle de gestion dans les banques islamiques: Une revue de littérature. *Recherches et Applications en Finance Islamique (RAFI)*, 8(1), 23-40.
- HILMI, Y. (2024). Le contrôle de gestion au niveau des clubs sportifs : Approche théorique. *PODIUM OF SPORT SCIENCES*, 2(2), 67–78. Consulté à l'adresse : <https://revues.imist.ma/index.php/PODIUM/article/view/46161>
- HILMI, Y., & EZ-ZARZARI, Z. (2020). Contrôle interne de l'information financière et exigences de la loi Sarbanes-Oxley : Évaluation et proposition d'une démarche d'implémentation pour les entreprises marocaines. *Revue Du contrôle, De La Comptabilité Et De l'audit*, 4(2). Retrieved from <https://www.revuecca.com/index.php/home/article/view/545>
- HILMI, Y., & FATINE, F. E. (2022). The Contribution of internal audit to the corporate performance: a proposal of measurement indicators. *International Journal of Performance and Organizations*, 1(1), 45-50.
- HILMI, Y., & FATINE, F. E. (2022). Transformation digitale des cabinets d'audit par les réseaux sociaux: Cas de KPMG. *International Journal of Economics and Management Sciences*, 1(1).
- HILMI, Y., & HELMI, D. (2024). Impact du big data sur le métier de contrôleur de gestion: Analyse bibliométrique et lexicométrique de la littérature. *Journal of Academic Finance*, 15(1), 74–91. Consulté à l'adresse <https://www.scientific-society.com/journal/index.php/AF/article/view/799>
- HILMI, Y., & HILMI, M. (2016). Le développement de l'employabilité, outil pour limiter l'inadéquation formation emploi: Cas du métier d'un responsable financier. *Revue Marocaine de recherche en management et marketing*, 1(13).
- HILMI, Y., & HILMI, M. (2019). LA PRATIQUE DE L'AUDIT MARKETING DANS LES ENTREPRISES MAROCAINES: CAS DE LA VILLE D'EL JADIDA. *Revue Internationale du Marketing et Management Stratégique*, 1(1).
- HILMI, Y., & KAIZAR, C. (2023). Le contrôle de gestion à l'ère des nouvelles technologies et de la transformation digitale. *Revue Française d'Economie et de Gestion*, 4(4).
- HILMI, Y., & NAJI, F. (2016). Audit social et performance de l'entreprise : une étude empirique au sein du champ organisationnel marocain. *Revue des Etudes Multidisciplinaires en Sciences Economiques et Sociales*, 1(3). doi:<https://doi.org/10.48375/IMIST.PRSM/remses-v1i3.5271>
- HILMI, Y., FATINE, F. E., AJARRAR, N., & BELKBIRA, F. (2020). La pratique de la gouvernance d'entreprise dans la période de crise du Covid-19. *Quelles reconfigurations Economiques, Managerielles et Culturelles à l'Epreuve du COVID 19?*, 66.
- HILMI, Y., ZOUINE, A., & FATINE, F. E. (2020). La mise en place d'un manuel de procédure d'application des IAS/IFRS, comme outil du contrôle interne. *International Journal of Management Sciences*, 3(2).
- Isaev, E. A., Korovkina, N. L., & Tabakova, M. S. (2018). Evaluation of the readiness of a company's IT department for digital business transformation. *Бизнес-информатика*, (2 (44) eng), 55-64.
- Karimi, J., & Walter, Z. (2015). The role of dynamic capabilities in responding to digital disruption: A factor-based study of the newspaper industry. *Journal of Management Information Systems*, 32(1), 39-81.
- KOBIYH, M., EL AMRI, A., OULFARSI, S., & HILMI, Y. (2023). Behavioral finance and the imperative to rethink market efficiency. *Financial Markets, Institutions and Risks*, 7(4), 38-53.
- Konopik, J., Jahn, C., Schuster, T., Hoßbach, N., & Pflaum, A. (2022). Mastering the digital transformation through organizational capabilities: A conceptual framework. *Digital Business*, 2(2), 100019.

- Lawes, R. A., & Kingwell, R. S. (2012). A longitudinal examination of business performance indicators for drought-affected farms. *Agricultural Systems*, 106(1), 94-101.
- Lengnick-Hall, C. A., & Beck, T. E. (2005). Adaptive fit versus robust transformation: How organizations respond to environmental change. *Journal of management*, 31(5), 738-757.
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human resource management review*, 21(3), 243-255.
- Mallak, L. (1998). Putting organizational resilience to work. *INDUSTRIAL MANAGEMENT-CHICAGO THEN ATLANTA-*, 8-13.
- Mazzone, D. M. (2014). Digital or death: digital transformation: the only choice for business to survive smash and conquer. Smashbox Consulting Inc.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly*, 283-322.
- Nachit, H., & Belhcen, L. (2020). Digital transformation in times of COVID-19 Pandemic: the case of Morocco. Available at SSRN 3645084.
- Neirotti, P., Raguseo, E., & Paolucci, E. (2017). Flexible work practices and the firm's need for external orientation: An empirical study of SMEs. *Journal of Enterprise Information Management*, 30(6), 922-943.
- O'Hea, K. (2011). Digital capability: how to understand, measure, improve and get value from it. IVI Executive Briefing Series.
- Oh, L. B., & Teo, H. H. (2006). The impacts of information technology and managerial proactiveness in building net-enabled organizational resilience. In *The Transfer and Diffusion of Information Technology for Organizational Resilience: IFIP TC8 WG 8.6 International Working Conference*, June 7–10, 2006, Galway, Ireland (pp. 33-50). Springer US.
- Poruban, S. (2017). Achieving digital maturity. *Oil & Gas Journal*, 115(7), 14-14.
- Powell, T. C., & Dent-Micallef, A. (1997). Information technology as competitive advantage: The role of human, business, and technology resources. *Strategic management journal*, 18(5), 375-405.
- Pratono, A. H. (2022). The strategic innovation under information technological turbulence: the role of organisational resilience in competitive advantage. *Competitiveness Review: An International Business Journal*, 32(3), 475-491.
- Proag, V. (2014). The concept of vulnerability and resilience. *Procedia Economics and Finance*, 18, 369-376.
- Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The journal of strategic information systems*, 27(1), 22-42.
- RECHIDI, N., BENNANI, H., NAFZAOU, M. A., BENAZZOU, L., & HILMI, Y. (2020). L'intégration pédagogique des TIC à l'épreuve de la crise covid-19: quels enseignements à tirer?. *Revue internationale du chercheur*, 1(2).
- Remane, G., Hanelt, A., Wiesboeck, F., & Kolbe, L. M. (2017, June). Digital Maturity in Traditional industries-an Exploratory Analysis. In *ECIS* (p. 10).
- Robertson, J., Botha, E., Walker, B., Wordsworth, R., & Balzarova, M. (2022). Fortune favours the digitally mature: the impact of digital maturity on the organisational resilience of SME retailers during COVID-19. *International Journal of Retail & Distribution Management*, 50(8/9), 1182-1204.
- Rossmann, A. (2018). Digital maturity: Conceptualization and measurement model.
- Sahut, J. M., & Lantz, J. S. (2003). La création de valeur et performance financière. *La revue du financier*, 28.
- Savall, H., & Zardet, V. (2004). Recherche en sciences de gestion: Approche qualimétrique, observer l'objet complexe (No. halshs-00783087).
- Sawalha, I. H. S. (2015). Managing adversity: understanding some dimensions of organizational resilience. *Management research review*, 38(4), 346-366.
- Schumacher, A., Erol, S., & Sihn, W. (2016). A maturity model for assessing Industry 4.0 readiness and maturity of manufacturing enterprises. *Procedia Cirp*, 52, 161-166.
- Sony, M., & Naik, S. (2020). Industry 4.0 integration with socio-technical systems theory: A systematic review and proposed theoretical model. *Technology in society*, 61, 101248.
- Stoel, M. D., & Muhanna, W. A. (2009). IT capabilities and firm performance: A contingency analysis of the role of industry and IT capability type. *Information & Management*, 46(3), 181-189.
- Suryaningtyas, D., Sudiro, A., Eka, T. A., & Dodi, I. W. (2019). Organizational resilience and organizational performance: examining the mediating roles of resilient leadership and organizational culture. *Academy of Strategic Management Journal*, 18(2), 1-7.
- Sutcliffe, K. M., & Vogus, T. J. (2003). Organizing for resilience. *Positive organizational scholarship: foundations of a new discipline. Positive organizational scholarship: foundations of a new discipline*. Berrett-Koehler.

- Tasic, J., Amir, S., Tan, J., & Khader, M. (2020). A multilevel framework to enhance organizational resilience. *Journal of Risk Research*, 23(6), 713-738.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Teichert, R. (2019). Digital transformation maturity: A systematic review of literature. *Acta universitatis agriculturae et silviculturae mendelianae brunensis*.
- Tessier, G. (1993). *Pratiques de recherche en sciences de l'éducation: les outils du chercheur débutant*. Presses universitaires de Rennes II.
- Tognazzo, A., Gubitta, P., & Favaron, S. D. (2016). Does slack always affect resilience? A study of quasi-medium-sized Italian firms. *Entrepreneurship & Regional Development*, 28(9-10), 768-790.
- Valdez-de-Leon, O. (2016). A digital maturity model for telecommunications service providers. *Technology innovation management review*, 6(8), 19-32.
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of business research*, 122, 889-901.
- Viana, C. J. P., Suquillo, E. J., Carmona, C., & Arellano, E. J. (2023). Digital maturity as a determinant of business resilience in microenterprises in Ibero-America: a post COVID-19 analysis. *Procedia Computer Science*, 224, 485-489.
- Wade, M., & Hulland, J. (2004). The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS quarterly*, 107-142.
- Weick, K. E. (1988). Enacted sensemaking in crisis situations [1]. *Journal of management studies*, 25(4), 305-317.
- Weill, P., & Woerner, S. L. (2015). Thriving in an increasingly digital ecosystem. *MIT sloan management review*.
- Westerman, G., Tannou, M., Bonnet, D., Ferraris, P., & McAfee, A. (2012). *The Digital Advantage: How digital leaders outperform their peers in every industry*. MITSloan Management and Capgemini Consulting, MA, 2, 2-23.
- Winnard, J., Adcroft, A., Lee, J., & Skipp, D. (2014). Surviving or flourishing? Integrating business resilience and sustainability. *Journal of strategy and management*, 7(3), 303-315.
- Yu, W., Jacobs, M. A., Chavez, R., & Yang, J. (2019). Dynamism, disruption orientation, and resilience in the supply chain and the impacts on financial performance: A dynamic capabilities perspective. *International Journal of Production Economics*, 218, 352-362.
- Zaoui, F., & Souissi, N. (2020). Roadmap for digital transformation: A literature review. *Procedia Computer Science*, 175, 621-628.
- ZOUINE, A., AIT-TALEB, N., & HILMI, Y. (2019). Efficacité d'apprentissage à partir d'un Business Simulation Game: vers une nouvelle approche sociomatérielle (Learning Efficiency from a Business Simulation Game: Towards a New Sociomaterial Approach). *Revue du Contrôle de la Comptabilité et de l'Audit*, (9).
- ZOUINE, A., HILMI, Y., & AIT-TALEB, N. (2020). Efficacité d'apprentissage à partir d'un Business Simulation Game : vers une nouvelle approche sociomatérielle. *Revue Du contrôle, De La Comptabilité Et De l'audit*, 3(2). Retrieved from <https://revuecca.com/index.php/home/article/view/90>

Books and reports

- Aurélie DUDEZERT, *La Transformation digitale des entreprises* Paris, Éd. La Découverte, coll. Repères, 2018, 128 pages.
- Thiétart, R. A. (2014). *Méthodes de recherche en management*-4ème édition. Dunod.
- Rapport annuel sur la Stabilité Financière N° 12, Exercice 2024.