

THE IMPACT OF COVID-19 PANDEMIC ON THE USE OF ARTIFICIAL INTELLIGENCE IN THE FINANCIER AND ACCOUNTANT PROFESSION

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Purpose: The constant evolutionary processes taking place in the economy are stimulating economic development, as well as social and environmental, thus requiring the use of new IT solutions in the enterprise. The aim of the article is the use of modern technology in the work of the financier and to present what benefits and risks their use brings. The COVID-19 Pandemic has had a major impact on the development of modern technologies. Currently, companies are introducing artificial intelligence to automate processes in the work of the accountant and financier and to reduce the cost of the company. Through the use of modern technology, companies can facilitate and speed up the process of aggregating data, checking financial statements, and generating detailed analysis, and more quickly identify the risks to which the business unit is exposed. The article is a research study. In order to examine more deeply how modern technologies are used in business units, a survey was conducted among employees of various companies working in financial and accounting departments. The survey covered 2000 respondents. All the surveyed employees are simultaneously students at one of the three economic universities: in Krakow, Wroclaw and Katowice. The study is in line with the author's scientific interests

Design/methodology/approach: The research methods used are based on the study of the literature on the subject of research and conducting a survey in order to determine whether modern technologies have been introduced in the surveyed companies in order to simplify and automate the work process of a financier and accountant. The survey was also aimed at diagnosing what modern technologies have been introduced in the surveyed units and what advantages and threats are brought by the use of modern technologies in business units.

Findings: The implementation of modern technologies is essential for the proper functioning of every modern enterprise. In summary, any growing finance division is currently facing many challenges in implementing modern technologies into daily processes. They have great potential to support the work of accountants and financiers, but their effective use requires consideration of a variety of aspects, including issues related to data security, regulatory compliance and the development of professional competence.

Originality/value: The results of the survey are an important contribution to the discussion on the use of modern technologies in the work of a financier in the digital era and allow for a better understanding of the needs and expectations of practitioners in this field. Companies can effectively use modern technologies to optimize processes and increase the efficiency and precision of financial data analysis by using AI-based tools to automate routine tasks, identify

patterns and irregularities in data, and use advanced data analysis algorithms to generate more precise and comprehensive reports. The possibility of continuous development of data analysis algorithms, the development of machine learning technology and the growing understanding of the potential of artificial intelligence is still a topic that is still relevant and worth in-depth research.

Keywords: ERP, BI, new technologies, IT solutions, COVID-19 Pandemic, financial reports, accountant profession.

Category of the paper: Research paper.

1. Introduction

In the modern digital age and current economic realities, all financial departments in a company when conducting economic analysis and when making decisions should take advantage in the development of new technologies and the development of technology (Sierpińska, Jachna, 2004).

The participation of new technologies in the work of the financier is increasingly making its presence felt, and the process of digitalization is beginning to affect more and more activities (Talar, 2021). The use of new digital solutions is a source of many opportunities, and on the other hand, it poses many challenges for controlling units.

However, the introduction of new technologies seems inevitable, mainly to keep pace with technological developments, to streamline processes and data flow in the company and to meet customer expectations.

The main purpose of the chapter is to look at the prospect of improving the work of a financier in the context of technological advances, which is certainly the impact of modern technology. The research method used is an in-depth analysis of the literature and a discussion of the results of the scientific study conducted. Taking into account the issues presented above, the research problem of this work can be formulated in the form of the following questions: Is modern technology helpful in the activities undertaken by financiers and accountants? What risks and benefits does it bring? What risks and benefits does it bring? What are the main challenges of adapting modern technology in the work of a financier, while maintaining data security, compliance with regulations and the need to develop the professional competence of employees?

2. The COVID-19 Pandemic and its impact on the development of modern technology

The COVID-19 Pandemic has had a tremendous impact on the development of modern technology, accelerating many trends that had previously developed slowly. Faced with a global health crisis, companies and institutions have had to adapt to new conditions, prompting them to invest in innovation. A rapid increase in the number of people testing positive worldwide prompted the World Health Organization (WHO) to declare COVID-19 an epidemic on January 31, 2020, and then classify it as a pandemic on March 11, 2020 (Bialas, Emerling, 2022; Maier, Brockmann, 2020; Conway, 2023). The COVID-19 pandemic that we faced had very negative consequences not only in the sphere of social life, but also in the sphere of economic life. The governments of many countries, in order to protect their citizens, introduced lock downs and bans on travel, assembly and many other restrictions. It is estimated that these restrictions have affected about 90% of the world's population (Gossling, Scott, Hall, 2020). Radical restrictions imposed by individual countries have contributed to a significant reduction in consumption, except for food purchases, for example. In addition, production at factories has been severely curtailed due to worker illnesses, contributing to disruptions in global supply and contributing to production delays in international markets. (<https://www.weforum.org/...>, 2020). All these restrictions in public life have affected the development of various areas of innovation.

One of the most important areas of innovation has been digitization. Many companies have moved their operations to the Internet. Remote working has grown in popularity, which in turn has contributed to the development of online working tools. Applications such as Zoom, Microsoft Teams and Click Meeting became essential components of professional business meetings and conferences. Companies began to invest in technologies for effective communication and collaboration. The pandemic also accelerated the development of artificial intelligence and data analysis. Companies began to use AI for analytics. Finally, the pandemic highlighted the importance of cyber security. The increase in hacking attacks and data theft forced organizations to invest in security. Increased awareness of threats has made data protection a priority.

In conclusion, the COVID-19 pandemic helped accelerate the development of modern technologies in many fields, which affected daily life after the pandemic.

3. The importance of artificial intelligence in the finance profession

Today's business challenges and also pandemic have forced businesses to implement modern technology platforms. Accounting software or any other solution supporting the organization of a company's finances must adapt to the changing needs of information management. In the field of accounting services, there is a growing trend of greater awareness among executives, according to which the books of account are an indispensable working tool not only for accountants, but also for the board of directors and management - executives. Accordingly, the coordination of accounting processes must be based on the full timeliness of data, its error-free and wider availability (Rzepecka,2019).

Consequently, modern technologies such as artificial intelligence, Big Data analytics, process automation and blockchain technology are an integral part of the modern financier. They are fundamentally changing the way managers collect, analyze and interpret financial data, allowing them to detect anomalies and identify risks more quickly and accurately (Borowiec, 2022). Particularly important is the role of artificial intelligence, which enables in-depth analysis based on large data sets, leading to streamlined processes and reduced risk of human error (Kokina, Blanchet, 2019).

Examples of processes that use modern technology include:

- circulation of supplier invoices - according to predetermined rules, computer programs enable seamless registration of supplier invoices and automatic assignment of them to the appropriate people in the company. Once accepted, the process moves to automatic decreeing, and then the invoices are assigned to the place of cost generation (MPK);
- verification of financial data - RPA technology can be used to check financial data such as account balance, taxpayer identification number, bank account or invoice payment receipt;
- payroll accounting - robots are responsible not only for creating payrolls, issuing PFRON deductions and certificates for employees, but also for downloading exemptions from ePUAP and accounting for employee absences;
- order processing - the programs have the ability to record orders, automatically generate invoices and post them, and monitor the payment process of payables. They can also retrieve bank statements and send reminders for outstanding payments;
- financial reporting - RPA bots allow companies to quickly create financial reports by importing spreadsheets from a variety of sources, allowing access to a full range of accounting-related data and the use of reconciliation tools.

It is also assisted by OCR (Optical Character Recognition) technology, which can read data from different types of letters, such as purchase orders and invoices, enabling automatic data entry into the system (<https://www.enova.pl/...>).

ERP software also plays a very important role in the work of an accountant and financier. ERP (Enterprise Resource Planning) software offers a comprehensive business management solution that integrates various business processes into a single system. It not only handles finances, but also production, sales, logistics and human resources processes. The ERP system provides a holistic view of a company's processes and data, enabling informed decision-making. It is more comprehensive and designed for larger companies that require an integrated approach to managing all aspects of their business. On a smaller scale, advanced accounting systems also demonstrate these functions.

The primary difference between accounting systems and ERP software lies in their scope and focus. The former are specifically designed for financial management, while the latter offers a wider range of business process management capabilities. This means that an ERP system will typically have more extensive operational management and financial management functions. The advantages and disadvantages of implementing an ERP system are shown in the table below.

Table 1.

Selected advantages and disadvantages of implementing an ERP system

Disadvantages of ERP systems	Advantages of ERP systems
<ul style="list-style-type: none"> - high cost of license purchase - very expensive implementation and adaptation of the system to the specifics of the company - serious organizational and process changes inside the company forced by the system implementation - high level of complexity of the system - difficulty to adapt it to processes functioning in the company - protracted implementation process and lack of clear date defining its end 	<ul style="list-style-type: none"> - integration of all processes, including production and administration of its own database for individual processes - improvement of communication between the company's business partners - such systems can also be a strategic competitive advantage

Source: own elaboration based on: Koliński, Stajniak, 2018, p. 25.

Accounting systems tend to be more flexible, allowing companies to tailor them to their specific needs. ERP systems, while usually somewhat rigid, offer a more streamlined and organized approach to managing business processes.

Accounting systems are less expensive and through this more accessible, especially for smaller companies or those with limited budgets. They are also traditionally easier to set up and use compared to ERP systems. However, the advent of Software as a Service (SaaS) solutions has made ERP platforms much easier to run than they were just a few years ago.

What's more, ERP systems can increase data security by centralizing all information within a company, making it easier to secure and protect it from unauthorized access. This is especially important for companies that process sensitive financial data.

ERP systems can also help companies reduce IT costs and streamline operations, and eliminate the need for multiple separate solutions, leading to lower IT costs. Advanced features such as intelligent process automation also reduce the burden on finance and HR teams, enabling them to focus on higher-value work for the organization and helping them respond more flexibly and with greater resilience to market or global economic changes.

With regard to the choice of modern technologies, businesses should decide which of these tools are most advantageous and necessary for the business, as well as adapted to its financial capabilities and the level and competence of its staff.

4. The use of advanced IT technologies in the finance profession

In order to diagnose what modern technologies are used in the work of the financier, a survey was used. The survey was conducted in the years 2022/23. The study was conducted in 2022 using the diagnostic survey method. In order to collect empirical material, the author's questionnaire was used. A survey was conducted among secondcycle students at universities in Małopolska, Lower and Upper Silesia. The survey covered 2000 respondents. Surveys were conducted anonymously and sent electronically. The study covered 3 Universities and 2000 students, of which about 21% were students of the University of Krakow, about 30% were students of the University of Katowice and about 50% of the people studied in Wrocław. The structure of students by type of university is shown in figure 1.

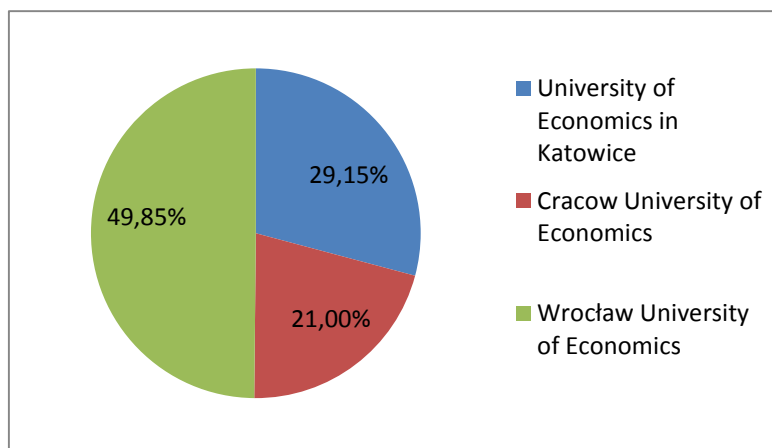


Figure 1. Structure of students participating in the survey by type of university.

Source: Own study.

To make the results of the study credible, it was investigated whether working students met at work with the use of advanced IT technologies regarding facilitation in the profession of accountants and financiers. Among those who noticed and drew attention to the use of AI solutions in the work of the financier, further research was carried out. Surveys of students who did not notice the introduction of modern technologies were rejected.

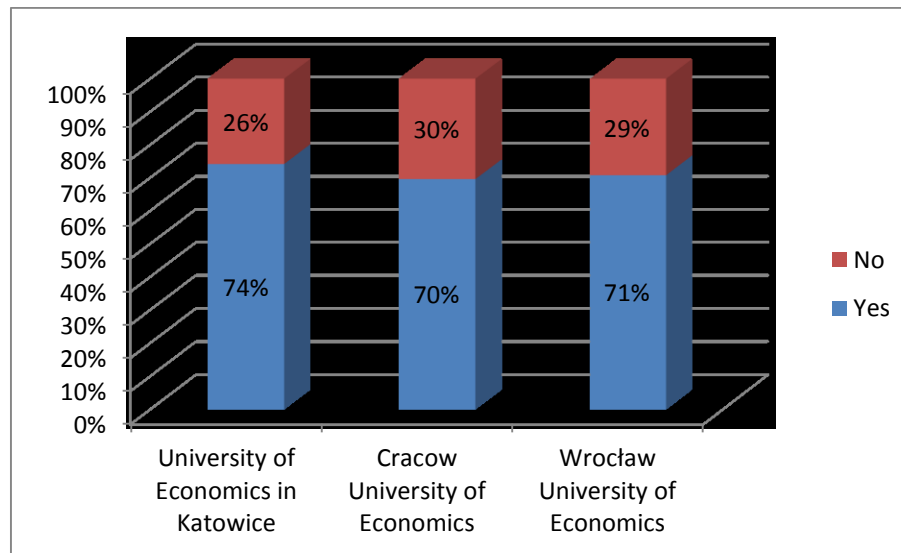


Figure 2. Share of respondents who do and do not use advanced information technology at work.

Source: Own study.

In each of the universities surveyed, more than 70% of respondents encountered the use of artificial intelligence in their professional work. Further questions in the survey related to detailing what elements of new technologies are present in respondents' workplaces and what problems are solved by advanced technologies in accounting work. The results are shown in figure 3. The largest number of respondents drew attention to BI systems, ERP, automatic payroll generation. A large number of respondents also noted the use of new technologies in conducting analyses and recording invoices.

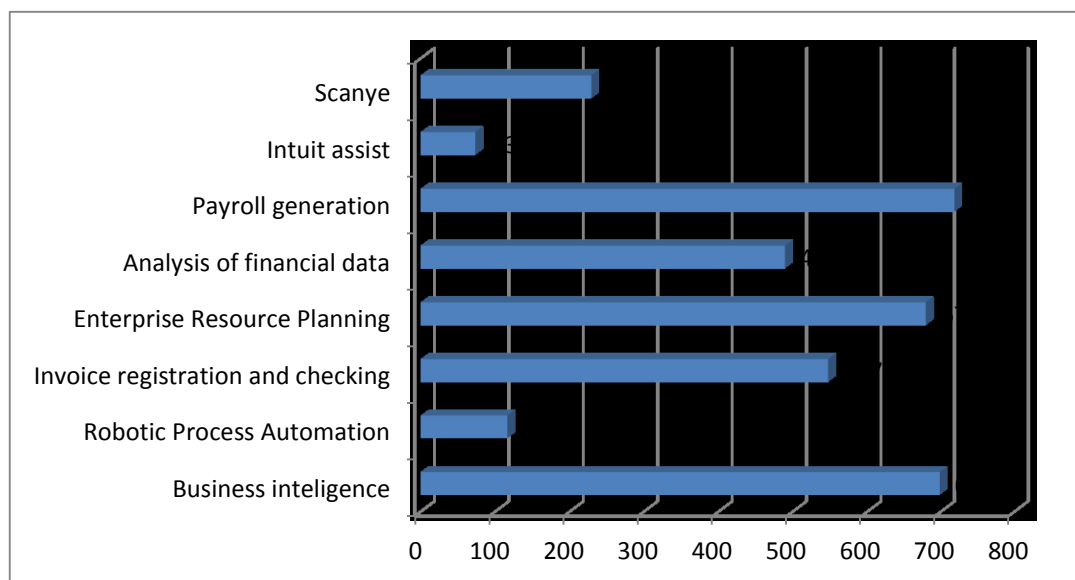


Figure 3. Elements of modern technology used in the work of financier and accountant.

Source: Own study.

Another question in the survey was about the benefits that come from using advanced technology. The responses are shown in figure 4.

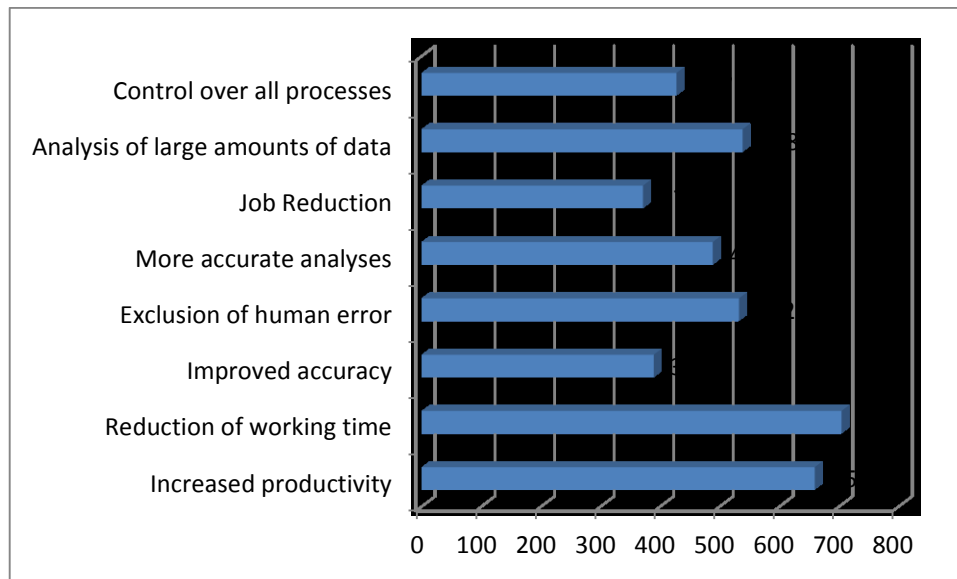


Figure 4. Advantages of using modern technologies in the work of financier and accountant.

Source: Own study.

Among the biggest advantages of using modern technologies, respondents cited work reduction and increased efficiency, as well as the ability to conduct quick analyses for management decisions.

The last question asked about the risks of using advanced technologies in the work of a financier. The most frequently given answers are shown in figure 5.

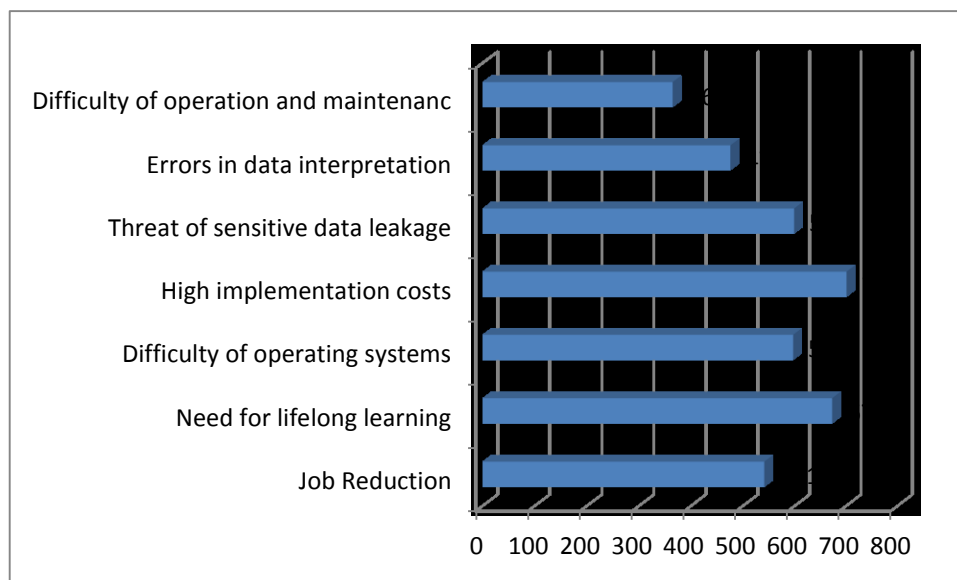


Figure 5. Threats of using advanced technologies in the work of a financier and accountant.

Source: Own study.

Among the biggest disadvantages in implementing modern technologies, respondents cited the high cost of implementing information systems and the need for continuing education and the threat of leaking sensitive data.

5. Conclusion

Concluding from the above analysis and survey data, it can be concluded that the majority of respondents recognize the benefits of using modern technology in the work of a financier. Key benefits such as improved productivity, reduced work time and increased ability to analyze large data sets and the ability to quickly generate the information necessary for management decisions were explicitly mentioned by the majority of respondents. This indicates that respondents have a positive attitude towards the potential opportunities presented by the use of modern technology in the work of a financier.

However, in addition to the benefits, respondents also have concerns and challenges related to the implementation of modern technologies. Of particular importance are concerns about the need to constantly adapt to changing technologies and the need for appropriate training and education. In addition, there are also concerns about data security and the risk of artificial intelligence systems misinterpreting data, and there are regulatory compliance issues. These issues require the development of appropriate risk management strategies, the implementation of effective security systems, and the provision of adequate training and education for employees to effectively use modern technologies.

The results of the survey are an important contribution to the discussion on the use of modern technologies in the work of a financier in the digital age, and provide a better understanding of the needs and expectations of practitioners in this field.

In summary, any growing finance division is currently facing many challenges in implementing modern technologies into daily processes. They have great potential to support the work of accountants and financiers, but their effective use requires consideration of a variety of aspects, including issues related to data security, regulatory compliance and the development of professional competence.

Acknowledgements

The publication/article present the result of the Project no 029/EFR/2023/POT financed from the subsidy granted to the Krakow University of Economics.

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