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## **CONTROLLERS' RESPONSIBILITY IN THE POST COVID BUSINESS ENVIRONMENT**

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### **ABSTRACT**

Without doubt, COVID-19 has left significant consequences on the world economy. The decline in business activities reflected primarily on the business results of companies and consequently their financial situation. Thus, a return to normal will require changes in the current way of management. Also, adaptation is necessary because digitalization "grabs forward" with lightning speed, it is present in the everyday life of individuals and in their business activities. Companies are necessarily changing the way of communication by modernizing information systems and the way of reporting in order to increase transparency but also to avoid uncertainty. Controlling as an information-analytical and advisory function changes its concept under the influence of digitalization and automation, and thus analytical and IT knowledge is required from controllers. The pandemic conditions in the last two years have further highlighted the value of applying business analytics and statistics in controlling for the purpose of predicting and forecasting future situations. The question justifiably arises as to what changes are necessary in the management and business partnership between the manager and the controller? What is the orientation of controlling in the current situation and in the future, and what to expect from the controller?

This paper aims to investigate the level of application of business intelligence and analytics tools in the Croatian practice of controlling in "post covid" conditions. The sample consists of companies in the manufacturing industry - 46 of them that have a controlling department and operate in the territory of the Republic of Croatia. Descriptive statistics show the level of application of business intelligence and analytics, i.e. statistical methods and forecasting methods in the year after the appearance of Covid. The research indicates the importance of the application of business intelligence and analytics tools, but also the need for their further expansion.

**Key words:** *controlling, BI & BA tools, prediction, Covid-19*

## **1. INTRODUCTION**

Undoubtedly, management and leadership are experiencing a change in the environment that is not only becoming more digital but also more uncertain due to the circumstances brought by the Covid pandemic. The way of thinking and the preference of goals are no longer the same, and the vision and strategy are becoming more short-term. Driven by the pandemic and its consequences, the management structure is trying to find a way out of the current crisis, which can be seen as a challenge but also an opportunity. In order to survive and sustain, solutions are sought from cost reduction, optimization to innovation. Controlling as a management support function should offer new solutions, warn and act proactively. Thus, the information-analytical and advisory role of controllers is coming to the fore and is increasingly sought after. That is, with the availability of advanced technology, controlling today has more time to interpret data, advise, and propose strategies and plans in real time (Vitezić and Lebefromm, 2019). In conditions of uncertainty, the advisory and proactive approach of the controller facilitates managers to make prompt decisions. In the full sense of the word, the controller becomes a business partner to the manager and a "constructive critic" (Schäffer, 2019). Holistic approach, fact-based decision making, prediction and forecasting, and visualization are the basic elements that form the features of the controlling function today but are also expected to be significant in the future.

Due to the influence of digitalization, the field of work and tasks of the controller are expanding and the strategic orientation is more and more present. The controller grows from a financial business analyst to an economic business analyst. The availability of relatively reliable data and information in short term is the basis for decision-making at the strategic level. Therefore, it is expected that in the future the role of the controller will be necessary i.e. the "only source of truth" that uses analytical and business skills in strategically oriented organizational topics (Stransky et al., 2019).

As a consequence of the pandemic, reporting on current results and forecasting becomes the priority. That is, key indicators adapt to business conditions that are uncertain and risky in a pandemic. Avoiding risky situations leads to the need to optimize costs, time, supply chains, and even information that is constantly increasing. The business model is changing and scenario analyzes are becoming more frequent given that they are based on real situations.

This paper is structured in four chapters. After the introduction, i.e. in the second chapter, presents the importance of controlling in today's digital environment and its role in the post Covid environment. The third chapter presents the methodology and results of the conducted empirical research, while the fourth chapter contains the conclusion and recommendations for further research.

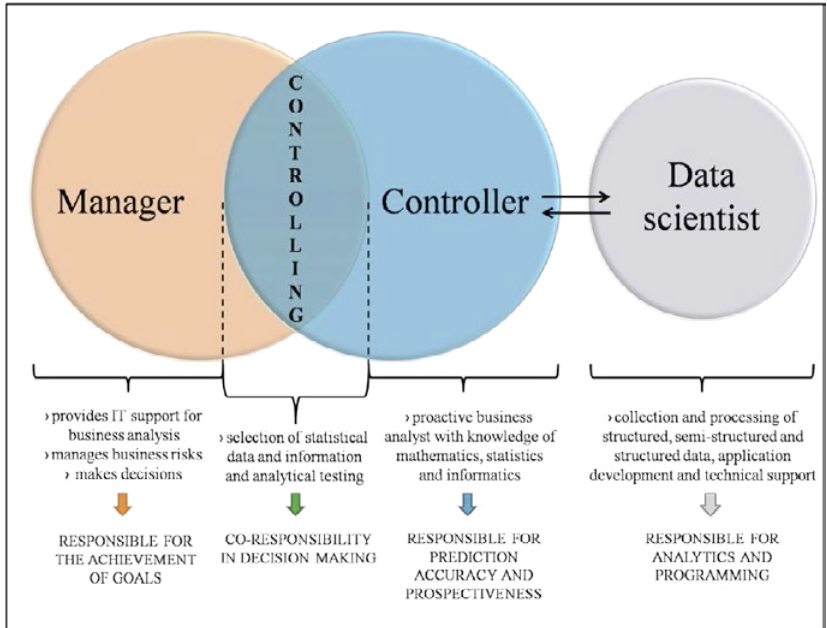
## **2. DIGITAL CONTROLLING AND POST COVID ENVIRONMENT**

Today's digital economy is based on information since they are the key to making any kind of decision. However, the decisions should be based on reliable, i.e. accurate and relevant data. An innovative form of information processing that enables a more detailed insight and analysis of a phenomenon is provided today through "Big Data". „Big Data“, as a term, is not unambiguously defined and there are a number of interpretations, but all could be summarized in processing a large amount of differently structured, semi-structured, and unprocessed data (Giri and Lone, 2014). The characteristic of this data is not only volume, velocity, variety, veracity, but some authors (Arockia Panimalar et al., 2017; Gärtner and Hiebl, 2018) add both visualization and value of the data and even venue, vocabulary and vagueness, which can sometimes be confusing (Moorthy et al., 2015). Big data analytics is one of the technologies in development that is mostly researched today, especially in the field of accounting discipline and controlling, in addition to blockchain technology which according to some research is in second place (Kroon et al., 2021).

With such a huge database enabled by digitalization, the question justifiably arises as to whether and in what direction the role of the controller in the company will change. IT technology has drastically changed the traditional way of reporting, thus management is able to extract information directly from the system (Schäffer, 2019). This is also supported by modern artificial business intelligence, i.e. advanced business analytics (data mining, machine learning, Internet of Things, neural networks and many other tools for sampling, forecasting, visualization, and analytics). Business analytics aims to make business decisions more efficient, rather than just simplifying the automation of standardized processes (Nielsen, 2018). Advanced business analytics is being

developed with the strengthening and improvement of computers, data infrastructure, and the development of new algorithms that have given rise to a new profile of experts - data scientists. Data scientist is described as an analyst, statistician, programmer, hacker (Davenport, 2014). The person who enters the genesis of data, the connection between data, their applicability and usability. The theory has not yet clearly distinguished the connecting points of the controller and the data scientist, and the practice is not yet at the level of possible confirmation of those common elements, and the effects that these two profiles of experts have on management. On the example of German practice, Schäffer and Weber (2018) confirmed that only a few companies employ a data scientist and that they mainly work in the IT sector. That is, that only 22% of the companies are associated with controlling, which indicates very little interaction. The process is slow and Möller et al. (2020) point out that fundamental change takes time and state that the call for a new and more proactive controller dates back to 1974, citing Henzel, 1974, Zünd, 1985 and Siegel, 1999. They also point out that many controllers are reluctant to look at business partnerships with management and that the concept is still far from being accepted internationally by controllers (Möller et al., 2020).

**Figure 1:** Relationship between management, controller, and data scientist



Izvor: Vitezić (2021)

The relationship between the controller and the data scientist is in the initial stage of development. But with the advancement of digital technology, the effectiveness of their activities will certainly be reflected in the creation of added value and sustainability. Innovation today is most often associated with process and product innovations and business models that are the result not only of technological advances but also of the expansion of the accounting profession, professional constraints, and investment in complementary services (Gardner and Bryson, 2021). Gardner and Bryson (2021) also highlight the dark side of technology in development as innovation creates new jobs but also destroys old ones. In contrast, audit firms (Big 4) emphasize the need for a stronger connection of artificial technology, blockchain, and big data with their profession through partnership, collaboration, and alliances. Hence, the controller is seen in a „face to face“ collaboration with the data scientist where he does not need to be acquainted in detail with statistical methods, but be able to ask the right questions (Schäffer, 2019).

By all means, significant changes in the profile of controllers can be expected in the future because economic knowledge and skills supplemented with quantitative (mathematics, statistics, and informatics) are a condition for the survival of this profession which if not adopted may feel the dark side of digitalization. IT technology has drastically changed the traditional way of reporting, and management is able to extract information directly from the system. Therefore, the controller needs to impose itself using available data, analytical skills, and various methods to justify its mission - to monitor, analyze, evaluate, solve.

### **3. EMPIRICAL RESEARCH**

The aim of this paper was to investigate the level of application of business intelligence and analytics tools in the Croatian practice of controlling in “post covid” conditions.

Accordingly, the research hypothesis has been set: business intelligence and analytics will play a crucial role in performing controlling activities, especially in uncertain business conditions.

#### **3.1. RESEARCH METHODOLOGY AND SAMPLE**

In order to achieve the set goal, an empirical study was conducted in the Republic of Croatia. The survey included 46 controllers working in large and medium-sized enterprises in the manufacturing sector. A survey was used to collect the data. The survey questionnaire was created based on a review of available scientific and professional literature, while the sample of companies,

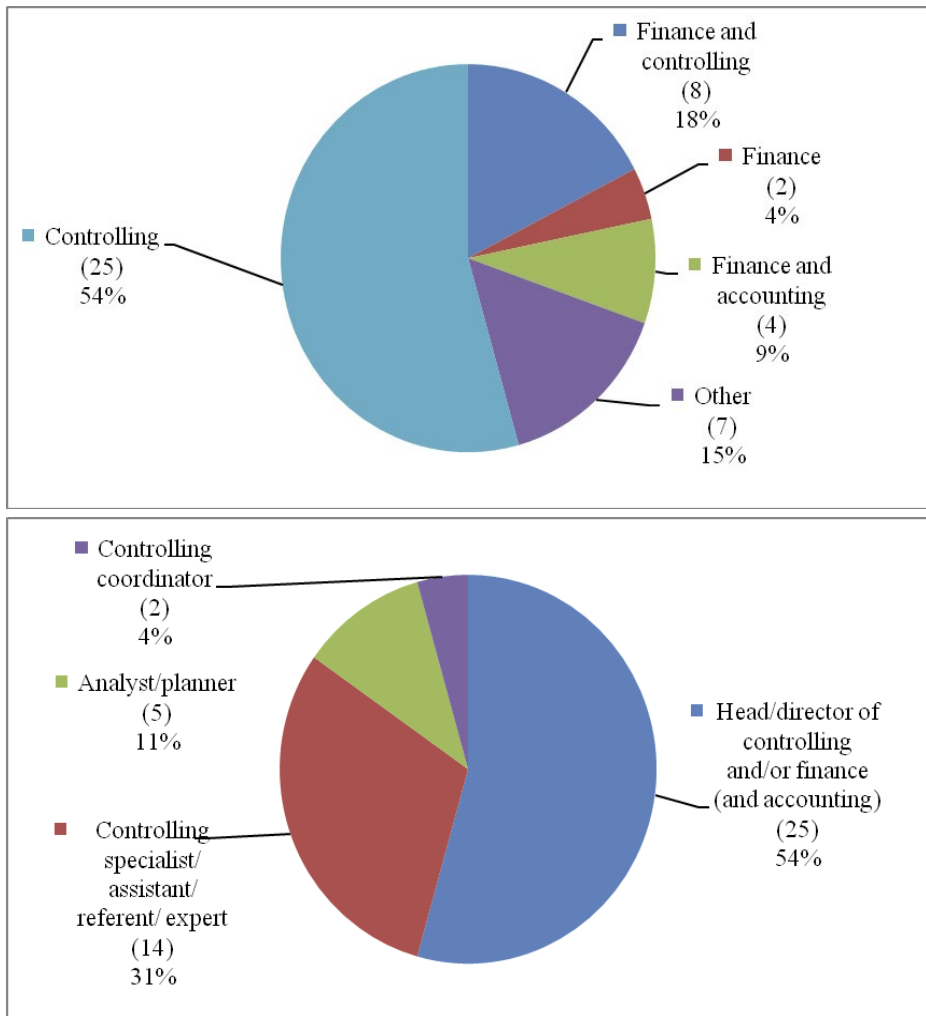
i.e. controllers, was created based on the database of the Association of Croatian Controllers (cro. Udruga hrvatskih kontrolera - UHK) and available LinkedIn profiles. The survey was conducted from October, 2020 to January, 2021.<sup>1</sup>

The sample is mostly made up of controllers working in large companies (34, i.e. 74%), while the rest (12 of them, i.e. 26%) includes controllers from medium-sized companies. According to the category of ownership, 24 companies are Croatian-owned and 11 foreign-owned, while the rest are mixed ownership companies. The sample includes 29 female controllers and 17 male controllers, most of whom (34, i.e. 74%) have a master's degree as their highest level of education (e.g. mag.oec.). Further, 5 of them have a master's degree in science, 1 has a bachelor's degree (e.g. bacc.oec.), and even 6 have the title of university specialist (e.g. univ.spec.oec.). In addition, the sample includes different job titles and department names of controllers. Most of the respondents (25 of them, i.e. 54%) perform their job within the department/sector "controlling". However, the work of the controllers is often performed within the departments of "finance and controlling", "finance" and "finance and accounting", but also in departments such as "economy and controlling sector", "corporate reporting department", "company management", etc. Accordingly, the job titles, i.e. the positions of the controllers within the company, also differ. The largest share consists of heads/directors of controlling and/or finance (and accounting) departments, followed by controlling specialists/assistants/referents/experts, analysts/planners, and controlling coordinators.

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<sup>1</sup> The results of the research are part of a doctoral dissertation entitled "Characteristics of controllers and managers in the function of efficient decision-making in the conditions of digitization" Antonija Petrić, under the mentorship of professor Nede Vitezić, PhD.

**Graph 1 i 2:** Names of departments and positions of controllers in the research sample



Source: author's work

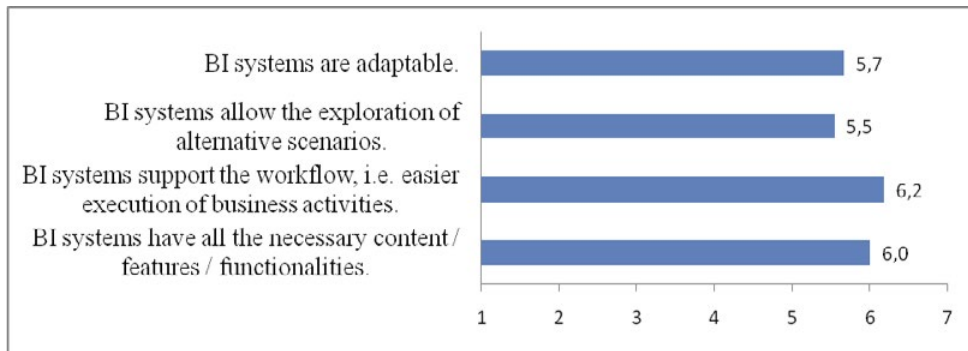
Descriptive statistics were used to process the results of the empirical research, i.e. the results are presented in graphical form.

### 3.2. RESEARCH RESULTS

Out of a total of 46 respondents, 33 use some type of business intelligence (BI), and the most commonly used are: Microsoft Power BI, SAP BI, and IBM Cognos. The other 13 controllers do not specify the use of BI, but it can be

assumed that they perform the same functions through the indicated ERP system, which includes SAP, Microsoft Dynamics NAV, GoSoft, Apress, and some self-developed systems. On average, controllers rate their Excel skills with a high score of 6.5 (Likert 1-7) and it is to be assumed that controllers mostly rely on its application in carrying out their activities. This agrees with the Gartner survey, which is conducted every year and which has been confirming Microsoft Power BI's leadership in business intelligence for several years (Richardson et al., 2020). Although not all controllers confirm the application of BI tools, 87% of respondents believe that their application is extremely useful, i.e. almost required in controlling. One respondent gave a neutral opinion, while the other 11% considered the application to be somewhat useful. Accordingly, 96% of respondents agree, i.e. completely agree with the fact that the use of BI should be increased in the controllers' work. That is, controllers who did not point out the current use, emphasize the need for a greater future application of BI for the purpose of an efficient controlling function. In addition, controllers who currently apply certain BI systems, on average give high marks to their basic features, especially in terms of the role in supporting the execution of business activities of controllers (Graph 3).

**Graph 3:** Evaluation of features of used BI systems (n = 33)



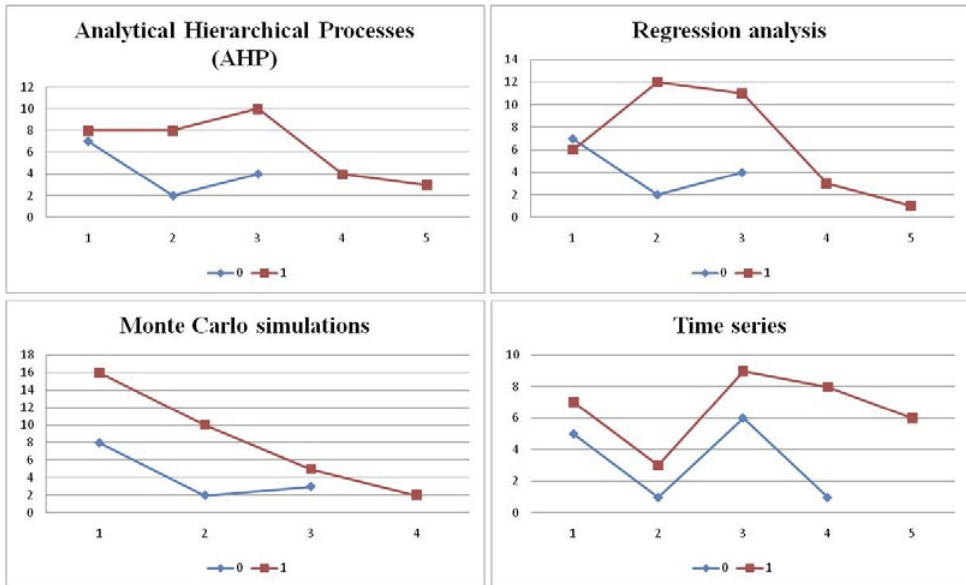
Source: author's work

Closely related to business intelligence, oriented towards descriptive analytics, is business analytics (BA). BA involves predictive and prescriptive techniques (Appelbaum et al., 2017) aimed at predicting future events and reducing business uncertainty. Although BI is considered an indispensable controlling tool, in today's dynamic environment, advanced analytical methods and models are given increasing importance in business decision making. This imposes also a need for their increased application in controlling, and according to some authors, it can be concluded that in the future they will become more important for controlling than BI (Richards et al., 2017).



Regarding the results of the research of this paper, one can see the current application of certain techniques of business analytics in controlling in the part of the manufacturing industry in the Republic of Croatia.

**Graph 4:** Level of application of business analytics techniques (n = 33)



*Legend:*

0=controllers who don't use BI tools

1= controllers who use BI tools

*Note:*

values on the abscissa = Likert scale 1-5 (1-never, 2-almost never, 3-sometimes, 4-almost regularly, 5-regularly)

values on the ordinate = number of controllers who gave a particular grade

Source: author's work

In accordance with the results of the research, a relatively low application of BA tools in controlling can be seen in the chosen sample of the manufacturing industry in the Republic of Croatia. Of the four techniques selected according to the BA classification by Appelbaum et al. (2017), it can be concluded that time series have the greatest application, given that 6 controllers indicated their regular application. That is, Monte Carlo simulations are the least represented since only 2 controllers report almost regular application. However, it can be assumed that this method of decision-making in conditions of uncertainty and risk could prove significant in future circumstances such as COVID-19, where the validity of the application will primarily depend on the

quality and reliability of available data (e.g. Big Data). The results show that controllers that apply BI systems also have a greater preference for the use of advanced analytical methods. In addition, 15 respondents reported regular and almost regular use of some form of predictive model, and an additional 15 occasional use. That is, 73% of controllers, in addition to basic activities (such as variance analysis, performance analysis, operational planning and budgeting, and monitoring of key business indicators), state prediction and forecasting as a regular and almost daily business activity. Thus, although the application of BA tools is currently low, the importance of their application can be emphasized, and in accordance with scientific and professional literature in the field of controlling, the importance of their future role and expansion of use.

#### **4. CONCLUSION**

The challenges posed by digitalization and the Covid pandemic are also reflected in controlling as a support to the management function. Controllers are increasingly in demand because uncertainty forces analytical thinking and quick action in order to adapt business models to the current situation. Therefore the question arises of what is changing in the approach and tasks of controlling? First, it upgrades the profile of the controller through the application of new knowledge and skills of a quantitative nature and proactive action. The tools are changing, becoming more sophisticated - big data, blockchain, artificial intelligence. That requires additional learning and application. The way of thinking is changing, so the controller is expected to be more analytical, creative, and innovative. The relationship with the management structure rises to a higher level as the business partnership requires a different organizational status, verbal and nonverbal, formal and informal communication, and above all the trust gained through validation of the controller's effects on decision-making.

This research has shown that in the Croatian practice of controlling the use of business intelligence and business analytics is not unknown. The research on a sample of companies from the manufacturing industry, in which controlling is usually most represented as a function, showed that most controllers use business intelligence tools. But, although much smaller, there is also a use of business analytics tools aimed at analyzing scenarios and forecasting business events. Knowledge and use of business analytics does not differ from the most developed European countries and only an upward trend can be expected in the future. Therefore, in the field of controlling and future training of controllers, the emphasis is placed on the adoption of modern tools that will ensure the effective performance of controllers' activities in business decision-making. Hence, this research can be expanded by including a larger sample of companies in the Republic of Croatia that have an organizational unit of controlling, structured by industries and dynamic over periods, but also compared with some other countries in the EU.

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## ODGOVORNOST KONTROLERA U POST COVID POSLOVNOM OKRUŽENJU

### SAŽETAK RADA

Bez dvojbi COVID-19 je ostavio značajne posljedice na gospodarstvo diljem svijeta. Pad poslovnih aktivnosti odrazio se je prvenstveno na poslovne rezultate poduzeća i posljedično financijsku situaciju, te će povratak u normalu zahtijevati i promjene u dosadašnjem načinu upravljanja. Prilagodba je nužna i iz razloga što digitalizacija munjevito „grabi naprijed“, prisutna je u svakodnevnom životu pojedinca pa tako i u njihovim poslovnim aktivnostima. Poduzeća nužno mijenjaju način komunikacije osuvremenjujući informacijski sustav i način izvještavanja u cilju veće transparentnosti ali i izbjegavanja neizvjesnosti. Kontroling kao informativno analitička i savjetodavna funkcija mijenja svoj koncept pod utjecajem digitalizacije i automatizacije, a od kontrolera se traže ne samo analitička već i informatička znanja. Pandemijski uvjeti u posljednjih više od godinu dana dodatno su istakli vrijednosti primjene poslovne analitike i statistike u kontrolingu a u svrhu predviđanja i prognoziranja buduće situacije. Opravdano se postavlja pitanje koje su promjene nužne u upravljanju i poslovnom partnerstvu između menadžera i kontrolera. Koja je orijentacija kontrolinga u trenutnoj situaciji i budućnosti i što očekivati od kontrolera? Ovaj rad ima za cilj istražiti razinu primjene alata poslovne inteligencije i analitike u hrvatskoj praksi kontrolinga u „post covid“ uvjetima. Uzorak čine poduzeća prerađivačke industrije – njih 46 koji imaju kontroling odjel i djeluju na području RH. Deskriptivnom statistikom prikazuje se razina primjene poslovne inteligencije i analitike tj. statističkih metoda i metoda predviđanja u godini nakon pojave Covida. Istraživanje ukazuje na značaj primjene alata poslovne inteligencije i analitike, ali i potrebu za njihovim dodatnim proširenjem.

***Ključne riječi:** kontroling, BI & BA alati, predviđanje, covid-19*