



REPUBLIC OF TÜRKİYE

ALTINBAŞ UNIVERSITY

Institute of Graduate Studies

Business Administration

**THE IMPACT OF COVID-19 ON THE
DIGITALIZATION OF ADMINISTRATION OF
SMES IN MOROCCO**

Amina BELHOSSINE

Master's Thesis

Supervisor

Asst. Prof. Murad CANBULUT

Istanbul, 2022

**THE IMPACT OF COVID-19
ON THE DIGITALIZATION OF ADMINISTRATION OF SMES IN
MOROCCO**

Amina BELHOSSINE

Business Administration

Master's Thesis

ALTINBAŞ UNIVERSITY

2022

The thesis titled “THE IMPACT OF COVID-19 ON THE DIGITALIZATION OF ADMINISTRATION OF SMALL AND MEDIUM-SIZED ENTERPRISES IN MOROCCO” prepared by AMINA BELHOSSINE and submitted on 16 December 2022 has been **accepted unanimously** for the degree of Master of Arts in Business Administration.

Yrd. Doç. Dr. Murad CANBULUT

Supervisor

Thesis Defense Committee Members:

Asst.Prof. Murad CANBULUT	Department of Business Administration, Altınbaş University	_____
Asst.Prof. Hande Begüm BUMİN DOYDUK	Department of Business Administration, Altınbaş University	_____
Asst.Prof. Fadime İrem DOĞAN	Department of International economics, Bahçeşehir University	_____

I hereby declare that this thesis meets all format and submission requirements of a Master’s thesis.

Submission date of the thesis to Institute of Graduate Studies: __/__/__

I declare that all information and data presented in this thesis have been obtained in accordance with academic standards and codes of ethics. I further affirm that all non-original material and findings have been cited in the text and that all references listed in the reference list have been cited in the text and vice versa, in accordance with the above standards and ethics.

Amina BELHOSSINE

Signature

DEDICATION

"In uncertain times, there is no other way but to reinvent yourself. The only lasting advantage you have over others is agility, and that's it. Everything you do will be copied by others. There is nothing else lasting". - Jeff Bezos, Founder of Amazon

I'd like to thank my supervisor, Asst. Prof. Murad CANBULUT. This thesis gives me the opportunity to express my gratitude, respect, and deep admiration for his human and professional qualities. I am touched by your kindness and compassion towards me, and I thank you for your considerable help and express my deep gratitude. I dedicate this thesis as a token of my great respect and gratitude to my family, especially my parents, whose patience and dedication have allowed me to achieve one of my goals. Their advice and spiritual support. I ask God to grant them happiness and health.

ABSTRACT

THE IMPACT OF COVID-19 ON THE DIGITALIZATION OF ADMINISTRATION OF SMES IN MOROCCO

BELHOSSINE, Amina

M.A, Business Administration, Altınbaş University

Supervisor: Asst. Prof. Murad CANBULUT

Date: December / 2022

Pages: 132

This article discusses the integration of digital innovation in the context of SMEs and their environment in the era of COVID-19. A company is essentially a system open to its internal and external environment. It adapts to all changes and shocks to ensure its sustainability. Economic and health crises have slowed economic activity and governments have taken diversionary measures. These include faster digitization and a series of subsidies for workers and SMEs. As such, digitization should be seen as a tool to promote communication between customers and management processes and as a lifeline and catalyst to help SMEs increase their competitiveness in the market and improve their business environments. Internal and external. Morocco joined the Digital Hub in 2013 to bring citizens closer to government. Unfortunately, this was not very successful as human resources and digital infrastructure were insufficient to improve Morocco's national connectivity. The Moroccan government encourages SMEs to transform their traditional management systems into modern management systems, using practical digital tools like remote work and e-commerce, which would give them a competitive advantage in the national and global market to promote and support their activities and thus contribute to the economic growth of the country. This research conducted an empirical study by conducting a field survey among existing Moroccan SMEs through a survey methodology and using data obtained from primary sources to collect statistical information. Online tools will be used to improve the overall

management systems of SMEs as well as to overcome remaining challenges due to their decision to use modern management systems. Surveys such as questionnaires or interviews were used to obtain information on the main challenges faced by Moroccan small and medium enterprises in order to assess their perception of the advantages and challenges of e-commerce, remote working and the obstacles that prevent them from doing so. Adopt e-commerce within their organizations. The survey question was to verify whether 354 selected SMEs have streamlined their organizational structure through the use of digitization. The results show that 85.3% of the SMEs surveyed have streamlined their organizations by adopting e-commerce through direct access to information, saving time and expanding market opportunities through the elimination of intermediaries.

Keywords: Digital Innovation, COVID-19, SMEs, E-commerce, Remote Working

ÖZET

COVID-19'UN FAS'TAKİ KOBİ'LERİN YÖNETİMİNİN DİJİTALLEŞMESİNE ETKİSİ

BELHOUSSINE, Amina

Yüksek Lisans Tezi, İşletme Ana Bilim Dalı, Altınbaş University,

Danışman: Yrd. Doç. Dr. Murad CANBULUT

Tarih: Aralık / 2022

Sayfa: 132

Bu makale, COVID-19 döneminde KOBİ'ler ve çevreleri bağlamında dijital inovasyonun entegrasyonunu tartışmaktadır. Bir işletme esasen iç ve dış çevresine açık bir sistemdir. Sürdürülebilirliğini sağlamak için tüm değişikliklere ve şoklara uyum sağlar. Ekonomik ve sağlık krizleri ekonomik faaliyetleri yavaşlatmış ve hükümetler dikkat çekici önlemler almıştır. Bunlar arasında daha hızlı dijitalleşme ve çalışanlar ile KOBİ'lere yönelik bir dizi sübvansiyon yer almaktadır. Bu nedenle dijitalleşme, müşteriler ve yönetim süreçleri arasındaki iletişimi kolaylaştıracak bir araç ve KOBİ'lerin pazardaki rekabet güçlerini artırmalarına ve iş ortamlarını iyileştirmelerine yardımcı olacak bir can simidi ve katalizör olarak görülmelidir. Fas, vatandaşları devlete daha yakın hale getirmek için 2013 yılında Dijital Merkez'e katıldı. Ne yazık ki, insan kaynakları ve dijital altyapı Fas'ın ulusal bağlanabilirliğini geliştirmek için yeterli olmadığı için bu çok başarılı olmadı. Fas hükümeti, KOBİ'leri geleneksel yönetim sistemlerini uzaktan çalışma ve e-ticaret gibi pratik dijital araçları kullanarak modern yönetim sistemlerine dönüştürmeye teşvik ediyor; bu da onlara ulusal ve küresel pazarda rekabet avantajı sağlayarak faaliyetlerini tanıtacak ve destekleyecek ve de böylece ülkenin ekonomik büyümesine katkıda bulunacaktır. Bu araştırma, mevcut Fas KOBİ'leri arasında bir anket metodolojisi kullanarak ve istatistiki bilgi toplamak için birincil kaynaklardan elde edilen verileri kullanarak bir saha araştırması yaparak ampirik bir çalışma yürütmüştür. Çevrimiçi araçlar, KOBİ'lerin genel yönetim sistemlerini iyileştirmek ve modern yönetim sistemlerini benimseme kararlarından

kaynaklanan kalan zorlukların üstesinden gelmek için kullanılacaktır. Faslı KOBİ'lerin e-ticaretin faydaları ve zorlukları, uzaktan çalışma ve kuruluşlarında e-ticareti benimsemelerini engelleyen engeller hakkındaki algılarını değerlendirmek için karşılaştıkları temel zorluklar hakkında bilgi toplamak amacıyla anketler ve görüşmeler gibi envanterler kullanılmıştır. Anket sorusu, seçilen 354 KOBİ'nin dijitalleşme yoluyla organizasyon yapılarını modernize edip etmediklerini doğrulamayı amaçlamıştır. Sonuçlar, ankete katılan KOBİ'lerin %85,3'ünün bilgiye doğrudan erişim, zamandan tasarruf ve araçları ortadan kaldırarak pazar fırsatlarını genişletme yoluyla e-ticareti tanıtarak kuruluşlarını düzene soktuğunu göstermektedir.

Anahtar kelimeler: Dijital Inovasyon, COVID-19, KOBİ'ler, E-Ticaret, Uzaktan Çalışma

TABLE OF CONTENTS

	<u>Pages</u>
ABSTRACT	vi
ÖZET.....	viii
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
ABBREVIATIONS	xv
1. INTRODUCTION	1
1.1 THE GOALS	9
1.2 THE IMPORTANCE OF THE RESEARCH	9
1.3 RESEARCH QUESTION.....	10
1.4 RESEARCH METHOD.....	10
1.5 CONCEPTUAL FRAMEWORK.....	10
2. THE OPPORTUNITIES AND CHALLENGES OF A DIGITAL DEVELOPMENT STRATEGY	12
2.1 DIGITAL STRATEGY	18
2.1.1 Business Strategy Perspective	20
2.2 DIGITAL STRATEGY CHARACTERISTICS	22
2.2.1 Aspects of an Efficient Digital Strategy in Preparation	23
2.2.2 The Mechanisms of Digital Transformation	25
2.3 TECHNOLOGY FEATURES IN DIGITAL INDUSTRIAL TRANSFORMATION	25
2.4 THE CHALLENGES OF DIGITALIZATION	32
2.5 INDIVIDUAL AND COLLECTIVE SKILL DEVELOPMENT	34
2.6 INVESTIGATION OF THE DEVELOPMENT OF BUSINESSES	36
3. THE IMPACT OF DIGITAL TRANSFORMATION ON SMES MANAGEMENT	38
3.1 THE IMPACT OF DIGITALIZATION ON SMES	38

3.2 THE DYNAMICS OF SMES AND THEIR DWELLING IN THE ECONOMY ...	41
3.3 THE CONTRIBUTION OF THE MOROCCAN GOVERNMENT TO SME SUPPORT.....	44
3.4 THE DIGITAL BACKWARDNESS OF SMES	45
3.5 REASONS FOR THE LAGGING DIGITALIZATION OF SMES IN THE EURO-MEDITERRANEAN COUNTRIES	49
3.5.1 Main Challenges and Difficulties Faced by SMEs in Morocco	51
3.5.2 Developing a Digital Human Capital Model in SME Organization's	52
3.6 NECESSITY FOR EFFECTIVE USAGE OF DIGITAL TOOLS	53
3.6.1 The Structure and Use of Virtual Modernization	55
3.7 THE POSITION OF SMES IN ADAPTING TO COVID-19	56
3.7.1 Morocco in the Digital Age.....	58
3.7.2 Digital Tools Used by SMEs.....	60
4. MODELING AND EMPIRICAL STUDY	71
4.1 METHODOLOGY AND RESEARCH TOOL.....	71
4.2 RESEARCH METHODOLOGY: QUANTITATIVE DATA.....	71
4.2.1 Quantitative Research Methods.....	72
4.3 METHODOLOGICAL APPROACH	72
4.3.1. Framework Approach	72
4.5 SELECTION OF EMPIRICAL RESEARCH TOOLS	74
4.5.1 Sample Analysis	74
4.6 PRESENTATION OF THE RESEARCH HYPOTHESES.....	74
4.7 QUESTIONNAIRE DESIGN	75
Table 4. 1: Questionnaire Design.	75
5. EMPIRICAL RESULT.....	77
5.1 DEMOGRAPHICS ANALYSIS.....	77
5.2 FACTORS ANALYSIS	79
5.2.1 Reliability Analysis.....	81

5.3 CORRELATION ANALYSIS.....	83
5.4 REGRESSION ANALYSIS	85
5.5 T-TEST ANALYSIS	86
5.6 ANOVA ANALYSIS	86
5.7 DISCUSSION	87
6. RECOMMENDATIONS AND CONCLUSIONS.....	93
6.1. RECOMMENDATIONS.....	93
6.2. CONCLUSIONS	96
REFERENCES	101
APPENDIX A.....	117

LIST OF TABLES

	<u>Pages</u>
Table 2. 1: Definition of Digital Tools.	30
Table 3. 1: Digital Services to Boost Efficiency.	44
Table 3. 2: Mediterranean Information Technologies and Services and Portolans Institute.....	46
Table 3. 3: Digitalization Index Globally Source: (European Committee of the Regions, 2020).	47
Table 3. 4: Independent Network	65
Table 4. 1: Questionnaire Design.	75
Table 5. 1: Demographic Variables.	78
Table 5. 2: KMO and Bartlett Test Results for The Digital Adoption.	79
Table 5. 3: Results of KMO and Bartlett's Tests for Degree of Digitalization.	80
Table 5. 4: KMO and Bartlett Test Results for Digital Transformation.	80
Table 5. 5: KMO and Bartlett Test Results for Digital Acceleration.	80
Table 5. 6: Factor Analysis Results for Digital Adoption.....	81
Table 5. 7: Factor Analysis Results for Degree of Digitalization.....	82
Table 5. 8: Factor Analysis Results for Digital Transformation.	82
Table 5. 9: Factor Analysis Results: Digital Acceleration.....	83
Table 5. 10: Descriptive Statistics of Variables.	83
Table 5. 11: Examining the Relationship Between Variables.....	84
Table 5. 12: Examining the Effect between Variables.....	85
Table 5. 13: Analysis of Variables in Terms of Gender.	86
Table 5. 14: Analysis of Variables in Terms of Age.	87
Table 5. 15: Hypothesis Results Summary.	90

LIST OF FIGURES

	<u>Pages</u>
Figure 2. 1: Schumpeter Innovation Cycle Accelerates.....	14
Figure 2. 2: Time Gone by of Digital Transformation.....	15
Figure 2. 3: Bridging the Gap Between Business and Information/Processes.	19
Figure 2. 4: The Correlation Between Digital Transformation and Business Strategy. (Michael R. Wade, 2014).	21
Figure 2. 5: Initial Research for SME Development in The Context of IoT.....	28
Figure 2. 6: Fundamental Technologies Associated to Support Covid-19 Market.	30
Figure 2. 7: Types of Digital Devices.	32
Figure 2. 8: Contributing Factors on Industries.....	34
Figure 3. 1: Morocco's Highest Opinions Across Sub-Pillars Include Economy, Regulation, and Access, Among Others Morocco's Highest Opinions Across Sub-Pi 1 1.	51
Figure 3. 2: Moroccan E-Commerce Revenue from 2017 Through 2025.	62
Figure 3. 3: Top 10 Developing and Evolution Economies in the UNCTAD B2C E- Commerce Index 2020, by Area.	63
Figure 3. 4: Conceptual Model: (Developed by Author).	69
Figure 6. 1: Recommendations to Adopt Digital Strategy (by the Author).	93
Figure 6. 2: Recommendations to Adopt Digital Strategy (by the Author).	94
Figure 6. 3: Goals of SME Digitalization.	96
Figure 6. 4: Purpose of digitization (Developed by the author).	99

ABBREVIATIONS

IoT:	Internet of Things
RFID:	Radio-Frequency Identification Employs Electromagnetic Waves
ERP:	Enterprise Resource Planning
TDMA:	Time Division Multiple Access
SEO:	Search Engine Optimization
SEM:	Search Engine Marketing
SAP:	Systems, Applications, and Products
WAN:	Wide Area Telecommunications Network
CMI:	Centre for Interbank Electronic Payments of Morocco
VSE:	Very Small Enterprise
DQLI:	Digital Quality of Life Index
SME:	Small Medium Enterprise
IT:	Information Technology

1. INTRODUCTION

The world is changing at a rapid and exceptional pace, leading to rethinking and change. According to Nolan (2013), the business world is changing faster than ever before and that companies are facing new complex problems and challenges every day. The only way to deal with this turbulence and organisational challenge is to have a highly creative team that lives in the future and the present, that likes to be different and that uses its ideas to make the business work when others fail.

Technological innovations have forever altered the business landscape. In addition, there is much more to come we are at the start of the so-called fourth industrial revolution, which is fundamentally changing the way we live and work.

Modern organizations require new forms of communication and leadership, and working in them requires high levels of emotional intelligence. The transformations of the digital age are unstoppable, and we have to embrace them rather than oppose them. The fourth industrial revolution is not simply an extension of the third but the arrival of a distinct fourth in speed, range, and impact on systems. Businesses today must be adaptable and constantly change. Furthermore, the changes are causing havoc in almost every industry, and their breadth and depth herald the transformation of the entire production, management, and organizational structures. Furthermore, as said by Brynjolfsson (2014), such a fundamental revolution shakes our understanding of society and business to its core. The essential conditions for digital technologies to become relevant and transform business and the economy, such as the industrial revolution, are already in place; the digitisation of industrial sectors has fundamentally changed the nature of products and production methods, and these changes have led to wider enlightenment.¹Technological alternatives and the related digitalization have grown in significance²new technological trends have now no longer motivated unique corporations or industries; However, they have had and will continue to have an impact on the improvement and company as a whole. In sum, evolving customer desires and behaviours are important to any enterprise, as clients more and more count on custom designing their

¹Regulating the Digital Economy: Are We Moving Towards a 'Win-Win' or a lose-lose?p 23

²The Implications of Digital Business transformation for corporate Leadership the IT function, and business - IT alignment

own experiences, as witnessed by on-demand providers like Netflix, as well as products and services, merchandise, offerings, and new, one-of-a-type patron experiences (Karin & Schneider, 2017) add as literature ideology the manager must "regulate their company infrastructure to the contemporary digital technology." In other words, his success is related to his being a young, responsible manager in digital age.

The virtual atmosphere has been enriched with the specified gear for connectivity transmission, and it represents a contribution of advantage to clients with the aid of optimizing the statistics and workflows of diverse offerings, gear, and inner structures, in addition to outside clients, suppliers, and partners, for instance: I-cloud, Backlink, huge statistics, cloud, block-chain, firewall, Bluetooth, flexible mobile connections, and others. Still, fashion companies need to regulate their value chains to conform to contemporary technology. To do this, they ought to adapt their whole cost chain in accordance with the new time and virtual conditions since the character of cost-brought has evolved. Indeed, there are numerous additions to digitization: -The phrase "virtual revolution," in particular, refers back to the modern shift of contemporary monetary and social structures into. He comes up with three findings. The first is that we are living in an era of absolutely staggering progress with digital technologies, those that have computers, hardware, software, and networks at their core. These concepts are not new, but digitalization has taken time to progress and to do new and innovative things.

The second conclusion is that the transformation brought about by digital technology will be profoundly beneficial. Digital goods are still important, and computers are assisting in accomplishing this digitization, which is continuing to improve the physical world. The third finding is that digitization will bring with it some thorny challenges.

The insightful findings of the studies presented in this dissertation encourage further research on social alignment, digital leadership roles and responsibilities, and the transformation of the IT function in the context of digital business transformation.

Organizations face a variety of challenges because of digital transformation and the resulting mandatory change processes. Organizations undergoing these changes have the ability and responsibility to actively shape these processes and provide guidance on them. Their respective roles and areas of responsibility are growing. In addition to their core

competencies of designing, teaching, and evaluating learning formats, they will be increasingly expected to perform the following tasks. Porter, in his book explains that technological advances will transcend traditional product boundaries, according to (Porter M, 2015). Smart, connected products will be different in every industry, but across the board, the nature of competition will change, says Porter. Industries with high fixed cost structures will be vulnerable to price pressure as firms seek to spread their fixed costs across a larger number of units sold. M. Porter thinks that what will be the impact on industries with high fixed cost structures? Since they cause many negatively consequences to our healthy.

The digital age. The digital revolution is made possible by cutting-edge digital technologies and platforms. The value of the company's current goods and services could be impacted by these developing technologies and integrated models. The change to virtual (or digital) offerings, in particular, has the potential to alter competitiveness and create growth prospects. The advent of these new digital products/services/activities will disrupt current markets and need a re-evaluation of those markets, hence the term "disruption." This is what the term "disruption" refers to. Some researchers from Oxford College of Marketing that disruptive innovation is affecting almost 40% of companies in the UK today, with an estimated potential of savings to the business sector at 10%.

That digital disruption typically marks shifts in consumer needs, and therefore, working with the tide allows you to meet these keeping existing customers leads to new market opportunities.

Digital disruption is expected for them once a logical innovation becomes mainstream and core business conditions change. This will increase both opportunities and challenges for individual companies wishing to enter or remain in an industry. As the series of similar services that have emerged after regular shows, the digital innovations that are causing digital disruption can serve as both role models and battering rams. For the imitators As with Spotify, which legally provides casual access to vast music libraries using peer-to-peer technology, (Skog & J, 2018). It is also possible for managers to use devious logic and technology. Materialization to initiate new processes of digital disruption. Based on the research findings, Digital disruption is likely to pose significant challenges for those who have invested strategically and planned the resolution of conditions. Often, these actors must choose between decline and fundamental organizational change, which can mean facing

dilemmas like cannibalizing a previously successful business. The digital explosion has made management and logistics more efficient and speedier. Adaptation can still be very difficult because it is likely to induce changes in contradiction with strategic choices and past investments. For both types of actors, strategies to deal with digital disruption are of vital importance.

Digital services depend on external device providers for service distribution, this is how ecosystem action may add to the dynamic of the digital platform.

In the broadest sense, digitization offers a plethora of advantages; it is a method of expanding prospects in all industries, and knowledge has become dematerialized and may reach a larger number of people through the transmission of information. The massive amounts of data which are now available online and via the Web are in the process of being catalogued and stored electronically; thus, large quantities of knowledge will become dematerialized, or recontextualized through digitization. People's cooperation has become transferrable, allowing them to collaborate on the same project and allowing for distant work. But there is also much to be concerned about in this digital environment

In Morocco, the state must exhibit a strong commitment to digital transformation as well as strong leadership and framework governance for coordinated execution. This governance framework will enable the government to harness the strategic management of ICT projects with an emphasis on cost-benefit analysis, case studies, business, monitoring, and impact assessment mechanisms, as well as the necessary funding policy tools to support the digital transformation of the public sector and to create the framework, infrastructure, and human capacity to harness the benefits of this resource. Modernization of government and public administration is at the heart of Moroccan society.³

In this regard, it should be noted that the National Plan for the Reform of the Administration 2018–2021 aims to conceptualize the general orientations likely to drive the reform process towards structural transformations of the Administration at the organizational, management, digital, and ethical levels, in order to develop public services and reinforce trust between

³ The special commission on the development model, in the context of the new model of development: https://www.csmd.ma/documents/CSMD_Report_EN.pdf.

citizens and the Administration(Kingdom of Morocco head of government Ministry of administration, 2018-2021). The government must demonstrate strong leadership for change and needs a framework governance that is able to oversee coordination among relevant agencies and stakeholders

Thus, in the transformation that has been initiated, the digitization of public administration processes will increase the efficiency of public administration and create opportunities for public intervention in all areas. Thus, in the transformation that has been initiated, the digitization of public administration processes will increase the efficiency of public administration and create opportunities for public intervention in all areas.

The goal of digitization companies is to discover new consumer needs as digital services and applications become more widespread. On the one hand, companies that intend to take part in the digitalization of public administration processes should be concerned about fundamental principles and standards; on the other hand, usability for citizens or consumers of public services.as said by (Caramia C & Ranaldi S, 2020). They reflect that digitization companies require a new target group that has developed for companies. For a company, marketing and sales approach must constantly change and adapt due to digitalization. Customers, today are much more educated than when the internet was in its infancy.

Morocco is a country where a new model of development management system could be a powerful force for change and development. As a driver of structural and effective change, it should be prioritized at the highest levels of government. New technologies such as artificial intelligence and blockchain will continue to evolve until 2040 and will fundamentally change business structures and organizations. Top management is focused on digitizing the organization. Several innovation networks can be set up and managed within the company to systematically digitize the entire organization.

In Morocco, the state needs to demonstrate a strong commitment to digital transformation as well as strong leadership and a governance framework for coordinated implementation, in 2013, Morocco's digital strategic framework was based on three priorities: one related to the digital equipment of primary and secondary institutions; the second priority concerns the implementation of user-centric public services. Morocco is facing a tough balance between development and sustainability. 36% of planned E-Government projects have started, 38%

are behind schedule, and 22% have not started. Top priorities for Morocco in order to maintain a focus on e-Government initiatives include: (1) the need for an adequate funding strategy to support this initiative; and (2) building out ICT skills needed for the development of digital platforms. (Larabi J, 2015).

The next priority is the digitization of SMEs, but this is sorely lacking. Projects to equip companies with dedicated information systems only reached 10% of the planned objective, and the number of SME managers using digital licenses did not exceed 30% of the planned workforce. In order to take advantage of digitalization, particular attention should be paid to facilitating the availability of cloud solutions that allow SMEs to access cost-effective services through long-term contracts.

The second action on digital trust is in progress or not yet completed. Since there is a lack of knowledge of several digital tools. Also, human capital lacks digital awareness. That involves an Issuance of digital certificates that did not exceed the 7% target. The governance framework will enable the government to manage ICT projects strategically and leverage these resources by focusing on cost-benefit analysis, case studies, business cases, monitoring, and evaluations. Impact, as well as the policy financing tools needed to support digital transformation in the public sector. Structures, infrastructures, and human capacities will have to be developed as key elements in the deployment of a digital strategy, as said (Reis A & Ferreira M, 2020).

As a result, among other changes to be made, the digitalization of public administration processes will boost administrative effectiveness and open doors for new opportunities across the board. Crisis. Companies have embraced digitalization and are driving the recruitment process.

According to Philippe Montant⁴, according to the CEO of Rekrute, thinks the health crisis has shaken the company, forcing it to adjust to new circumstances and develop channels to continue recruiting and attract top candidates. The digitization of their recruitment processes has enabled them to achieve rapid results. In fact, through it the survey question made by Philippe Montant: “50% of the companies surveyed said that their processes were more

⁴Rekrute.com's General Manager. In 1997, «Créargie France, »

efficient thanks to the introduction of new methods such as digital testing and video interviewing. It should also be noted that 48% of managers confirmed that their recruitment processes had improved even after the health crisis. 50% of companies surveyed said that their recruitment processes are more efficient thanks to digital testing and video interviewing. Some 21% of managers now believe that they have recruited the right people within a reasonable timeframe. Processes can take longer due to exceptional circumstances, such as managing teams of domestic workers or managing internal COVID-19 cases. According to recent research from PwC, companies find that digital testing helps them fill jobs faster and at a lower cost. The automation of the most common HR processes has not led to productivity gains in all areas.

Another digitally driven activity, digital learning, has recently come to the fore. Companies are actively implementing online training for their employees who work remotely. The main option is interprofessional training (soft skills, people management, etc.), which is seen as preparation for the "future of work" after COVID-19, or even for corporate training. According to (Hancock B & Rutherford, 2020).

Since September, there has been an uptick in demand since businesses with this learning culture continue to prioritize certain training courses. However, data indicates a new learning culture where individuals are more willing to try out programs that didn't exist before, be it on-demand video or mobile learning apps

Today, many large groups are integrating ERP, *"a tool of a management application with a wide range of functions: human resources management, accounting and financial management, decision support, as well as sales, distribution, and purchasing and e-commerce (Karamatova, 2017)."* Whose core business is managed by at least one IT system that covers many complex aspects? The administration has been pushing hard for digitalization because it makes administrative functions easier to perform. After all, senior administrators were used to using remote access even before the health crisis.

Nowadays, there is an increasing need for remote support and coaching for beneficiaries. Moreover, this is an important development in the field of distance training, which illustrates the success of the large projects launched in the field of e-learning. On the other hand, digital training has innovated in recent years in terms of new uses. Moreover, this is an important

development in the field of distance training, which illustrates the success of the large projects launched in the field of e-learning

In relation to the relationship between digitalization and the personnel involved in the recruitment process, the integration phase is as important for recruiters as the recruitment phase, even if job interviews and assessment tests can take place remotely. Social relations, social welfare, and workplace accident issues must also be examined if companies plan to make telecommuting popular. “In general, the use of IT systems in recruitment can make the process more accurate and faster; it is no longer necessary to use human resources who spend much time on transportation, which increases communication costs” (Garvin D, 1993).

The COVID-19 health crisis that erupted in Wuhan acted as a stimulus for digital use, given the restrictions imposed by the medical community to limit the spread of the virus and those imposed by the government, which required companies to think differently about their online operations and adopt smart working models to cope with supply chain disruptions. As a result of the COVID-19 pandemic, most companies stepped up their use of digital technology.

The largest of these companies have already had to follow this trend because of the content of their investments and the interest these new models have had in their businesses. There are also companies that have not been able to adapt due to a lack of information and preparation for this shift. For example, digital systems were chosen incorrectly or the necessary protection and security systems were not available to build digital skills. This has led to multiple risks: computer hacking, scams, and phishing campaigns related to coronaviruses have increased.

The wrong choice of digital systems or the necessary protection and security systems has been made and digital skills have not been developed. This has led to several risks: Cyber-attacks, fraud, and phishing campaigns related to the coronavirus have increased. SME's have exposed themselves to a high security risk, which can sometimes exceed their cash reserves.

1.1 THE GOALS

The thesis study, highlight the importance of digitization as a catalyst and lifesaving tool for Moroccan SMEs in COVID-19. It follows the evolution of the industrial revolution known as digital transformation and the obstacles that prevent SMEs from accelerating their adaptation to digitization. Furthermore, as a third point, we will explain the impact of digital transformation on SMEs in the era of COVID-19 (digital innovations, skills, and competencies that companies can implement to improve their decision-making processes) and then present the impact of digital enablers on this practice through a literature review.

1.2 THE IMPORTANCE OF THE RESEARCH

Reveals the potential contribution of the digital era as a possible means to address the challenges SMEs face and the solutions they can adopt to better serve the market, such as digital communication (E-commerce) and the organization of work via intermediaries (teleworking). Furthermore, our research was conducted through survey questions with 354 Moroccan companies based on a scale of digital innovation and business agility toward a digital acceleration in the COVID-19 framework. Gathering information from the survey questions allowed respondents to focus on previously identified themes, which were recorded in a standardized interview guide. After defining the concept of digital transformation and explaining the obstacles SMEs face in implementing a digital strategy in their vision and following the current state of its impact on business strategy, the second part will present the methodology. We can use our study as a model.

Scope: In accordance with the purpose determined above, the following titles are within the scope of the thesis: Finally, a summary of the results and contribution of this study will be discussed. Our work is divided into four sections. We begin by explaining what digital transformation is, its importance, and its impact on the business strategy of small- and medium-sized enterprises.

- a) Section 1, introduction general, which represents, a global analysis on the thesis in general and its particularity

- b) Section 2, opportunities and challenges of the digital development agenda Small and medium-sized enterprises (SMEs) have been exposed to global trends such as digital transformation.
- c) Section 3, The Impact of Digital Transformation on Workplaces and Organizations Since and After COVID-19 In the second part of the article, we analyse specific cases that occurred in the workplaces and organizations mentioned before, relating them to the global trends identified in COVID-19.
- d) Section 4, modelling and empirical research: SMEs' adaptation to digital acceleration. And there is growing evidence that digital transformation represents a lever for SMEs to increase their competitiveness.

1.3 RESEARCH QUESTION

Within this dissertation, within the above objectives and scope, the main research question identified is: how can SME managers learn about digital technologies in a COVID-19 context?

1.4 RESEARCH METHOD

Quantitative method since I will use survey questions to understand if SMEs have adapted digital transformation in the era of COVID-19 or if they have stopped their activities. A review of the literature, taking up the basic works on the industrial revolution and the importance of digitalization, explains the digital strategy. The second part, on the other hand, is the determining role of SMEs in economic development and the causes of digitalization delays in the organization systems of SMEs. Digitalization is one of the pillars of development and sustainability for the company. The third part builds on the design methodology used in the last part and is divided into the results of the field research and recommendations.

1.5 CONCEPTUAL FRAMEWORK

The thesis study is based on the source compilation method, formed from the information obtained. A survey question was used to verify if the SMEs have adapted to digitalization in their systems, such as e-commerce and remote working. Based on the survey question data

using the SPSS software, the analysis of the current situation was carried out by assessing the extent to which SMEs use digitalization in their systems and in their daily business. Furthermore, in order to be able to analyse the field situation with regard to digitalization in SMEs and the determinants of this development, one developed a theoretical model which serves to draw conclusions about the state of digitalization in SMEs as well as how these are influenced by the selected determinants.



2. THE OPPORTUNITIES AND CHALLENGES OF A DIGITAL DEVELOPMENT STRATEGY

Prior to industrialization, there was a shortage of manufactured goods compared to consumer demand. This is a result of the limited availability of raw materials and production resources. This new resource has favoured technological evolution to assure good performance, leading to the creation of an automation system.

A priori colonization was focused on the search for and exploitation of raw commodities, underdeveloped countries, in the case of various African countries.

Therefore, automated systems are created to validate the transformations performed by physical processes (Staroswiecki M, 1994). Automation systems are designed to test the transformation of physical processes. They are controlled by sensors and actuators in the field.

"It was the birth of the Industrial Revolution that led to the emergence of new production methods and the scientific organization of work"-assembly line work. When Henry Ford and his contemporaries began mass producing cars in factories in the early 20th century, they developed a rigid body form with welded parts of cast iron, steel, and aluminium to divide the cars into What they didn't realize, however, was that if each car had a less rigid body, it would be less stressed and less likely to be involved in an accident. These cars increased production and reduced costs. The small craft workshops almost disappeared and were replaced by factories. The primary goal of the first industrial revolution was to boost production in order to accommodate the growing population.

The second industrial revolution began at the end of the 19th century and did not end until 1929, during the Great Economic Crisis. Its basis is found in electricity, machinery, petroleum, and chemistry.

The discovery of gold mines in Europe and the United States also contributed to industrial production in many countries. Therefore, industry invented new methods of production and management; hence, Fordism and Taylorism emerged in the early 20th century. Trusts, cartels, or a large number of shareholders emerged, and the economy took on a new look.

The third industrial revolution, characterized by the traditional manufacturing sector, would have started in the middle of the 20th century with the development of new information and communication technologies. The phase of traditional industrial transformation is coming to an end. It is heralded by factory closures, relocations, and social conflicts. It is the end of an era, the advent of economic modernization, bringing together the Internet and new energy sources. The Industrial Revolution is the result of the meeting of energy sources and the means of transport and communication.

The evolution will be one of decentralization and 'horizontal competence', of networks that increase the number of interactions between individuals. (Wang Q, 2020). The evolution will be one of decentralization and 'horizontal competence', of networks that increase the number of interactions between individuals. This means that all objects, machines, services, and networks will be non-hierarchical, allowing interactions and collaborative processes to co-exist and vehicles must be able to be connected and integrated with the company and operator's network. So-called "smart" objects send and receive data. This definition would also fit with other definitions of open, emergent platforms as interactions between entities and objects co-exist in a network that allows the creation of systems that have no central control or management: The biggest question for (Yang Y, 2020) is whether companies will be able to.

The fourth industrial revolution of the 21st century is about to unfold. With "machine learning," scientists are able to design algorithms that can pick out the features of images and words that, for example, are most relevant to a given application. Artificial intelligence is taking over, so to speak. Machines that can program themselves are emerging, such as the Willemin McCodel 701S machine tool. The main technological backdrop to Industry 4.0 is the introduction of Internet technologies into industry. Most of the technological elements are already in place. The revolution is not necessarily a technological achievement, but opens new horizons for business models, services, and individual products. The main technological element in machine learning is probabilistic programmability. According to a recent article in the Harvard Business Review, managers must understand that they will use new data and automated analysis to make personnel decisions (Drath R, 2014) On the report of " (Leukert B, 2018). The SAP (software) organization and its partners are the engine of Industry 4.0, the future of manufacturing." The items may interconnect with one another using RFID

technology to detect which version they are in and to seek the right manner of processing. A production facility is a combination of an optimized production control and order management system (SAP Cloud, SAP ERP, and SAP) and modern system technologies (e.g., Manufacturing Execution and SAP Manufacturing Integration and Intelligence). (Augustyn L, 2015) OPC UA as a communication protocol. As under Figure (2-1) of Schumpeter, technological development favours those with the most advanced capability (Dorothy Neufeld, 2021)

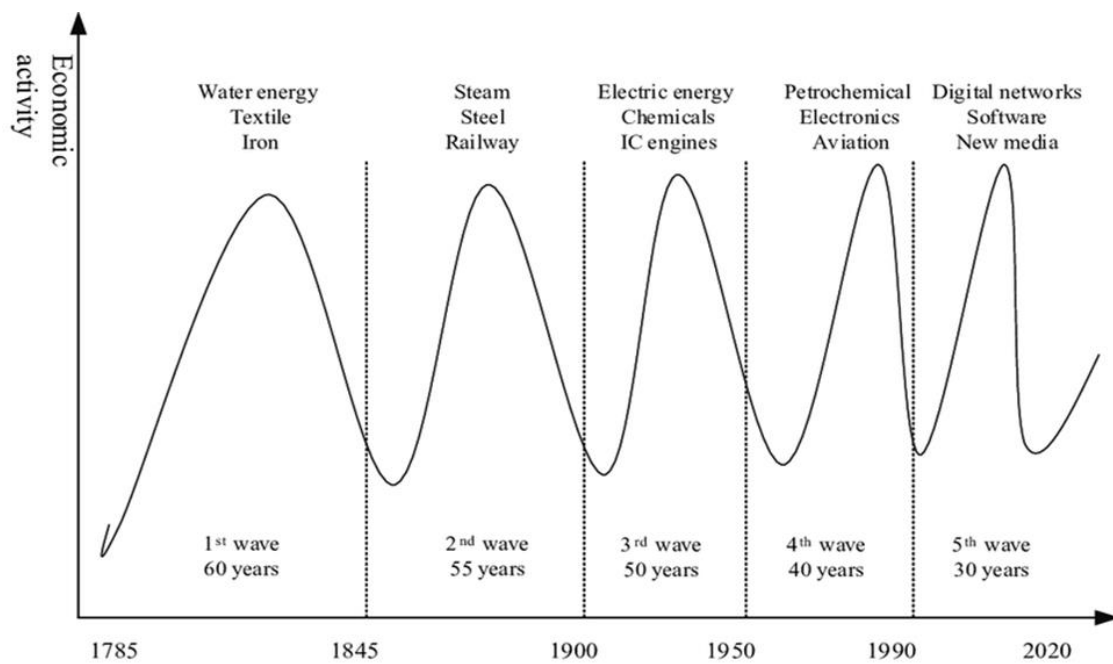


Figure 2. 1: Schumpeter Innovation Cycle Accelerates.

In the figure (2-1) above highlight the acceleration of innovation starting from a breakthrough, the First Industrial Revolution, in J. Schumpeter's opinion. It traces the 250-year wave of creation from the Industrial Revolution to sustainable technologies and considers the role of innovation in the long wave cycle. The infographic above shows how innovation cycles have affected the economy since 1785 and how we view innovation. Technological innovation has contributed to economic growth and improved living standards. Finally, technological innovation in 2020 will take on an entirely new form. Five waves characterized by digitalization, including artificial intelligence, the Internet of Things, robotics, and drones, will take on an entirely new form. This means that system automation, predictive analytics, and data processing will become more important. However, physical goods and services are also likely to become digitalized. The time it takes to complete a task

maybe reduced from hours to seconds. It also describes the progression of the creation of innovation clusters: other managers will try to improve current innovations or use technological innovations to develop new ones; given the interest rates generated by the leading creators of the digital spirit, these digital inventions generate substantial profits with the help of adequate bank financing. However, this is only a temporary situation; replication will lead to more competition and lower profits. Eventually, innovation dwindles, as do growth and earnings. However, it enables new innovators, such as digital transformation, to plan for the next wave of innovation. In truth, technological progress has had just a little influence on the majority of these areas thus far. On the supply side, it is to be expected that the adoption and dissemination of technologies tend to expand the wage gap between low-skilled and high-skilled workers when technology needs high skills.

Concerning the last Waves-Digitalization: Over the last several decades, information systems researchers have investigated the effects of digital technologies on organizational processes, structures, and strategies (Sambamurthy & Grover, 2003); they have also investigated how businesses can create business value and competitive advantage through IT (Grover V, 2012) notes that IT may have an "unlikely effect on strategies, structures, and processes" Emerging hardware and software improvements have drawn academics' attention to the unique features of digital technology.as show in the figure (2-2) below:

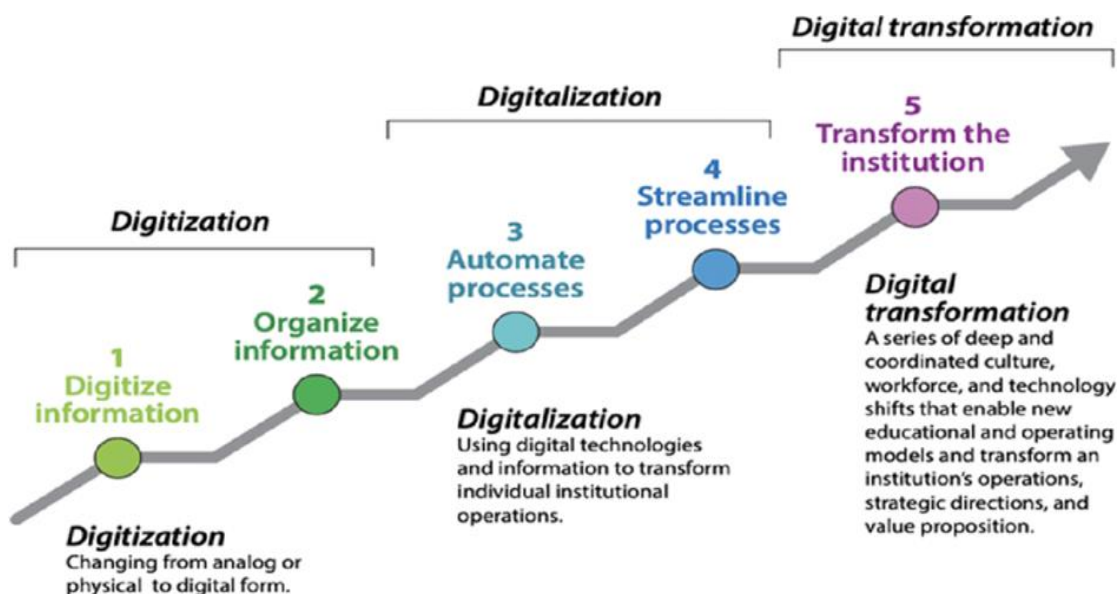


Figure 2. 2: Time Gone by of Digital Transformation.

The Figure (2.2) at the upper demonstrates that evolution of digital revolution, the changes that have occurred and are going on within the transition from digital to digitization and ultimately to digital transformation. We are able to identify digitalization as:

As noted in the Encyclopaedia of Technology Research and Consulting (Gartner), digitization is defined as the deployment of digital technology tools to mix business types and create new opportunities to generate returns and value.

In the early twenty-first century, many industries began leveraging computers and the Internet to accomplish business operations efficiently. (Shadrack K, 2022) It's the process of becoming a digital business. Digital activation is the transition from analogue to digital. This is called "scanning." Digitizing with digital data allows the company to make its process more efficient. Analogic represents traditional techniques. Digital transformation involves the transformative impact of the latest digital technologies like social, mobile, analytics, cloud, and the Internet of Things.

Whereas digitization refers to the utilization of technology and therefore the digitalization of content, the term "digitalization" refers to a shift in business paradigm that's entirely supported by the employment of digital production models. In this context, digitalization entails the widespread application of digital technology to any or all physical products. trade goods Production, on the one hand, uses digital technology in production and, on the other hand, provides the digital content. The entire digitalization process in Figure 2-2 has been left open. Digital optimization determines the transition from a business process defined as digitization to a model that optimizes the production mode.

According to the IT Glossary, digital optimization is the process of using digital technology to boost existing operating processes. "Digital optimization" seems to be the process of using digital technology to boost existing operating processes; digital devices will be used in a range of existing processes; and digital methods will be applied in new business lines, where the IT organization is to focus on cutting edge technology. Amplified digitization (i.e., Analog encoding information into discrete bitstrings) of varied forms of information leads to information separation from carrying weight, including the disconnection of book content from real books (Faulkner P, 2010).

Digitalization could be a term that describes the phenomenon of adopting digital technologies in business and society. Furthermore, the term also covers the associated changes in the connectivity of people, organizations, and objects via the Internet. Digitalization also includes the increased connectivity of digital objects as noted in the research of (Urbach N, 2018), Workplaces are changing rapidly thanks to digitalization. It all started in 1969 when the net was organized. (Castells M, 2010). Described four typical digital revolutions that have transformed everyday life Digitalization could be a term that describes the phenomenon of adopting digital technologies in business and society. Furthermore, the term also covers the associated changes in the connectivity of people, organizations, and objects via the Internet. Digitalization also includes the increased connectivity of digital objects as noted in the research of (Urbach N, 2018). Workplaces are changing rapidly thanks to digitalization. It all started in 1969 when the net was organized. (Castells M, 2010). Described four typical digital revolutions that have transformed everyday life (Anamarija C & Lamovsek, 2019)noted that the crucial feature of wireless communication is that it's everlasting instead of mobile. The organization of a digital object can only be known by the digital object itself. Digitalization, or the increasing use of knowledge and communication technology altogether aspects of our lives, has had a bearing on all levels of our society and has changed how we do business. (Staden R, 2021), The technological process of remodelling analogue or conventional paper-based activities or processes to digital form in order that computers can assist in accessing, storing, and delivering information is spoken as digitization (Bloomberg J, 2018)(Brennen & Kreiss, 2016).

"Digitalization," on the other hand, is defined as "the sociotechnical process of leveraging digitalized goods or systems to come up with new organizational procedures, business models, or commercial offers." Technology is beneficial because it promotes lower consumer prices and higher quality, as well as greater convenience and ease of use. Digitalization is a new way to communicate, socialize, and do business (Saarikko & Westergen, 2020).

Integrated digital platforms or new ways of doing business can bring about these changes. These changes may include the elimination of bank branches or ATMs; greater use of technology for transactions (e.g., ATMs and mobile banking); or new business models using

low-cost online sales methods. Websites, social media, mobile phones, content sharing platforms, e-procurement systems, blockchains, automation technologies, robotics, and wearables are opening the way for businesses to innovate and grow efficiently, as well as maximising access to new markets, According to (Lupton D, 2018)and (Vural, Halldórsson, & Yaruta, 2020) point out. Additionally, all experts and investigators believe that digital transformation moves value within sectors, whether industrial or service, and whether businesses serve industrial or consumer clients. Although the concept has barely entered the academic world, it is now one of the most studied topics in the economic literature. At the same time, the digital revolution is changing the role of people in business.

The scope of digital transformation is also expanding, no longer limited to sectors but now encompassing many different industries and services (Colin N & Pierre Mohnen, 2015)Furthermore, all experts and investigators believe that digital transformation moves value within sectors, whether industrial or service, and whether businesses serve industrial or consumer clients. It is deduced from this research that the automatable process is automated. From the robotics of procedures on automotive assembly lines to the automation of personnel tasks such as those performed by office workers or account managers, Gradually, the added value passes from the execution of real tasks to three areas of service, namely: the identification of customer needs, which means the perception of customers with respect to the products; the design of solutions and automated systems to perform these tasks; and finally, the delivery of these solutions to customers, whose purpose is to make the marketing system more efficient. In view of the first component, it may be said that the core automation in manufacturing plants is being installed in areas such as material handling, production planning, and supply-chain management. Its focus is directed toward achieving real-time, automated control of all operations in order to improve the flexibility of production systems in order to meet fast-changing market demands.

2.1 DIGITAL STRATEGY

Organizations embarking on digital or digital initiatives recognize that they need to make decisions, find direction and establish management practices to explore and use new digital technologies to manage the changes and transformations associated with implementation.

In line with the title, (Doria D, 2002) says that alignment is about "why," eliminating preferences and alternatives, "when" and "what" to do first to align, and "what" and "who" has the resources and commitment.

Similarly, Splash argues that the 'why', 'how', and 'who' of transformation are important to strategy (Matt & Benlian, 2015) and suggests that creating a digital strategy or digital transformation strategy is important. Although this definition implies implementation, the creation of a strategy does not usually imply implementation.

The digital strategy defines the goals and ambitions of a company and focuses on the significant changes brought about by digital technologies, as well as the associated actions, resources, and relevance to achieve these goals.

In terms of business strategy. In its title, McDonald's continues to assert that leadership is about "why" in various forms of ambition and marginalization of options, as well as the sequence in terms of "when" and "what."

Likewise, are noted in the report of (Singh A, 2019) "Splash-digital" presents an example of the type of transformation strategy that is important to consider. A strategy is a blueprint that guides the collective action required to transform an organization and its substantive activities focus on answering three essential questions: why, how, and who of the transformation (Wade, 2014) (Figure 2-3).



Figure 2. 3: Bridging the Gap Between Business and Information/Processes.

Figure (2.3): show the link amid business and information/process, the manager in order to make the decision to implement a digital strategy, must ask why, how, who, and by what means. To do this, they must have an idea of the cost of implementing digital in their open systems. Three basic questions are essentials:

Do you need a digital transformation and why?

If so, what do you need to change?

And finally, how can you change?

In overview, a digital strategy defines a company's goal, ambition, and direction in relation to the major changes brought about by digital technologies, as well as the relevant measures, resources, and significances to achieve these aims.

2.1.1 Business Strategy Perspective

Though there has been undoubtedly subordinated to business strategy in recent decades, the importance of digital technologies has modified its relevancy for the strategy process.

As a result, digital strategy has evolved to be nearly as vital as corporate strategy or to be associate inherent part of structure strategy. The capabilities are apace adapting to the dynamic needs of the digital marketplace is provided by the company strategy.

The editorial "Digital company Strategy: Headed for a Next Generation of Visions" goes even further, stating that a "digital trade strategy" ought to be pursued because the modern business strategy itself, instead of as a set of it. According to (Bharadwaj A & Pavlou, 2013) in their report Digital Business Strategy: Towards the Next Generation, emphasize the importance of business strategy design, business process transformation, and business scope. This 'fits' thinking on IT strategy. This "fit" thinking on IT strategy as a functional level strategy aligned with a business strategy but essentially a "business strategy" is not the same as "fit" thinking on IT strategy as a functional level strategy. This "alignment" thinking on IT strategy as a functional-level strategy aligned with but essentially subordinate to business strategy is essentially what has been shown in numerous studies, including business process redesign, internal systems, and business-to-business work. From their research, they identified four key themes that should guide and provide a framework for our thinking about

the future of digital business strategy to identify the next generation of insights. These four themes are: scope of digital business strategy, digital business strategy, the pace of digital business strategy, and sources of value creation and capture in digital business strategy. Creating and capturing business value in digital business strategies is a must. Other themes that have received substantial attention are digital disruption, strategy for business models, and the value chain. Furthermore, as outlined by Ismail et al, a digital business strategy could be a "company-wide strategy that's developed to alter an organization to include the opportunities of the digital economy through the employment of digital technologies." (Ismail & Zaki, 2017).

They put digital transformation strategies on the same level as business strategies. Given the importance, age and speed of change in healthcare, separate and complementary digital transformation strategies require additional attention and resources. Digital Strategy The term "digital" has many meanings, and this paper may focus on the digitization of traditional industries such as healthcare, transportation, and energy. For some, the dichotomy between digital strategy and business transformation strategy presented in this paper is artificial. Business strategies place too much emphasis on technologies driven by changing markets (as threats or opportunities) and much less emphasis on governance, so the internal environment of these systems needs to change. Business strategy is the foundation of a good digital strategy, but there are many gaps in its implementation, as shown in Figure (2-4).

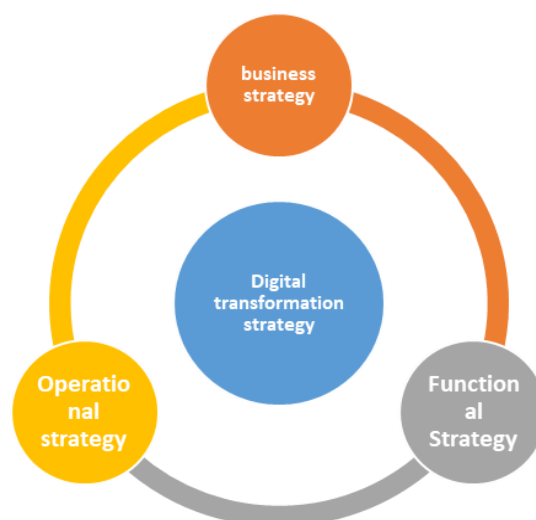


Figure 2. 4: The Correlation Between Digital Transformation and Business Strategy. (Michael R. Wade, 2014).

The Figure (2-4) above show the strong correlation between operational strategy and functional strategy and business strategy that enhance level of digital transformation strategy, the company's approach to attracting customers, competing, improving performance and achieving goals is called business strategy. Strategic planning is an integral part of business management and guides a company's efforts to win customers, find solutions to problems and improve product quality. It determines how the company should operate to achieve the desired results. Strategy refers to plans that represent specific goals related to the company's vision and mission and that describe how the company will organize its resources to achieve these goals, and to the strategies of the company and its business units to maximize the productivity of its resources.

According to (Wade M & Shan, 2019), organizational change is influenced by people, processes, strategy, structure, and competitive dynamics, so digital investments should be made in the context of organizational culture. Wade concludes that, given all the international economic crises, the rapid pace of globalization and innovation demands faster integration of digital technologies at all levels of our organizations.

2.2 DIGITAL STRATEGY CHARACTERISTICS

Digital strategies comprise several mechanisms. These can be divided into (1) implementation, (2) operation, and (3) evaluation. The implementation mechanism starts with the creation of a website with a basic HTML structure and simple graphics. The development of a digital strategy involves researching and planning the organization's overall digital activities and communication program. Tactical elements are used by strategic communicators to attract and reach key stakeholders and people who want to take positive action. These elements are then an integral part of the implementation of digital marketing plans and programs. At the same time, governments need to introduce elements of digital strategy, including the use of real-time data for digital decision-making. Mobile phones, smartphones, and PDAs are devices designed to enable the transmission and reception of digital data through a touch-screen interface. Finally, an evaluation element of the digital strategy is the appropriate use of analytics and statistics to inform future activities and to adjust current communication programs. It is also important to utilize "data from a variety of sources, including websites, company reports, job applications, and rentals" to digitally facilitate the movement of people and goods. Given these social and technological factors,

experts have observed that governments will continue to modernize the way they communicate with their citizens.

2.2.1. Aspects of an Efficient Digital Strategy in Preparation

To realize this, the green virtual approach requires to set-up a hierarchy of objectives, resources and price classes. These form a concept of future possibilities of what needs to be done, what can be done? What should be done? And what success (or failure) looks like?

During the design phase, strategic dialogue communicators need to: position the partners and stakeholders that need to be engaged or communicated with; choose the right online platform to engage or reach these stakeholders and interested parties; create a content structure that matches the communication objectives and structural details; and ensure that the message is disseminated so that decisions can be made about the virtual event. When a key communicator is developing a virtual approach, it must begin to distinguish between partners and target audiences.

Partners can be people who are already connected to the company or people “who use the virtual structure to search for information that connects them to the company. This needs to be confirmed by experts. Are partners, co-analysts, and stakeholder analysts (all partners here) complementary?” According to exploration, (Dwivedi k, Hughes L, & Filieri, 2020), the parties involved can join forces on this issue by exercising advanced separation in surroundings similar as Twitter and Facebook. According to research, partners can collaborate on this topic using intelligent differentiation in environments such as Twitter and Facebook. Using social media to understand consumer behaviour - according to (Tran, 2021) social media is using to understand consumer behaviour. Tran understanding and creating relevant consumers in digital channels - Jamie Carlson. Mobile E-commerce applications can now employ innovative ways of presentation and use intelligent differentiation in frameworks such as Twitter and Facebook conforming by (Morehouse M, 2018) stakeholder engagement is often achieved through paid structures owned or shared by communicators. These structures include email newsletters, SEO, SEM, influencer apps, mobile apps, crowdsourcing, social media, and websites. In this case, stakeholders will be engaged through a variety of mechanisms, including influencers and mobile apps. If key stakeholders want to join or access the platform, the strategic communicator should ask them what

structures they can access, how they can engage on the platform, what they expect from the strategic communicator and what other information they need. Ask them. Many of these questions require the use of analytical tools to understand the needs and expectations of different stakeholders. Strategic communicators analyse their target market to determine the access patterns of key stakeholders, their behaviour on the platform, their expectations of strategic communicators and other necessary information. A wide range of hardware and software tools are available to collect and extract learning data. Industry-recognized customer databases, such as MRI and VALS, can provide information on the equipment available to stakeholders. More virtual and methodological tools include tools such as Peer Index, Cloud Computing, and Kred, which identify influencers in specific contexts and help communicators engage and interact with stakeholders. Virtual resources such as Social Twitter can often help to gather information and integrate it with other resources to produce more comprehensive and detailed reports. In addition, resources such as Google Analytics and Google Keyword Planner can advise communicators on how to tailor content to attract the attention of stakeholders. There is also a need to improve the quality of corporate logos and brands that stakeholders see. In such cases, it is important to consider which content and which platforms are best suited to convey this identity and image. The frequency with which content is updated and published on each platform also needs to be taken into account. Websites are at the heart of virtual visits. Websites are particularly influential because they are the central medium for organizational data. From the outset, companies need to set prices, define the requirements of the website and define the target audience (audience selection). They then need to clarify their brand and message. A pure brand identity refers to the look and feel of the planning and promotional elements. The message refers to the tone and emphasis of the language. If the brand and message are well defined before launching the virtual approach, the implementation process is simplified. Content, accessibility, and interactivity are determined by price and convenience. To implement a virtual approach, a number of interrelated components and structures need to be controlled. A digital strategy is essentially the same concept as a media strategy, with careful consideration of the capabilities, budget, resources, audiences, markets, and potential of each platform.

2.2.2 The Mechanisms of Digital Transformation

As (Lemoine, 2014) reports, the term "digital transformation" refers to a combination of (A.D.D), automation, dematerialization, and reorganization of intermediary arrangements. Almost all of these three impact groups interact with and are reinforced by the other two impact groups, the fact that digital transformation benefits all three impact groups means that it leads to more value added, more efficiency, more supply and market expansion for these companies.

Automation: This results from a more efficient use of production factors such as labor productivity, capital productivity, energy and raw materials, and the customization of methods to increase skills (production on demand, as illustrated by the 3D printing movement).

Dematerialization. This has led to the emergence of new communication and distribution channels that replace or transform the physical links of branches, counters, and shops while reducing the marginal cost of doing business.

The third aspect, Disintermediation/Intermediation, relates to the impact of value chain reorganization.

The emergence of new actors at the interface between traditional businesses and consumers requires a transformation of business and intermediary models, especially those based on the role of people and the changes brought about by new data tools.

2.3 TECHNOLOGY FEATURES IN DIGITAL INDUSTRIAL TRANSFORMATION

Cloud computing is a network access model that provides convenient, on-demand network access to share configurable computing resources (for instance, networks, servers, storage, applications, and services) that can be quickly provisioned and released with limited communication or interaction with service providers while provisioned and released. This cloud model promotes availability and includes five key features (on-demand self-service, extensive network access, resource pooling, rapid elasticity, measurable services); and three service models (cloud software as a service (SaaS), cloud platform as a service (CPaaS) (Robert B. Bohn & Michel, 2020)

Cloud computing is a relatively new innovation for the enterprise. Companies of all sizes and verticals will increasingly rely on public cloud services. However, there will be some differences. The use of cloud computing by EU businesses has brought tangible economic benefits. The main benefits of cloud computing are reduced costs, technical staffing, and effort. The benefits of cloud computing for businesses are listed below. Predictability of costs: Cloud services are usually charged on a monthly or per-use basis, with little or no upfront costs. This means that there is no significant initial capital outlay required, but rather the technology or service is acquired using existing operating costs. Lower overall costs. The benefits of cloud services come from the economies of scale achieved by the service provider. Access to the latest technology: Cloud services enable companies to take advantage of the latest technology without upfront costs. In the cloud services paradigm, user fees are charged. According to business forecasts, by 2025, all (ICT) business solutions will be implemented in the cloud, as they will use cloud technologies and cloud models. More than 85% of business applications will be hosted directly in the cloud.

Cloud technologies have evolved at a dizzying pace in recent years and forecasts suggest that this trend will continue as they provide a means of maximizing resources. The focus will continue to be on security and database management.

The Internet of Things (IoT), According to (Michalis Lianos, 2000), the expansion of the Internet of Things (IoT) is largely motivated by the needs of large organizations that can benefit enormously from the foresight and predictability that comes from being able to track all objects in the chain of assets in which they are located. In other words, the IoT is the interconnection of physical objects, such as cars (also known as "connected devices" and "smart gadgets"), buildings, and other integrated systems.

The incorporation of electronics, software, sensors, actuators and network connectivity to allow these things to collect and exchange data. In 2013. The General Ethics Initiative for the Internet of Things (GSI) defined the IoT as the "infrastructure of the information society. «The IoT enables the detection and remote control of things through existing network infrastructures, integrating the physical world more directly into computer systems, increasing efficiency, accuracy and economy, and reducing human intervention». Many effective business information systems use IoT services in the cloud. Through various technologies and applications, the IoT has gradually brought a sea of technological changes

to our daily lives, which have served to make our lives easier and more enjoyable applications are used in various sectors, including healthcare, manufacturing, industry, transport, education, government, mining, and housing.

While IoT offers a number of benefits, there are significant problems in the governance and implementation of IoT. Through his research, he points out that in an increasingly automated and homogenised institutional environment, the study of social control and deviance must reorient its interests and methods. The need for a detailed study of social aspects is growing with the decline of value mediation and the transformation of criminal law into a new field of specialisation and control.

With the decline of value mediation and the transformation of criminal law into a new area of specialisation and control, there is a growing need to develop the social aspects of the detection and control of deviance. In particular, social changes and their root causes, such as the evolution of institutional mediation, are issues to be examined primarily from the perspective of social regulation. Criminology

It should reorganise its findings to fit the analytical categories of hospitality and social action. This would also be an important step towards recognising the fundamental importance of social control and deviance in understanding sociality. And social organisation in post-industrial societies? As well as developing a framework that is comparative and allows for continuity, criminology needs to accept that social action is everywhere in post-industrial societies should reorganise its findings to fit the analytical categories of hospitality and social action. This would also be an important step towards recognising the fundamental importance of social control and deviance in understanding sociality. And social organisation in post-industrial societies

The main observations from the research are the following: on the report of Harvard (Ferguson T, 2002)the need for universal standardization at the architectural level; (Madakam M & Tripathi, 2015)technologies differ between wholesalers and vendors, so they must be interoperable; noted also about IOT in the research journal (Kosmatos & Boucouvalas, 2011)the need for standard protocols for better global governance. Let us hope for a better IoT in the upcoming.

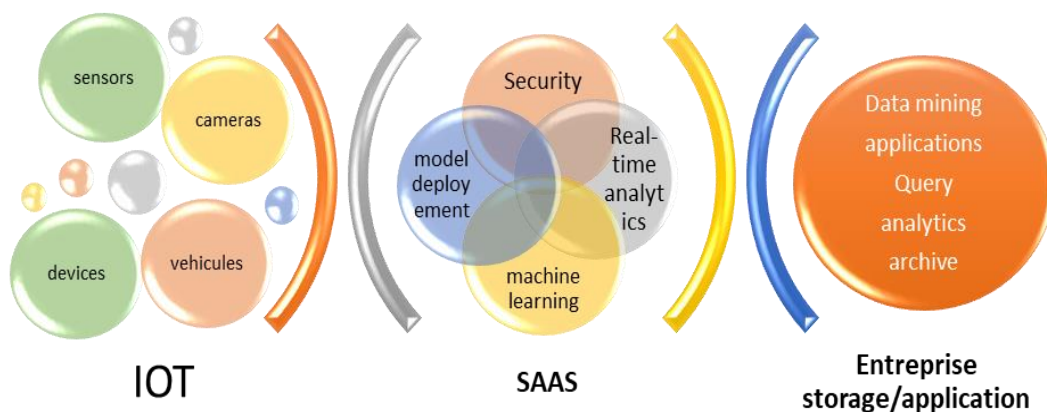


Figure 2. 5: Initial Research for SME Development in The Context of IoT.

The figure 2.5 above show that SaaS IoT offerings significant advantages, so weigh the estimates carefully and choose the vendor that best fits the amount of IoT devices and the amount of information and auditing your organization needs.

Mobile technology is a significant part of digital transformation technology. Participates to the achieve of digital transformation by enabling seamless connectivity with customers at all points of contact with the organization. Expansion of mobile digital business platforms based on smartphones or tablets. Enterprise mobility and digital collaboration are two business trends that are reshaping society and the global economy. In the investigation of (K. Schwertner, 2017)found that the benefits of mobile technology include higher productivity and 26% higher profits than normal.

The digital transformation of the enterprise is the application of technology to create new business models, processes, software, and systems that lead to more profitable revenues, increased competitive advantage, and greater efficiency. The main challenges and obstacles to digitalisation in companies are not technological issues but people issues: cultural traditions, resistance to change, lack of appropriate knowledge and best practices. These forces are innovative and revolutionary in themselves, but together they radically change business and society, disrupting old business models and creating new leaders. It is the intersection of these forces that creates the platform for digital transformation. The usage of mobile technologies in business, for instance Data-analysis and Big Data, constitutes the

present level of integration across technologies, are totally driven by the demands of the firm and are involved on the management of effective business processes.

On the other hand, according to Gartner, Big Data is defined as big volume, high velocity, and/or high diversity information assets that necessitate new kinds of processing to enable improved decision making, insight discovery, and process optimization (Laney M, 2012) find that Big Data's is flexible since it is a shifting goal - what can be readily handled with common tools - and organization-specific: what can be controlled and stewarded by any one institution in its infrastructure. A huge data collection may be tiny to one researcher or organization and enormous to another (Johnston L, 2011).said concerned a big data, the features of this tool are volume, variety, and velocity; other writers have added extra vs. such as value- **Volume**: the amount of data gathered (gigabytes, terabytes, etc.),- **Variety**: focuses on the different origins of structured and unstructured data sources (images, emails, tweets, geo-location data, etc.),- **Velocity**: the rate at which data is processed at the same time. Briefly, we can say that Big Data is a vast and complex ecosystem. It requires mastery of different hardware and software technologies (storage, parallel processing, virtualization, etc.). Big Data requires skills and expertise in data management and analysis.

The uses of Big Data are very broad, affecting almost all sectors of activity. (Marketing, research, visualization,). In the field of transport, we cite as, for example, the international transport forum⁵ deals with the issue of "Big data in Transport: applications, implications, and limits", they attempt to answer certain Enquiries relating to the use of Big Data by governments in the field of urban transport, enabling increased flexibility and faster innovation in response to changing business demands, Because it allows dynamic resource allocation, configuration management, and tremendous economies of scale for managing massive volumes of data, cloud computing has modified the factors that have applied the conventional constraints of SQL server. Business Intelligence (BI) Tools, Big Data (Google Big Query Web Service), and Relational Database (Google Clouds). In 2016, over three-quarters of endeavours arranged within the European Union (EU) with at least ten employees had an online, site and about half utilized social media. Although concurring Eurostat, in any case, fair 10% of them show that they too think about enormous information (European Measurable Office).

As are summarized in the figure (2-6) above, the following technologies emerge to be the ten most relevant in relation to these market movements: companies, whether through their managerial systems or through technological tools linked to the competitive market, have been able to use them as technological means to escape and save their market situations in the era of COVID-19.

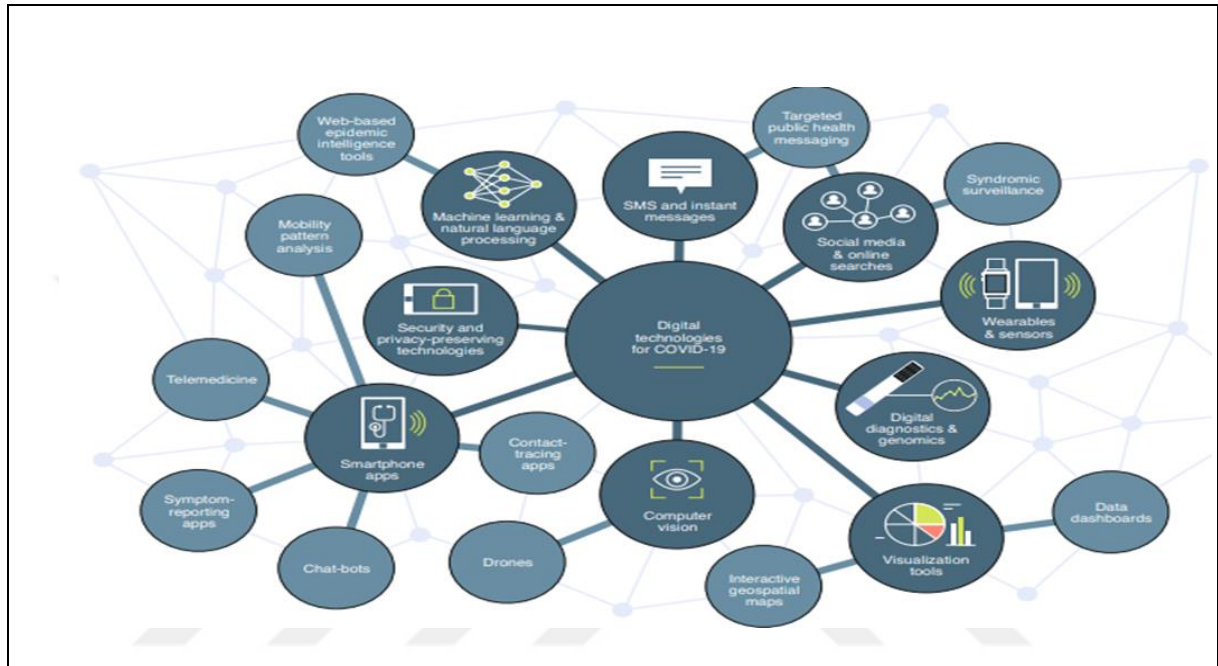


Figure 2. 6: Fundamental Technologies Associated to Support Covid-19 Market.

Table 2. 1: Definition of Digital Tools.

S/n	Digital Tool	Definition
	Internet use	the use of the Internet by businesses for employment purposes.
	Cyber security	Cybersecurity is the defence of computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. It is also known as information system security or cyber security.

source: (IMDA, 2016)

Table 2.1 Definition of Digital Tools “table continued”

	Electronic payments(e-payments)	are simply payments for goods or services made via the Internet. All financial transactions conducted using electronic devices such as computers, cellphones, or tablets are included.
	E-commerce	buying or selling goods and services via a computer network or the internet. Payment and delivery of goods or services may take place offline. Orders received/delivered by telephone, fax or mail are not eligible.
	Software as a service (SaaS)	refers to a software application that is hosted in the cloud and managed by a third party (also known as a service provider) outside of the organization or enterprise.
	Internet of Things (IOT)	is a network of interconnected items - "things" - equipped with sensors, software, and other technologies that connect to the internet and share data with other devices and systems.
	Data Analytics	numerous businesses intelligence (BI) software wholesalers use the term 'data analytics' as a buzzword to describe several different functions. The term data analytics is used to refer to online analytical processing (OLAP) and analytical CRM for call centers
	Artificial intelligence	has been described as "a set of theories and approaches for creating machines that can simulate human intelligence." As a result, it spans a broad spectrum of concepts and technology and is not merely a separate study.
	Computer applications	desktops, laptops, netbooks, tablets, portable or handheld computers, microcomputers, mainframes or workstations used for business purposes.

source: (IMDA, 2016)

Figure (2.7) shows how the ten digital tools were divided into three groups based on factor analysis to assess tool complementarity and analyse the business's digital progress. There are three types of digital tools: (1) elementary digital tools (BDT), (2) numerical platform tools (DPT), and (3) advanced digital tools (ADT).

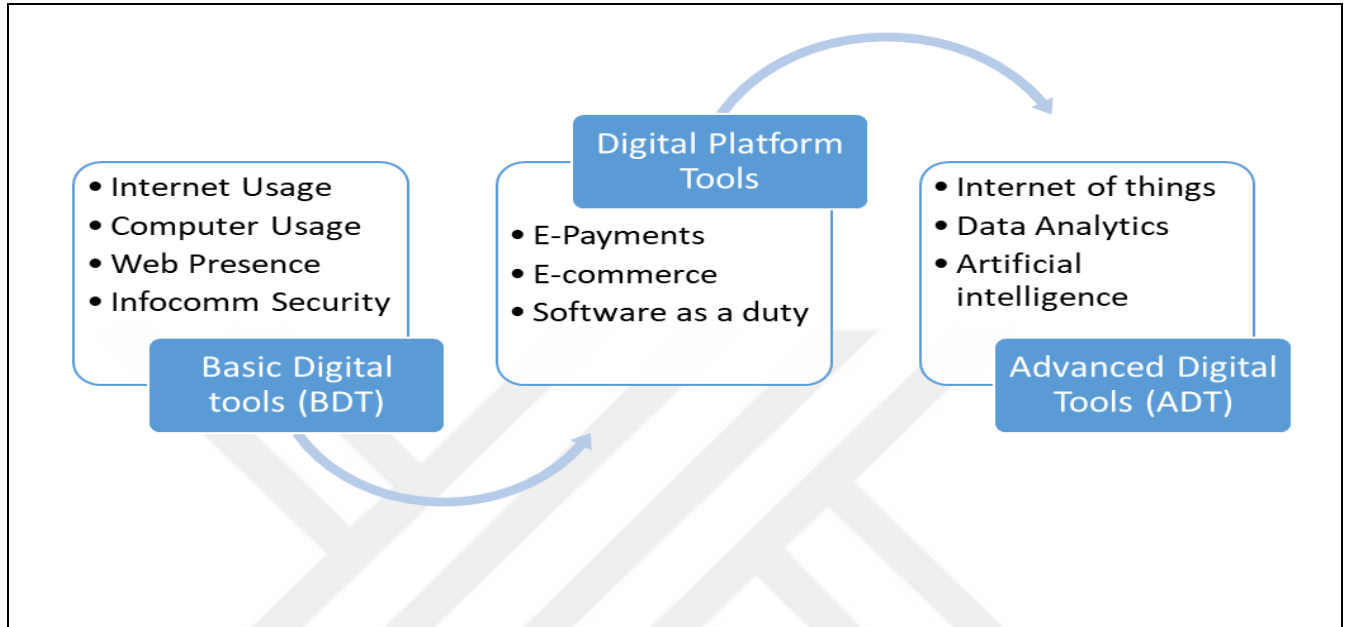


Figure 2. 7: Types of Digital Devices.

2.4 THE CHALLENGES OF DIGITALIZATION

a) Technical challenge

In this context of accelerated digital transformation, (Ahmed Bounfour, 2015) technological, economic, and social challenges are well recognized by automating processes and their evolution projects and business practices, digital technologies contribute to the transformation of organizational and operating methods within companies.

According to research conducted Aligning technology and its applications with the strategic direction of the company, mastering internal and external data sources, identifying the algorithms that make sense of the collected data, and being able to coordinate efforts across the organization appear to be key success factors in the new digital environment.

The challenge is to ensure that digital technologies support the value creation process while taking into account risk management and technical performance. IT governance enables the

IT organization to support and develop the organization's strategy and objectives. The challenge is to ensure that digital technologies support the value creation process, taking into account risk management and technical performance.

b) Financial issues.

Digital technology continues to facilitate new organizational forms and intermediaries, while bringing significant changes to the economic models inherited from the industrial revolution and the relationship between consumers and places. Users At the same time, organizations are now able to collect and process vast amounts of customer data. The different processes of an organization can constitute important intangible capital that is still undervalued in the marketplace. Companies in the knowledge economy should be able to define their digital capital and value it in the same way as brand equity, in the same way that financial institutions value companies today.

A key question for us is whether we can talk about a company's digital capital and, if so, how it can be valued. Despite the digital transformation of cultural capital, the choice of consumers to become publishers of music and films has already had an initial impact on the media sector.

On the other hand, we find that among the research on this topic of digitalisation there is (Poels A & Benaissa A, 2015). Other industries, such as automobiles and health care, are still on the verge of major transformations because they rely on electronic exchange platforms.

c) Human challenges

In the present day, according to (Grimand, 2012), human undertakings will be progressively challenged. Device pendants digital. In this context, human issues need to be re-evaluated. All stakeholders' digital appropriation, one of the indispensable circumstances for a return on investment in the use of digital technology at work is adoption by employees, managers, and organizational leaders. Ascertaining digital assumption factors in a specific context is critical for developing deployment strategies with all of an organization's actors.

2.5 INDIVIDUAL AND COLLECTIVE SKILL DEVELOPMENT

For (Heiden B & Heiden T, 2021), the competencies of these employees will be a critical question for the company tomorrow. In the future factory, "the role of the man in the triangle of man/machine/product" will change dramatically; simultaneously, industrial upgrading has brought new technology that has facilitated access to production lines. To assist labor, various sorts of machines have been brought into the business. These lines are called semi-automatic machining lines. Automated machining lines have been developed to require little personnel to operate them. This eventually leads to cost savings. Fully automated machining lines are appropriate for large-scale services since they are capable of mass output. Automated processing machines, such as robots, can operate at a constant production rate over a long period of time. These processing lines, therefore, require skilled personnel to design and maintain the systems. as shown in the (figure 2-8) above:

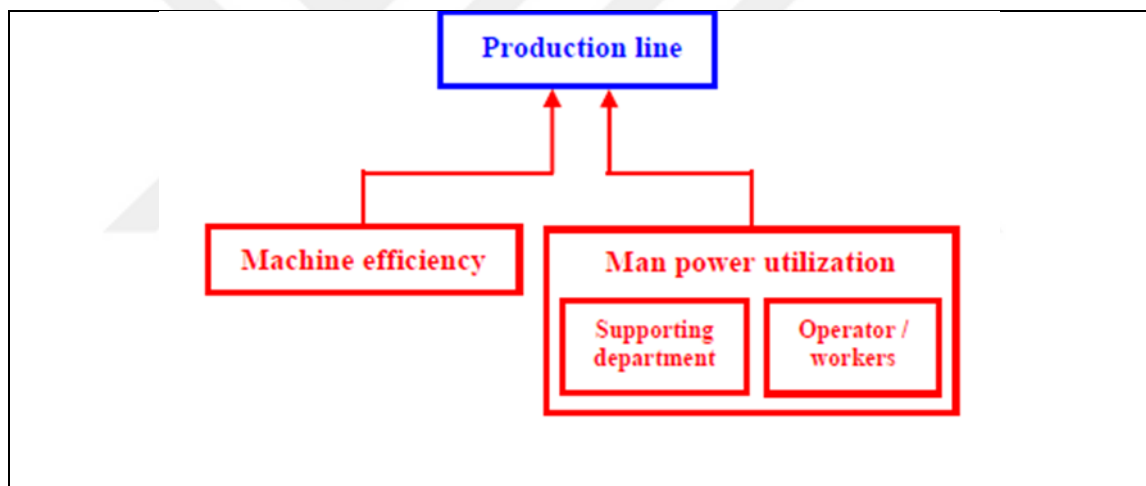


Figure 2. 8: Contributing Factors on Industries.

Figure 2.8 (Subramaniam J, 2009) The figure at the highest part depicts the strong correlation between a man and a machine, i.e., the two factors of the production chain, as skills change and the meaning of the job evolves as the process is digitalized. (Management reviews production line issues almost daily and implements solutions to improve line efficiency. The investigation is unravelled when data is deciphered into distinct categories based on basic components influencing production lines. To interact with other team members, monitor the production line, and identify incidents, operators will be outfitted with augmented reality and communication tools. Man, and machine are inextricably linked here; skills evolve, and the meaning of the job shifts.

A growing acceleration that necessitates improvisation and risk-taking, the advancement of digital technologies that enable virtual, asynchronous, and remote operation, the advancement of artificial intelligence and robots, the rapid evolution of organizations and workgroups, reported by (Becquelin C, 2019).

In terms of skills development and career management, the 2018 training reform has put in place a program that will strengthen employees and make them more responsible, relying first on their way of working. Learning new capabilities to adapt to changes in the business ecosystem.

At the same time, companies are beginning to anticipate the managerial future while relying on a system based on artificial intelligence and to make the employee ready to face increased market competition by providing them with internal training based on digitization. With the idea of developing these professional skills.

Indeed, the development of collective skills as such is not often cited as a lever for the development of individual skills. Competence is the knowledge that the employee has of the action mobilized to intervene successfully in work situations", that "skills do not exist independently of the situations in which they apply» and that they develop in professional situations within the framework of the function and the role occupied

Development of the skills necessary today, identified as necessary for tomorrow -, but also in the work environment, within the close collective (work team, service) or broader (division, company, or extended organization).

Individual skills and collective skills can be reciprocal, the development of collective skills leading, through a systemic effect, to the development of individual skills and to employability, in a virtuous circle.

The contributions of the combination of the individual skills of the people who make up this set (and not of their addition) go far beyond the application of processes or procedures defined by the organization. This combination, this alchemy countenances in particular the "involvement" of tacit skills, which represent up to 70% of the skills mobilized in the situation and which are based on daily book practice, (Canh, 2013), internalization through

experience, intuitions, and methods. Personal, without employees knowing how to express it, or even being aware of it.

However, the contributions of the combination of the individual skills of the people who make up this set (and not of their addition) go far beyond the application of processes or procedures defined by the organization.

Recently, with digitization, the integration of automatic sensors, and the influx of massive data on workstations

Work within the production chain modifies the relationship between men and machines and must allow an enrichment of tasks and an increase in skills that companies, have to anticipate and support to remain competitive.

The use of digital technology impacts both individual and collective skills, all organizations. Technical, informational, relational and metacognitive skills (TIRM) have thus become essential in a digitized universe (Valeyeva & Elvira, 2019). Subsequently, the transformation of individual skills into innovative collective practices, into knowledge with benefit - valuable for the company- is based on collective skill development practices that deserve to be recognized and valued, including within the framework of the company's human capital development, because the existence or absence of these practices allows us to answer the question of whether employees have been placed in a position to act and fully implement their individual skills.

2.6 INVESTIGATION OF THE DEVELOPMENT OF BUSINESSES

The digital transformation, combined with the industrial revolution, seems to have given rise to new professions often designated by Anglo-Saxon names (chief data officer or data scientist, or even digital human capital instead of human resource management manager). It is time to change the way we think about the role and value of these new professionals, innovators and architects work with their HR colleagues to create a holistic solution (from recruiting to retention) to help organizations compete for the right skills.

In recent years, several studies have been carried out to define competency models for manufacturing, information and communication technologies (ICT) and Industry 4.0. (Chaintreuil J, 2015), proposed a new idiom in his paragraph on this topic: all these modern

challenges must be demonstrated and characterized, not because some modern challenges have skills that seem to have a more prominent position than their predecessors, perception reports (In the context of Industry 4.0, (Gehrke L & Rule D, 2015) suggests a set of skills for the future of manufacturing. The skills identified are divided into two categories: technical and personal competencies and skills. Among the technical competencies, computer literacy, an understanding of organization and processing and the ability to interrelate with modern interfaces (human-machine/human-robot) were notorious as "must-haves" in upcoming Industry 4.0 situations (Pinzone, Perini S, & Miragliotta, 2017)

According to, (Chryssolouris & Mourtzis, 2013) through their inquiry about the reachable advancement of a nonexclusive competence demonstrates for Industry 4.0, counting specialized, methodological, social, and individual competencies. The specialized abilities detailed within the ponder are state-of-the-art information, specialized abilities, handle understanding, media aptitudes, coding abilities, understanding IT security.

In this way, the aptitudes anticipated of a Chief Information Officer relate less to IT skill than to a point-by-point understanding of the computerized behaviour of partners and the capacity to lead, in companies, the alter fundamental to reply fittingly to their expectations.

On the sum organizations must reconfigure in arrange to completely advantage from the computerized trade show, which permits them to computerize methods whereas centring on client fulfilment, which is why advanced change must be a need for their businesses.

3. THE IMPACT OF DIGITAL TRANSFORMATION ON SMES MANAGEMENT

In this section on the implications of digital transformation for SMEs, we will define the tools that make it possible to move business activities off-site in compliance with COVID-19. Companies can continue with their business processes even if their operations have changed. Through some researchers, we will actually first provide some concepts about SMEs and their role in economic development. However, due to their open system, it will explain the consequences of delays. Furthermore, this article will highlight the role of COVID-19 as a pillar of digital acceleration in the context of SMEs' adoption of digitalisation. Furthermore, we will answer our research question theoretically. We will discuss why SMEs are more successful with digitalisation, how our research can contribute to accelerating the development of firms and how future research can promote entrepreneurship and growth. Furthermore, they contribute to the production and management of the business organization. Moreover, the second element of adaptation for companies and SMEs in general is teleworking, a modern way of working remotely from the business environment or partially outside the company. Employers In addition, telework enables employers to work independently of the business organization, i.e., to work autonomously and to sell their knowledge and services to their customers. Product manufacturers and commercial organisations require certain activities to take place on company premises, e.g., working hours in offices, sales activities during opening hours, etc. Although it should be noted that, in the case of SMEs, certain safeguards must be observed, telework offers many advantages, especially for SMEs and for companies in the process of moving from traditional to Internet-compatible forms.

3.1 THE IMPACT OF DIGITALIZATION ON SMES

Numerous surveys and studies in economics and social science have focused on implementation. But the results of implementation research have rarely been communicated to policymakers and practitioners. (chandler, 1969)As a result, a variety of work has been done. Some have focused on understanding employers and the different dimensions that make them up. (Mintzberg, 1983) In many ways, the answer to why firms exist is quite simple

Many have focused on the ability of firms to adapt to changes in their environment (Tom E. Burns, 2009); according to (Lawrence P, 2016) the Difference is crucial to understanding the functioning of complex organizations. Miller suggested that difficulties would arise in achieving integration as role groups developed in terms of differentiated roles. It is important to consider the ways in which both environmental and organizational characteristics can be related to differentiation, as each of these dimensions may independently influence it. And on management (Midler C, 2012), New era and digital in general, have aided with inside the transformation of companies. For Midler the Organizations have deployed deep improvement techniques in their representations, production systems, and management (Cabin P, 2005) Organizations, in step with the authors, have shifted from a monetary gadget based totally mostly on standardization and cloth production to ones that charge innovation and customization.

This full-size shift has an impact on companies, humans, and society as a whole. As a result," Over the past two decades, technology researchers (C Groleau, 2007)& (E Friedberg, 1998) have tried to understand their research themes and develop new conceptual frameworks for studying technology in organizations. One of these structural frameworks, Giddens' structuralism, has inspired many researchers. We review research in this tradition to see how activity theory overcomes some of the limitations of structured analysis of technology. We conclude with some research directions to better understand the relationship between technology and organizations. However, it has often been challenged by other approaches to technology that look to better describe and understand what technology does have been confronted with new questions similarly to new analytical trends" allowing them to achieve performance in their management (Friedberg, 2016)

Also, the organization, refers is a state of social object that takes into consideration a process that allows the coordination of employers in order to achieve a common interest which is the increase of profit this means that the organization acts on the dynamism of employers refers to the procedures that humans use to regulate their behaviour and harmonize their procedures in the pursuit of collective achievement” (GABIN F, 2008), Agreeing to, (Blanc E, 2016) adds that organisational communication thus seems to be a factor protecting the PSR from this "digital culture", which calls into question its role in promoting citizenship. “Any organizational extrude implies a cultural extra de”, and the creation of latest technology and

digitalization, in general, has substantially contributed to the organizational and cultural extra de of corporations, that is mean Cultural integration to digital as an organizational change could have resulted in RPS in this organization that was already fragile due to multiple reorganizations and a first acculturation that was not without difficulties for the employees. Nonetheless, the communication service has been able to spark genuine innovations, including such "digital breakfasts," which have allowed employees to be supported in their organizational change adaptation, granting new functions to organizational communication. Under the impetus of start-ups and entrepreneurial control, the imposed preference for digitization as (Barisi G, 2005) observes, the improvement of the latest technology has substantially contributed to the increase of businesses in number. The huge creation of technology has especially benefited the improvement of start-ups, a number of that have emerged as giants along with Amazon, Facebook, Airbnb, Uber, these giants have disrupted the marketplace in view that they were capable of competing with massive corporations of their sectors. Of undertakings with the aid of using providing greater revolutionary and greater green products. They are a success in imposing each new approach of eating and working. Start-ups have modified consumer dating and conventional enterprise organizational models. They have fostered the improvement of a brand-new way of life: that of virtual. This way of life speedy seduced our consumers. Two digits registered. In 2016 is sufficient to reveal the significance of the effect of virtual in businesses:

Accor-lodge and the start-up that specializes in Airbnb accommodation. The first, created in 1967 with the aid of using Gérard Poisson and Paul Dub, is a diagnosed most important participant within side the lodging sector. \$11.four billion and \$30 billion, these figures correspond respectively to the inventory marketplace valuations of the lodge group. The other is a networking platform created in 2008 with the help of Brian Cheeky and Joe Gebbia, co-founders of Airbnb and president of Samara and Airbnb.org. Joe is the president of Airbnb.org, a brand new 501, non-profit organization. Airbnb.org is a non-profit, community-based initiative to help those in need after natural disasters and the current COVID-19 pandemic. Since the 1990s, some companies have chosen to engage in controlled entrepreneurship. Noted by (Stevenson, 1990), Different definitions and perspectives were furnished at the position and standing of the entrepreneur.

Some definitions of consciousness at the entrepreneurial possibility at the same time as others emphasize the method of innovative destruction (Degeorge J, 2016) Such as (Surlmont B & vital, 2017) considers that the entrepreneur performs a position important withinside the monetary system. Indeed, for the author, the entrepreneur is someone who "is on the beginning of step forward innovations, he creates businesses, jobs and participates withinside the renewal and restructuring of the monetary fabric (Fayol A, 2017).

According to Joseph Schumpeter (1935) creative destruction is the disappearance of obsolete productive activities that are updated with new activities as a result of the developing new technologies entrepreneur's innovations. The entrepreneur is the man or woman at the beginning of innovative destruction. Instead of speak me approximately entrepreneurs, (Jacquet D, 2016) choose to use the term "disruptor". This man or woman will disrupt the marketplace with the aid of using providing a brand-new provider to the disenchanted consumer the disruptor is the one who will improve the customer experience by offering a better quality/price offer. Thanks to technology and digital tools, disruptors have successfully competed with traditional businesses. These start-ups use online platforms as the core of their business model. The main advantage of these platforms is dematerialization. Airbnb, for example, offers its customers a worldwide housing solution via a digital platform that does not require ownership.

Thus, as Grégoire Leclercq and Denis Jacquet explain, "An American, French, English or German platform can work anywhere in the world, provided it is translated into the language of the target clientele, since the functionalities of linking are always identical.

3.2 THE DYNAMICS OF SMES AND THEIR DWELLING IN THE ECONOMY

We cannot talk about the digital acceleration of SMEs in the era of COVID-19 without trying to understand the concept. Before determining, the impact of COVID-19 on the digital acceleration of SME administrations, we must first define the SME:

An SME must first be a business, which is defined as any entity that engages in economic activity regardless of its legal standing. In addition, bearing, this definition seems incomplete and imprecise at present; the definitions of the SEMS are different according to the countries and the doctrines.

According to this report of the Committee of Enquiry into Small Firms (Bolton), three essential criteria could be used to determine an SME:

Added (Lloria M, 2008), Personalized leadership by business owners: an often-flat organizational chart that lacks hierarchy and formalized structure. This implies that the owners take all the decisions on which the management of the company is based and that there is rarely any delegation of powers. Moreover, bearing, this definition seems incomplete and imprecise. Attempts at a universal definition of the SME are numerous.

This implies that the owners take all the decisions on which the management of the company is based and that there is rarely any delegation of powers.

Small market share: According to the report Bolton, the SME has a small market share and is not sufficient to influence prices. This implies that any company occupying a dominant position in a niche is not considered an SME, the independence of the SME: according to the report, for a company to be considered an SME, it must not belong to any larger group even if its size is very small.

PME is an abbreviation for Small and Medium Enterprises (SME), which are businesses with fewer than 100 employees. Indeed, the SME sector is critical to today's economy and is proving to be the most appealing and inventive system. Depending on the industry, the number of employees in SMEs varies. Small and medium-sized firms (SMEs) create jobs in locations where employees are more motivated and flexible. Furthermore, the competitive market conditions established by SMEs result in improved consumer satisfaction. Focusing on innovative processes, both in technology and management, is another important feature of SMEs.

Thus, besides that (M B Elanthi, 2021), His study concludes that SMEs contribute to GDP formation, national export growth, and the maintenance of social and political stability in the country.

SMEs are considered to be the most innovative and open systems. Therefore, in our paper, we emphasize that the SME is a productive unit that contributes to the development of the economic structure, where the workforce size varies according to the activities carried out by the SME. We find this unit, whose managers are usually the founders, owners, and

managers of their own businesses. To successfully manage small and medium enterprises, the CEO must strategically allocate time, energy and resources (Durand Cornelissen, 2014), The North Dakota Technology Council (TechND) defines it as an independent entity with a small number of employees.

This number varies depending on the government's statistical system. The most common limit is 250 employees, especially in the EU, but in some countries the limit is 200 employees, and in the US, an SME is any company with fewer than 500 employees. according to report (Pierre Célier, 2004) In Morocco, the number of employees varies for SMEs, very small enterprises (VSE): 10-19 employees (or usually less than 20 employees), - small enterprises (SE): 20-49 employees (or usually less than 49 employees), medium-sized enterprises (ME): and enterprises with a balance sheet total of up to 50 million dirhams (MDH), and a balance sheet total of up to 50 MDH(HT).

SMEs are a component of the world economy; they represent more than 98% of companies and they constitute a part of it represent more than 99% of all companies. The new definition of SMEs developed by the National Agency for the Promotion of SMEs (ANPME) takes into account only the criterion of turnover and disregards the workforce of the company. The latter distinguishes three types of SMEs, VSEs with a turnover of less than 3 MDH, small PE companies whose business volume excluding VAT is between 3 to 10 MDH and medium-sized enterprises with a turnover of 10 to 175 MDH, as for at Bank Al-Maghrib, it qualifies as TPE companies with a turnover of less than 10 MDH and SMEs, those whose annual business volume is between 10 and 175 MDH (HT).

In Morocco, given the small size and relative vulnerability of SMEs, the interpretation of the concept of SMEs has evolved in accordance with the provisions of the various texts promoting this type of enterprise. Among these documents are the 1972 Simplified Accelerated Procedure, the 1983 Investment Code, the 1987 Bank Al Maghrib⁵ Definition, and the 2002 Small and Medium Business Chart.

⁵ The Central Bank of Morocco.

3.3 THE CONTRIBUTION OF THE MOROCCAN GOVERNMENT TO SME SUPPORT

In Morocco, they represent nearly 95% of the national productive fabric; they contribute up to 40% to private investments and 30% to exports.

the SME sector will be the most vulnerable affected especially if the Coronavirus19 spreads more and more this leads to the situation of SMEs which cannot survive and persist in the competitive market a drop in demand, the production sector must stop operating, shutting down workers which translates into lower economic growth.

According to the first article of this statute (A Boudiaf, 2022), “an SME is an enterprise which is directly managed and/or operated by a natural person who is the owner’s-owners or shareholders who, alone or together with other enterprises, own no more than 25% of the capital or voting rights of the enterprise do not meet the classification of an SME (however, this level may be obsolete). Financial institutions with a mandate to raise savings from public sources if the enterprise is controlled by a collective investment fund, private equity firm or venture capital organization. Currently they think that Most Moroccan businesses, especially SMEs, are still in their infancy when it comes to risk management practices. Risk management has become increasingly important with the current COVID-19 virus pandemic. A risk-based approach is a cross-sectoral approach that allows companies to improve their performance.

Table 3. 1: Digital Services to Boost Efficiency.

Virtual Academy	e-learning is a platform to strengthen the capacities of partners and targets of Morocco SMEs and improve the services offered to VSEs, AEs, and project leaders.
Skills transfer platform	it is a platform dedicated to service providers and advisers
Nawat platform	Nawat platform for the management of group support carried out within the framework of the Nawat group
Jisr Lmokawala	it is a platform for managing SME projects in Morocco

Developed by the author

Scope for SMEs: After (C.Papillon, 2005). SMEs include small and medium-sized enterprises, i.e., those with no more than 500 employees. Most SME managers do not want their companies to go beyond a certain size - the 'people side' - because they are afraid of changing their functionality (stability and user-friendliness are the goals).

The small size of SMEs allows for a more efficient and economical management of human resources. More efficient: because it often leads to greater flexibility in the use of labor and more labor force participation. More cost effective: because the workforce is generally less skilled and less unionized, which can reduce labor costs and simplify wage arrangements in times of economic downturn.

The small size of SMEs also leads to a number of disadvantages, the most important of which is the issue of financing. On foreign trade Exports are closely related to the size of the enterprise.

3.4 THE DIGITAL BACKWARDNESS OF SMES

According to the World Economic Forum's 2019 Network Readiness Index (NRI) report (W.Sidło, 2020), the Network Readiness Index has not improved much since 2013. The speed of internet bandwidth is one of the main barriers to the digital transformation of companies. According to the researchers, e-government and the e-government readiness index determine how technology is used at the government level and in SMEs. At the national level, internet bandwidth speed is one of the main barriers to digital transformation for businesses, and the World Economic Forum's 2019 Network Readiness Index (NRI), which includes internet speed, enterprise-level technology adoption, the e-Government and e-Public Services Index, and the E-Index-Government Readiness Index, has not shown significant improvement since 2013.

Table 3. 2: Mediterranean Information Technologies and Services and Portolans Institute.

Country (in 2021)	Score (out of 100) in 2021	Rank (out of 121) in 2021	Score (out of 100) in 2019	Rank (out of 121) in 2019	Rate of change of score	Rate of change (Rank)
Albania	38,40	84	46,57	75	-17,54	12%
Algeria	36.88	90	35,30	98	4,28	-8,16%
BIH	42,72	81	42,71	81	0,023%	0
Egypt	42,49	72	38,58	92	10,134%	-21,73%
Israel	67.31	21	70 ,86	22	-5,0098%	-4,54%
Jordan	40,24	78	46 ,97	73	-14,32%	6,48%
Lebanon	41,57	76	41,44	86	0 ,313%	-11,68%
Mauritania	-	-	-	-	-	-
Montenegro	51,12	44	-	-	-	-
Morocco	43,06	69	41, 38	87	4,05%	-20,68%
Palestine	-	-	-	-	-	-
Tunisia	39,24	84	42,04	84	-6,66%	0
Turkey	50,98	46	53.75	51	-0,03	-9,80%

Trio Mobil a été sélectionné comme fournisseur pour BSH en raison de ses excellentes performances dans les essais POC, de ses compétences techniques et de sa capacité d'exploitation mondiale.

Table 3. 3: Digitalization Index Globally Source: (European Committee of the Regions, 2020).

	Morocco	Algeria	Tunisia	Turkey	EU	Mena
	Morocco	Algeria	Tunisia	Turkey	EU	Mena
Digitalization index	0,38	0	0,33	0,5	0,6	0,46
Institutional and regulatory						
Government Online Service Index	63,08	13,08	78,74	87,69	82,66	62,36
Legal framework's adaptability to digital business model	43,51	32,07	33	N/A	54,38	55,34
ICT regulatory environment	89,77	58,5	73,75	96,72	93,15	72,55
E-commerce legislation	100	50	100	100	100	71,72
Ease of doing business index	73,4	48,6	68,7	76,8	76,2	61,6
Human Capital						
Enabling Digitalization -Knowledge pillar	33,9	83,3	26,7	47,9	65,5	51,7

Table 3.3: Digitalization Index Globally “Table continued”

Firms (both large and SMEs) with Websites	65,94	N/A	61,92	61,63	76,12	48,6
Share of Internet users in total Population (%)	64,3	58	66,8	83,3	88,22	70,93
E-Participation Index	74,52	9,55	77,7	84,08	84,22	60,17
Socioeconomic gap in use of gap in use of digital payments	30,05	60,38	35,33	68,25	87,03	58,17
Infrastructure						
Enabling digitalization connectivity Pillar	66,5	28,4	58,7	33	61,9	50,8
Enabling digitalization infrastructure pillar	31,4	32,9	36,4	66	73,2	52,3
Availability of local online content	51,41	39,46	39,46	N/A	72,65	57,3
Rural gap in use of digital payments	0	89,99	27,44	59,78	72,9	51,63

Source: (European Committee of the Regions, 2020)

The Digitalization Index is on that: alpha scale = zero (worst performance)

To one = alpha scale mean (best performance).

Other assessments are listed in the table of digitalization index.

A: alpha plate, starting from 0 (worst output).

Maximum: 100 = (best result).

The local and regional authority not only lacks the prerogative, but also the budget and the capacity to participate in digitization efforts, also indicating that many of its representatives

have a low digital culture and their skills suffer from an internet connection slow and poor-quality IT equipment (see Table 1,2 in Network Readiness Appendix)

3.5 REASONS FOR THE LAGGING DIGITALIZATION OF SMES IN THE EURO-MEDITERRANEAN COUNTRIES

Subsequent to the spread of the COVID-19 pandemic, which started in Wuhan and then spread across the globe, some sectors, particularly SMEs, have been hampered by a lack of IT equipment and digital skills, making it difficult for them to digitalize under normal circumstances. Several barriers are behind the delay in digitalization: slow regulations contribute to an unfavourable business environment that prevents SMEs from developing long-term strategies and effective digitalization plans. (N Berggren, 2009) and also according (The world bank, Morocco - Financing Innovative Startups and Small and Medium Enterprises Project, 2017) the local and regional governments have not only the power but also—higher cost of digitalization implementation—the budget and capacity to contribute to digitalization efforts. Recent government initiatives requiring high operating costs and strict labor laws remain a barrier to SME development and innovation. Political instability constitutes a barrier for SMEs and frequent changes in legislation, factors that contribute to a hostile business environment and have long prevented SMEs from developing strategies and digitizing effectively.

The lack of adequate legislation to protect the integrity of entrepreneurs in many countries has hindered their business development. Complex and slow processes, bureaucracy, and high tax burdens prevent SMEs from getting rich, accessing finance, and going digital, as observed by the (The World Bank, 2020) and (Business Environment Ranking, 2021). Another impediment to national and sub-national authorities' effective and efficient legislative capacities is the scarcity and lack of trustworthy data on digitization within the majority of states, including those with a national agency. The data is out of date and disjointed: effective burdens of knowledge gathering because information is outdated and fragmented, government agencies, local and regional authorities are unable to concretely assess or evaluate information on the ground, plan strategic orientations, or deploy digital strategies. Another issue to set-up digitalisation is Failing to establish specific measures: allocating no resources to the design and definition of “indicators” or “barometers” of the digital context, or to a measurement strategy for securing quantitative or qualitative data for

appropriate metrics. There are Lack of information and no transparency of data: public procurement procedures in many countries in the region are non-transparent and archaic, which hinders the development of SMEs, as public procurement opportunities for national and sub-national authorities may be limited to unofficial lists of preferred contractors (due to corruption) or to large companies that can deliver large quantities of goods in a short period of time (rather than regular deliveries). Governments lack the digital, technological, and human capacities to take full advantage of the information and data they collect SMEs do not trust state authorities when trying to avoid paying for imports. According to (N Benjamin, 2014) the scale of the black economy is the biggest obstacle to digitalization efforts in most countries in the MENA, or Mediterranean region. Many SMEs prefer to stay in the informal sphere to avoid paying taxes and dealing with the consequences of government bureaucracy, because they do not trust national authorities (centralized or sub-national) and they certainly do not want to go online to avoid government surveillance. The Difficulty in financing funds for start-ups to embark on the digitalization process: According to a PAS survey (Economic and Social Commission for Western Asia, 2017), start-ups wishing to go digital often encounter financing problems (42% of respondents in Arab countries identified this as the main obstacle for entrepreneurs), the commission provide 4 mainly points to promote digitalisation Monitor foreign direct investment flows quantitatively and qualitatively, and gear them towards areas that result in technology transfer. Generalize business surveys to gauge the level of ICT adoption and implement well-thought industrial policies to leverage ICT for growth. Improve the efforts of national statistical offices in Arab. (world bank group, 2018) SME's have tight bank credit conditions, a rigid banking sector, a lack of diversified financial products, high loan guarantee rates, and risk-averse attitudes of shareholders who are reluctant to invest their money in countries with perceived political instability, poor business environments, and no stable legal frameworks.

The European Commission has adopted a European SME index for Mediterranean countries in the MENA region based on the European Small Business Act, and there are no updates to the Union for the Mediterranean SME policy framework for the Maghreb countries.

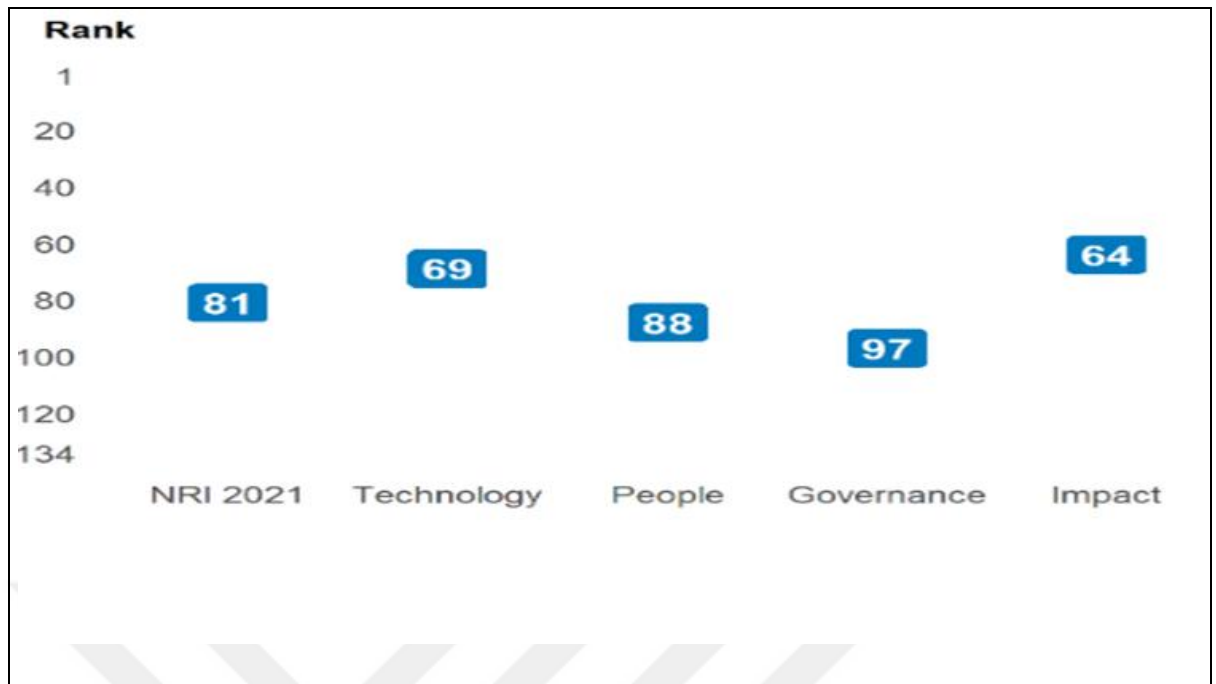


Figure 3. 1: Morocco's Highest Opinions Across Sub-Pillars Include Economy, Regulation, and Access, Among Others Morocco's Highest Opinions Across Sub-Pi 1 1.

The figure 3-1: show though, more could be done to improve the performance of the economy in the comment thread on business, living standards, and incorporation. As is mentioned (Institut potulans, 2021)

3.5.1 Main Challenges and Difficulties Faced by SMEs in Morocco

In Morocco, technological information is limited: on the one hand, SME managers are not informed about the management of the information system, because SME managers fear losing control of their data according to research. On the other hand, by the delay in terms of new technology, in 2013 and do not want to invest in new technology and computer software and IT services. Furthermore, the national agency for the promotion of SMEs in the field of IT integration grants in 2010 launched a program aimed at investing SMEs in technological tools, but this refusal of managers because of delays in the lack of transparency of data and lack of discipline and digital culture to get involved in digital transformation. Nevertheless, the implementation of this program presented major challenges and difficulties, on the report of (head of the moroccan government, 2020): for instance, the lack of an integrated vision for digital transformation leads to a partial and muted response to the needs of citizens and businesses. Digital transformation, in the use of technology to create

new business models and opportunities, has never been more important. Regulatory barriers hinder the effective implementation and widespread use of digital platforms. Despite the efforts made, there is still room for improvement in the digital infrastructure, with white spaces to be covered, low speeds and low utilisation of data centres. The culture and use of digital among citizens, businesses and public administrations is still limited; change management is insufficient and the skills of public administrations need to be strengthened and the use of digital needs to be democratised; the governance system does not allow for effective management of the implementation of digital initiatives and infrastructure policies are needed to implement government digital initiatives in order to identify gaps and create a coherent and uniform digital area which fully supports the functioning of the European Digital Single Market.

3.5.2 Developing a Digital Human Capital Model in SME Organization's

According to research (Lynch, 2002) , education and human capital are the most important aspects of modern culture. Education and human capital are some of the most important aspects of modern culture. This paper reviews the literature on this topic to better understand human capital and to illustrate how policy instruments can contribute to the overall well-being of a population by improving the efficiency of the education system. Incorporations with more traditional unionized labor-management relations with little or no direct participation of employees in decision-making have substantially lower productivity. Unionized plants that have adopted new workplace practices such as incentive compensation and greater employee participation in decision making perform much better than non-union plants. A number of studies (M Kim, 2018) show that in the era of digital transformation, the skill and value of human capital are taking on new measurements. The following are some of the new needs and capabilities for human capital in the current era: as Adapting to the digitization of the company requires a job profile with a higher level of knowledge, as technological developments require the acquisition of new skills through specialized training. As reported by (H Silva, 2017) he finds through his investigation that high-tech innovation displaces low-skilled workers, increasing their probability of becoming unemployed or of being offered short-term employment contracts. Decision-makers face the dilemma between designing innovation policies directed mainly at high-tech firms and labor market (and education and training) policies that reduce the downside of technological

change. According to (Alicia R Crowe, 2006) digital ability requires the ability to select, deconstruct, synthesize, and evaluate large amounts of information in statistical, graphical, or narrative form through blogs, websites, and emails in order to control multiple sources, form opinions, and plan actions. (Berson M, 2004), in addition, found that people develop basic skills for assessing and evaluating the reliability of information, gain experience of the availability of information in different formats, become familiar with the digital environment, understand digital technologies, and adapt to this virtual environment depending on the time spent there. Based on the Digital Economy and Society Index (Russo V, 2019), these include developing basic skills in analysing and assessing the reliability of information; gaining experience in accessing information in different formats; becoming familiar with the digital environment; understanding digital technologies; and adapting to this virtual environment through time spent online. (Kim M, 2018), (Bennet, 2009) & (Eleni Laitso & Dimitris V, 2020), There is a need to create a system of rules, norms, and values that everyone can use on an ongoing basis. Other studies focus on digital citizenship and try to highlight the skills needed and the norms to be followed in digital activities. (Bennet, 2009) Think about digitization, that young people who are exposed to digital culture have very different learning tools than traditional ones, because unlike generation (y), the younger generation (z) has faster access to digital tools when they are used. They therefore prefer to receive information individually, to produce creative content themselves rather than consume it, to solve problems collaboratively rather than individually, and to share the results. They find that the major factor causing the delay in the digital transformation consists of the way of improving the acquired knowledge and the incompetence of the human capital. (Aytekin Isman, 2014), find that the use of digital tools in a digital society requires skills and competences that facilitate the use of digital tools and processes.

3.6 NECESSITY FOR EFFECTIVE USAGE OF DIGITAL TOOLS

Otherwise, corporate managers must comprehend and identify new technologies' human, cultural, and societal demands, operate legally and ethically, assure the safe use of information, and be accountable for their use. On the other hand, (Noula I, 2019) argues that digital or cyber citizenship is a concept that describes a model of citizens who respond digitally and instantly; exposing and communicating in a social life model.

This idea is controversial in the social sciences and in the literature because of divergent views on the status of digital citizenship. In practice, those who are able to use digital technologies responsibly and as citizens are referred to as "digital citizens" (Papacharissi Z, 2010), and it is believed that citizens can monitor and comment on international events, gather and filter news, and contribute their opinions through blogs and videos uploaded to YouTube. I define digital citizens as people who are online every day. By focusing on frequent use, they are changing the debate on the digital divide to include the tools and skills to participate online. according to (Mossberger K, 2007), the retreat of public debate into private conversations is a form of political protest by citizens who feel excluded from mainstream debates and those who connect the real world to cyberspace and use the internet frequently and successfully. Furthermore, defines digital citizens as those who are online every day. By focusing on frequent use, they reframe the debate on the digital divide to include the tools and skills needed to contribute online. The most frequently cited definition of digital citizenship is provided by (Ribble M, 2007) study, which is based on nine elements: digital ethics, digital utility, digital regulation, digital mentoring, digital information, marketing automation, cloud rights and responsibilities, digital health and well-being, and digital security. Referred to (Steven G, 2001), the digital world predates the establishment of norms of responsible behaviour in the digital environment. People will be empowered to realize the potential of digital technological solutions. This means that industries with agile management systems will gradually implement changes in their organizational structures, from traditional to technological modernization, leading to an increasing wage gap with training, with experienced employees earning higher incomes. Based on the report of (European Bank for Reconstruction and Development, 2016), the quality of education in the region has declined considerably and the skills that graduates possess are not transferable to the private sector. Moreover, entrepreneurial opportunities for women are abundant across the region (for example, only 14% of SMEs in the Arab world are owned by women, compared to the global average of one in three). As pointed out (Stepanyan, 2019), Being outside the new information and communication technology (ICT) sector, owners and employees of more classic SMEs are often unaware of the importance of digitalization and do not take advantage of the opportunities it offers.

3.6.1 The Structure and Use of Virtual Modernization

According to (Schaaper M, 2020), Despite enhancements on the ground, internet access in the Mediterranean countries surveyed is still very expensive, slow and/or difficult to access. Geographical transformations are evident in terms of ICT connectivity, which has a direct influence on regional innovation, growth and business conception. Differences in connectivity between cities subsidize to the information, and centralization of high economic activity centres, which does not lead to consistent monetary development. Capacities show that this thriving city has a greater advantage than others in terms of its supplier base. This is also the case in Morocco, where cities such as Rabat and Tangier have higher connectivity than Meknes and Oujda (J Chauffour, 2018); even with the same population. Where extra frivolously disbursed populations could take advantage of new investments in national connectivity initiatives Access to virtual offerings additionally affect famous get admission to monetary offerings. This is Related to which can be the fairly low numbers of SMEs, mainly of an extra conventional type, which own web sites or Facebook pages despite the fact that this has reportedly extensively rehabilitated because the outbreak of the COVID-19 pandemic, Likewise, there may be a deficiency of virtual structures connecting capability marketers with each capability clients and investors. Foreign consumers lack statistics approximately SMEs' trustworthiness, at the same time as SMEs have little or no statistics approximately overseas client expectancies, on the report of, (D.Simone, 2019); (Sirimanne S, 2019)&The world bank⁶.follow to their supports Morocco's Digital Economy Plan (DPF) aims to further reduce the cost of doing business and support the digitization of business services Strengthening Guidance for Digital Entrepreneurs focuses on integrated private sector growth through enterprise creation and start-up financing. In Morocco, Algeria, and Tunisia, some respondents felt that the relationship between academia and non-state regions is weak. These are also influenced by low investment in research and development (R&D) in non-state regions, weak government incentives to spend money on R&D, and frustration with high-level resource policies.

⁶(The world bank, Kingdom of Morocco for the financial inclusion and digital economy development policy financing, 2019)

3.7 THE POSITION OF SMES IN ADAPTING TO COVID-19

Within weeks, the world as we knew it was changed. The international COVID-19 pandemic has forced the closure of global businesses, whether small, medium or large, put economies at risk and put our lives on hold. Due to the Great Depression, disaster in modern times has reached an unprecedented scale. The COVID-19, the outbreak has caused an economic and social shock, which has manifested itself in the bankruptcy of many companies around the world (Joseph A. Amoah, 2021), all the measures taken to curb the contagion such as social distancing, confinement of local and international, the closing of borders, as pointed out (Milasi & John Hurley, 2020), the COVID-19 have forced companies to take commercial measures based on digitalization externally both at the level of customers and suppliers and other stakeholders and internally its relationship with employees and the employer-employee relationship, based on the (World health organisation, 2020) statistics presented show 190 million cases of COVID-19. Then the pandemic spread to all countries of the world, in addition to viral mutations that are constantly increasing. Significantly, disrupting the global economic situation which has manifested itself in the decline of livelihoods and business performance, while allowing the distinction between large companies and SMEs in rural and urban areas and between advanced economies and developing classic economy. (E Beaunoyer, 2020), This divide stems from the large digital divide that is forcing SMEs to adapt, and SMEs continue to do so by using e-commerce tools (considered as a business model for distributing their products or services) or electronic payments (based on the financial exchange of goods and services or information over computer networks) or teleworking (defined as shift working), to name just two digital methods.

Though, the current COVID-19 pandemic is forcing companies to automate tasks in order to maintain social distance and adapt to the new situation. It is doubtful that this trend will continue after the end of the pandemic, but the tangible and intangible benefits are likely to continue.

In contrast, the current COVID-19 pandemic is forcing companies to automate tasks to maintain social distance and adapt to the new scenario. Amid December 2019 and May 2020, digital technologies will make life easier and automate tasks, leading to a 60% increase in internet traffic and a 120% increase in video conferencing. While this trend is unlikely to

continue beyond the end of the pandemic, it is likely to materialize in both tangible and immaterial profits.

According to (Müller R, 1985) and (Smart C, 1984), In the face of such economic turbulence and change, SMEs have to adapt and adopt two measures: short-term emergency solutions for survival and long-term strategic solutions for growth.

A study on digital adaptation in the business sector (Acosta P, 2020) found that during the pandemic crisis, when the connectivity index increased by 50% from December to May 2019, managers were more likely to comply with government bans to limit distribution. They prefer to spend half of their time working in the company and the other half with their employees via video conferencing. They therefore need to think about modernizing the economy, which includes the use of digital tools such as the Internet of Things and artificial intelligence, blockchain, robotics, CRM and other new digital technologies, not forgetting the use of predictive analytics and data. Digital transformation is impacting businesses differently based on business activity, with significant differences between manufacturing, commercial, and service businesses. Manufacturing businesses are primarily keen on controlling costs per product, production period, as well as the breakdown of total costs into manufacturing, logistics, and administration. Commercial businesses are interested in monitoring product acquisition prices with particular attention to logistical and customer service costs. Despite the business activity type, something that all businesses share is the need to innovate in products and/or services, business processes, and business models. As pointed out (Jane Laudon, 1991). The digital enterprise is an organization that partially or manages significant business processes and relationships with its stakeholders (suppliers, customers, employees, business partners through digital means).

The result he could find from (Levit, 2018) observations on the survey is that the digitalization of business has made the rules of the economy more global and digital, and that in recent years, globalization and digitalization have gone hand in hand and the two are complementary, as many thinkers believe that work has to be replaced, when in fact technology can make work more flexible, agile and efficient. The COVID-19 crisis has shown that the way people think about work has changed. It is more efficient and gains in productivity, The COVID-19 outbreak is a driving force behind the formation of digital start-ups.to come up with an excellent idea and meet the needs and renovate their services and

adapt to the new formality and ensure their stability in front of their traditional competitors, The COVID-19 to influence companies on the supply and demand side in avoiding panic buying, and peaks in demand for certain products.

Thus, digital transformation allows companies to innovate in their supply chains to avoid chronic shortages even in times of health and economic crisis (COVID-19) and allows SMEs without experience to join the platform ecosystem, or to create a digital business model to drive their products for example, "Marjan" in Morocco to remain more competitive, either by providing unique products with information superior products or engaging customers to chat online, providing integrated multi-channel products and services, or providing better product display online. Online using e-commerce workflows or virtual showrooms.

3.7.1 Morocco in the Digital Age

Subsequent, the spread of COVID-19, governance under the supervision of his majesty the KING Mohammed (VI) may God glorify him: Morocco took the perspective of rationalizing and accelerating the pace of digitalization, even adhering to the recommendation of the council of the OECD on the partnership for open government, certainly an effective and well-coordinated digital strategy aimed at short-term and long-term strategic digital orientations. Its purpose is to make public action in terms of job creation, economic competitiveness, and performance, financial inclusion, transparency and accountability, the fight against corruption, territorial development, as noted in (Belkeziz, 2019), In this context the King may God assist him, has highlighted public evaluation committees governed by an effective digital system based on three fundamental principles: the transparency of the system and the coherence of public decision-making mechanisms and would ensure attentive and methodical monitoring of the implementation of public projects.

The assessment to instrument a high-performance and efficient digital government presents a number of challenges for the transformation of public action. A transformation that will impact sectorial development strategies, services for economic and social operators, civilian services, territorial policies, and even the way organization functions. Citizens and businesses in Morocco are becoming increasingly connected because of the ongoing development of technological infrastructure, as well as the development of social networks, which are now compulsory as a means of communication and interaction, resulting in new

forms of social, economic, and political interaction. These connections require quality, efficient responsiveness, and a focus on the needs of the users. These services can "better respond to citizens' expectations, improve service users' general knowledge of services before they interact with the Administration" and help them acquire more "soft skills". As said before in the research (SAMHSA, 2020). Approaching administration to citizens through digital tools, as in "E-Government." (Carlos Conde, 2018). Morocco's government has shown a strong commitment to digital transformation, but coordinated implementation will require strong leadership and a governance framework. Since the early 1990s, Morocco has opted to delegate the development of telecommunications infrastructure to the private sector. By 2020, (Agency national telecommunications regulatory, 2020) smartphone penetration rate is estimated to be 137.5%. A similar governance framework would allow the government to implement strategic management of telecommunications projects. Based on this indicator, the Union International des Telecommunications (International Telecommunication Union, 2021) ranks Morocco fifth out of 22 Arab countries. These statistics, however, do not provide an indication of the quality of access to networks, which is significantly lower in rural areas compared to urban areas. Indeed, because of the regulator's perpetuation policy, operators prefer to invest in densely populated areas because they are more profitable. Issues and challenges of the digitalization of the Moroccan financial system, for all players in the Moroccan financial sector, the challenges of digital transformation are increasingly obvious. Digitalization allows the improvement of the productivity of Moroccan companies inside and outside the country. The objective assigned to this platform has been to attract a greater segment of foreign direct investment intended for the continent in the country, assuming that Morocco is already among the largest investors in West Africa since more than 85% of Morocco's foreign direct investment is destined for Africa. Today, this platform has managed to attract and host more than a hundred and multinationals active in the financial sector, according to (The Legatum Prosperity index , 2020) All those axes have been identified in terms of the reforms to be implemented in this regard. They necessitate the acceleration and consolidation of digital transformation. Concerning the sector of financial digitization, the government encourages stakeholders but also individuals while granting them micro-credits and digital services in order to facilitate their access to various financial services without traveling and even to consolidate infrastructure banking in rural areas. Especially in some areas where there is an

increase in poverty levels, the digital recovery policy has implemented efforts in terms of financial inclusion with the aim of providing access to savings that will aim to reduce poverty and provide credit to encourage SMEs to create jobs. Households and small businesses would invest more and better in more productive assets, which could contribute to triggering social transformation, as has happened in other countries in Asia and Africa. At the same time, digitization can improve the efficiency of financial institutions thanks to the virtual generalization of online operations (salary payments, transfers, withdrawals, invoices, etc.). It can also simplify the emergence of new services and players thanks to the more rapid diffusion of new technologies. This dynamic would allow companies to access new markets which were not accessible before in a win-win configuration through e-commerce and digital payment. The flexibility of products and services must take into account the various profiles of Moroccan households and their features (income level, education level, economic activity, etc.) to assess ways to divert them from their preference for using cash. The e-commerce sector is one that cannot develop adequately without this trust.

3.7.2 Digital Tools Used by SMEs

We looked at the impact of COVID-19 on businesses in the previous chapter, but in this chapter on SMEs, given their importance and contribution to the country's economic structure and prosperity, we described how the government implemented regulations to combat the spread of COVID-19 in order to consider how SMEs were able to adapt to digitalization in this economic and health crisis in the following chapter, in the COVID-19 era, by utilizing some digital tools such as platforms or even remote working:

The E-Commerce: Last year, e-commerce performed well despite the disruption caused by COVID-19 across all sectors. Refer to the latest research from the (CMI), e-commerce will reach new heights in 2020. As noted in (MAP, 2021), Although the COVID-19 crisis hit many companies hard, e-commerce performed well last year. According to a recent report from the Centre for Interbank Electronic Payments (CMI), E-commerce activity will reach an all-time high in 2020. According to CMI, (Sinclair, 2022) “In 2020, there were 14.3 million debit card, Moroccan, and foreign online transactions totalling AED 6 billion in commercial and physical facilities connected to the CMI, an increase of 46% compared to 2019. And 25% compared to 2019“. In 2019, e-commerce in Morocco grew by 46% in terms of the number of transactions and by 25% in terms of money spent. In 2021, e-commerce in

Morocco will continue to grow, with a 48% growth in terms of the number of transactions and a 30% growth in terms of money spent. Jumia has more than 10,000 sellers and offers more than 8 million products. Moroccan e-commerce company Jumia announced a partnership with Visa to improve access to business-to-business cash flow. The World Bank reports that only 17 percent of Moroccans over the age of 15 use digital payments, and only 1.6 percent of the population buys products and services online. Morocco could benefit from its growth potential in the region since the Mediterranean port of Tangier is connected to about 40 African ports. Chari was valued at \$100 million in January 2022 after announcing plans to experiment with a buy-now, pay-later (BNPL) solution with the acquisition of Karny. More efforts are needed to reach a larger percentage of the Moroccan population since most retailers still sell on consignment.

The main reasons for this huge development are the growing consumer confidence in e-commerce and the massive digitization of public services to ensure the continuity of certain activities and protect private consumption. Moroccans are increasingly using high-speed internet and fully paid mobile phones, and with better connectivity they can more easily shop online, providing a safe option for health-conscious consumers.

We could not complete the literature review without defining the concept of “E-commerce” according to which is considered a digital option in order to face the covid19 pandemic and limit distancing according (Barney, 1991). Companies with long-term competitive advantages will improve their long-term business performance. Implementing the concept of e-commerce in a company to gain a competitive advantage over its competitors can be a source of competitive advantage .as noted (A.Khan, 2016), E-commerce is the electronic purchase and sale of commodities (or services) via virtual platform. It includes a range of information, processes, and tools for online buyers and sellers, such as mobile shopping and encryption of E-payments (Wigand, 1997). To distinguish between e-commerce and terms with broader meanings and concepts, some may think that e-commerce only refers to transactions.

According to (Almousa, 2013) in the context of E-commerce "In today's competitive environment, e-commerce must be one of the secrets to success and growth.", e-commerce is the sale or exchange of computer-generated products between businesses, households, individuals, governments and other public or private organizations over the internet.as

pointed out (Fichter, 2008),It's a complex sector with a lot of issues. To the detriment of traditional commerce, e-commerce is growing rapidly around the world. As a result, it has significant implications for business-to-business and business-to-consumer interactions. Its growth has contributed to the transformation of traditional commerce and the expansion of international trade.

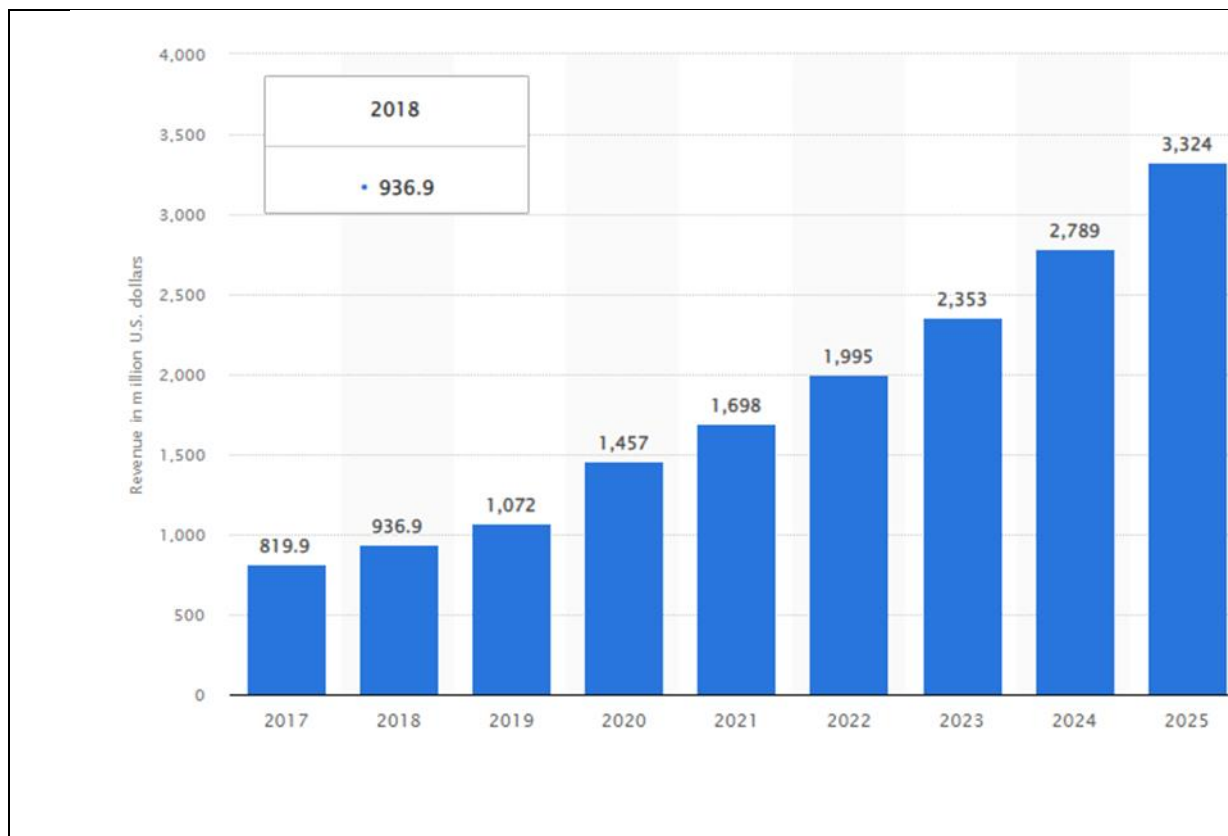


Figure 3. 2: Moroccan E-Commerce Revenue from 2017 Through 2025.

In the figure 3.2 upper, the individual demand for online shopping is shown in the following graph: The total E-commerce market is expected to reach sales of around USD 1.7 billion by 2021; Statista's Consumer Market Outlook estimates that the value of this will grow over the next few years, reaching USD 3.3 billion by 2025, with an estimated value of USD 3.3 billion. This suggests that people are starting to trust online shopping face to COVID-19 people start to buy for virtual platform as Jumia, Glovo and Alibaba. According to Statista, the e-commerce market comprises the sale of physical goods to private end consumers via digital media (B2C). This definition includes purchases made on both desktop computers (including laptops and notebooks) and mobile devices (such as smartphones and tablets). E-commerce marketplaces (re-merchandising and C2C) exclude digitally distributed services.

For example, digital media downloads or streaming, digitally brokered goods in B2B marketplaces, and digital purchases or resales of damaged, defective, or repaired goods. All amounts refer to annual gross revenue only and do not include transportation costs. (Statista, 2022)

East, South & Southeast Asia	West Asia	Africa	Latin America and the Caribbean	Transition economies
Singapore	United Arab Emirates	Mauritius	Costa Rica	Belarus
China, Hong Kong SAR	Saudi Arabia	South Africa	Chile	Russian Federation
Korea, Republic of	Qatar	Tunisia	Brazil	Serbia
Malaysia	Oman	Algeria	Dominican Republic	Georgia
Thailand	Turkey	Ghana	Colombia	Ukraine
Iran (Islamic Republic of)	Kuwait	Libya	Uruguay	North Macedonia
China	Lebanon	Kenya	Jamaica	Republic of Moldova
Mongolia	Bahrain	Nigeria	Trinidad and Tobago	Kazakhstan
Viet Nam	Jordan	Morocco	Peru	Azerbaijan
India	Iraq	Senegal	Argentina	Bosnia and Herzegovina

Figure 3. 3: Top 10 Developing and Evolution Economies in the UNCTAD B2C E-Commerce Index 2020, by Area.

this figure shows the Evidence of B2C development in Morocco, according in the 2018 international ranking of UNCTAD's Business-to-Consumer (B2C) Index, Morocco ranks fifth in terms of e-commerce market size behind Nigeria and South Africa, in the index. As a result, the Kingdom of Morocco dropped from 85th to 81st place out of 151 countries assessed. The report, which was released by UNCTAD during Africa E-Commerce Week in Nairobi, Kenya, (United Nations Conference on Trade And development, 2019) in December 2018, takes into account the number of online shoppers, the level of server security and the ease of payment and delivery. In this area, Morocco outperforms the African average (26%) and even the global average (54%), with 62% of Moroccans using the internet, compared to three quarters of the continent's population who do not yet use it. Access Along with Gabon, Morocco tops the African table, ahead of South Africa (59%) and Tunisia (56%). The coverage of secure internet servers in Morocco is 54 per cent (15 percentage points higher than in 2017) and compares very well with South Africa (83 per cent), Mauritius (56 per cent) and internationally (also 56 per cent).

Moroccan E-commerce includes more than a thousand operators using Facebook, Instagram, and “WhatsApp” groups to reach customers and present their products discreetly, these sellers operate on a delivery payment basis, which makes it more difficult for the authorities to follow them, despite the proliferation of trade, Moroccan start-ups still face major

constraints that hinder their prospects. Although reaching a record level of funding in 2021, set at \$29 million, Moroccan start-ups are suffering from a low flow of international investment and a deadly administrative process, reports "Techcabal", an African start-up platform. JUMIA platform, Morocco

As we are keen-sighted, Morocco is also worried about the consequences of digital revolution on the labor market. The country must start planning to reap the benefits of this transformation while also limiting the negative effects it may have on economic growth and job creation.

Means, such as 'the Maroc Digital 2020 strategy', are already in place. The pandemic has highlighted the importance of hastening this transformation in order to offset the negative effects on the Moroccan economy. In addition, according to (Benabdeljalil I, 2020), "it is possible that digitalization will provide a solution for victims of the digital transition."

About Remotely working, Working from home became popular in the 1990s as a result of economic expansion and the advancement of information and communication technologies.(Alves Cachapela, 2016)

The symbiosis between Data and communication technology development and cost-cutting strategies demonstrates that the system has been a game changer. The growth of the Internet has considerably aided the proliferation of remote working. Distensible is a beneficial tool for employees who want to be self-sufficient at work as well as a technological project. (Laurent Taskin, 2003)

It is regularly executed by a natural person under the following conditions: on the one hand, the work is completed at a distance, far from the location of the work, and far from the customer's actual capability to monitor the services provided by the teleworkers; on the other hand, the work is performed using computers and/or telecommunications tools, as well as remote communication tools, for instance, google meet, skype and ZOOM.

To explore the subject of remote work, one must first investigate the concept of work in general, with the exception that remote work incorporates a core notion of distance into its development (Taskin L, 2003)."Telework refers to the performance of a professional activity, in whole or in part, at a distance (i.e., outside the immediate vicinity of the location

where the outcome of this work is expected and outside any physical possibility for the supervisor to monitor the performance of the service) and through the use of ICT" (Laurent Taskin P. E., 2007). It is difficult to complete all chores digitally. The most viable ones have immaterial and digital characters in common, demanding.

Table 3. 4: Independent Network

	Benefits	Drawbacks
Alarge enterprise or SME for all those involved in e-learning.	*Significant benefits. Incentives contain encouraging goal creation, encouraging professional relationships, avoiding micromanagement, investing in automation, and accepting failure. (V Patricia, 1999) *Lowering staff churn and unemployment (Mello, 2007)through flexible scheduling, consistency, performance incentives, communication between staff and manager. • There have been new management control systems established. Managers should be aware of the common issues related with telecommuting and establish clear performance requirements for telecommuting.	• Increased monitoring and regulation; (Dambrin, 2004) • Management conflict • Hitches in assessing worker and his performance (B Chaumon, 2003); (C William, 2005) • Asking questions of the working group (A Felstead & Sally, 2003) • Technical issues related to equipment (A.Mello, 2007)

Table 3.4: Independent Network “table continued “

	Determine and provide the appropriate tools. Identify and deliver the appropriate tools, as well as additional resources The manager should establish precise days, times, and ways of communication for his or her squad, as well as remotely monitor the roster. (H.Cholet, 2000) • Transformational communication enables the workforce to experience a new type of communication focused on developing qualities such as empathy, honesty, responsibility, assertiveness and leadership. It fosters self-esteem and self-confidence, as well as empathy and respect for others. When working at a distance, communication must be transformative. Requests, respect, complaints, offers and so on are some examples of organizational communication flows (A, 1994) • Employees with more freedom of action can start and end the day with their tasks done and achieve significant results.	
--	---	--

Table 3.4: Independent Network “Table Continued”.

	• People who work remotely work longer hours, have a better work-life balance and are less stressed, resulting in increased productivity. (Taskin L, 2003), Rewards	
Force worker	Homework has become obsolete(Ville Helminen, 2007); (Laurent Taskin, 2003) -positive working environment among employees(Itzhak Harpaz, 2002); (Arnold T, 2006). -Expands autonomy (A.Mello, 2007) -Recovers efficiency (Taskin L, 2003) -Progresses motivation ; (A.Mello, 2007)	• Workplace conflict (Jeffrey Greenhaus, 2013),(Sylvie St-Onge & GILLES GUÉRIN, 2012) • Employees misinterpret electronic control (Peter Bain, 2002) • social isolation as a result of digital output consumption(Cecily D.Cooper, 2002);(Lynette Harris, 2003) • Lack of professional opportunities (C, 2005)

In this section on an adaptation of SMEs, we have defined the tools that have been able to maintain the activity of the company, far from the workplace while respecting the rules of containment of COVID-19. Indeed, according to several researchers, e-commerce is an activity of sale and purchase by digital tools via the intermediary of the company responsible for delivery such as JUMIA and Glovo by digital commercial strategies. This instrument allows communication between consumers and managers of the production chain by offering them the possibility of giving their opinion to correct product failures and improve

performance. In addition, contribute to the management of the productive and commercial organization of the products.

On the other hand, the 2nd element of adaptation of companies and in general SMEs, there is teleworking, which is a modern way of working at a distance from the business environment or partially outside the premises of the employer in addition, teleworking allows the employer to work independently of the business organization, i.e., to work autonomously and to sell his expertise and services to the client.

Teleworking provides the employer with autonomy and at the same time its performance and benefits for the employer. Other advantages and disadvantages are essential for the teleworker and the companies such as remote monitoring by the manager; these new technologies allow reliable and combinable information and raise the visible and foreseeable uncontrolled elements to offer the possibility of supervising the workers.

Indeed, control and autonomy are two antagonistic concepts. that coexist and which can go in the same direction by ensuring the freedom of the employer and the daily monitoring of the controller to achieve short-term and long-term performance, objectives ensuring better productivity. Trust and control attributes to employers to ease the tensions between the two, but these two dimensions are necessary to make remote work more profitable for companies in general and in particular among SMEs.

To conclude, thanks to the factors of digital marketing and remote work, SMEs have been able to accelerate their modern managerial rhythm and ensure the stability and continuity of their activity within the market. According to (B.Moriones & L.López, 2013)the adoption of technologies improves SMEs' profitability, growth, stock market value, social and environmental performance, and satisfaction.

As seen by (S.Alam, 2009), the use of technology can improve company competitiveness because the Internet allows SMEs to compete with large corporations, That Leads to SMEs' performance.

As part of research, to verify our five starting propositions, which were as follows:

1) H1: The degree of digitalization is significant for the adoption of digitalization.

- 2) H2: The adoption of digitalization is significant for the improvement of digital infrastructure.
- 3) H 3: SMEs involvement in the digitization process has an impact on digital acceleration.
- 4) H4: Digital acceleration has an impact on the digital transformation of SMEs.
- 5) H5: Digital transformation is significant for the performance of SMEs and companies in general.

As a result, a digital business strategy is a design approach that digitally disrupts the business environment or offers novel digital offerings to gain a competitive advantage. In essence, it is a hybrid of an IT-driven digital strategy and a business strategy with a symbiotic relationship between the two, as pointed out (Ramasubbu, 2013).

Companies must have a digital strategy that suits them in order to successfully controlling digital transformation and thus ensure future survival in times of digitalization. Companies use the "digital transformation framework" to develop a digital strategy.

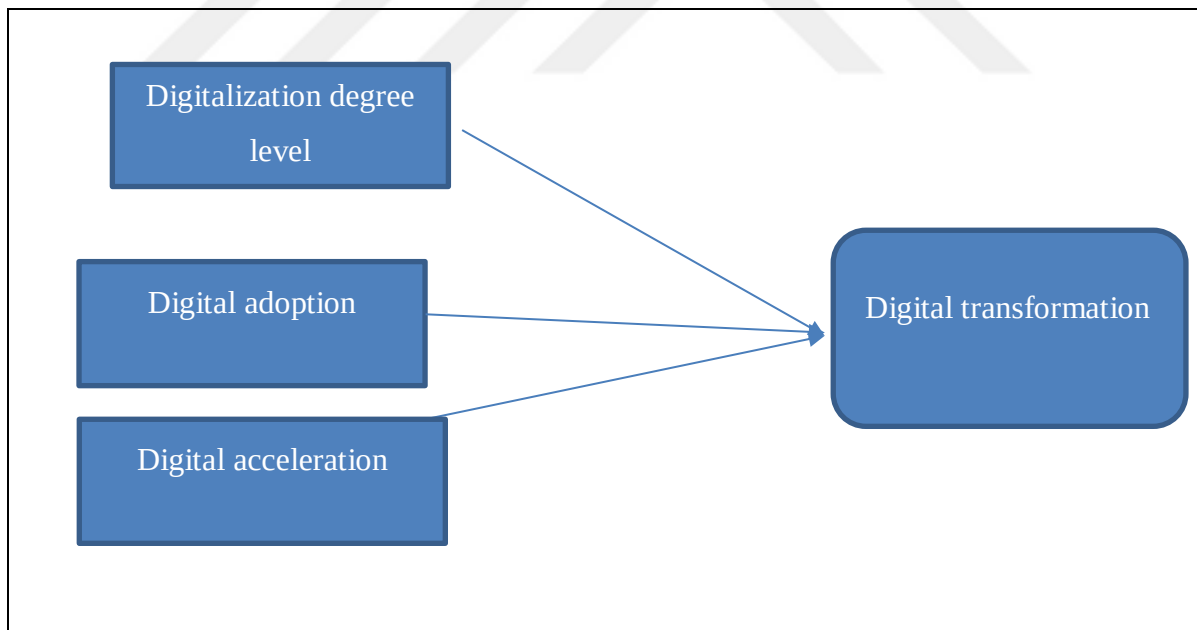


Figure 3. 4: Conceptual Model: (Developed by Author).

Through our literary review, we will develop a conceptual theoretical model that will highlight and clarify our investigation in order to answer our research question: In the era of covid-19, Our conceptual framework shows that SMEs that resort to digital innovation are

able to secure a certain performance, which allows them to ensure a certain continuity in the market and a certain risk, while those that cannot ensure adaptation to digitalisation have stopped their activities. Based to literature review our conceptual framework is composed on 2 variables:

- i. Independent variables (cause) are: Digitalization degree level, Adoption of digitalization, digital acceleration.
- ii. Dependent variable (effect) is Transformation digital



4. MODELING AND EMPIRICAL STUDY

Before focusing on the technique and methodology on which our thesis should focus, we must first frame our thesis and describe the tools we will use to measure the impact of digitalization on SMEs in Morocco in the era of COVID-19, in the chapter. This will allow us to empirically measure the impact of COVID-19 on the digitalization of SMEs in Morocco. Many philosophical questions as to why digitization is more crucial for SMEs have been addressed previously.

I create a deeper set of research questions within this framework and present ideas on how to relate the questions to the data accordingly so that I can answer the question presented at the beginning of my work.

My combination of research approaches to examine the phenomena of digital acceleration of Moroccan SMEs and provide the best answers to these issues is presented in the last part.

4.1 METHODOLOGY AND RESEARCH TOOL

The methodology we'll use to accomplish our study uses a questionnaire as a quantitative research instrument and a semi-structured interview as a qualitative research tool.

Through the investigation we conduct for our thesis, we will be able to comprehend how digitization has made the management system in small and medium-sized businesses in Morocco flexible and contemporary.

4.2 RESEARCH METHODOLOGY: QUANTITATIVE DATA

In this section, the method used in this study to examine and evaluate the proposed research design is elaborated. Based on the study of (Wacheux, 1996) discussion above, empirical research is carried out to examine how digitalization enables SMEs to ensure their persistence in the era of covid, but it is appropriate to highlight a definition of quantitative research.

4.2.1 Quantitative Research Methods

In our study, it is ideal to use a hypothetico-deductive approach in combination with a quantitative approach in order to achieve greater validity of the total body of knowledge. The selection of the domain (population), the selection of the subjects and finally the selection of the subgroup or sample are therefore prerequisites for the study, which we will discuss in the next section.

4.3 METHODOLOGICAL APPROACH

The impact of COVID 19 on the digitization of Moroccan SME management poses a modern management problem that integrates several important concepts and axes of analysis that are part of the new systemic analysis, leading us to believe that the epistemology most appropriate for us is positivism, as positivist epistemology is related to three main assumptions: the ontological assumption, the deterministic assumption and the dualistic objectivist epistemological assumption. The ontological assumption assumes that the existence of the real is independent of the interest and attention that the researcher (Marie-J Avenier, 2015) may give it. Thus, the goal of science is to discover truth. The deterministic hypothesis puts forward the idea that there are special forms of internal determination of reality. "As Comte has already said, it is suggested that "everywhere, instead of when we cannot determine the cause itself, we simply look for patterns, i.e., stable relationships between the observed phenomena".⁷

4.3.1. Framework Approach

In the first part, chosen a quantitative analysis consisting of a description of the situation in Morocco regarding the concept of digitization of SMEs, i.e., a description of the events associated with it without the use of a measurement instrument.

The second part will then be devoted to the questionnaire, which integrates a quantitative approach since it is clear that we have to deal with the measurement of the answers collected in order to carry out our reliability analysis.

⁷ Ibid, p.26

We can therefore say that the methodology on our subject is a mixed one, in which the distinction between qualitative and quantitative is blurred, since none of the criteria mentioned allows an absolute distinction between the two types of methods. Furthermore, the choice of a method depends on the question under study, the nature of the research (exploratory, confirmatory, etc.), its accessibility to certain populations, and the resources available, provided it ensures the quality of the data collected so that the research question is answered.

4.4 RESEARCH OBJECTIVES AND QUESTIONS

This section of our work includes an introduction to the objectives that guided our research; the digital transformation that we have seen above includes many elements that are of interest to managers, especially in SMEs, and are therefore of interest. In addition, to assess the company's perception and maturity regarding digital transformation. Study and measure the impact of digital transformation on the productivity of the company's ecosystem and organizational environment, and identify the barriers that prevent them from deploying digitalization in their infrastructure.

Furthermore, by assessing the performance of the digital innovation tools that managers carry with them, all these points will help us to achieve the basic objective of answering our research questions.

Regarding the impact of COVID-19, our research will focus on conducting and answering the questions posed at the beginning, by which we mean a questionnaire and semi-structured interviews on the impact of COVID-19 on digitalisation. Management of SMEs in Morocco. In addition, it will be useful to know how each company's sector of activity responds. In addition, we will learn how they are responding to ensure their sustainability in the market. For example, is the government providing any support to SMEs to ensure continuity in the market? Are they adapting by using digital acceleration mechanisms as a way to protect the performance of their ecosystem while changing their organizational culture, introducing new products and identifying barriers to their digital footprint? The research methodology we will adopt is quantitative, using semi-directed interviews as a research tool. Furthermore, the aim is to present the axes that will guide our research, namely the digital transformation mentioned above, which includes a number of elements of interest to managers, especially

SMEs, and therefore relevant. On the other hand, the perception and maturity of companies regarding digital transformation were assessed.

The impact of digital transformation on the productivity and organizational context of a company's ecosystem was examined and measured, and barriers to delaying the adoption of digital technologies in their infrastructure were identified. In addition, by evaluating the effectiveness of the digital innovation tools used by managers, all these points will allow us to achieve our main objective of answering our research questions.

4.5 SELECTION OF EMPIRICAL RESEARCH TOOLS

In this section, we discuss how we conducted the empirical analysis to collect data through observation, which is widely used in empirical analysis:

4.5.1 Sample Analysis

SMEs located in Morocco were included in this study. The sample used was made up of SMEs in each region using purposive sampling and segmentation techniques with the following criteria: The selected SMEs are trying to adapt to digitalization in order to confirm their continuity in the market during the COVID-19 pandemic.

The distribution technique of the instrument was conducted online in 18 cities in Morocco using a form with ordinal measures (Likert scales). The results of the questionnaire were obtained from SMEs in 19 provinces, sample size 354 SMEs. The variables used are measured as follows.

Our empirical study focuses on the extent to which digitization fits the environment and organization of SMEs.

4.6 PRESENTATION OF THE RESEARCH HYPOTHESES

Thus, through this study, we want to focus on SMEs and answer the following questions: How do SME managers learn about digital technology in the COVID-19 era? This issue leads us to propose certain hypotheses, namely as part of research, to verify our six starting propositions, which were as follows:

- i. Hypothesis 1: The degree of digitalization is significant for the adoption of digitalization.
- ii. Hypothesis 2: The adoption of digitalization is significant for the improvement of digital infrastructure.
- iii. Hypothesis 3: SMEs involvement in the digitization process has an impact on digital acceleration.
- iv. Hypothesis 4: Digital acceleration has an impact on the digital transformation of SMEs.
- v. Hypothesis 5: Digital transformation is significant for the performance of SMEs and companies in general.

4.7 QUESTIONNAIRE DESIGN

Table 4. 1: Questionnaire Design.

Variables	Items	Source
Degree of digitalization	* We fully adopt digital artifacts (products or services) *We fully adopt digital platforms that support digital products and services *We fully adopt digital infrastructures, such as technology tools and systems	(Hai Guo & Ran Huang, 2020)
Digital technology adoption	*Big data technology (such as big database, data analysis technology) *Cloud computing technology (such as cloud computing)	(Hai Guo & Ran Huang, 2020)

Table 4.1: Questionnaire Design. “Table Continued “

	*IoT technology (such as network distribution technology)	
Digital transformation	* Change existing product lines *Change regional market coverage *Change external cooperative Relations	(Hai Guo & Ran Huang, 2020)
Digital acceleration	Strengthen the application of online office tasks Improve the digitalization of supply chain channels Adopt digital artifacts, such as digital products or services Adopt digital platforms, such as digital communication platforms	(Hai Guo & Ran Huang, 2020)

5. EMPIRICAL RESULT

Analysis was performed with the SPSS 21.0 program, working at the 95% confidence level. The analysis used independent group t-test, ANOVA test, Pearson correlation and regression. Differences in variables by gender were analysed by t-test and differences in variables by age were analysed by ANOVA test. In addition, the relationship between variables was analysed by Pearson correlation and the effect was analysed by regression test.

In this study, Exploratory Factor Analysis was used to determine the construct validity of the scale and Cronbach's Alpha coefficient was calculated to determine the level of reliability.

EFA is used to reduce and summarize the data, i.e., to transform many hidden variables into more controllable factors; KMO and Bartlett's tests are performed to determine whether the scale is suitable for factor analysis; the KMO coefficient is used to determine the sample to be used for factor analysis. Calculated to test the sample size, while the normal distribution status is checked by Bartlett's test. In doing so, the KMO test measure must be greater than or equal to 0.50 and the sphericity of the Bartlett test must be statistically significant.

To determine the factor structure of the scale, the Scree Plot graph showing the distribution of eigenvalues is examined. However, if the number of factors is more than one, varimax vertical rotation is used to assign the items to the relevant factors. In the process of factor analysis, the factor loadings values are considered in the process of assigning scale items to or removing them from a factor.

5.1 DEMOGRAPHICS ANALYSIS

Table 5.6 shows the demographic characteristics of our population to understand our sample: we can see that the gender of the participants is indicated. 33.9% of the respondents are male and 66.1% are female. It is clear that there are more men than women in the population. Table 5.6 also shows the age of the respondents. 125 of the respondents are under the age of 30. The remaining 147 respondents are between 30 and 39 years old. The remaining 82 respondents are aged 40 and above. At the workplace level, 104 respondents are employees and 48 are company managers. In terms of activity, the majority of respondents are employed in manufacturing and operations. 29.1% of the 103 respondents indicated that COVID-19

has had an impact on their organization. 75.9% Finally, we see that 48.9% of employees are laid-off managers and those who left their jobs during COVID-19.

The first part of this analysis consists of demographic data showing the characteristics of the respondents:

Table 5. 1: Demographic Variables.

		N	%
Gender	Men	234	66,1
	Female	120	33,9
Position in the company	Operation Manager	48	13,6
	CEO	21	5,9
	HR Manager	36	10,2
	Finance Manager	45	12,7
	Director	46	13,0
	Employee	104	29,4
	General manager	15	4,2
	Other	39	11,0
Age	18-29 ages	125	35,3
	30-39 ages	147	41,5
	40 and more	82	23,2
Sector of activities	Manufacturing and activities	103	29,1
	wholesale and retail	0	0,0
	Agriculture, animal production and hunting	30	8,5
	Forestry and fishing	33	9,3
	Construction	35	9,9
	Consultancy and accounting	0	0,0
	Real estate activities	39	11,0
	Tourism	55	15,5
	Human health and social support activities	55	15,5
	Accommodation, catering and similar	4	1,1
Organization been affected by covid-19	Yes	267	75,9
	No	85	24,1
Reduction the number of employees	Yes	173	48,9
	No	181	51,1

66.1% are men, 29.4% are employees, 41.5% are between 30 and 39 years old, 29.1% belong to the production and activity sector, 75.9% are affected by COVID-19 and 48.9% have reduced the number of employees.

5.2 FACTORS ANALYSIS

In this section, we will attempt to statistically measure the KMO to determine the extent to which the data are suitable for factor analysis, and the variable digital adoption is found, This table (5.7) presents two tests that indicate whether the data are suitable for structure detection. The Kaiser-Meyer-Olkin measure of sample adequacy is a statistic that indicates how much of the variance of the variables may be due to underlying factors. High values (close to 1, 0) usually indicate that a factor analysis may be useful with your data.

After determining the factor structure, confirmatory factor analysis was performed to validate the factor structure and the goodness-of-fit index was calculated. Factor analysis was performed according to standard practice. Pearson product moment correlations

Product-moment correlations were used between all characteristic variables. Since the study was exploratory in nature, principal component analysis was conducted using the principal diagonal unit.

Principal component analysis was performed using the principal diagonal unit. According to Kaiser (1960) and Guttman (1954), the solution is as follows rotation of all factors with eigen values greater than one.¹

Table 5. 2: KMO and Bartlett Test Results for The Digital Adoption.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,903
Bartlett's Test of Sphericity	Approx. Chi-Square	1464,853
	Df	21
	Sig.	0,000

In the factor analysis, a KMO value of 0.903 was calculated. Therefore, the sample size was adequate for factor analysis (KMO>0.500). In Bartlett's test, a statistically significant X2 value of 1464.853 ($p<0.05$) was found. Based on the results of the KMO and Bartlett's tests, the data were considered adequate for factor analysis.

Table 5. 3: Results of KMO and Bartlett's Tests for Degree of Digitalization.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,918
Bartlett's Test of Sphericity ,nbv	Approx. Chi-Square	1362,859
	Df	21
	Sig.	0,000

In the factor analysis, the KMO value was calculated at 0.918. Consequently, the sample size is adequate for factor analysis ($KMO > 0.500$). In the scope of Bartlett's test, the X^2 value was found to be 1362.859 and statistically significant ($p < 0.05$). According to the results of the KMO and Bartlett's tests, it was concluded that the data were suitable for factor analysis.

Table 5. 4: KMO and Bartlett Test Results for Digital Transformation.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,673
Bartlett's Test of Sphericity	Approx. Chi-Square	322,383
	Df	3
	Sig.	0,000

In the factor analysis, the KMO value was calculated as 0.673. Therefore, the sample size is suitable for factor analysis ($KMO > 0.500$). Within the framework of Bartlett's test, the X^2 value is 322,383 and statistically significant ($p < 0.05$). According to the results of KMO and Bartlett's test, it was concluded that the data were suitable for factor analysis.

Table 5. 5: KMO and Bartlett Test Results for Digital Acceleration.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,749
Bartlett's Test of Sphericity	Approx. Chi-Square	626,190
	Df	3
	Sig.	0,000

In the factor analysis, a KMO value of 0.749 was calculated. Thus, the sample size is appropriate for factor analysis ($KMO > 0.500$). Bartlett's test found the X^2 value to be 626.190 and statistically significant ($p < 0.05$). According to the results of KMO and Bartlett's test, it was concluded that the data is suitable for factor analysis.

Table 5. 6: Factor Analysis Results for Digital Adoption.

	Factor Loadings	Ratio of Variance Explained	Cronbach's Alpha
Adopt digital infrastructures	0,870	63,399	0,901
Digitalization relies on internal	0,862		
relies on external purchases	0,855		
Adopt management digital model	0,846		
Adopt digital business models	0,794		
Adopt digital platforms	0,692		
Adopt digital artifact	0,619		

According to the results of the factor analysis, the scale consists of seven items and one factor with factor loadings between 0.619 and 0.870, which explains 63.399% of the total variance of the scale and has a reliability coefficient of 0.901. Thus, the reliability level of the scale is quite high.

5.2.1 Reliability Analysis

Cronbach's alpha indicates the reliability level of the scale. This coefficient is between 0 and 1. According to the alpha coefficient (alpha), the reliability of the scale is interpreted as follows.

$00 \leq \alpha < .40$, the scale is unreliable.

If $.40 \leq \alpha < .60$, the scale is unreliable.

If $.60 \leq \alpha < .80$, the scale is reliable.

If $.80 \leq \alpha < 1.00$, then the reliability of the scale is high.

Reliability analysis can be defined as the internal consistency of an instrument. It was first defined by Lee-Kronbach. The critical value for reliability analysis is .70 or higher. The analysis of the results shows that the Cronbach's alpha value for digital inclusion is 0.901. In this case, the hypothesis is accepted. For the improvement of digital infrastructure, the degree of digital adoption is significant with a Cronbach's alpha value of 0.903 for the degree of digital adoption. In this case, the hypothesis is accepted. The use of new digital tools affects the adoption of digital tools. In this case, the Cronbach's alpha value for digital

transformation is 0.7833 hypothesis. Digital transformation is meaningful for the performance of SMEs and the performance of firms in general.

In order to address our research question of identifying digital transformation in SMEs, we will test the reliability and validity of all criteria related to a specific development model. It is possible to observe differences in four variables (digital adoption, digital acceleration, digital transformation, and digital degree) that actually reflect differences in two unobservable variables. Again, thanks to factor analysis, we will measure the correlation of the elements of each variable if the element is close to 1, as shown in the table below, to see if our four variables confirm a strong correlation between them.

Table 5. 7: Factor Analysis Results for Degree of Digitalization.

	Loading factor	Ratio of Variance Explained	Cronbach's Alpha
IOT technology	0,847	63,500	0,903
Big data	0,831		
Plat form development technology	0,820		
Mobile technology	0,812		
Machine earning	0,810		
Digital commerce instant messaging	0,798		
Cloud computing technology	0,640		

According to the results of the factor analysis, the scale consists of seven items and one factor with factor loadings ranging from 0.640 to 0.847. the explanatory rate of the total variance of the scale is 63.500% and the reliability coefficient is 0.903. therefore, the reliability level of the scale is very high.

Table 5. 8: Factor Analysis Results for Digital Transformation.

	Factor Loadings	Ratio of Variance Explained	Cronbach's Alpha
Regional market coverage	0,881	69,938	0,783
External cooperative relations	0,847		
Change existing products line	0,778		

According to Table 5.8 the factor analysis, the scale consists of 3 items and 1 factor with factor loadings ranging from 0.778 to 0.881. the total variance explained by the scale is 69.938% and the reliability coefficient is 0.783. therefore, the reliability of the scale is quite high.

Table 5. 9: Factor Analysis Results: Digital Acceleration.

Factor Loadings Ratio of Variance Explained			Cronbach's Alpha
Strengthen the application of online office tasks	0,916	82,555	0,894
Adopt digital platforms	0,911		
Improve the digitalization of supplychain	0,899		

Table 5.9 upper show the results of the factor analysis, it was determined that the scale consisted of 3 items and one factor with factor loadings ranging between 0.889 and 0.916. The rate of explaining the total variance of the scale is 82.555% and the reliability coefficient is 0.894. Accordingly, the reliability level of the scale is very high.

Table 5. 10: Descriptive Statistics of Variables.

	n	Mean	Std. Deviation
Digitalization Degree	354	3,20	1,07
Digital Adoption	354	3,12	1,01
Digital Acceleration	354	3,20	1,03
Digital Transformation	354	3,27	1,24

Table 5.10 the table above show, the average Digitalization Degree is 3.20=1.07; Digital Adoption is 3.12=1.01; Digital Acceleration is 3.20=1.03; Digital Transformation is 3.27=1.24.

5.3 CORRELATION ANALYSIS

In Table 5.16, we explore and use Pearson's correlation measure, r , to describe the strength and direction of the direct relationship. The correlation between the four variables allowed us to perform a correlation test to evaluate the relationship (dependency) between the four variables, showing that the relationship is strong and positive when the value is close to 1.

On the other hand, a value close to negative 1 indicates a strong negative correlation. However, a value close to 0 indicates that the relationship between the dependent variable and the target variable is weak. On the other hand, since it has a dual purpose, the significance of the variables can also be tested with this analysis. These variables are significant if the value is less than 0.05. If the variable is less than 0.05, the relationship is not tested. To test Thesis H3, businesses regressed on the predictor variables (numerical metamorphosis), the independent variable significantly overestimated the dependent variable $F = 143.708$; $P < 0.001$ indicates that the independent variables can play an important role in the structure of the dependent variables ($\beta = 0.207$; $P < 0.001$), these results easily indicate the positive effect of the independent variables. Also, $R^2 = 0.552$ is supported by 53.2, so our thesis addresses the issues of digital metamorphosis for SMEs and firm performance in general.

Table 5. 11: Examining the Relationship Between Variables.

		Digitalization degree	digital adoption	digital acceleration	digital transformation
Digitalization degree	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	354			
digital adoption	Pearson Correlation	,671**	1		
	Sig. (2-tailed)	0,000			
	N	354	354		
digital acceleration	Pearson Correlation	,526**	,570**	1	
	Sig. (2-tailed)	0,000	0,000		
	N	354	354	354	
digital transformation	Pearson Correlation	,658**	,666**	,567**	1
	Sig. (2-tailed)	0,000	0,000	0,000	
	N	354	354	354	354

**p<0,01 Pearson correlation test

The table 5.11: show There is a strong positive relationship between digitalization degree and digital adoption ($r=0.671$); a moderate positive relationship between digital acceleration ($r=0.526$); and a strong positive relationship between digital transformation ($r=0.658$).

There is a moderate positive relationship between digital adoption and digital acceleration ($r=0.570$); there is a strong positive relationship between digital transformation and digital adoption ($r=0.666$).

There is a moderate positive relationship ($r=0.567$) between digital acceleration and digital transformation.

5.4 REGRESSION ANALYSIS

Studies often use simple descriptive and correlational analyses. However, abandoning regression altogether can lead to problems that reduce the accuracy of the study, for example, partially correlated variables can be ignored. Therefore, we conducted a simple analysis, controlling for four variables: province, sector, property, and year.

Complete regressions between the key variables as a robustness test.

First, as shown in Table 5.17, the overall level of digitalization positively affects the implementation of crisis management strategies, including the response to the degree of digitalization ($\beta = 0.329$, $p < 0.001$) and digital technology adoption ($\beta = 0.327$, $p < 0.001$).

Second, digital adoption influences digital acceleration significantly ($= 0.207$, $p 0.001$).

These empirical results support our arguments.

Table 5. 12: Examining the Effect between Variables.

Dependent	Independent	B	Std. Error	Beta	t	p
digital transformation	Digitalization degree	0,383	0,058	0,329	6,629	0,000*
	digital adoption	0,402	0,063	0,327	6,361	0,000*
	digital acceleration	0,249	0,054	0,207	4,622	0,000*

F=143,708; p=0,000

R²=0,552 *p<0,05 regression test

Table 5.12: the table upper show The regression model to examine the effect is significant ($p < 0.05$). When the results are examined, Digitalization degree, digital adoption and digital acceleration positively affect digital transformation (Beta=0.329, Beta=0.327, Beta=0.207). 55.2% of the change in digital transformation is explained by Digitalization degree, digital adoption and digital acceleration.

5.5 T-TEST ANALYSIS

In this section, the Student t-test was used to compare differences in the four variables by gender, (t-test) were chosen to test the extent to which the sub-dimensions used for digital transformation differed across the demographic variables under study. The significance level was $P=0.05$. This section checked whether the P-value of the test was less than 0.05 and whether the results were statistically significant. If the P-value is greater than 0.05, Table 5.18 shows that the results are not statistically significant. In our case, the P value is greater than 0.05. the P value for digitization is ($0.644>0.05$), P for digital assimilation ($0.176>0.05$), P for digital acceleration ($0.326>0.05$), and P for digital transformation ($0.476>0.05$).

Table 5. 13: Analysis of Variables in Terms of Gender.

What is your gender		N	Mean	Std. Deviation	t	P
Digitalization degree	Men	234	3,18	1,08	-0,463	0,644
	Female	120	3,24	1,05		
digital adoption	Men	234	3,07	1,03	-1,355	0,176
	Female	120	3,22	0,96		
digital acceleration	Men	234	3,16	1,05	-0,983	0,326
	Female	120	3,28	1,00		
digital transformation	Men	234	3,24	1,27	-0,713	0,476
	Female	120	3,34	1,19		

* $p<0,05$ t test

There is no significant difference between women and men in terms of digitalization degree, digital adoption, digital acceleration and digital transformation ($p>0.05$)

5.6 ANOVA ANALYSIS

In this section the ANOVA is used to compare means between three or more groups. A significant P-value in the ANOVA test indicates that there is at least one pair between which the difference in means is statistically significant. In this section, we compare the variables with and find that age is not significant or the P-value is greater than 0.05, the degree of digitization has a P-value ($0.674>0.05$), numerical adaptation ($0.732>0.05$) and numerical acceleration ($0.929>0.05$) and numerical transformation P($0.226>0.05$).

Table 5. 14: Analysis of Variables in Terms of Age.

		n	Mean	Std. Deviation	F	P
Digitalization degree	18-29 ages	125	3,26	1,14	0,435	0,647
	30-39 ages	147	3,19	1,04		
	40 and more	82	3,12	1,01		
	Total	354	3,20	1,07		
digital adoption	18-29 ages	125	3,16	1,06	0,312	0,732
	30-39 ages	147	3,13	1,00		
	40 and more	82	3,05	0,97		
	Total	354	3,12	1,01		
digital acceleration	18-29 ages	125	3,21	1,11	0,074	0,929
	30-39 ages	147	3,18	1,05		
	40 and more	82	3,23	0,88		
	Total	354	3,20	1,03		
digital transformation	18-29 ages	125	3,38	1,35	1,493	0,226
	30-39 ages	147	3,29	1,17		
	40 and more	82	3,08	1,19		
	Total	354	3,27	1,24		

* $p < 0,05$ ANOVA test

Table 5.14 show that There is no significant difference between the groups with different ages in terms of digitalization degree, digital adoption, digital acceleration and digital transformation ($p > 0.05$).

5.7 DISCUSSION

The results obtained through the model projected in the previous part allow us to deal with a comparison and the validation of the elements discussed in the theoretical part, but before we can say that the collection of the data listed and collected through the questionnaire shows strong reliability and consistency between items.

As for the econometric analysis, we opted for a factor analysis as well as the correlation tables and regression owed promising and significant results, which implies a good quality model.

In addition, we have seen in the theoretical part that according to (Acosta P, 2020), during COVID-19, with sanitary confinement, internet traffic increased between December 2019 and May by 60%, Managers preferred to respect the standard of social distancing they are using video conferencing at 120% of epidemic advantage levels.

This theoretical analysis was materialized in our empirical study given the probability value which was found to be less than 5% for the variable "Mobile technologies such as mobile Internet, wireless" which implies strong growth in digitization in the era of COVID-19 with several Moroccan companies.

Moreover, (Kenneth C. Laudon, 2019), designated that the digital enterprise is an organization that partially or totally manages vital business processes and relationships with its stakeholders. It goes without saying that Moroccan companies have integrated digitalization as a tool for communication and organization with stakeholders and this is deep-rooted through the analysis of the variable "The involvement of SMEs in digitization in the era of COVID-19". Indeed, the econometric analysis of this variable has made it possible to identify several significant items with a p-value of less than 5%, which approves the commitment of Moroccan companies to digitalization in a pandemic period.

The COVID-19 period involved the dismissal of several employees given the crisis situation experienced by Moroccan companies during this period, which initiates the replacement of human capital with machines, in our empirical study we have tried to explain the role of human capital as an item "A technology such as a machine" which has a strong impact on the process of digitalization of the Moroccan company as we described in the second chapter through (John M. Levis, 2018) which explained that the digitalization of companies makes it possible to make the rules of the economy more global and digital, globalization and digitalization have gone hand in hand in recent years because one feeds the other several thinkers believe that it is necessary to replace labor by machines, but the problem is that technology can be harnessed to make work more agile and efficient (Levit, 2018).

The digitalization of companies makes it possible to make the rules of the economy more global and digital, globalization and digitalization have gone hand in hand in recent years because one feeds the other several thinkers who believe that the workforce must be

supported by machines, but the problem is that technology can be harnessed to make work more agile and efficient.

SME adaptation defines the tools that have been used to move activities away from the workplace while adhering to COVID-19 restriction rules. According to several researchers, e-commerce is an activity where digital business strategies, integrate digital tools to sell and buy, and where distribution companies serve as intermediaries. These tools allow communication between consumers and supply chain managers by giving consumers the opportunity to express their opinion to correct product defects and improve performance. It also contributes to the management of product production and sales organization.

On the other hand, another element of adaptation in companies, generally SMEs, is telework. Telework is a modern way of working outside the work environment or partially outside the employer's premises, using ICT to achieve the same results as working at the client's premises. In addition, teleworking allows employers to work independently of the business organization, for instance they can market their experience and services to customers.

For employers, telecommuting can be productive and commendable, while employees benefit from the freedom of autonomy. Other advantages and disadvantages relate to teleworkers and companies, such as remote supervision by managers. These new technologies can provide reliable and connectable data, the identification of visible and predictable non-supervisory factors, and the ability to monitor workers. Indeed, supervision and autonomy are contradictory concepts.

However, they can co-exist and work in the same direction, ensuring better productivity by guaranteeing the freedom of the employer and the day-to-day control of the supervisor to achieve short- and long-term performance goals. Trust and control are employer characteristics that ease the tension between the two, but both of these dimensions are necessary to make teleworking more beneficial for companies in general and SMEs in particular.

In sum, the factors of digital marketing and teleworking have enabled SMEs to accelerate modern management and ensure stability and continuity in the market: according to (B.Moriones & L.López, 2013) the adoption of technology has improved the profitability,

growth, market value, social and environmental performance and satisfaction of SMEs. As (Syed Shah Alam, 2009)

Argues, the use of technology can improve business competitiveness, as the internet enables SMEs to compete with large companies. This improves the performance of SMEs.

These findings of the authors discussed before this correlate positively with what we obtained through our empirical study given the analysis of the following items "We fully adopt digital artifacts (products or services)" which goes with the findings related to commercial strategies and distribution deployed by Moroccan companies and which were significant during our empirical study. In addition, we can add that the discussions of the (B.Moriones & L.López, 2013).

Literature review is validated through the significance of the variable "Moroccan SMEs and their acceleration in digital transformation" which integrates the 7 items discussed before and of course who we are. Made it possible to validate what was projected in the theoretical part.

Finally, we can conclude that the empirical study allowed us to validate both the theoretical discussion and verify the analysis of the following hypotheses:

Table 5. 15: Hypothesis Results Summary.

Hypothesizes	Validity
The use of new digital tools impacts the adoption of digital tools.	Accepted
The adoption of digitization is significant for the improvement of digital infrastructure.	Accepted
Business involvement in the digitization process has an impact on digital acceleration.	Accepted
Digital acceleration has an impact on the digital transformation of SMEs.	Accepted
Digital transformation is significant for the performance of SMEs and companies in general.	Accepted

H1: ***The use of new digital tools impacts the adoption of digital tools***: has been partially validated because the integration of modern tools includes a certain high cost which cannot apply to all Moroccan companies given the limit of their growth.

H2: ***The adoption of digitization is significant for the improvement of digital infrastructure***: The advent of digitization integrates a certain level of competition on the market compared to companies and especially that it implies a form of effective change with a high degree of deployment of digitization because each one does not wish to become the next relic. This validates our hypothesis of environmental mutation. Of course, Morocco has a weakness in digital infrastructure because it is still considered a developing country and, in our study, empirically the point of organizational agility was not considered significant, the variables adaptation digital scale with 7 items was found reliable alpha 0.901 so that we accepted the alternative hypothesis.

H3: ***Business involvement in the digitization process has an impact on digital acceleration***.: Digitalization implies a certain change in the organization of business with a change in the managerial spirit and management styles with the flexibility of innovation. The empirical study has allowed us to show that Moroccan SMEs are not totally oriented toward the modernization of the organization given the fear of change and the consequences it may involve with the low transparency of information, hence this hypothesis. The dependent variable is adoption digital in the firms was regressed on predicting variables (digital transformation) to test the hypothesis H3 , Independent variable significantly predicted dependent variable $F=143,708$; $P<0,001$ which indicates that the independent variables can play a significant role in shaping dependent variables ($\beta = 0,207$; $P<0,001$) these results clearly direct the positive effect of the independent variables .moreover the $R^2 = 0,552$ was supported 53,2% so our hypothesis is valid.

H4: ***Digital acceleration has an impact on the digital transformation of SMEs***: Companies need to become more focused and move from digital transformation to digital acceleration. It's not about the digital transformation of your business - that's a given - but how to accelerate that transformation. If left to their own devices, it will take years, if not decades, to implement these advanced digital solutions across all processes, industries and enterprises. Similar to Pearson correlation of digital acceleration and digital transformation was found to be moderately positive and statistically significant , $r= 0,576$; $P<0,001$ correlation shows

the relationship between the Digital acceleration and digital transformation ,if the significance value is less than 0,05 it shows that the Pearson correlation has a positive value it shows that the digital acceleration and digital transformation have a positive relationship as well then supports the alternatives hypothesis

H5: *Digital transformation is significant for the performance of SMEs and companies in general.* Businesses are increasingly transforming their commercial operations through advanced digital technologies. While the effect of object internet has been revealed to be insignificant. Given the scarcity of research in the field of digital transformation and industry 4.0, this last has provided new perspectives, ideas, and a framework for future researchers. Decision-makers will find their place there in order to devise appropriate human capital development strategies and strengthen their absorption capacity. Alpha greater than 0.5 and the digital transformation variable scale with 3 items was found reliable contract was 0.783. then the alternative hypothesis is accepted.

6. RECOMMENDATIONS AND CONCLUSIONS

6.1. RECOMMENDATIONS

Digital transformation is now essential for any company that wants to succeed in the market, as well as a real performance lever. Indeed, the digitization of businesses is underway and there is no longer a choice.

For the successful digitization of Moroccan SMEs, mastering existing systems is essential. The first step is to rely on internal resources, understand them and make the most of them.

Therefore, the following recommendations can be made:



Figure 6. 1: Recommendations to Adopt Digital Strategy (by the Author).

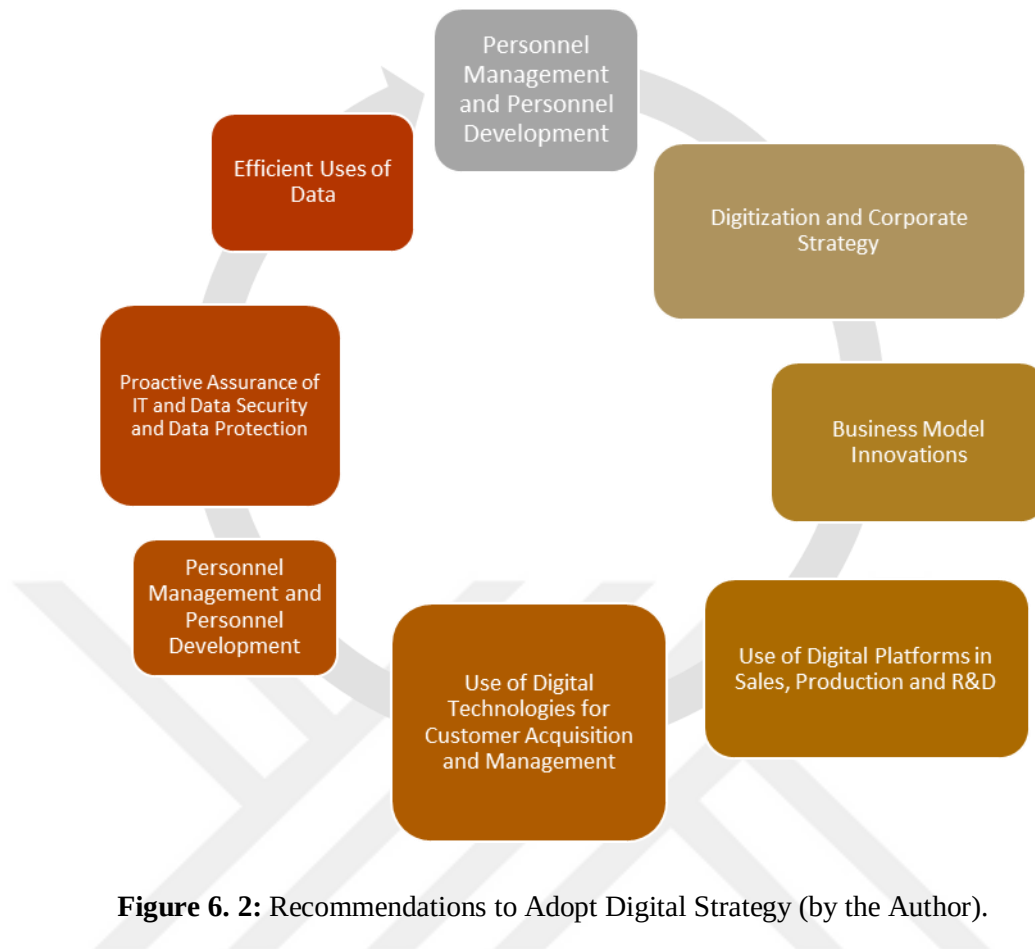


Figure 6. 2: Recommendations to Adopt Digital Strategy (by the Author).

- a) Digitization and business strategy: The Moroccan manager must reflect on the company's digitalization strategy and set specific objectives. This objective must always be adapted to his company and defined in coherence with his global commercial strategy. The economic evaluation of digitalization projects is complex. The leader or manager will have to use different evaluation methods and ratios to make the investment decisions he wants to make as part of his digitalization strategy.
- b) Innovation in the business model: Managers need to pro-actively think about how digital technologies can extend their business model or whether they need to adapt their business model according to the market. They don't know that a successful business model innovation is usually the result of an intensive development process that must respond precisely to customer needs. Due to conflicting goals, disruptive new business models cannot often be built into traditional business models, so midsize companies must operate in a separate business unit from their core business.

- c) Human resources management and development: Human resource management and development should be developed as part of the digitization strategy. Employees should be actively supported with extensive education and training on digitization-related topics, and investments should be made in recruiting experts. Leaders should also keep in mind that digitalization can be a significant cause for concern.
- d) They must include in their business systems the ICT communication channels between their customers and their entities to improve quality, achieve performance and adapt to their external environments.
- e) The use of digital technology for customer acquisition and management: Customer management can also be based on digital technologies such as CRM systems and social media. Information systems and applications can make customer management more efficient and customer-friendly. They can also expand their online presence to reach new (international) customer groups, increase customer satisfaction, and strengthen customer loyalty.
- f) Effective use of data: As part of the data strategy of small and medium-sized companies, managers must determine their desired data to collect, or what they already collect in data within their internal entities, and how it can be used in a useful way. To avoid wasting data, they must collect only the data they actually use. It is also important to think about the format of the data to be collected so that it can be evaluated as simply and efficiently as possible.
- g) SMEs must proactively ensure IT and data security and data protection: IT and data security are an essential part of the quality of products and services and, in the era of digitization, can have a direct competitive as well as a technical impact. Therefore, data protection and IT and data security are established as central pillars of the digitization strategy and are actively and systematically ensured internally within the company.
- h) Use of digital platforms in sales, production, and research and development: use of digital platforms so that SMES companies can connect with customers, suppliers, and partners and exchange services and information to increase the efficiency of production, sales, and research. Invest in additional training for employees in the use of these platforms and also ensure upstream that the solutions are compatible with partner systems.

- i) The previously mentioned recommendations can help businesses move forward and get online and digital. The elements mentioned above can lead Moroccan SMEs to the situation illustrated in the diagram below.

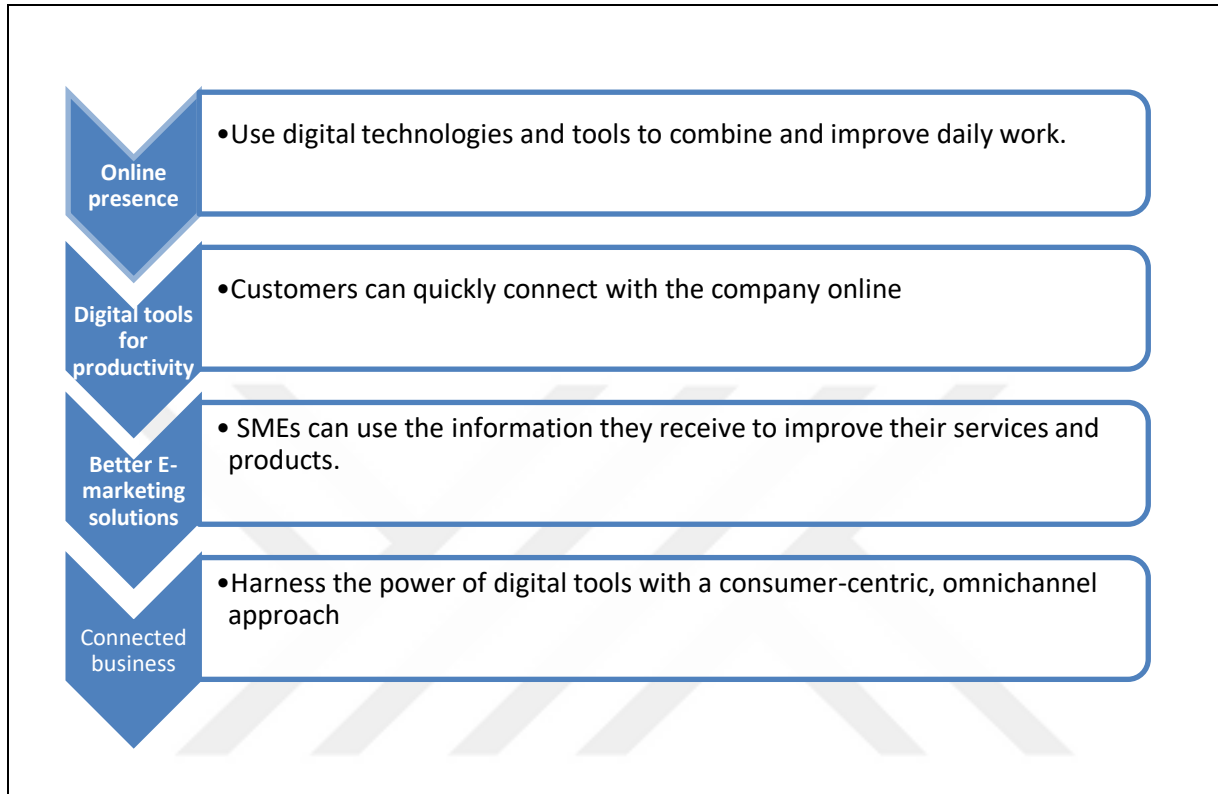


Figure 6. 3: Goals of SME Digitalization.

6.2. CONCLUSIONS

Digitalization offers many benefits to SMEs, such as providing new opportunities for innovation, helping to improve profitability and productivity through automation and forecasting.

However, SMEs are slow to adopt digital tool solutions and face many barriers to catching up with the transition. A review of the literature reveals a number of points that policy makers should focus on to ensure that SMEs can benefit from the advantages induced by digitization (Literature review, chapter 2):

- 1- Achieve minimum data literacy for SMEs;
- 2- Re-train managers and workers to adapt business practices and guide AI models.

3- Closing the financial gap.

4- Enable SMEs to adopt digital modernization and upgrading solutions.

5- Ensure that SMEs have access to an efficient knowledge marketplace where they can find cloud-based AI solutions to overcome capacity constraints.

6- Develop sectoral or industry-specific approaches within the AI policy agenda to address the lack of transferability of AI models.

7- Promote mutual learning and knowledge sharing among a wide range of stakeholders.

Digital transformation has been a key factor in the success of SMEs and microenterprises, especially since the health crisis. Digital can help businesses in a variety of ways, such as maintaining productivity and even increasing revenues, facilitating communication exchanges between customers and businesses, avoiding wasted resources, reducing costs, improving supply chain understanding and strengthening customer relationships. In fact, in the covid19 era, Morocco climbed 13 places in the Digital Quality of Life Index (DQoL) to 71 out of 117, making it the third best DQoL in Africa. 56% of managers and executives work remotely at least one day a week according to (Youssra ja, 2020).

Technological advances are changing the way customers and employees use the internet. They are always connected, can access the corporate network remotely and no longer need to be physically in the office to work effectively. In recent years, the number of remote workers has increased in Morocco.

Coworking spaces, once used mainly by the self-employed, are now attracting an increasing number of SMEs. These multi-purpose spaces respond to the flexible needs of SMEs and offer opportunities to improve professional networks and diminish real estate costs.

These new ways of working, facilitated by digital technology, encourage autonomous and immediate decision-making. This should lead to increased productivity. In the future, companies will need to use these flexible ways of working to remain competitive.

However, many companies are not making effective use of the digital tools at their disposal and are not taking the necessary steps to improve their performance.

Being left behind in the digital game poses real problems. Despite recognizing that digital is essential to business, companies are still afraid to embrace it. This may be due to a lack of internal resources or because they do not see digital tools as a priority expenditure.

Nowadays, most companies are suddenly interested in digital transformation, but there are still misconceptions about what it means and how SMEs should manage it.

Digital transformation is not simply having a website and ordering online, nor is it a marketing slogan for technology companies. It is about using all the digital technologies available to companies to streamline processes, improve performance, increase business efficiency, and expand the products and services they offer. This transformation enables technology-driven businesses to change the way employees work and interact with colleagues, transform the customer experience, improve data management and storage capabilities, and reduce exposure to hackers and other security risks.

The challenge of digital transformation is to break down barriers of space and time. To meet this challenge, companies need to address three key areas: mobile connectivity, the Internet of Things, and the ubiquity of the Internet. This is to address new consumer habits in communications, entertainment, transportation, and commerce's-working spaces, once used mainly by the self-employed, are now attracting more and more SMEs. These versatile spaces meet the flexible needs of SMEs and offer the potential to improve professional networks and reduce real estate costs.

These new ways of working, facilitated by digital technology, encourage autonomous and immediate decision-making. This is expected to increase productivity. In the future, companies will need to use this flexibility in the workplace to remain competitive.

However, many companies are not making effective use of the digital tools at their disposal or taking the necessary steps to progress their performance. Falling behind in the digital game can cause real problems. Despite recognizing that digitization is essential to their business, companies are still afraid to go digital. This may be due to a lack of internal resources or because they don't see digital tools as a priority expense.

At the moment, most businesses are suddenly interested in digital transformation, but there are still misconceptions about what it means and how SMEs should manage it.

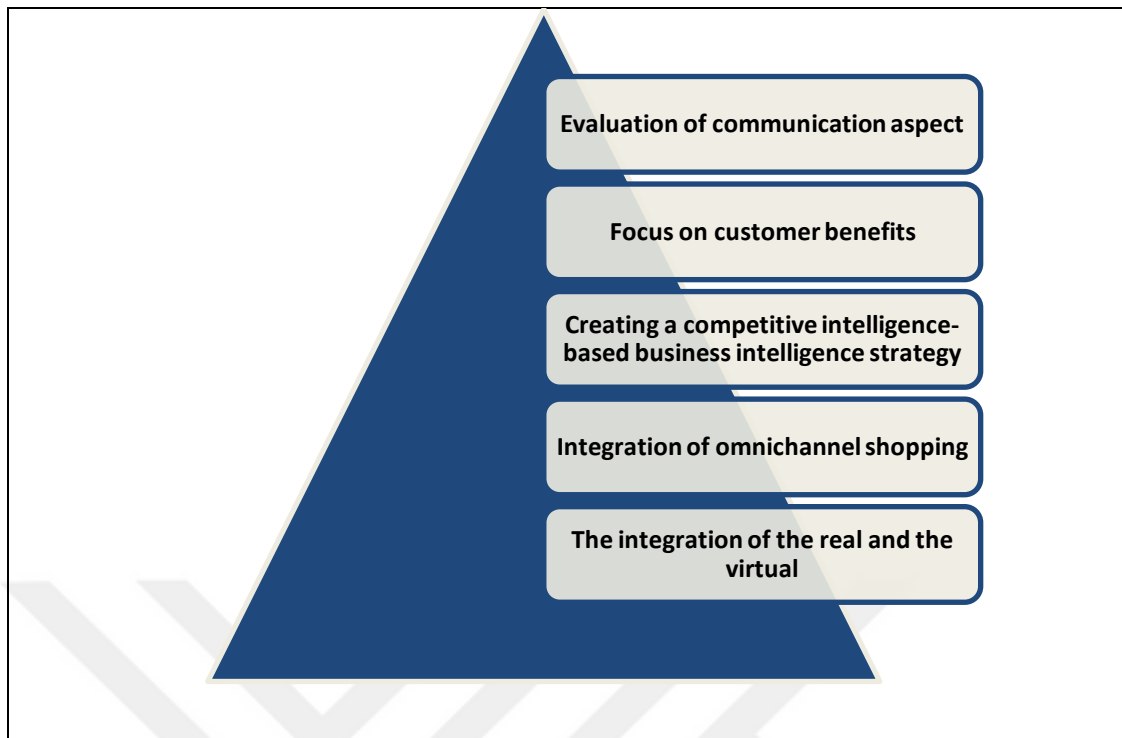


Figure 6. 4: Purpose of digitization (Developed by the author).

Based on the analysis of our empirical studies, and of course the discussion in the literature review, we can conclude that since the COVID-19 era, digitalization has been an important source of development for Moroccan SMEs.

Companies in Morocco, regardless of size, whether they were large corporations or SMEs, began digitizing their data more than ten years ago. But over the past two to three years, businesses and organizations have just recently been keenly aware of the significance of converting their business operations to a digital format. The trend towards digitization is no longer just for large companies. Today, Moroccan SMEs are also striving to digitize their business processes.

There is a trickle-down effect from large multinationals to SMEs who very clearly see the huge benefits of digitization.

Thus, in a broad sense, the human factor outweighs the lack of budget. The human challenge in terms of increasing the capacity of internal resources to accompany this transformation. The second challenge relates to the financing of this transformation, as it involves investment. Of course, investment is profitable, but for SMEs, resources must first be mobilized. Lack of time and resources, concerns about confidentiality and lack of trust,

process complexity and lack of knowledge of existing opportunities may be other barriers. In an exploratory manner, this paper summarizes three main aspects: the perceptions of leaders and managers of SMEs in Morocco, and the challenges and problems associated with digital transformation. The impact of digital transformation on business practices is widely shared across studies. According to the book of, (Dudézert A, 2018).is finding her debate the debate between those who see digitalization as a job stealing tool and those who see it as a liberating tool that allows employees to better focus on their work, in addition to the financial and human challenges. According to the Moroccan entrepreneur, Morocco has enormous potential to compete with advanced countries in the digital sector.

"This is a great chance to update many of the outdated business procedures that have been in use for a long time". Morocco's young and energetic workforce is tech knowledgeable, and the country's government is dedicated to it "noted by (Benchekroun yasmina, 2020).adding that now is the time to seize this opportunity and urging Moroccan companies to participate in the country's digital transformation.

Many of the world's large, established economies have an outdated technological infrastructure that requires significant investment to modernize. However, Morocco is "free from such constraints" and can outperform advanced economies in key sectors.

Moroccan companies will also be better prepared to compete and act more quickly when opportunities arise.

Morocco requirements to keep investing in this area if it wants to dominate the world stage. The sectors of industry, imports and exports, insurance, financial and legal services, accounting, and government institutions are now those most affected by digitization in Morocco.

These industries' shift to digital technology has the potential to boost Morocco's economy to unprecedented heights.

Finally, a shift in perspective is necessary for effective transformation. The Moroccan manager cannot create a contemporary business while retaining a conventional organizational structure. Because of this, even actors who are resistant to change must leave their comfort zones and adopt new technology.

REFERENCES

- A Boudiaf, M. Z. (2022). Importance and Advantages in the Face of the COVID-19 Pandemic – Case of Four Moroccan Small and Medium-Sized Enterprises. Merrakech, Morocco: Public Health and Economic Resiliency in the Post-COVID-19 Era.
- A Felstead, N. J., & Sally, W. (2003). Managerial Control of Employees Working at Home. international journal of employment relations.
- A, K. (1994). de l'interaction homme-machine à la communication homme-homme. techniques et sciences informatiques, 105-127.
- A.Khan, M. (2016). E commerce for Entrepreneurs: Boon or Bane. International Journal of Applied Business and Economic, 173-180.
- A.Mello. (2007). Managing Telework Programs Effectively. Employee Responsibilities and Rights Journal volume.
- Acosta P. (2020). COVID-19 Pandemic: Shifting Digital Transformation to a High-Speed Gear. Information Systems Management, 261.
- Adam Elbaz. (2020). Moroccans spent 4.1 MMDH online in 9 months. Morocco jewish times.
- Agency national telecommunications regulatory. (2020). Broad internet consolidation. ANRT.
- Ahmed Bounfour, V. F. (2015). Cloud computing and organisational design: towards a comprehensive research agenda. French journal of management and information systems, 3-10.
- Alam, S. S. (2009). ICT Adoption in Small and Medium Enterprises: an Empirical Evidence of Service Sectors in Malaysia. International Journal of Business and Management.
- Alicia R Crowe. (2006). Technology, citizenship and social studies classroom. democracy education in the technological age.
- Allard F. Poesi, M. C. (1999). Management Research Method. Dunod .
- Allard Poesi, M. (1999). Construction de l'objet de la recherche. Paris: Dunod.
- Almoussa, M. (2013). Barriers to E-Commerce Adoption: Consumers' Perspectives from a Developing Country. scientific research.
- Alves Cachapela, L. (2016). Le télétravail. Confiance et autocontrôle : alternative ou partenaires du contrôle à distance? Faculté des Sciences Sociales.
- Anamarija C, L. J., & Lamovsek, A. (2019). HOW DIGITALIZATION CHANGES THE WORKPLACE. Dynamic Relationships Management Journal, Vol. 8.

- André Hanelta, R. B., & David Marz, C. A. (2021). A Systematic Review of the Literature on Digital Transformation: Insights and Implications for Strategy and Organizational Change. *Journal of management studies*.
- Anne M.Valet. (2011). Choix méthodologiques en sciences de gestion: Pourquoi tant de chiffres. *Management&avenir*, 289-302.
- Augustyn L, M. S. (2015). Customer logistic service in the automotive industry with the use of the SAP ERP system. The 4th IEEE International Conference on Advanced Logistics and Transport. Valenciennes, France: IEEE.
- Avenier M, G. M. (2012). Research epistemological framework. Pearson.
- Aytekin Isman, O. C. (2014). DIGITAL CITIZENSHIP . The Turkish Online Journal of Educational Technology, 73.
- B Chaumon, M.-é. (2003). évolutions techniques et mutations du travail:émergence de nouveaux modèles d'activité. France: Presses Universitaires.
- B.Moriones, M. B., & L.López, F. (2013). Perceived performance effects of ICT in manufacturing SMEs. *Industrial Management & Data Systems*.
- Barisi G. (2005). Guérir le travail aujourd'hui:Mission impossible?Mission impossible? Docplayer.
- Barney, J. (1991). Firm Ressources and sustained competitive advantage. *Journal of Management*.
- Becquelin C. (2019, March 7). Make collective a skills for developing individual skills. Retrieved from competency: <http://www.magrh.reconquete-rh.org/index.php/articles/carrieres/103-becquelin-5>
- Belkeziz, S. K. (2019, december 5). le digital,au coeur du modèle de developpement. Retrieved from APEBI: https://www.apebi.org.ma/wp-content/uploads/2019/12/APEBI_RP_Digitale_05122019.pdf
- Benabdeljalil I. (2020). Transformation digitale du Maroc, perspectives, risques et enjeux,. Retrieved from amadeusonline: <https://amadeusonline.org/publications/analyses-covid-19/transformation-digitale-du-maroc-perspectives-risques-et-enjeux/>
- Benchenkroun yasmina. (2020). is digitalization the future of Morocco's business sector? Morocco world news.
- Bennet, L. (2009). Young citizens and civic learning: Two paradigms of citizenship in the digital age. *Citizenship Studies*, 110-113.
- Berson M, I. R. (2004). Developing Thoughtful "Cybercitizens". *Social Studies and the Young Learner*.
- Bharadwaj A, O. A., & Pavlou, N. V. (2013). Digital business strategy: toward a next generation of insights. *Misquarterly*, 472.

- Blanc E. (2016). Une communication des organisations comme facteur de protection des risques psychosociaux liés à l'acculturation au numérique. communication&organization.
- Bloomberg J. (2018, April 29). Digitization, digitalization, and digital transformation: confuse them at your peril. Retrieved from Forbes: <https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-at-your-peril/?sh=439e3a202f2c>
- Boyko S. Atanassov, Y. A., Asha S. Multani, Z. Z., & Sharon Y.R. Dent, D. D. (2009). Gcn5 and SAGA Regulate Shelterin Protein turnover and telomere maintenance. Cell press, 306.
- Brennen, S., & Kreiss. (2016). Digitalization . The international encyclopedia of communication theory and philosophy, 1-11.
- Brynjolfsson E, A. M. (2014). Work, Progress, and Prosperity in a Time of Brilliant Technologies. New work times: The Second Machine Age.
- Business Environment Ranking. (2021, June 21). the economist intelligence. Retrieved from Business Environment Ranking unit: <https://www.eiu.com/n/campaigns/sign-up-for-the-eiu-healthcare-newsletter/>
- C Groleau, A. M. (2007). L'articulation technologies – organisations : des pistes pour une approche communicationnelle. communication&organization.
- C William, G. L. (2005). An update on telecommuting:review and prospects for emerging issues. SAM advanced Management Journal.
- C, G. L. (2005). An Update on Telecommuting: Review and Prospects for Emerging Issues. S.A.M. Advanced Management Journal.
- C.Papillon. (2005). Les PME: atouts et handicap. Problèmes économique (documentation française).
- Cabin P, B. C. (2005). Théorie - Pouvoir - Stratégie - Communication - Changement. sciences humaines.
- Canh, S. M. (2013). Using ERG Theory as a Lens to Understand the Sharing of Academic Tacit Knowledge: Problems and Issues in Developing Countries – Perspectives from Vietnam. In M. A. Chilton, ssues and Potential Solutions: Issues and Potential Solutions-Knowledge Managment issues (pp. 174-192). IGI Global.
- Caramia C, C. D., & Ranaldi S, S. M. (2020, June 9). Smartphone-Based Answering to School Subject Questions Alters Gait in Young Digital Natives. Italy,Rome.
- Carlos Conde. (2018, July 09). Laying the Foundations for the Digital Transformation of the Public Sector in Morocco. Retrieved from OECDE: <https://www.oecd.org/gov/digital-government/la-revue-du-gouvernement-numerique-du-maroc-2018.pdf>

- Castells M. (2010). *The Impact of the Internet on Society: A Global Perspective*. University of Southern California, 571.
- Cecily D. Cooper, N. B. (2002). Telecommuting, professional isolation, and employee development in public and private organizations. *Journal of Organizational Behavior*.
- Chaintreuil J. (2015). collective HR views on transformation . Diateino.
- chandler, j. (1969). *strategy and structure*. New Jersey: Business & Economics.
- Chrysosouris, D. M., & Mourtzis, D. (2013). *Manufacturing Systems: Skills & Competencies for the Future*. sciverse science direct.
- Clavis Nwehfor Fubah, M. M. (2022). Exploring COVID-19 Challenges and Coping Mechanisms for SMEs in the South African Entrepreneurial Ecosystem. Sustainability.
- Colin N, A. L., & Pierre Mohnen, A. P. (2015). *The Digital Economy*. Cairn international edition, 12.
- D. Simone. (2019, December 12). *The Virtual Market Place : Connecting Women-Owned Small and Medium Sized Enterprises to E-Commerce Platforms in Middle East and North Africa Region*. Retrieved from The world bank: <https://documents1.worldbank.org/curated/en/300431583135784038/pdf/The-Virtual-Market-Place-Connecting-Women-Owned-Small-and-Medium-Sized-Enterprises-to-E-Commerce-Platforms-in-Middle-East-and-North-Africa-Region.pdf>
- Dambrin, C. (2004). How Does Telework Influence the Manager–Employee Relationship? *International Journal of Human Resources Development and Management* .
- Daniel A Skog, W. H., & J, S. (2018). How Spotify Leveraged Boundary Resources to Become a Global Leader in Music Streaming. *Hawaii International Conference on System Sciences*. Umeå University.
- David W. Parker, R. D. (2015). Improving productivity with self-organised teams and agile leadership. *international journal of productivity and performance management* .
- Dawn Freshwater, G. R. (2004). *Deconstructing evidence practice*. London : Ibid.
- Degeorge J, K. M. (2016). Poursuite d'opportunité entrepreneuriale et modes de management. *Revue Finance Contrôle Stratégie*, 27-57.
- Devellis F. (2003). *Social psychological foundation of health and illness*. Blackwell.
- Doria D. (2002, december 18). *Mcdonald's corporation*. Retrieved from Studocu: <https://www.studocu.com/my/document/universiti-teknologi-mara/bachelor-in-business-administration-hons-marketing/222-dominics-paper-research-about-mcd/21559135>

- Dorothy Neufeld. (2021, june 30). TECHNOLOGY Long Waves: The History of Innovation Cycles. Retrieved from Visual capitalist: <https://www.visualcapitalist.com/the-history-of-innovation-cycles/>
- Drath R, A. H. (2014). Industrie 4.0: Hit or Hype? IEEE Industrial Electronics Magazine, 56-58.
- Drucker-Godard. (1999). Méthodes de Recherche en Management. Paris: Dunod.
- Dudézert A. (2018). la transformation digitale des entreprises. In l. découverte. Paris: la découverte .
- Durand Cornelissen. (2014). SMEs. courseHero, Coursehero.
- Dwivedi k, I. I., Hughes L, j. C., & Filieri, J. J. (2020). Setting the future of digital and social media marketing research: Perspectives and research propositions. International Journal of information Management, 2-3.
- E Beaunoyer. (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. Computers in Human Behavior, 2.
- E Friedberg, E. Y. (1998). The Dynamics of Organized Action. Contemporary Sociology, 600-601.
- Economic and Social Commission for Western Asia. (2017, January). Perspectives of Digital Economy in the Arab Region. Statistics, Information Society and Technology.
- Eleni Laitso, A. K., & Dimitris V. (2020). Digital Competitiveness in the European Union Era. MDPI.
- Elizabeth G. Cohen, R. A. (1997). Working for Equity in Heterogeneous Classrooms: Sociological Theory in Practice. Sociological Theory in Practice.
- Ernst von Glasersfeld. (2007). Pourquoi le constructivisme doit-il être radical? Revue des sciences de l'éducation .
- European Bank for Reconstruction and Development. (2016). what's holding back the private sector in Mena? Retrieved from lessons from the entreprise survey: https://www.eib.org/attachments/efs/econ_mena_enterprise_survey_en.pdf
- Europeen Commitee of the Regions. (2020). Digitalisation of small and meduim enterprises(SMEs) in the mediterr. Portulans Institute and World Information Technology and Services.
- Faulkner P, C. L. (2010). Theorising technology. Cambridge Journal of Economics, 16.
- Fayol A. (2017). Chapitre 3,the entrepreneur. In F. Alain, Théories et pratiques, applications pour apprendre à entreprendre (p. 18). Dunod.
- Ferguson T. (2002). Have you objects call my object . Harvard business review .

- Fichter, K. (2008). E-Commerce: Sorting Out the Environmental Consequences. *Journal of Industrial Ecology*, 25-41.
- Florence A.Poesi, V. P. (2003). Conduire un projet de recherche, une perspective qualitative. *la recherche d'action*, 85-132.
- GABIN F, J. F. (2008). *La communication. État des savoirs*. Paris: Éditions Sciences humaines.
- Garvin D. (1993). Beyond high philosophy and grand themes lie the gritty details of practice. *Harvard business review*.
- Gehrke L, A. T., & Rule D, M. P. (2015). A Discussion of Qualifications and Skills in the Factory of the Future: A German and American Perspective. *setting the standard* (p. 8). ASME.
- Gérald d'Amboise, J. A. (1996). *Le projet de recherche en administration: Un guide général à sa préparation*. guide general .
- Gilbert A.Churchill, J. R. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research*.
- Gill J, J. P. (2002). *Research Methods for Managers*. London: Sage Publications Ltd.
- Girod-Séville, V. (1999). *Epistemological foundation of research* . Dunod.
- Gliem, J. A., & Gliem, R. R. (2003). Calculating, Interpreting, And Reporting Cronbach's Alpha Reliability Coefficient For Likert-Type Scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*.
- Grimand. (2012). The appropriation of management tools and its effects on the dynamics. *management avenir* , 237-257.
- Grover V, R. K. (2012). Cocreating IT Value: New Capabilities and Metrics for Multifirm Environments. *MIS Quarterly*, 225-232.
- H Silva, F. L. (2017). Technology, employment and skills: A look into job duration. *Research Policy*, ELSEVIER.
- H.Cholet, C. R. (2000). *La charge mentale au travail : des enjeux complexes pour les salariés*. Economie et Statistique.
- Hai Guo, ., Z., & Ran Huang, A. G. (2020). The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *frontiers of business research in china* .
- Hancock B, P. K., & Rutherford, S. (2020). Adapting to a digital age will require organizations—and not just employees—to equip themselves with new capabilities. *Mckinsey*.
- head of the moroccan government. (2020). *Note of general guidelines for the development of digital in Morocco 2025*. Kingdom of Morocco.

- Heiden B, V. A., & Heiden T, B. (2021). Communication in Human - Machine - Product Triangle - Universal Properties of the Automation Chain: Witness Simulation Example. *Advances in Information and Communication* (p. 990). AISC, volume 1364.
- IMDA. (2016). Annual survey on infocom Media. Singapor.
- Institut potulans. (2021). Network reading index. Portulans institute .
- International Telecommunication Union. (2021). Digital trends in the Arab States region 2021: Information and communication technology trends and developments in the Arab States region, 2017-2020. Retrieved from committed to connect the world : <http://handle.itu.int/11.1002/pub/8184d626-en>
- Ismail, M. K., & Zaki, M. (2017, November). Digital Business Transformation and Strategy: What Do We Know So Far? Retrieved from cambridgeservicealliance: https://cambridgeservicealliance.eng.cam.ac.uk/system/files/documents/2017NovPaper_Mariam.pdf
- Itzhak Harpaz. (2002). Advantages and disadvantages of telecommuting for the individual, organization and society. *organization and society*, 74-80.
- Iva Gregurec, M. T., & Katarina T. pupek. (2021). The Impact of COVID-19 on Sustainable Business Models. *Sustainability*.
- J Chauffour. (2018, june). Governing towards efficiency, equity, education and endurance. Retrieved from KINGDOM OF MOROCCO, A Systematic Country Diagnostic: <https://openknowledge.worldbank.org/handle/10986/29929?locale-attribute=en>
- Jacquet D, G. L. (2016). *Uberisation : Un ennemi qui vous veut du bien ? : Un ennemi qui vous veut du bien ?* Dunod.
- Jane Laudon, K. C. (1991). *Management Information Systems: Managing the Digital Firm*. Pearson.
- Jean-Louis L. Moigne, E. M. (1999). *l'intelligence de la complexité*. l'harmattan .
- Jean-louis L. Moigne. (2021). *Les épistomologies constructivites . Que sais-je?*
- Jeffrey Greenhaus, N. J. (2013). Source of Conflict Between Work and Family Roles. *The Academy of Management Review*, 76-88.
- Jobie Budd, B. S., & manning, E. M. (2020, August). Digital technologies in the public-health response. Retrieved from Nature medicine: <file:///C:/Users/pchpm/Downloads/digital%20tools.pdf>
- John M. Levis. (2018). intelligibility, Oral Communication, and the Teaching of Pronunciation. *Cambridge applied linguistics*.
- Johnston L. (2011). *Data is the new black . Library of congress .*
- Joseph A. Amoah. (2021). COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice. *European management journal*.

- K. Schwertner. (2017). digital transformation of business. *Trakia Journal of Sciences*,, 388.
- Kaiser F Henry. (1974). An index of Factorial simplicity. *Psychometrika*,.
- Karim Ben Kahla, F. W. (2020). de l'organisation de la theorie à la théorie des organisations vers un postivisme raisonne . *Méthodes Qualitatives et Gestion des Ressources Humaines*.
- Karin V, T. F., & Schneider, C. (2017). Learning & Development in Times of Digital Transformation: Facilitating a Culture of change and Innovation. *International journal of advanced corporate learning*, 25-28.
- Kenneth C. Laudon, J. P. (2019). *Essentials of Management Information Systems*. Pearson Education,.
- Kim M, C. D. (2018). Development of Youth Digital Citizenship Scale and Implication for Educational Setting. *Educational Technology & Society*, 155-171.
- Kingdom of Morocco head of government Ministry of administration. (2018-2021). a performance administration at the service of the citizen and development. *Reform National plan for administrative*.
- Kosmatos, N. D., & Boucouvalas, A. C. (2011, April). Integrating RFIDs and Smart Objects into a Unified Internet of Things Architecture. Retrieved from scientific research: <https://www.scirp.org/journal/paperinformation.aspx?paperid=4696>
- Kristine Dery, I. M., & Nick van der Meulen. (2017). The digital workplace is key to digital Innovation. *Management Journal article*.
- Laney M, A. (2012). The importance of big data: A definition . *Gartner*.
- Larabi J. (2015). Morocco's digital Backwardness. *La vie éco* .
- Laurent Taskin. (2003). Les Enjeux du télétravail pour l'organisation. *Reflets et perspectives de la vie économique*.
- Laurent Taskin, P. E. (2007). The possibilities and limits of telework in a bureaucratic environment: lessons from the public sector. *new technology ,work and employment*, 195-274.
- Lawrence P, J. W. (2016). Differentiation and Integration in complex organization. *JSTOR*.
- Lee J.Cronbach. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika volume*.
- Lemoine. (2014). *Se former au bilan de compétences*. Dunod.
- Lemoine Claude. (2014). *Se former au bilan de compétences - 4e édition: Comprendre et pratiquer la démarche* Broché. In C. Lemoine, *comprendre et pratiquer la demarche*. DUNOD.
- Leukert B. (2018). *Industrie 4.0: Why Openness and Collaboration Make All the Difference*. SAP News Center.

- Levit, A. (2018). Merging technologies and people for the workforce of the future. *Humanity works*.
- Lloria M. (2008). A review of the main approaches to knowledge management. *Knowledge Management Research& Practice*.
- Lupton D. (2018, August 18). Better understanding about what's going on': young Australians' use of digital technologies for health and fitness. *Taylor&francis online*. Retrieved from Taylor&Francis online : <https://www.tandfonline.com/doi/abs/10.1080/13573322.2018.1555661?journalCode=cses20>
- Lynch, S. B. (2002). How To Compete: The Impact of Workplace Practices and Information Technology on Productivity. *Review of Economics and Statistics*, 83.
- Lynette Harris. (2003). Home based teleworking working and the employment relationship:. *Managerial challenges and dilemmas*.
- M B Elanthi, M. (2021). *Agile Workforce a post pandemic Revival plan for SMEs*. IGIglobal.
- M Kim, D. C. (2018). Development of Youth Digital Citizenship Scale and Implication for Educational Setting. *Educational Technology & Society*.
- M.Hlady, R. (2002). la méthode des cas application à la recherche de gestion. *Perspectives marketing de Boeck supérieur*.
- Madakam M, R. R., & Tripathi, S. (2015). Internet of Things (IoT): A Literature Review. *Journal of Computer and Communications*.
- Malhotra, A. (2022, september 14). The bridge to digital transformation. Retrieved from Linkdin: <https://www.linkedin.com/pulse/bridge-digital-transformation-atul-malhotra/>
- Manu Carricano, F. P. (2009). *Analyse de données avec SPSS*. Pearson .
- MAP. (2021). E-commerce:Online transaction up 43%in 2020(CMI). Agence marocaine de press .
- Margarita P. Galimova. (2019). Readiness of Russian entreprises to digital transformation: organizational drivers and barriers . *Bulletin USPTU Science education economy Series economy*.
- Marie J.Avenier, C. T. (2021). Mixer quali et quanti pour quoi faire? Méthodologie sans épistémologie n'est qu'une ruine de reflexion. *Electronic Engineering*.
- Marie-J Avenier, C. T. (2015). Finding one's way around various methodological guidelines for doing rigorous case studies: A comparison of four epistemological frameworks. *Systèmes d'Information et Management*, 26.
- Marjorie A. Pett, P., & Nancy R. Lackey, J. J. (2003). The use of factor analysis for instrument development in health care research . *Making sens of factor analysis*.

- Mark Saunders, P. L., & Thornhil, A. (2007). Research methods for business students . Prentice Hall.
- Martine G.Seville, V. P. (2002). Les critères de validité en sciences des organisations : les apports du pragmatisme. Dauphine Recherches en Management.
- Martine G.Seville, V. P. (2010). Criteria of validity in organizational sciences: the contributions of Pragmatism. Dauphine Management Research -DRM.
- Martine G.Seville, V. P. (2010). Criteria of validity in organizational sciences: the contributions of prgmatism. Dauphine Management Research, DRM.
- Matt Fitzpatrick, I. G., Ari Libarikian, K. S., & Zimmel, R. (2020). The digital-led recovery from COVID-19: Five questions for CEOs. Mckinsey.
- Matt, T. H., & Benlian, A. (2015). Digital Transformation Strategies. Springer.
- Mello, A. (2007). Managing Telework Programs Effectively. Employee Responsibilities and Rights Journal, 247-261.
- Michael R. Wade. (2014, december). Digital business Transformation. Conceptual Framework,RESEARCH & KNOWLEDGE. Retrieved from IMD: <https://www.imd.org/research-knowledge/articles/digital-business-transformation/>. Retrieved 11.09.2021
- Michalis Lianos. (2000). Dangerization and the End of Deviance: The Institutional Environment. British Journal of Criminology.
- Midler C. (2012). Management des projets et transformation de l'entreprise. dunnod.
- Milasi, S., & John Hurley. (2020). Teleworkability and the COVID-19 crisis: a new digital divide? Labour, Education and Technology, 8-28.
- Mina Singh, C. C., & Geri Lobiondo-wood, J. H. (2017). Nursing research in canada methods,critical appraisal,and utilization. Elsevier.
- Mintzberg, H. (1983). Structure in Fives: Designing Effective Organizations. Henry Mintzberg.
- Morehouse M, A. J. (2018). Digital Strategy. researchGate.
- Mossberger K, C. J. (2007). Digital Citizenship: The Internet, Society, and Participation. The mit press.
- Müller R. (1985). Corporate crisis management. Long Range Planning,Elsevier.
- N Benjamin. (2014, May). Informal Economy and the World Bank. Retrieved from The World bank:
<https://openknowledge.worldbank.org/bitstream/handle/10986/18799/WPS6888.pdf?sequence=1&isAllowed=y>

- N Berggren, A. B. (2009, May 02). The growth effects of institutional. Retrieved from Academia accelerating Accelerating the world's research.: <https://d1wqtxts1xzle7.cloudfront.net/30912072/berg-with-cover-page-v2.pdf?Expires=1666912769&Signature=Ziu~N~zaEU~bEiUC5qMvjktLciQl0PjgfyXNBHeW4FGWJiNdrackYaI~WtYXypFhypOuegG5atwit3ZRJ4a961dEXhmvGe-URA-9G5Rnd1-RkgVKJoNfAMIRtuMQLuj2M3L2JnL-63uZqhMIq7K4mW>
- Nardeosingh Rambhujun, L. B. (2008). Data analysis and decision -making techniques applied to HRM. collection Management des ressources humaines.
- Nataliia Trushkina, R. A., & Natalia Rynkevych, G. B. (2020). Digital transformation of organizational culture under conditions of the information economy. Retrieved from virtual economics : <https://virtual-economics.eu>
- Noelia Camara. (2017). DiGiX: The Digitization Index. BBVA .
- Nolan B, G. s. (2013). The world is altering quickly, but at an exceptional rate, ushering in reflective and ultimate changes. metminds .
- Noula I. (2019). Digital Citizenship; Citizenship with A Twist? International Journal for research in Media & Communication, 10-13.
- Nunnally, J., & Bernstein. (1994). Psychometric theory. 3rd ,McGraw-Hill.
- Nunnally, J., & Bernstein. (1994). The assessment of reliability. Psychometric theory.
- OECD. (2021). OECD SME and Entrepreneurship Outlook. OECD.
- Ouchagour Leila. (2022). Le HCP pointe du doigt le retard numérique des entreprises. Aujourd'hui.
- Paillé P, M. A. (2003). L'analyse qualitative en sciences humaines et sociales. Paris,France: Armand Colin.
- Papacharissi Z. (2010). Democracy in a Digital Age. A Private Sphere.
- Paul Devadoss, S. L. (2007). Enterprise Systems Use: Towards a Structural Analysis of Enterprise Systems Induced Organizational Transformation. communications of the association for information systems.
- Peter Bain, P. T. (2002). Entrapped by the "Electronic Panopticon"? Worker Resistance in the Call Centre. New Technology Work and Employment.
- Phil Johnson, J. D. (2000). understanding Management Research: An introduction to epistemology. SAGE publication.
- Pierre Célier. (2004, May 5). Definition(s) of SMEs in Morocco and europe. Mohammadia, Morocco .
- Pinzone, P. F., Perini S, S. G., & Miragliotta, M. T. (2017). Jobs and Skills in Industry 4.0: An Exploratory Research. Advances in Production Management Systems. The Path to Intelligent, Collaborative and Sustainable Manufacturing.

- Poels A, D. R., & Benaissa A, P. D. (2015). Localization of Flow Separation and Transition Over a Pitching NACA0012 Airfoil at Transitional Reynolds Numbers Using Hot-Films. *Journal of fluids Engineering*.
- Porter M, J. E. (2015). How Smart,connected products are transforming companies. *Harvard business review*.
- Portulans institute. (2021). Network Readiness Index 2021:Benchmarking the Future of the Network Economy. Retrieved from Portulans institute: <https://networkreadinessindex.org/>
- Rajiv Dewan, B. J. (2003). Product Customization and Price Competition on the Internet. *Management Science*.
- Ramasubbu, C. N. (2013). Design Capital and Design Moves: The Logic of Digital Business Strategy. *MIS Quarterly*.
- Rambhujun Nardeosingh, B. L. (2008). Analyse des données et techniques décisionnelles appliquées au MRH. Foucher.
- Raymond A.thietart. (1999). Méthode de recherche en management. Dunod.
- Raymond A.Thietart. (2014). Méthodes de recherche en management. Dunod.
- Reis A, M. F., & Ferreira M, L. T. (2020). Technological trends in digital agriculture and their impact on agricultural machinery development practices. *Revista Ciência Agronômica*.
- Ribble M, G. B. (2007). Digital Citizenship in Schools. *International Society for Technology in Education*.
- Robert B. Bohn, C. A., & Michel, M. (2020, February 13). NIST Cloud Computing Program - NCCP. Retrieved from NIST: <https://www.nist.gov/programs-projects/nist-cloud-computing-program-nccp>
- Ron Sanchez. (1995). Strategic flexibility in product competition . *Strategic management journal* , 135-159.
- Russo V. (2019). Digital Economy and Society Index (DESI). European Guidelines and Empirical Applications on the Territory. *Studies in Systems, Decision and Control book series (SSDC,volume 208*.
- S.Alam. (2009). ICT Adoption in Small and Medium Enterprises: an Empirical Evidence of Service Sectors in Malaysia. *International Journal of Business and Management*.
- Saarikko, U. H., & Westergen, B. T. (2020). Digital transformation: Five recommendations for the digitally conscious firm. *science direct , Elsevier*, 825-839.
- Sadinovich Boltaev Burkhon. (2021). international scientific and practical online conference on human ressource: problems,solution,perspectives. (p. A multidisciplinary peer reviewed journal). A multidisciplinary peer reviewed journal.

- Safa mostafa. (2019, February 28). HOW TO MEASURE THE DIGITAL TRANSFORMATION IN THE ARAB COUNTRIES. Retrieved from Arab development portal: <https://www.arabdevelopmentportal.com/blog/how-measure-digital-transformation-arab-countries>
- Sambamurthy, A. S., & Grover, V. (2003). Shaping Agility Through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms. *MIS Quarterly* 27(2), 237-263.
- SAMHSA. (2020, February 24). substance abuse and mental health services administration. Retrieved from The National Guidelines for Crisis Care: <https://www.samhsa.gov/sites/default/files/national-guidelines-for-behavioral-health-crisis-care-02242020.pdf>
- Savall H, Z. V. (2004). Approche Qualimétrique, Observer l'objet, complexe. *Recherche en Sciences de Gestion-economica*.
- Schaaper M, D. P. (2020). Measuring digital development, ICT price trends 2019. Geneva: International Telecommunication Union.
- Şener BÜYÜKÖZTÜRK. (2002). Faktör Analizi: Temel Kavramlar ve Ölçek Geliştirmede Kullanımı. *Kuram Ve uygulamada eğitim yönetimi*.
- Shadrack K. (2022). Management of public sector records in the digital age (pp. 2-12). *Entreprise content management*.
- Shadrack Katuu. (2022). Management of public sector records in the digital age. Mpumalanga Records Management Forum. south africa: Enterprise Content Management.
- Shadrack Katuu. (2022). Management of public sector records in the digital age. Researchgate, 2-12.
- Shuttleworth M. (2015). internal consistency reliability defines the consistency of the results delivered in a test, ensuring that the various items measuring the different constructs deliver consistent scores. *Internal consistency Reliability*.
- Sinclair, M. (2022). Exploring Morocco's growing e-commerce sector. insight.
- Singh A. (2019, March 13). The Bridges To Build : Your Digital Transformation Strategy ! Retrieved from Linkdin: <https://www.linkedin.com/pulse/bridges-build-your-digital-transformation-strategy-arjun-vikram-singh/>
- Sirimanne S. (2019). Value Creation and Capture - Implications for Developing Countries. Digital Economy Report ,UNCTAD.
- Smart C, I. V. (1984). Strategy and the environment: A study of corporate responses to crises. *Strategic Management journal*.
- Staden R, E. A. (2021). Digitalization – a necessity in the new normal. B&FT Business & Financial Times: Home.

- Stake R. (1995). Data Gathering. the art of case study research, 49-68.
- Staroswiecki M, M. (1994). Intelligent actuators. Hermes.
- Statista. (2022, May 4). E-commerce revenue in Morocco from 2017 to 2025. Retrieved from <https://www.statista.com/forecasts/1306030/morocco-revenue-of-the-e-commerce-market>
- Stepanyan, V. (2019, july 29). ENHANCING THE ROLE OF SMES IN THE ARAB WORLD. Washington, D.C.: International Monetary Fund. Retrieved from International Monetary Fund: file:///C:/Users/pchpm/Downloads/PPEA2019040.pdf
- Stephan Denning. (2018). The age of agile: how smart companies are transforming the way work gets done. AMACOM.
- Steven G. (2001). Technology and the Wage Structure. Journal of Labor Economics, 1.
- Stevenson, J. (1990). A paradigm of entrepreneurship: entrepreneurial management. Strategic Management Journal, 17-27.
- Subramaniam J, k. (2009). Optimization of available resources and methods of capitalizing human capital on industrial process lines efficiently. WSEAS transactions on systems , Production management.
- Surlemont B, A. F., & vital, I. (2017). Hybrid entrepreneurship: What news ? entreprendre-innovover, 5-7.
- Syed Shah Alam, M. K. (2009). Adoption in Small and Medium Enterprises: an Empirical Evidence of Service Sectors in Malaysia. International Journal of business and management.
- Sylvie St-Onge, S. R., & GILLES GUÉRIN, É. C. (2012). Vérification d'un modèle structurel à l'égard du conflit travail-famille. Relations Industrielles.
- Taskin L. (2003). Télétravail, les mythes d'une success story. Entre autonomie et contrôle. gestion 2000,.
- Teerawat Charoenrat, C. H. (2015). SMEs and the rise of global value chains. Integrating SMEs into global value chains: Challenges and policy actions in Asia. Asia Development Bank institute.
- The Legatum Prosperity index . (2020). Retrieved from Kingdom of Morocco as part of the Global Openness Index, Morocco as part of the Global Openness Index,: <https://www.prosperity.com/globe/morocco>
- The world bank. (2017, March 10). Morocco - Financing Innovative Startups and Small and Medium Enterprises Project.
- The world bank. (2019, January 23). Kingdom of Morocco for the financial inclusion and digital economy development policy financing. Retrieved from the world bank: <https://documents1.worldbank.org/curated/en/930571550977295030/pdf/FINAL->

- The World Bank. (2020). doing business. The World Bank.
- Thomas M.Thomson. (2012). Management by objectifs . The Pfeiffer Library.
- Tom E. Burns. (2009, November 4). the management of innovation. Retrieved from ssrn: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1496187
- United Nations Conference on Trade And development. (2019). UNCTAD B2C E-COMMERCE INDEX 2019. UNCTAD Technical Notes on ICT for Development. UNCTAD.
- Urbach N. (2018). Introduction to Digitalization Cases: How Organizations Rethink Their Business for the Digital Age. Springer.
- Urbach N, M. R. (2018). How Organizations Rethink Their Business for the Digital Age. Management for professionals.
- V Patricia, V. G. (1999). Le travail flexible à l'aube du 21ème siècle". Fondation Travail-Université (Namur).
- Valeyeva, K. R., & Elvira, V. R. (2019). Metacognition and Metacognitive Skills: Concepts, Methodologies, Tools, and Applications. Early childhood development.
- Ville Helminen, M. R. (2007). Relationships between commuting distance, frequency and telework in finland. Transport Geography.
- Vural, V., Halldórsson, G., & Yaruta. (2020). Can digitalization mitigate barriers to intermodal transport? An exploratory study. Elsevier,Research in Transportation Business & Management.
- W.Sidło. (2020). Digitalisation of small and medium enterprises (SMEs). european union: The European Union and the Committee of the Regions.
- Wacheux, F. (1996). Méthodes qualitatives de recherches en gestion. Paris : Dauphine recherches en management.
- Wade. (2014). Digital business transformation. Retrieved from IMD: <https://www.imd.org/research-knowledge/articles/digital-business-transformation/>. Retrieved 11.09.2021
- Wade M. (2015). Digital business transformation: A conceptual framework. International Institute for Management Development.
- Wade M, Y., & Shan, J. &. (2019). Digital Vortex 2019. Global Center for Digital Business Transformation. Retrieved from cambridge alliance service.
- Wang Q, M. (2020). Integrating blockchain technology into the energy sector — from theory of blockchain to research and application of energy blockchain. Elsevier.

- Wigand. (1997). Electronic Commerce: Definition, Theory, and context. The information society, Taylor & Francis.
- William L. Gardner, B. J., & Fred Luthans, D. R. (2005). Can you see the real me?" A self-based model of" A self-based model of authentic leader and follower development,. Leadership Quarterly.
- world bank group. (2018). The Arab World Competitiveness . world bank group.
- World health organisation. (2020). WHO Coronavirus (COVID-19) Dashboard. Retrieved from world health organization: <https://covid19.who.int/region/emro/country/ma>
- worldometers. (2020). Worldometer information Technology & services. Retrieved from Worldometers: <https://www.worldometers.info/coronavirus/>
- Wynne W. Chin. (1998). Commentary: Issues and Opinion on Structural Equation Modeling. Management Information Systems Research Center.
- Yang Y, D. (2020). The Construction of Intelligent Classroom System Based on CC2530. Springerling.
- Youssra ja. (2020). Survey 56% of Moroccan executives are teleworking 6% are on leave. Media 24.
- Yvonne Giordano. (2003). Conducting a research Project: A qualitative perspective. les essentiels de la gestion.

APPENDIX A

SURVEY QUESTIONS

A.1 SURVEY QUESTIONS

Dear Dr. Professor at Altnbaş University,

This is a questionnaire for the Master's thesis entitled "The Impact of COVID-19 on the Digitization of SME Administrations in Morocco," which is being prepared under the direction of Prof.Asst.Murad Canbulut. The study is based on the digital dimension of Moroccan SMEs in order to know their reactions to this global health and economic scourge as well as their adaptation to digital acceleration. The following questionnaire will take approximately 5–10 minutes to complete. It is the same in the context of this academic research. Your answers to our questions will be treated confidentially and will only be used in the context of this academic research. It is very important to us that the choices you make reflect your true personal thoughts and opinions. Thank you for taking the time to participate in our survey. The data collected will remain confidential and used only for academic purposes. It is very important to us that the choices you make reflect your true personal thoughts and opinions. Thank you for taking the time to participate in our survey. Note: The word "digital" in survey questions emphasizes any digital management tools you use in your work. It is important that you remember these details when answering the questions and think about the acceleration and adoption of digital within the SME system in general when answering the questions, which is very important for the results we get.

Amina BELHOSSINE

A.1.1 Appendix Second-Level Subheading

ALTINBAS UNIVERSITY, TURKEY

DEPARTMENT OF BUSINESS ADMINISTRATION

QUESTIONNAIRE

Section A: Demographic question

Q1 What is your gender

- ☐ Male ☐ Female ☐ Other

Q2 What is your position in the company

- ☐ Director
☐ CEO
☐ General Manager
☐ HR Manager
☐ Finance Manager
☐ Operation Manager
☐ Employee
☐ Other

Q3 how many years of experience

- ☐ < 1
☐ 1-3
☐ 3-6
☐ 6-10
☐ >10

Q4 what is your level of education?

- ☐ No degree
☐ High school-undergrad
☐ Bachelor

- ☐ > Graduate (MA, MBA, PhD)

Q5 How old are you?

- ☐ <30 years old 18-29 ages
- ☐ 30-40 Years old 30-39 ages
- ☐ 40 years old 40 and more

Q6 what is your sector of activities

- ☐ Manufacturing and industries
- ☐ Wholesale and retail
- ☐ Agriculture, animal production and hunting
- ☐ Forestry and fishing
- ☐ Construction
- ☐ Accommodation, catering and similar
- ☐ Real estate activities
- ☐ Tourism
- ☐ Consultancy and accounting
- ☐ Human health and social support activities

Q7 Has your organization been affected by COVID-19?

- ☐ Yes
- ☐ No

Q8 If yes, have you reduced the number of employees?

- ☐ Yes
- ☐ No

Q9 how many employees are in working remotely?

Q10 What is your firm's overall degree of digitalization?

	Totally disagree	Partially disagree	Not sure	Totally agree	Partially agree
We fully adopt digital artifacts (products or services) products and services					
We fully adopt digital platforms that support digital					
We fully adopt digital infrastructures, such as technology tools and systems					
We fully adopt digital business models					
Firm digitalization relies on external purchases					
We fully adopt digital management models					
Firm digitalization relies on internal R&D					

Q11 What is your firm's degree of digital technology adoption?

	Totally disagree	Partially disagree	Not sure	Partially agree	Totally agree
Big Data such as data base, data analysis technology					
A technology such as machine learning					
Mobile technology such as mobile internet, wireless communications					
Cloud computing technology					
IOT Technology such as network distribution technology					
Social such as E-commerce, instant messaging					
Platform development technology such as network platforms					

Q12 Will you firm accelerate its digital transformation after the COVID-19?

	Totally disagree	Partially disagree	Not sure	Partially agree	Totally agree
Strengthen the application of online office tasks					
Improve the digitalization of supply chain					
Adopt digital platforms such as digital communication platforms					

Q13 Will you firm change in the following aspects after the pandemic COVID-19?

	Totally disagree	Partially disagree	Not sure	Partially agree	Totally agree
Change existing products line					
Change regional market coverage					
Change external cooperative relations					

This survey was adopted according to two articles to find out the reaction of Moroccan SMEs And their adaptation to digitalization in the era of COVID-19. (Hai Guo & Ran Huang, 2020), and (Iva Gregurec & Katarina T.pupek, 2021).