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The covid-19 impact on digital & e-commerce

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Abstract. We live in a time when technologies are taking more and more place in our daily lives. E-commerce is a perfect illustration of this fact because it allows customers from all countries to buy different types of products and services in a very fast and simple way. Today, with the rapid development of digital; Big data, artificial intelligence, IoT, blockchain... words that still seemed barbaric a few years ago, occupy a prominent place in the digital tools we use every day. That is why at a time when Covid-19 is affecting the whole world, it is interesting to ask what is the place of digital and new technologies in the health crisis? What are they for when all means are good for fighting the virus? Moreover, in addition to the development of the internet and the use of digital tools, the changes noted on consumer behavior attract the attention of specialists who are trying to understand these changes; traditional purchases of customers are becoming increasingly rare, leaving room for web activities or electronic commerce. The only reason behind this fact is that customers can now choose their product with their fingertips across the globe. So due to the covid19 pandemic, e-commerce activities are also facing unexpected challenges. This study will focus on the impact of digital in the fight against covid-19 on the one hand, but also and especially on e-commerce activities and the sudden change in demand on the other.
Keywords. Technologies, E-Commerce, Pandemic, Covid19.
JEL. F21, F68, O53, K23.

1. Introduction

The COVID-19 pandemic is one of the biggest crises in modern history; it has indeed created a huge shock for healthcare professionals, governments, businesses and customers around the world. Many countries and leaders were taking bold and strict measures to prevent the spread of the virus and the collapse of their health systems. Because people had to stay at home and practice social distancing, many businesses and industries faced severe upheaval.

However, the spread of digital technologies and the use of the internet allowed humans to continue to connect and communicate; businesses were able to interact with their customers even if they were physically remote. This diffusion of technology also allowed brands and merchants to continue to sell their products to their customers and at least partially maintain their business activities. In this paper, it will look at how consumers have embraced e-commerce to still be able to buy their products, and how especially in countries where the share of active online shoppers was lower, people felt increasingly encouraged to order online.

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Therefore, in many of these markets, consumers could be expected to remain confident in using digital as a buying channel.

Companies in countries that are tackling this challenging time to build a strong digital presence in a long-term perspective will be much more likely to thrive in the post-COVID-19 future.

1.1. Objectives

The overall objective of this study is to measure the impact of the Covid-19 pandemic on the use of new technologies, the bet of governments, companies and customers on digital to fight the pandemic. The use of digital tools was essential for the treatment of different cases during the health crisis in several countries, their ability to offer consumers the opportunity to buy products and services while respecting barrier measures was also decisive. Therefore, one of our objectives is to find out how digital technology has allowed companies and consumers to continue their business activities, after analyzing the technological tools to fight the pandemic in several countries. It will be a question of revisiting the results of the survey undertaken by the United Nations experts to examine the effects of COVID-19 on the markets of several countries in particular: Brazil, China, Germany, Italy, the Republic of Korea, the Russian Federation, South Africa, France, Switzerland and Turkey. Based on the available statistical data, we will return first, briefly on the pandemic itself, the concepts of new technologies and e-commerce, then on the relations between companies and customers during the period of confinement in France.Finally, with the help of academic and professional literature, explore also the changes on trends and major challenges that will be faced by companies in the medium term.Ultimately propose certain skills necessary to firms to maintain, or even acquire, their competitive advantages in the post-Covid-19s world.

1.2. Study context and framework

In an increasingly digitalized and connected world in comparison with the period 2002 during the first SARS epidemic, it has become obvious in this current context of Covid-19 pandemic, to integrate new digital tools to manage this scourge. Before demonstrating their usefulness in this health crisis, it will be useful to recall what are Big Data and Artificial Intelligence on the one hand, then for a better delimitation of the framework of our study, go back on the meaning of the keywords that are: coronavirus Covid-19 and electronic commerce on the other hand.

1.2.1. Big data

Big Data refers to a massive set of data that a conventional digital tool is unable to process because of the ever-increasing volume of information available. This data comes from different sources and is of different natures which are one of the issues on which Big Data is based precisely. Indeed, it offers everyone the possibility to consult giant databases thanks to a tool meeting the rule of 3V:

* Volume: amount of important data.

* Variety: very heterogeneous in nature.

* Velocity: with high processing speed (real-time).

New analytical and modeling tools have emerged to use these massive data volumes wisely. This was the case in the fight against Covid-19.

1.2.2. Artificial intelligence

Artificial intelligence brings together all the techniques that can allow a machine to simulate real intelligence. These techniques are based on artificial neural networks made up of servers. They are able to take into account heavy calculations within huge databases. Algorithms are added to optimize the calculations as and when processing to make the machine more and more efficient.

The strength of this tool in the coronavirus crisis is explained by the ability, like Big Data, to identify and analyze data faster than a human. This saves time and is the key to success against this extremely fast spreading virus.

1.2.3. Coronavirus disease (COVID-19)

If the current health crisis marks the minds by its extremely rapid spread speed, it must still be remembered that a coronavirus epidemic had already occurred at the beginning of the century. Indeed, the coronavirus is responsible for the SARS crisis (severe acute respiratory syndrome) of 2002-2003 where more than 30 countries recorded thousands of cases over several months. But the Covid-19 crisis of 2020 has different characteristics. Its very rapid spread has led to a health chaos that has had to be brought under control. The coronavirus disease (COVID-19) is an infectious disease caused by a newly developed coronavirus. Most of the people infected with the COVID-19 virus will suffer from mild to moderate respiratory disease and recover without requiring special treatment. Older people and those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory diseases and cancer are more likely to develop serious illness. The best way to prevent and slow transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infections by washing your hands or frequently using alcohol-based disinfectant without touching your face. The COVID-19 virus is spread mainly by droplets of saliva or nasal secretions when an infected person coughs or sneezes, so it is important that you also practice respiratory etiquette (for example, coughing into a flexed elbow).

1.2.4. E-commerce or e-commerce

E-commerce, also known as e-commerce, refers to the purchase and sale of goods or services on the Internet, as well as the transfer of money and data to execute these transactions. E-commerce companies are of the following main types,

a) Business-to-Business (B2B)

b) Business-to-Consumer (B2C)

c) Business-to-Government (B2G)

(d) Consumer-to-Consumer (C2C)

(e) Mobile Commerce (M-Commerce).

E - Commerce and online shopping are often used interchangeably, but at its core, e-commerce is much broader than that-it embodies a concept for doing business online, incorporating a multitude of different services, for example: making online payments, booking flights, etc.E-commerce has grown rapidly since its modest beginnings with online sales expected to reach US. 599.2 billion by 2024. The COVID-19 outbreak saw e-commerce sales climb 25% in March 2020 alone. The power of e-commerce should not be underestimated as it continues to invade everyday life and presents important opportunities for small, medium and large businesses and online investors. You don't need to look far to see the potential of ecommerce businesses. Amazon, for example, which has set the standard for customer-oriented websites as well as a lean supply chain, sells more than 4,000 items per minute to SMEs alone. Our study will focus on the Business-to-Business (B2B) type, as it will allow us to better understand the purchasing practices and policies of companies and professionals and the transformations related to the crisis Covid-19.Il in particular, it emerges that the health crisis has led to the acceleration of the digitalization of e-commerce purchases of professionals.34% of customers of B2B e-commerce sites consider that the health crisis has led them to develop online orders at the expense of other channels (e - mail, fax, stores, agencies, telephone, order taking by sales representatives).More than two thirds of them believe that this transfer of orders to the e-commerce channel is now acquired.

2. Problems and methodology

2.1. Research questions

The following research questions will help achieve the research objectives set out above:

1. What has been the impact of digital in the fight against covid-19?
2. What has been the impact of Covid 19 on e-commerce?
3. How did COVID-19 trigger the turn of digital and e-commerce?

2.2. Methodology

The research method is the netnography: an analysis of quantitative data collected online on the latest UN reports, results on the impact of Covid-19 on digital and on other public or private institutions reports around the world.It is also based on the results of an online survey carried out on Fevad members during the month of November 2020 among 1,645 people making purchases on the Internet in a professional capacity (last purchase less than 6 months for 98 %).

On the UN report at least 200 questionnaires completed for each country by an international panel

Total: at least 1600 completed questionnaires

Interview duration: 15 minutes

Survey date: early June 2020

RESPONDENT

Total 1,819 respondents

220 Italian respondents 233 South African respondents 216 German respondents 225 Turkish respondents 221 Russian Federation respondents 227 Chinese respondents 220 Republic of Korea respondents 257 Swiss respondents

50% Women 50% Men

3. The impact of digital in the fight against Covid-19

Due to the rapid evolution of the virus and its global reach, medical resources have been imbalanced and very heterogeneous between different populations. Thanks to the dynamic spatio-temporal data processed in real time by Big Data, it was easier to analyze the needs of different countries and provide the appropriate help as they go.It is with such an evaluation system that the supply of material could be possible and the risk associated with routing in the requested areas controlled.

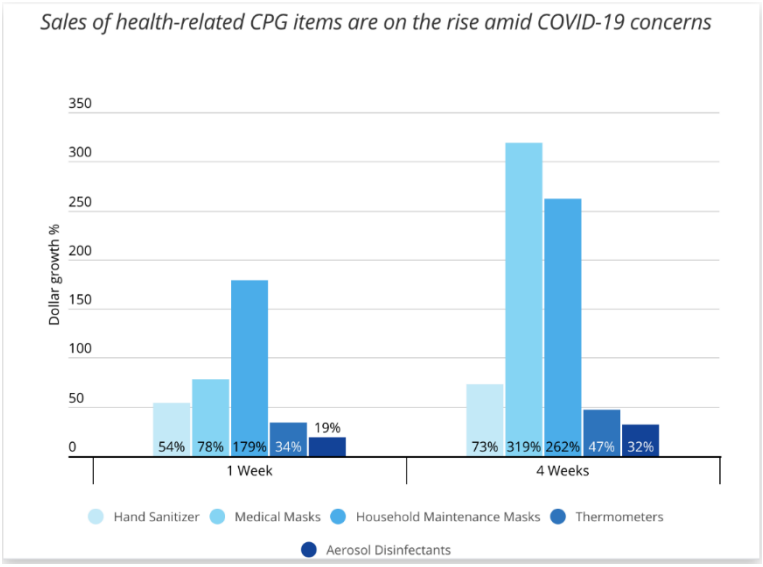


Figure 1. *Sales of health-related CPG items rise amid COVID-19 concerns.*

3.1. Big data and digital against Covid-19

Being a massive set of data that a conventional digital tool is unable to process because of the ever-increasing volume of information available, it is useful to use this technology for public health because the transmission of data is much faster. And a colossal amount of data can be processed and analyzed. Big Data was then asked to study these different elements, from medical databases principalement. Il was also asked to carry out models of viral activity to guide health professionals and thus help the authorities to establish schedules and controls throughout the monde.De good results were also obtained in China by combining the Big Data tool with:

* Geolocation data,

* And GIS (geographic information systems).

This is in order to efficiently process many localized data:

* Rapid visualization of epidemic information,

* Spatial tracing of proven cases,

* Forecasting the evolution of transmission, at regional or national level,

* And balance and management of supply and demand of material resources.

Several institutions and research groups have used GIS technology to analyze information about, for example, the graphic representation of the epidemic or clinical consultations for fever. The goal was to develop a quick way to identify key elements of the evolution of the epidemic. Socio-spatial and geographical data were ideal information because they were updated regularly but their volumetry was massive. Indeed, to ensure a rapid analysis of the situation, it is necessary to be able to study spatiotemporal dynamics at multiple scales by linking different health departments to the internet. Thanks to Big Data, all this information was able to be unified and sorted despite the many different sources. They have been applied in spatiotemporal analyses and pandemic extent visualization systems. They were integrated into a single multi-scale dynamic map to visualize epidemic data at the scale of a country, region, city or neighbourhood according to the need sought. Big Data technology has also allowed the development of dynamic color-coded maps to transmit more intuitive information: from blue to black for mortality, from yellow to green for cured cases, etc. Indeed, when correlated with medical data, it makes it possible to establish the trajectory taken by a patient with Covid-19 in order to monitor the evolution of the virus in these areas and identify possible new epidemic outbreaks.

3.2. Artificial intelligence and facial recognition

Artificial intelligence has played an important role in managing this crisis in different ways. Starting with the combination of the latter with facial recognition systems. This technology is used to detect the temperature of a person through a thermal image (in public transport for example). The image below detects by thermal camera people with fever. Individuals with this symptom are identified through facial recognition software. Then, artificial intelligence categorizes them as risk cases in order to isolate them.These practices have been heavily used in China.

A group of researchers from Stanford University has created an algorithm to improve facial recognition systems to recognize faces even if they are covered by a medical mask, beard or glasses. Even though most patients are mild cases, doctors must apply the same intensive methods to isolate, treat and monitor all patients. AI algorithms help triage Covid patients:

* 80 % have a mild form of the disease.

* 15 % have a moderate form of the disease.

* 5 % have a severe form of the disease.

Figure 2. *AI against Covid-19 Thermal camera installation at the airport*

3.3. Other technologies used in response to this pandemic

Other digital tools have had an impact on the management of this crisis such as:

Machine Learning Thanks to its ability to predict and analyze, it allows the development of advanced computational models to trace information and predict the course of the disease.

Creating real-time alerts during a doctor's visit, if a patient combines symptoms and travel history in a risk area, an alert is automatically launched.His data are immediately returned to the body in charge of detecting new cases.

The use of QR codes: At airports to classify travellers ' infectious risks (from low to high) the QR code is in place.Indeed, reports are made online easily. If the risk is low, the person receives an SMS on his phone upon arrival at the aéroport.Si the risk is high, quarantine the time of the incubation period is feasible.

IoT A platform: allows public health agencies to access data for pandemic surveillance. For example, the "Worldometer" website provides real-time updates on the number of people affected by Covid-19. Or real-time tracking maps to track coronavirus cases around the world using data collected from international health agencies such as WHO.

Blockchain: someblockchain companies have developed a partnership with pharmacies to deliver drugs to the patient using an accurate and reliable tracking system.

Open Data: Governments have resorted to open data, or Open Data.Open and freely available data. In France, the Public Health Agency has transmitted certain data such as the number of visits to the emergency room, the number of hospitalizations, etc.This practice not only tends to offer an overview of the spread of the virus to anyone. But it also shows a desire for global collaboration to maximize information and find a solution to this crisis.

The unprecedented COVID-19 crisis has highlighted the critical role digital technologies play. In the years to come, we will see 2020 as the

moment that changed everything. Nowhere else has unprecedented and unexpected growth occurred like in the digital and e-commerce sectors, which exploded amid the COVID-19 crisis?

4. The impact of the Covid-19 crisis on e-commerce purchases

In a context of slowing economic activity, COVID-19 has led to a surge in e-commerce and accelerated digital transformation.As lockdowns have become the new norm, businesses and consumers are increasingly "going digital," providing and buying more goods and services online, taking the share of e-commerce in global retail from 14% in 2019 to around 17% in 2020. These and other results are presented in several reports from different institutions around the world, COVID-19 and E-Commerce: A Global Review, from UNCTAD and deTrade for all partners, reflecting the powerful transformations of global and regional industry recorded throughout 2020.The study is also based on the results of an online survey conducted during the month of November 2020 among 1,645 people making purchases on the Internet as a professional example (last purchase less than 6 months for 98 %). The questionnaire was sent to customers of the following B2B retail and e-commerce brands, members of Fevad: Agrizone.net, Bruneau.fr, Jpg.fr, Mabeo-direct.fr Tereva-direct.fr, Manutan.fr, Maxiburo.fr, Raja.fr, Ldlc-pro.com, Ugap.fr, Cdiscount Pro, Onedirect.fr, Boxtal.com, Legallais.com, Frankel.fr, Pro.carea-sanitaire.fr, Voussert.fr. The structure of the sample, the profile of the respondents 90 % proceed to transactions on sites, applications or e-commerce solutions, 10% are only prescribers for B2B purchases. 27% are business managers (including self-employed and liberal professions), 9% are directors or managers of entity, department or department and 8% are directors, purchasing managers or general services 53% work in TPEs (less than 10 employees), 36% in SMEs (10 to 249 employees) and 11% in GE / ETI (250 or more employees). Main sectors of activity of the clients surveyed: Construction (21 %), Services (17 %), Industry (12 %), Commerce (11 %), Public service (8 %), Health (6 %), Agriculture (6 %), these results are presented by the graph below: it can be seen that from a sectoral point of view, it is in agriculture, commerce and in the health sector that we find the highest proportions of buyers who have increased their orders on the Internet, it is in industry and the public sector that the rates are the lowest.

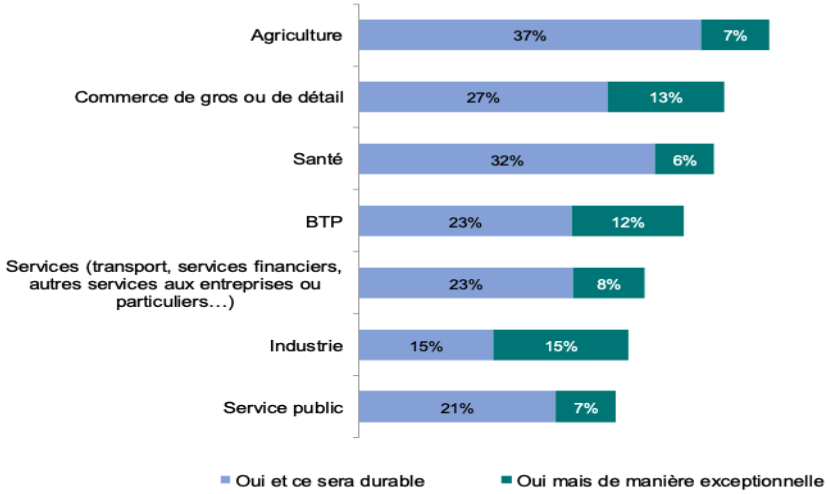


Figure 3. *Proportion of buyers who indicate that the Covid - 19 crisis has led to an increase in Internet orders by customer sector*

The effects of this evolution are found at all stages of the customer's life cycle (during prospecting, in the negotiation phase or in the context of customer follow-up) with an increase in digital uses in exchanges and customer-supplier relationship (video-conference, social-selling...).But they are also at all key stages of the customer journey, with increased use of e-commerce platform services.

4.1. The impact of the Covid-19 crisis on the customer-supplier relationship

The development of telecommuting and videoconference exchanges induced by the Covid-19 crisis has also strongly transformed the commercial relations between distributors and their customers: reduction of face-to-face appointments, physical meetings, trips to trade shows, events...However, when it comes to exhibition visits, attendance at professional events, the vast majority of buyers consider that a past themselves or more broadly their company will move back into these events. For face-to-face meetings or business trips, opinions are more divided and the impact would then be deeper and more sustainable. Thus, 37% of buyers with direct exchanges with suppliers believe that the distance relationship works very well and that they do not think to represent (or very moderately) the face-to-face appointments at the end of the Covid-19 crisis. These appointments could be reserved for key moments in the customer-supplier relationship (response to a call for tenders, negotiation of a framework contract, purchase of a complex and expensive service or product...) where face-to-face can bring a strong added value.PhilippeNantermoz, Managing Director at Legallais confirms this strong trend " Visio has existed for a very long time but had not taken off. Even if a return of appointments, meetings in "presentential" is expected by many, it is certain that the visio will remain one of the great achievements

of this Covid-19 and will transform strongly and permanently the commercial relations and the work of the sales forces ".

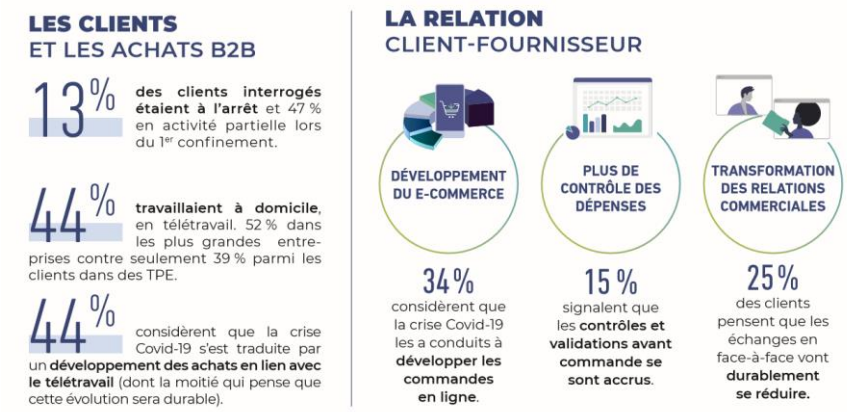


Figure 4. *Fevad Study by Next Content and Médiamétrie-December 2020*

4.2. Changes to purchasing practices and policies

While the health crisis favors an increase in orders on the Internet, the study focused on the evolution of online shopping practices and customer expectations. The survey deciphered the customer journey during the last online purchase and in particular the search for prior information and the selection of suppliers.Beyond the price which remains more than ever decisive, what matters strongly for the B2B customer in the choice of the e-commerce site, is its ability to dispose of the product quickly, with guaranteed delivery. Availability in stock is one of the criteria of choice for 52% of customers. According to the buyers interviewed, the availability of products but also guarantees on deliveries are the 2 criteria that have gained the most importance, the Covid-19 crisis has been able to create significant tensions on supplies. And this has not been without impact on the customer-supplier relationship with a use of the phone which has remained very important on the part of customers in particular to reassure themselves about the product, its technical characteristics but also the availability. This is particularly the case among large and mid-sized customers: more than half of buyers in mid-sized companies searched for information before ordering online and among them 20% had telephone contact with the supplier.According to Nathalie Chapusot, Deputy Managing Director Marketing, Commercial & E-Commerce, Raja Group " The health crisis has been an accelerator of how to manage the relationship with the customer. The period required even more advice, guidance and listening. The relationship is currently as much about these human qualities of help and reassurance as about the qualities of sales. "The digitalization of shopping in the wake of the Covid-19 crisis has increased the demands for a simple and effective online experience. B2B customers want to save time and autonomy, reduce order errors without having to seek customer support. This is a criterion of choice for more than 40% of e-commerce customers in virtually all product categories. 31% of buyers in

large companies or mid - sized companies indicate that the ease of ordering online is much more important since the Covid-19 crisis in choosing a supplier. According to Stéphane Loire, Associate Director of Next Content " In these large companies, purchasing customers are often subjected to more complex purchasing systems with customers not always being able to go directly to e-commerce sites and where the use of the phone is still very important ".

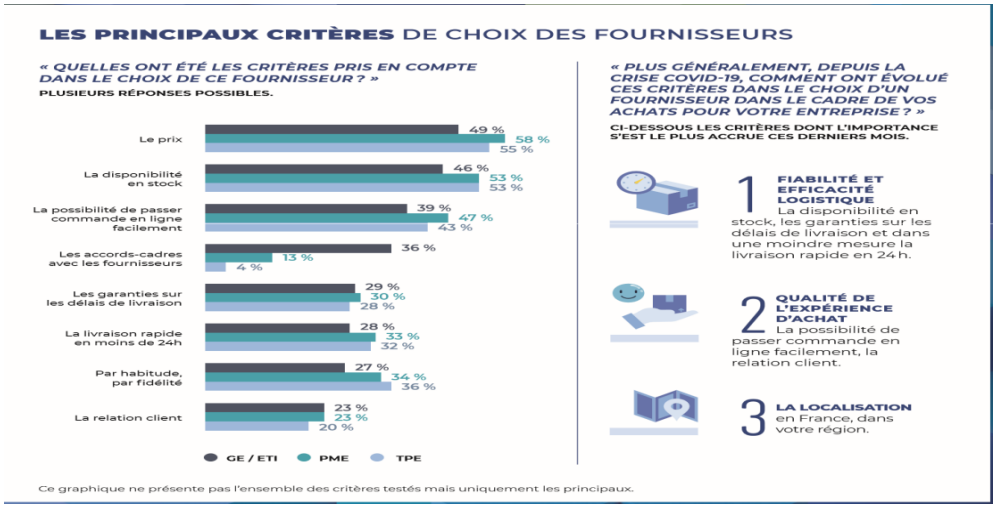
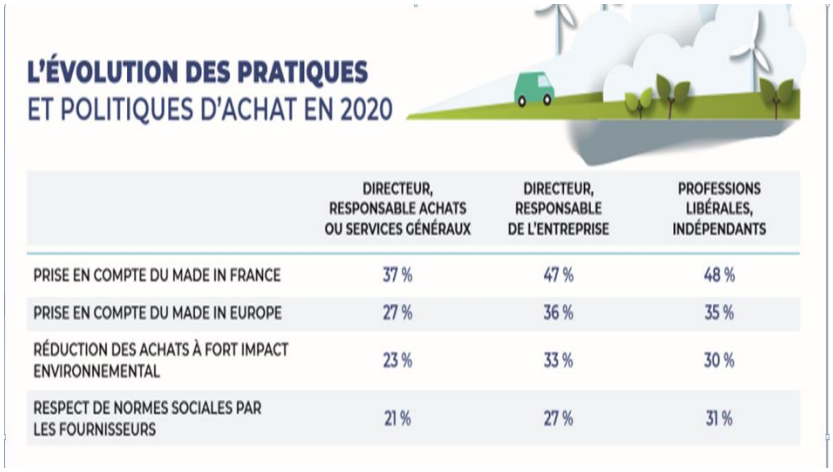


Figure 5. *Fevad study by Next Content and Médiamétrie-December 2020*

4.3. Procurement and corporate social and environmental responsibility

One of the other lessons of the study concerns the distributor's CSR policy or commitments (social and environmental responsibility) which are not yet at the top of the criteria for choosing suppliers. Nevertheless, buyers are increasingly integrating environmental and societal considerations into their purchasing practices. These criteria can differentiate two close suppliers on price, stock availability, logistics reliability or the quality of the user experience on the Internet. In addition, for many buyers, purchasing practices and policies are an important component of their company's commitments and social and environmental responsibility. This plays more on the products purchased (its characteristics, geographical origin) and the reduction of certain consumption than on the choice of supplier. Thus, among the decision-makers surveyed (business leaders, directors or purchasing managers, general services of an establishment or a department of the company), 44% say they have changed their practices or policies in 2020 by taking more account of Made In France. They are 29% to have sought in 2020 to reduce purchases with high environmental impact. And for the largest customers, compliance by suppliers with certain CSR criteria is already a prerequisite. According to Julie Dang Tran, Managing Director of Manutan France "The environmental rating is now very important when we are solicited by large groups in the context of tenders. Manutan as a distributor is judged on its

own performance in particular in terms of logistics but above all on its offer, its selection of products. For example, we are asked for indices of repairability. We therefore have increasingly marked approaches on these topics among our customers and increasingly strong requirements at this level". Jamila YAHIA MESSAOUD, Director of Consumer Insights at Médiamétrie, concludes: "The health crisis has been a real accelerator of the digitalization of multiple functions in companies. The successive confinements and the telework that has been imposed on many professionals have induced an adaptation of purchasing practices, professional interactions on the one hand and have put the spotlight on latent requirements on the part of professional buyers, in particular the CSR commitments of distributors. It is a good bet that some of these adaptations will turn into profound evolutions. "The pandemic has further highlighted the digital divide in the world. The internet is essential communication tools that can help people cope with the crisis. The technology sector is helping many industries adapt to this new situation and reduce risks. However, an estimated 3.6 billion people worldwide are not connected to the internet, including 900 million in Africa. Only 27 per cent of African women have access to the internet and only 15 per cent of them can afford to use it. People who do not have access to the internet cannot receive timely information about the crisis. They also do not have the opportunity to learn about preventive measures or benefit from telemedicine.



	DIRECTEUR, RESPONSABLE ACHATS OU SERVICES GÉNÉRAUX	DIRECTEUR, RESPONSABLE DE L'ENTREPRISE	PROFESSIONS LIBÉRALES, INDÉPENDANTS
PRISE EN COMPTE DU MADE IN FRANCE	37 %	47 %	48 %
PRISE EN COMPTE DU MADE IN EUROPE	27 %	36 %	35 %
RÉDUCTION DES ACHATS À FORT IMPACT ENVIRONNEMENTAL	23 %	33 %	30 %
RESPECT DE NORMES SOCIALES PAR LES FOURNISSEURS	21 %	27 %	31 %

Figure 6. *Evolution of purchasing practices Fevad study by Next Content and Médiamétrie-December 2020*

If the big winner during the lockdown was the large retailers, since the end of the lockdown retailers have to adapt to the new set of constraints and invent new business models (Cao, 2014). The loss of consumer income, the resumption of out-of-home consumption and the reopening of traditional shops will reduce its potential, and in particular that of large hypermarkets, some shopping centres and department stores. These outlets may take advantage of their size to ensure more safety than smaller ones,

but compliance with hygiene measures and barrier gestures will result in increased costs and reduced productivity. The downward trend in demand that has been going on for some years now for these larger stores will also contribute to this reduction, which future automation will hardly be able to compensate for. On the other hand, the revenue gains in e-commerce can be maintained in the longer term, since they are part of an active trend 5 already well before the crisis. But to retain e-commerce customers, conquered by necessity during the lockdown, retailers will have to improve the structures of their supply chain and the organization of teams in store and warehouse. The growing consumer demand will make the adoption of e-commerce systems in addition to stores (multichannel) a survival condition for all distributors, and will make skills in" omnichannel " (the integrated management of different channels) an increasingly important critical factor of success (Cao & Li 2015). It is through the integration and synergies of the different channels that it will be possible to ensure consumers a perceived coherent offer and a fluid and "seamless " service experience (Verhoef *et al.*, 2015 Shen *et al.*, 2018). To gain, or even maintain, competitive advantages in omnichannel, technological skills, in big data, logistics and merchandising have now become very important and will be increasingly important (Treadgold & Reynolds, 2016). Relationships with suppliers and with sales and delivery teams proved crucial in responding to the crisis, confirming the importance of taking stakeholders ' expectations into account and gaining their trust. The crisis has finally reinforced emerging trends in the FMCG sector towards greater corporate social responsibility and commitment to the pursuit of sustainable development (Colla 2016b).

5. Conclusion

In the years to come, we will see 2020 as the moment that changed everything. Nowhere else has unprecedented and unexpected growth occurred like in the digital and e-commerce sectors, which exploded amid the COVID-19 crisis? In an immediate response to the rapid spread of Covid-19 among populations, many countries have closed non-emergency services in hospitals and postponed operations. This decision was not sustainable in the long term and digital tools could overcome these temporary closures with the implementation of telemedicine, the implementation of a virtual e-learning platform for research and education, AI to develop patient triage systems to alleviate the burden on doctors and chatbots developed to help patients detect symptoms early.Some software installed on smartphones could detect certain medical data from one patient to another, such as temperature. This prevented unnecessary consultations and resulted in positive results. In this article, we have looked and deliberated in a derogatory way at the COVID-19 outbreak. We focused primarily on how the corona virus spreads and affects e-commerce globally.

Awareness of almost this topic can countersign better information in people and deliberate on how e-commerce, technology tools, business and economies of countries are affected by Covid-19. We were interested in the impact of Covid-19 on e-commerce because, the topic will surely encourage other researchers to study it more deeply for various reasons.Moreover, it must be remembered that the coronavirus pandemic has led to a sudden and significant transfer to online services, people spend more time online and are more dependent on digital communications. Can not this intensification of online activity attract malicious actors and increase the possibilities of cyber attacks?

References

Badot, O., Lemoine, J.-F., & Ochs, A. (2018). *Distribution 4.0, Montreuil*, Pearson.

Cao, L. (2014), Model transformation companies in the shift to a cross-channel retail strategy: A case study. *International Journal of Electronic Commerce*, 18(4), 69-96. doi. 10.2753/JEC1086-4415180403

Cao, L., & Li, L. (2015). The impact of cross-channel integration on retailers revenue growth. *Journal of Retailing*, 91(2), 198-216. doi. 10.1016/j.jretai.2014.12.005

Colla, E. (2016a). La distribution face aux comportementsémergents du consommateur, in: Desjeux D., & Moati P. (coordinateurs), *Consommationsémergentes, la fin de la société de consommation ? Le bord de l'eau*, (pp.102-114), Paris.

Colla, E. (2016b). Stratégies internationales-de développement durable - des distributeurs" in: Laure Lavorata (coordinatrice) Marketing etDéveloppement durable), *Economica*, 102-114.

Colla, E. (2019). *La leggeEGalim in Francia e i suoieffetti*, GliOsservatori di Centromarca, Dicembre.

Colla, E. (2019). La politique de prix, in: Badot, O., Lemoine, J.-F. and Ochs, A., *Distribution 4.0, Montreuil*, Pearson.

Ienca, M., & Vayena, E. (2020). On the responsible use of digital data to combat the COVID-19 pandemic, *Nature Medicine*, 26(4), 458-464. doi. 10.1038/s41591-020-0832-5

Shen, X-L., Li, Y-J., Sun, Y., & Wang, N. (2018). Quality of channel integration, perceived fluidity, and use of omni-channel services: the moderating roles of internal and external use experience, *Decision Support Systems*, 109, 61-73.

Shu, W.D. (2020). Digital technology and Covid-19, *Nature Medicine*, 26(4), 458-464. doi. 10.1038/s41591-020-0824-5

Treadgold, R. & Reynolds, J. (2016). *Navigating the New Retail Landscape: A Guide for Business Leaders*, Oxford University Press, Oxford.

Verhoef, P., Kannan. P., & Inman, J. (2015). From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing, *Journal of Retailing*, 91, 174-181. doi. 10.1016/j.jretai.2015.02.005

Zhou, C. (2020). Covid-19: Challenges for GIS with big data, geography and sustainability, Geography and Sustainability, 1(1), 77-87. doi. 10.1016/j.geosus.2020.03.005

Wang, C.J. (2020). Response to Covid-19 in Taiwan, *JAMA*, 323(14), 1341-1342. doi. 10.1001/jama.2020.3151