

Strategic foresight after COVID-19 and the accounting perspective: cognitive mapping study

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Abstract:

Background: Given the challenges that COVID-19 pandemic presents for the worldwide economy, there is a number of specific lessons that can be learned from this crisis. The main objective of this article is to help professional accountants to resume their activities and improve their forward-looking strategy. More precisely, it is intended to identify the variables that contribute to the improvement of the professional accountants' activities mainly after the COVID -19 pandemic.

Materials and Methods: Through non-directive interviews with the professional accountants, we could identify 23 variables which represent the future system that refers to events, trends and decisions that can be made. The methodology research is based on cognitive mapping, which makes it possible to analyze the prospective strategies after the COVID-19 pandemic. Indeed, the cognitive map helps to clarify the mental orientation of a person and to visualize some ideas and beliefs on the achievement of their objectives.

Results: The obtained results showed that "digitization and Technology" are the most influential variables in the thinking of the professional accountants as they represent the evolution during the COVID-19 period while "communication and clients number ", which are the most dependent, represent the objectives to be achieved while the variables "teleworking and teleconference " are the means to achieve these objectives.

Conclusion: This research analyzes the accounting strategy in which the emphasis is on the mind and the forward thinking of professional accountants. Moreover, this study may increase awareness about the positive results of the COVID-19 period and develop a future strategy of work.

Key Word: COVID-19; Strategic foresight; Digital evolution; Social distancing; Professional accountants; Cognitive map.

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I. Introduction

In fact, in the late 2019, the world has witnessed the spread of a viral disease, which evolved into COVID-19 pandemic, which has so far infected more than 200 million people worldwide and caused more than 4,42 million deaths until August 2021. Moreover, this pandemic has caused unprecedented economic and financial disruption (Corbe et al., 2020; Gormsen and Koijen, 2020). In fact, the COVID-19 pandemic has definitely changed lives around the world and all sectors, countries and people have been affected by this pandemic however, the breadth and depth of its impact on the world's population and the firms' productive capacity remains unknown. Therefore, to help the economy and business finances recover, this article has analyzed a set of forward-looking strategies based on the changes brought about by the COVID-19, which can change lives in a positive direction.

Currently the conditions are changed because there are known vaccines that lead to the relaxation of social distancing and the resumption of economic operations. The possibility of business closures does not exist and the first stages of a full takeover are unfolding quickly. However, the sudden shock caused by the COVID-19 pandemic could result in a recovery and a stronger comeback (Corbe et al., 2020). Given the challenges posed by the COVID-19 pandemic for the global economy, this difficult period made us learn a lot of lessons to improve our operations in the future. In this perspective, the aim of this article is to analyze a strategic foresight to help professional accountants achieve their objectives after the COVID-19 pandemic, i.e. we will study the variables that help improve the accounting activity after the COVID crisis. Moreover, given the challenges that the COVID-19 poses for the worldwide economy, there is a number of specific lessons through which we can learn from this crisis. Therefore, the aim of this article is to present a strategic foresight to help professional accountants achieve their objectives after the end of the pandemic, i.e. we will study the variables that help professional accountants improve their activity after the COVID-19 crisis. In fact, this research is based on a

methodology inspired by the accounting psychology paradigm, proposing that professional accountants use a new strategy to resume their activity. Consequently, this research adds to the emerging literature on the effect of the coronavirus on accounting activities by investigating the strategic foresight after this pandemic, namely that of the digitization linked to COVID-19 pandemic. The obtained results showed that “teleworking, teleconferencing, E-learning and video conference” are variables that help professional accountants improve their future activities.

On the other hand, the contribution of this paper is threefold. First, it adds to the previous literature that has analyzed the effects of the corona-19 pandemic on the financial markets by analyzing the strategic foresight after this pandemic. Indeed, there is a number of specific lessons through which we can learn from this crisis. Second, this research presents a strategic foresight that helps professional accountants to resume their activity after the disappearance of the COVID-19 pandemic. Finally, using the cognitive map, this research studies the factors that help improve activities after the COVID-19 crisis.

Therefore, this article is structured as follows: the literature is presented in section 2 then, section 3 includes the research methodology while the results analysis is presented in section 4 and finally, the conclusion is presented in section 5.

II. Literature

Previous studies have analyzed the enormous costs in the current lives of the COVID-19 pandemic and their economic impact on the financial markets. Goodell (2020) expected losses because of the pandemic to be annually about 500 billion US dollars, or 0.6% of the global income. In light of the costs of the COVID-19 pandemic, this huge amount seems now to be greatly underestimated.

Furthermore, recent academic papers have predicted large-scale events of the COVID-19 pandemic and its economic consequences (Ali et al., 2020; Goodell, 2020; Zhang et al., 2020). In fact, these papers often consider the pandemic ex post costs. For example, Goodell (2020) studied the impact of the COVID-19 pandemic on the financial markets and institutions. For their part, Ru et al. (2020) analyzed the stock market responses to the early stages of the COVID-19 pandemic and found that there were more immediate and substantial market responses in countries. In the same perspective, Al-Awadhi et al. (2020) found a negative relationship between the growing cases of the COVID-19 pandemic and the stock market returns. Furthermore, their results indicate that the information technology and medicine manufacturing industries outperformed the aggregate market. In contrast, the beverage production and transport sectors (air, road and water) performed less well (JakubSzczygielski et al., 2021).

A pandemic in a highly interconnected country calls for innovative digital solutions to provide responses to the spread of the COVID-19 pandemic. It cannot be denied that this pandemic has brought several negative restrictions and unforeseen challenges across all sectors. Still, there is no question that this pandemic has facilitated a boost for digital transformation in many industries, which in turn has mitigated some of the negative effects of COVID-19. It can even be argued that the COVID-19 pandemic is fast becoming the accelerator of one of the biggest workplace transformations in life (Kempf, 2021).

On the other hand, according to Raghunath and Tan (2020) social distancing is recommended as a measure by the World Health Organization to reduce infection rates however, many countries and individuals have adopted different levels of social distancing measures in order to reduce the spread of the COVID-19 pandemic. Moreover, a study based on data about the pandemic in Spain revealed that people practice different levels of social distancing depending on the level of perceived risk. Additionally, the study found that the degree of the used social distancing affects the rate of infection. In other words, people who practice higher degrees of social distancing are less likely to be infected (Raghunath and Tan, 2020). In the same perspective, and in an attempt to reduce the interaction between people, many countries have implemented lockdown accompanied by restrictive measures, such as the full closure of workplaces which required employees to work from home. In this context, Saltiel, (2020) surveyed Singaporeans and found that over 80% of the employees hope to continue working remotely for at least half of their working hours while Saltiel (2020) reported that remote working is likely to become commonplace. On the other hand, Dingel and Neiman (2020) indicated that working remotely is not possible for everyone. In fact, by categorizing occupations per field of activity, such as digital work, it becomes possible to work from home however manual work cannot be undertaken from home. According to this classification of occupations, Dingel and Neiman (2020) found that up to 37% of occupations in the United States could potentially be performed at home. For their part, Bloom et al. (2015) indicated that according to pre-COVID-19 statistics in 2016, 60% of companies in the United States offered remote working as an alternative way of working. The stated that executives may be reluctant to use remote working arrangements because of concerns about the possibility of distractions that could lead to reduced productivity. In addition, they affirmed that the employees' productivity can decrease when working remotely due to the lack encouragement. As for White (2018) he indicated that it is important to put in place suitable infrastructures so that workers always remain socially connected with their colleagues, which makes it possible to improve the

employees' productivity. Therefore, managers will need to assess whether the company should invest in remote work or adapt traditional working arrangements, even though the work can potentially be performed remotely. In the same context, Briggs et al. (2020) suggested that the confinement during the COVID-19 pandemic has reduced daily routines and led to thinking about new consumption patterns and the possibility of an alternative future, but according to their survey a great number of respondents remained strongly attached to the elements of pre-lockdown procedures

Social distancing leads to digital work, which involves the use of new technologies by which people can perform their work in a variety of places using new techniques (Wilks and Billsberry, 2007). Therefore, digital evolution is seen as a tool to transform the challenge of the COVID-19 crisis into an opportunity. Indeed, many elements of technological change are created in remote work, resulting in a general acceleration of social and digital transformations, which are the key points of the future. In this perspective, we assume that the impact of the COVID-19 pandemic on the accounting profession in the future is positive.

III. Material And Methods

In the methodological framework, we will use a qualitative method for the collection of information. In fact, this method is based on non-directive interviews which consist in a set of open-ended questions prepared in advance. The purpose of using these types of questions is to identify the variables of strategic foresight after the disappearance of the COVID-19 pandemic.

We asked the professional accountant to identify the important factors which, according to him, could modify their mission after the COVID-19, each of these variables is written by the researchers, who asked the professional accountant to determine not only the influencing factors but also those influenced by these factors. However, this method requires an in-depth analysis by using not only the main influenced and influencing variables but also the sub-variables, which could lead to richer analyzes by asking more precise questions (Godet, 2001; Elaoud and Jarboui, 2019). We have also asked the professional accountants on the challenges and the opportunities created by the pandemic as well as on the solutions to mitigate the negative effects of the Covid-19 pandemic.

Actually, these interviews start with the following questions:

Is COVID-19 causing a long-term change in the work of professional accountants?

What are the lessons to be learned from the changes identified by COVID-19?

What are the opportunities generated by the pandemic?

Through non-directive interviews with the professional accountants, we could identify 23 variables which represent the future system that refers to events, trends and decisions that can be made. In fact, table 1 presents the definition of the main variables collected through the conducted interviews.

Table no 1 definition of the main variables

	Variables	Definition of Variables		Variables	Definition of Variables
V1	TLW	Teleworking	V13	TaxP	Tax-payment
V2	DIG	Digitization	V14	SETT	Settlement
V3	TEC	Technology	V15	OnlineS	Shopping online
V4	WEBS	Website	V16	PANICB	Panic buying
V5	WEBI	Webinar	V17	AI	Artificial Intelligence
V6	MEET	Meeting quality	V18	SharingI	Sharing information
V7	TELC	Teleconference,	V19	AK	Accounting knowledge
V8	VID	Videokonference	V 20	IQ	Information quality
V9	ELEA	E-learning	V21	NC	Number of clients
V10	COMM	Communication	V22	ADV	Advises
V11	OnlineD	Online declarations	V23	RC	Regularity and Conformity
V12	OnlineA	Online accounting	V24	SD	Social Distancing

However, these variables do not act independently but are rather combined with one another, makes it possible to characterize, classify and identify the relationships between them and analyze their potential influence.

Therefore, to analyze the variables linked to the prospective strategy after the covid-19 period, we used a cognitive mapping-based methodology. Moreover, several studies analyzed the cognitive mapping using different methods. However, this study is carried out using the MICMAC software since it deals only with prospective structural analyzes. In addition, this software helps to study the relationship of each variable to a relation with a certain situation in the future by helping the individual to propose a foresight strategy (Amari and Jarboui, 2015; Veltmeyer and Mohamed, 2017; Elaoud and Jarboui, 2019).

On the other hand, according to Arcade et al., (2003) the variables make sense only when we explain all the relationships that link these variables. Indeed, when there is a relation of direct influence between two variables, it is necessary to quantify the relation, by which we estimate its importance. That is to say, in case the

influence of the relationship is strong, we attribute value 3 while if it is medium, we attribute value 2 then, if it is weak, we assign it value 1 on the other hand, if there is no direct influence relationship between two variables, value 0 is assigned to the structural matrix analysis (Elaoud and Jarboui, 2019).

IV. Result

The analysis of a cognitive map is based on the study of the links structure between concepts. In fact, the MICMAC software enables to organize the variables and measure the impact of the relationship between them (Godet, 2000; Cossette, 2001; Elaoud and Jarboui, 2019). Moreover, the variable plays an important role when their indirect influence is strong. In fact, a comparison between the two classifications makes it possible to understand the evolution of the system while the software makes it possible to classify and sort the variables that guide the prospective strategies of professional accountants after the end of the COVID-19 pandemic. Therefore, the first figure presents an analysis of the classification of the variables according to their direct or indirect influence on one another.

Classify variables according to their influ

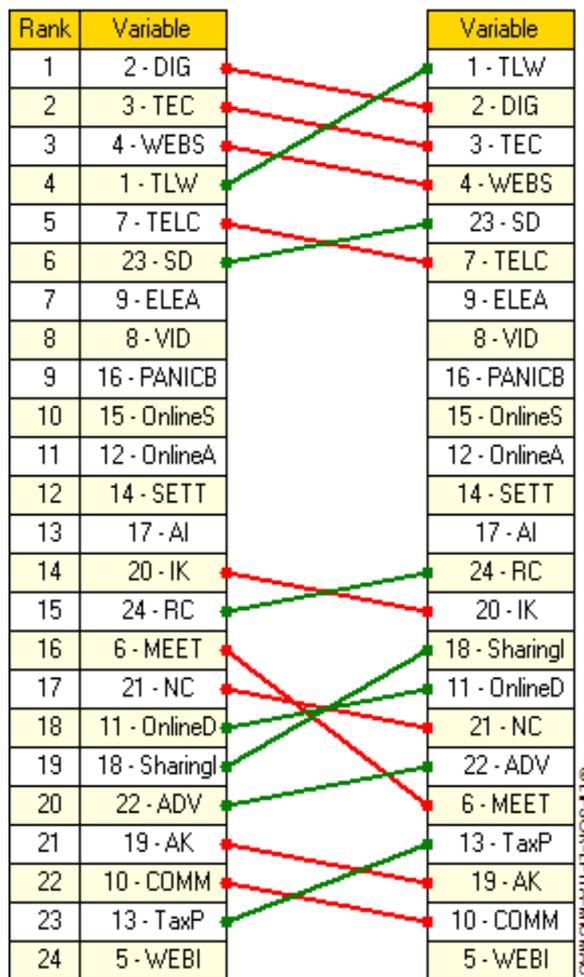


Figure 1 Hierarchy of variables

Figure 1 indicates that, for the professional accountants, the variables "digitization", "Technology" and "Website" are the most influential according. On the other hand, the lockdown and reopening resulting from the pandemic crisis, have a positive impact on the future of all professions through the use of technology and digitization, thus providing a post-Covid-19 perspective. In this regard, the MICMAC method generates what is called an influence-dependence plan (Ozesmi and Ozesmi, 2004; Amari and Jarboui, 2015) where each variable is positioned on the displacement plane and has an influence and dependence indicator. In fact, figure 2 shows the movement of the variables according to their classification.

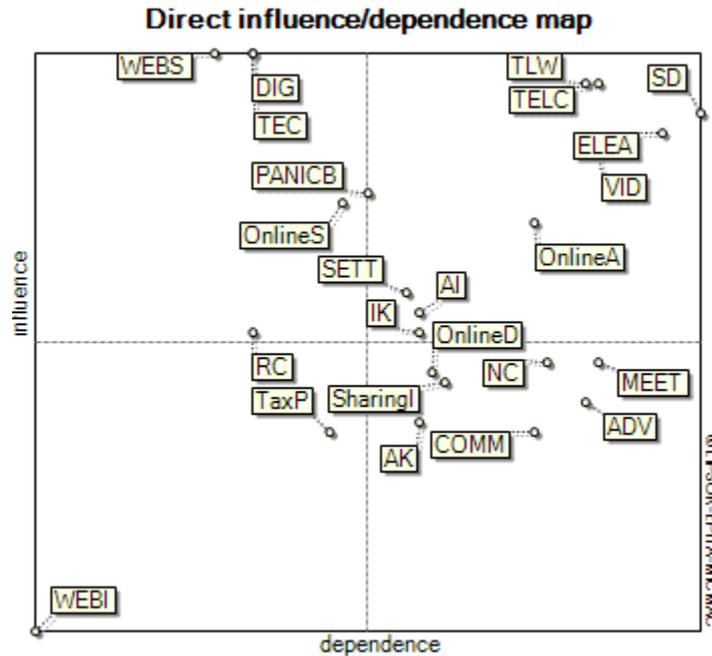


Figure 2: Direct influence/dependence map

The cognitive variables of the professional accountants linked to the COVID-19 period are projected in the influence / dependency map. Moreover, these variables, which are very influential but not very dependent, represent the most predominant concepts in the dynamics of the participant's thought and constitute the explanatory factors of the system. In our case, the variables “Digitization”, “Technology” and “Website” are the most dominant in the cognitions of professional accountants, reflecting the intention to focus on global development in a period characterized by the obligation to adapt this evolution. Since they are very dependent and influential, these variables are called intermediate variables. Therefore, they constitute the challenges of the system, such as the prospective strategy of the professional accountants after the COVID-19 period. Furthermore, the following variables are noted: “Teleworking”, “Teleconference”, “E-learning”, “Videoconference” and “Online accounting”.

Consequently, the variables that are simultaneously very influential and very dependent are the results of the evolution, the latter is explained by the input and the intermediate variables (Elaoud and Jarboui, 2019). In fact, figure 3 indicates the “Meeting quality”, “Communication”, “Advice”, “Number of clients” and “Sharing information” variables. On the other hand, the variables that are both not very influential and not very dependent are relatively excluded from the reflection of the professional accountants and therefore, do not have much impact while both highly influential and dependent variables are mainly related to the changes caused by the COVID-19, resulting in lessons that could be applicable at the end of the pandemic. As for the less influential and dependent variables, they are more related to the goal of the professional accountants, which consist in improving the work quality. Therefore, this strategy seems to be the main theme around which these variables revolve.

As far as we are concerned, we focus on the most influential and dependent variables, that is to say, the intermediate variables since, on the one hand, they constitute the stakes of the system and, on the other hand, they help identify all the key issues, namely all the variables linked to forward-looking strategies after the COVID-19 period.

According to the obtained results, cognitive changes, which result in an improved digitization, lead to the enrichment of knowledge and changes in the work. Indeed, “virtual presence, teleconference, videoconference” and other remote meeting solutions facilitate information sharing, thus avoiding the obstacles of holding meetings, such as being in different cities, travel time, transport costs and existence of multiple engagements. Thus, remote meetings save time, logistics, and hard costs associated with international travel. In addition, the spread of the pandemic has created challenges for individuals to cope with emerging and continuing changes in the work environments while finding practical solutions to provide their services under exceptional circumstances without losing professional skepticism. Besides, Governments around the world are intervening with different strategies and programs to slow the transmission of the virus while the only social contact is technology.

Figure 2 indicates that the "Social distancing" variable is very influential and dependent, which leads to several implications, such as working from home, shopping online, panic buying, e-learning. In fact, these implications have changed peoples' lives and represent future opportunities.

On the other hand, figure 2 indicates that "Teleworking" is also a variable that is both very influential and dependent. Indeed, the government has introduced electronic payment (including filing and settlement), which has reduced the frequency of payments, tax-payment compliance times, tax avoidance and transaction costs. In addition, a variety of electronic declarations for applicants filing over the Web have been developed and are being improved, which will allow professional accountants to complete electronic, social and tax documents and submit them to the authority over the Internet free of charge. Therefore, to survive and fight the pandemic, governments are relying on artificial intelligence (AI), knowledge management and cognitive level.

V. Conclusion

To conclude, we can say that coronavirus has affected all parts of the world. As a rapidly spreading communicable disease, the virus had turned into a global pandemic affecting social relations, economies and corporate finance. This difficult period enabled us to learn a lot of lessons to improve our activities in the future.

In fact, there is a large body of research that analyzed the effect of the Covid-19 pandemic before and during its spread as well as after its disappearance. Therefore, to improve the economy and corporate finances, this paper presents a set of strategies based on the cognitive map, which can be implemented at several structural levels. More precisely, the main objective of this article is to help professional accountants resume their activities and improve their forward-looking strategies through lessons learned during the COVID-19 period. Then, the method used in this research is based on cognitive mapping, which makes it possible to analyze the prospective strategies after the COVID-19 pandemic. Indeed, the cognitive map helps to clarify the mental orientation of a person and to visualize some ideas and beliefs on the achievement of their objectives. The obtained results showed that the variables "digitization, technology, website" are very influential in the thinking of professional accountants representing the evolution during the COVID-19 period while "communication, the quality of the meetings, the number of the clients" are dependent variables, thus representing the objectives to be achieved. Concerning the variables "teleworking, Online declaration, E-learning", they are the means to reach the objectives.

According to the obtained results, developments in work and professions, such as artificial intelligence, blockchain, platform-based business models, and cloud-based services, have accelerated the technological change, causing a lot of unrest for the future, especially in finance and accounting professions. Therefore, it is reasonable to expect a lot of interest in the very near future on the effect of COVID-19 in accounting and finance. However, professional accountants will have new opportunities to work in a globalized world in which physical distance becomes less relevant since, feelings towards remote work seem to have changed dramatically. From this analysis, the basic strategies were clarified for the implementation of the prospective of professional accountants in order to improve their activities by focusing on digitalization.

As a consequence, we expect that this research will reshape our understanding of how COVID-19 affects prospective labor strategy, a relatively unexplored area. More specifically, this study shows that COVID-19 has a positive effect on work through the evolution of technology. Thus, the results provide preliminary evidence of the impact of the COVID pandemic on the accounting profession in the future, showing that the variables "Teleworking, teleconferencing, E-learning" have important implications for the accounting perspective. Finally, this research will be of interest to professional accountants who want to improve their activities as well as those of the managers. Moreover, this study could be of interest to investors, managers, and university researchers interested in discovering the positive effect of COVID-19 in the future therefore, it should be of great interest to decision-makers and regulators concerned with developing the economy and corporate finance. This document also anticipates that the evolution of digitization during the COVID-19 period may develop the world economy by adapting technological development.

In addition, practitioners and researchers can use the results of this study to better understand the variables of success in the accounting activities after COVID-19. Therefore, they can use the results of this study to improve their forecasting strategy. Developments in work and professions are opening up new avenues for research into the opportunities and interests of COVID-19 by sector and country. Finally, the covid-19 pandemic emerged with pros and cons both of which should be investigated as a research perspective to improve future work strategies.

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