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SUCCESS FACTORS, TOOLS AND CONTROLLERS' TASKS IN CONDITIONS OF INTENSIVE DIGITALIZATION

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The main goal set by this paper is to identify the position of controlling and controllers in the practice of companies operating in the Republic of Serbia in the conditions of intensive digitalization. This research study is focused on understanding and the critical success factors of controlling, tools and the controller's tasks. The research study was conducted on a sample of 35 companies, and the respondents were employed in various controlling positions. In methodological terms, the analysis of the collected data included descriptive statistics, measuring the reliability and internal consistency of the variables (*Cronbach's alpha coefficient*) and conducting a nonparametric test (*Mann-Whitney's U test*). The results of the research study show that controlling is understood as multidimensional, most often professional support to management; that the controlling key success factor is the controller's expertise and competence; that the most important controlling tools are the budget, variance analysis and the short-term calculation of the results, and finally that one of the controller's basic tasks is reporting to management. The nonparametric test enabled the identification of statistically significant differences in the respondents' attitudes.

Keywords: controlling, management accounting, controller, digitalization

JEL Classification: M41, M49

INTRODUCTION

Emphasizing the importance of quality financial and nonfinancial reporting, as well as financial management, arises as a result of dynamic changes in the environment, globalization, global crises, digitalization and the other factors that complicate company management and make it complex. At the same time, directly and indirectly, there is increasing

pressure on accountants, management accountants and controllers as the experts whose primary goal is to contribute to the achievement and maintenance of the results desired to be achieved by the company based on the "accounting understanding of the world" (Kral & Šoljaková, 2014, 313). As early as in the 1980s, it became clear that those experts' positions and roles were changing. At the beginning of the XXIst century, changes are becoming even more intense. This is supported by research done in this area, which is gaining in breadth and depth, i.e. which includes some completely new dimensions, such as new technologies, new trends and the like

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(Burns & Baldvinsdottir, 2005; Järvenpää, 2007; Jack & Kholeif, 2008; Hyvönen, Järvinen & Pellinen, 2015). At the very beginnings of this progressive line of development, accountants predominantly perform traditional and routine tasks. They need to have the basic and traditional types of knowledge, skills and competencies in the accounting and finance fields. This basic knowledge has been constant throughout the development period, and there are the views that it is becoming even more important in the times of corporate scandals and crises (Scapens, Baldvinsdottir, Burns & Nørreklit, 2009). The demands of time and change have conditioned their constant upgrading, with the simultaneous change in accountants' positions, roles and tasks. As a result, the current moment indicates the fact that accountants on that line of development appear in the role of "business partners" (Vaivio & Kokko, 2006).

The emergence of business partners represents a completely new stage in the development of experts in the accounting, management accounting, controlling and financial management fields. The term *poslovní partneri* is the translation of the English term business partners. In order to avoid terminological and essential ambiguities, the fact that these are not a company's business partners in the traditional and literal meaning of the word should be noted. It is actually the term that indicates the new roles assigned to experts in the fields of accounting, management accounting, controlling and financial management. This new role implies that they become partners, associates and management advisors (business and management support associates). Therefore, the focus is on the new roles and partnership of accounting and financial experts with company management.

Understood in the above way, business partners' responsibilities include providing support to operations and strategic management (CIMA 2009; Burns, Warren & Oliveira, 2013), creating strategic information, actively participating in the decision-making process (Lambert & Sponem, 2012; Graham, Davey-Evans & Toon, 2012) and exerting an influence on the way management will use the created information (Weber, 2011). They deal with problem-solving, management control, future-oriented

reporting, advising and assisting in the decision-making process (Roman, Roman, & Meier, 2014). Although not generally accepted, the mentioned and similar roles attributed to business partners are performed by management accountants or controllers (Kráľ & Šoljaková, 2014). Although the term *kontroler* is not the happiest solution when the translation of the English term *controller* is concerned, it is very common in practice and in the literature. It should be noted that, in addition to the term *controller*, there are the following similar terms used in practice, namely a planner, analyst, financial analyst, advisor, sparring partner, and so on. That is the person responsible for planning, control and information (Roman *et al*, 2014).

The last and seemingly the strongest impulse to the evolution of these experts was given by the development of information and communication technologies (ICTs), i.e. by the digitalization process. As early as in 2003, an emphasis was placed on management accountants' new, far broader and future-oriented roles resulting from the ERP application (Scapens & Jazayeri, 2003). The ERP software automates routine accounting tasks and allows shifting the focus towards more demanding financial management (Newman & Westrup, 2005, 269). The ERP implementation causes changes in the structure of the time required for the performance of various tasks of management accounting and also allows the application of various advanced techniques and tools. The accountant's role in the controlling domain is becoming stronger and stronger, while the time required for the performance of routine tasks is being reduced (Malinić & Todorović, 2012). Digitization has reached incredible proportions, making the otherwise specific context of development even more complex.

In such a context, accompanied by the imbalance of theory and practice and a lack of relevant theoretical and empirical research, the question of the true essence of controlling and the controller's role as business partners arises. The whole situation is complicated by terminological specifics (controlling associates with control), the existence of the different definitions and concepts of controlling, the number and variety of tasks performed by controllers that evolve over

time, as well as the different organizational solutions of controlling in practice (Todorović & Jovanović, 2020). Bearing all the foregoing in mind, the main goal set in this paper implies the identification of the position of controlling and controllers in corporate practice in the Republic of Serbia in the conditions of intensive digitalization. The research study is focused on understanding and the critical success factors of controlling, tools and the controller's tasks. The research study was conducted on a sample of 35 companies, and the respondents were employed in various controlling positions.

The key contribution made by this research study reflects in the dissemination and supplementation of the knowledge of modern trends in the development of controlling (management accounting) and financial management, and the better understanding of the role of controlling in the digitalization context. The results of the empirical research study enable us to gain an insight into the development of modern controlling practice, i.e. into the controller's tasks and responsibilities, and the operational and strategic tools used by controllers. The research results concerning the key success factors of controlling can also be useful to practitioners in the controlling function implementation and improvement processes.

In addition to the Introduction and Conclusion, the paper is structured into the four sections. The first section presents the results of previous research studies. The second section refers to the questionnaire design, and the third section is dedicated to the explanation of the research methodology. The fourth section includes the analysis and discussion of the research results.

LITERATURE REVIEW

Controlling is the function that collects and analyzes business data, which are then made available to management in the form of various reports and serve as the decision-making basis. Thanks to their expertise in management accounting and financial management, controllers provide support and

assistance in creating, analyzing, understanding and interpreting the information necessary for different levels of management (Burns *et al.*, 2013). However, the role of controlling has evolved from information-oriented to management-oriented. Controllers are becoming advisors to, associates and partners of management in the implementation of numerous activities. Managers expect controllers to determine whether something is good or bad for the company, identify the problems that are a priority, and help them solve those problems (Breuer, Frumușanu & Manciu, 2013).

Unlike the traditional management accountants who were primarily engaged in routine work, today's management accountants are acquiring new roles. The study entitled *Evolving Role of the Controller*, which included 567 respondents, of which 82% were controllers and 18% were accounting professionals, confirmed significant change in their roles over time (IMA, 2013). Controllers appear in the roles of business lawyers, business analysts, financial analysts and business partners who should add value to the decision-making process and be more management-oriented (Yazdifar & Tsamenyi, 2005; IMA, 2013). They represent internal consultants, advisors, and management partners (Scott & Irwin, 2009; Goretzki, Strauss & Weber, 2013, 49). As business partners, controllers (advanced management accountants) represent experts in the preparation, interpretation and use of a broad spectrum of information. Their task is to integrate information on different bases and from different perspectives and interpret the interrelationship between financial and nonfinancial performance measures as well. The information created by business partners is more direct, strategic, relevant, concise, focused, selectively selected, qualitative and quantitative, and integrated (financial and nonfinancial); as such, they are the basis of sound management decisions (Todorović and Janjić, 2021). The controller's focus shifts to the analysis and interpretation of information, the more intensive communication of company goals and potential ways to have those goals achieved with the departments involved in achieving goals and making decisions on the future business direction (Kral & Šoljaková, 2014, 314). In addition to the focus on operational activities

and information, business partners need to be future-oriented and strategically important (Burns *et al*, 2014).

If the information described in this way represents outputs, then the question of inputs and the processes controllers need to implement logically arises. Making strides beyond the traditional framework of jobs, responsibilities, skills and tools is the key prerequisite for controllers to contribute to creating value for the organization (IMA & Deloitte's Center for Controllershship, 2018). The realization of new roles and the provision of necessary information requires from the controller expertise, new knowledge and the application of various operational and strategic tools, such as the Balanced Scorecard (BSC) and Rolling Forecasting (IMA, 2013). One study found that more than 80% of the respondents believed that there were more pronounced requirements for controllers to apply strategic, forward thinking and strategic tools (IMA, 2013). Some of the tools of strategic management accounting, such as competitive accounting, strategic cost analysis, and strategic pricing as well, are gaining in importance (Guilding, Cravens & Tayles, 2000).

Analyses show that the controller's knowledge, skills and competencies evolve over time and that it is a continuous process. Professional controllers are essential and the controlling key success factor. Controlling success factors need to be identified and analyzed because the success of controlling depends on the successful management of those factors. In addition to the controller's expertise, the controlling success factors are also the management who are ready for change, the highly developed accounting function with the professional staff, as well as adequate solutions in the information and communication technologies (ICT) field (Očko & Švigir, 2009). One study identified the following factors which the improvement of controlling and the controller's position depends on: the controller's strategic orientation development, the use of modern ICTs, a better definition of the controller job description, understanding the importance of the accounting standards and overall accounting regulations, training and knowledge improvement (IMA & Deloitte's Center for Controllershship, 2018).

How the said function is organizationally positioned can also be mentioned as a success factor. Although there are no universal solutions, the predominant attitude is that controlling should be positioned outside the existing hierarchy (management-executive functions) in the company (Očko & Švigir, 2009, 25; Král & Šoljaková, 2014, 317). Controlling should be viewed as an independent function positioned at the level of the company's central functions, directly next to the highest decision-making bodies and directly subordinate to the management of the company. Such an organizational solution ensures the uninterrupted flow of information throughout the organization and avoiding the problems caused by hierarchical relationships (Očko & Švigir, 2009, 25). In that case, the collection, processing and presentation of information are performed evenly and in a coordinated manner throughout the organization and towards all its hierarchical levels (Todorović and Janjić, 2021), which is a prerequisite for successful controlling.

Numerous studies (IMA, 2013) also deal with the quality of the information system and applied ICT tools as a precondition for the controller's successful work. An analysis of the responses of 800 accounting and finance experts suggests that the digital revolution is significantly affecting their jobs and tasks (IMA & Deloitte's Center for Controllershship, 2018). Accelerated digitization is leading to the fundamental transformation of the accounting profession. Routine accounting is being automated, thanks to which fact accountants are absolved of routine work and data processing. In contrast, the activities that require experience, intuition, creativity and multidisciplinary in execution are gaining in importance and, according to certain studies, they will become primary on the labor market (IGC, 2020). The application of integrated information systems (*Enterprise Resource Planning - ERP*), real-time data analysis and Business Intelligence (BI) is becoming commonplace in the controller's work. Industry 4.0, including the Internet of Things (IoT), the Internet of Services (IoS), Machine Learning, Robotics and Augmented Reality are also becoming a reality in the controller's work. Research has increasingly become focused on big data analytics and cloud computing (Zecevic, Radovic-Stojanovic & Cudan, 2019). The IGC

conducted a study indicating the application of the RPA applications (*Robotic Process Automation - RPA*) (IGC, 2020). In the literature, the term *number crunchers* is increasingly being associated with the controller, which in fact indicates a person, a professional whose job is to process a large amount of data and conduct various calculations. This is not possible without an appropriate ICT support. The fact is that digitalization is a new reality. Digital technologies should be seen as a factor of creating added value for organizations in a dynamic and uncertain business environment. However, ICT without qualified human resources and a supporting infrastructure is an investment loss (Stankic, Jovanovic-Gavrilovic & Soldic Aleksic, 2018). Hence, accounting and finance experts need to embrace digital technologies and improve their IT knowledge and competencies (SAIPA, 2019, 11; Demko-Rihter, 2021).

Concerning the controller's task, the fact that they are numerous, diverse and quite broad should be pointed out. J. Očko and A. Švigir (2009, 35) highlight the fact that the controller's key tasks include the preparation of information for decision-making, the monitoring and control of the implementation of decisions, counseling, encouragement and motivation, the coordination of management activities and so forth. The controller's tasks include support for the planning, control and information processes; cooperation in defining goals; support for the budget development and implementation; cost accounting and cost calculation; reporting and interpreting results; support for the operational and strategic planning processes; various forms of counseling; the identification of problems and problem solving, and so on (Osmanagić-Bedenik, 2007, 85; Todorović and Ljubisavljević, 2022).

The results of a research show that management accountants in the Republic of Serbia mostly carry out the following activities: performance analysis, the preparation of monthly reports and consulting. The activities of financial planning, performance control and continuous improvement are also significant (Parč, 2021). The results of this do not deviate from the results of similar studies (Wadan, Teuteberg, Bensberg & Buscher, 2019). Research in the development of controlling in the USA included 800

accounting professionals, and the results showed that the controllers had spent 69% of their working time on traditional tasks, such as the preparation of financial reports, the harmonization of reporting systems, closing processes on a weekly, monthly and annual bases, and so on. The rest of the working time was dedicated to solving the company's strategic problems (IMA & Deloitte's Center for Controllorship, 2018).

According to a research study conducted in the Czech Republic, the controller's job is to provide information, budgeting at the strategic, tactical and operational levels, create forecasts, assessments and expectations (Král & Šoljaková, 2014). The authors of this research study point out the fact that controllers are coordinators (they implement the activities related to the company's goals and their implementation), expert planners (they prepare future scenarios for management), methodologists (they are responsible for determining the product cost and sales prices, costing, budgeting and the development of management accounting) and communicators (they are responsible for the transfer and dissemination of results to all management levels and other stakeholders as well) (Král & Šoljaková, 2014). It is clear that the controller's daily activities are a combination of traditional and strategy-oriented tasks (IMA & Deloitte's Center for Controllorship, 2018). A balance needs to be established and maintained between them, which may be a challenge.

QUESTIONNAIRE DESIGN, DATA COLLECTION AND METHODOLOGY

In the organizational-methodological sense, the research included the creation of a research framework, the creation of the questionnaires and data collection, the analysis of the obtained data and drawing the conclusions of the paper (Figure 1).

Based on the analysis of the results presented in the previous research, a research framework was constructed, and a questionnaire was created. The questionnaire consisted of three groups of questions. The first group of questions was aimed at identifying the position of controlling in specific

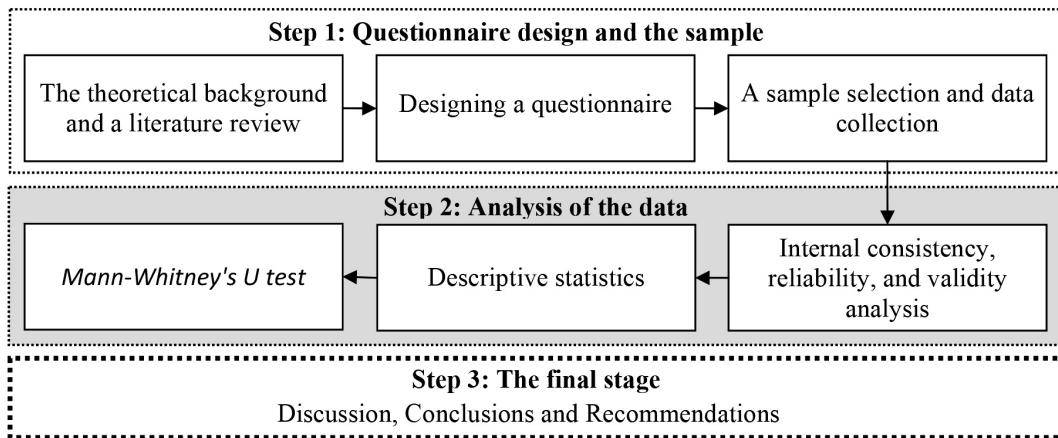


Figure 1 Research conducting

Source: Authors

companies, in which sense the following questions were asked, namely whether there was an organized controlling function or not, how long that function had been in place, how many employees there were, who was responsible for controlling, how it was organizationally positioned, how controlling was perceived in a particular company, and which IT tools the controllers used. The second group of questions referred to the identification of the respondents' attitudes towards controlling its essence (7 statements), success factors (8 statements), tools and responsibilities (9 statements) and the controller's tasks (14 statements). A five-point Likert scale was used (Jamieson, 2004). The respondents were offered responses ranging from 1 - strongly disagree to 5 - strongly agree. The third group of questions referred to the data about the respondents.

The data collection process was based on the questionnaire survey, directly, via email communication and on the basis of the web survey (*Google forms*). The target group were the companies of all sizes and of all legal forms that had organized controlling in their organizational structures in any organizational format (a department, a service, a function, etc.). The controllers, i.e. the persons who performed tasks in the controlling process, were interviewed. A total of 35 questionnaires were collected.

The data obtained from the questionnaire were analyzed in the Statistical Package for Social Sciences (SPSS, Version 20.0). The reliability and internal consistency of the variables were measured using Cronbach's alpha coefficient. Cronbach's alpha coefficient was 0.707. That result showed a relatively high level of internal consistency, and the good reliability and internal consistency of the measurement scale (Hair, Black, Babin & Anderson, 2009). The generally agreed lower limit for Cronbach's Alpha was 0.70, although it might fall to 0.60 in exploratory research (DeVellis, 2003).

Descriptive statistics were used to measure the central tendency (the arithmetic mean, the mode, the median) and variability (the standard deviation). Nonparametric Mann-Whitney's U test was also used with the aim of comparing the respondents' attitudes and the magnitude of the influence according to the Cohen criterion was analyzed (Gravatter & Wallnau, 2004).

THE SAMPLE

As has already been pointed out, a total of 35 questionnaires were collected, i.e. the questionnaires were filled out by the 35 persons (from 35 companies) employed in controlling. In 32 (or 91.40%) of the 35

companies having been subjected to analysis, there is an organized controlling function, service or department (hereinafter referred to as the function). In the companies that do not have an organized controlling function, the tasks in the controlling field are performed by the employees engaged in accounting and finance or, but in one case, by an external consultant. When the length of the controlling function in the analyzed companies is concerned, it is a relatively juvenile function, since it has only been in place for an average of 6.49 years. The sample included the companies with the controlling function that had been in place for only 1 year, and those with that function having been in place for almost two decades already. In as many as 57.14% of the cases (20 companies), the Head of Controlling is responsible for the controlling function; in 31.43% of the cases (11 companies) the Finance Head or the Finance Director is he who is responsible for that function, and in 8.57% of the cases there is a shared or joint responsibility of the person in charge for accounting or finance (Head of Accounting or Finance), and only in one case an external consultant is responsible.

The next question related to the organizational positioning of controlling. In 42.85% of the cases, the controlling function was positioned at the central level of the company, whereas in the remaining 57.14% of the cases different solutions were applied (decentralized organization, line organization, within a sector, etc.). The adequate organizational positioning of controlling is one of the prerequisites for its success (Kral & Šoljaková, 2014, 317). This research

indicated the fact that the positioning of controlling at the level of the central company functions was not significantly in place. Since controlling success had not been monitored or measured, it was not possible to say with certainty what the effects of the selected organizational solutions were. Future research should have this interdependence in focus. The analysis also shows that the average number of the controlling employees is 5.20; at least 1 and no more than 30 (at the level of one company group). Based on the prior analysis, it can be concluded that, there is an organized controlling function in the companies under observation, in about 42% of the cases this function is positioned at the company's central level, it is a relatively young function (about 6 years on average) with a relatively small number of employees (about 5 on average); in almost 60% of the cases, the responsibility of the Control Head for this function is defined.

Regarding how controlling is perceived and observed in a certain company, the respondents were offered 7 statements. The results of this analysis are shown in Figure 2. The respondents were allowed to choose one or more than one options.

As can be seen from Figure 2, the respondents consider that controlling is Professional support to management in 85.71% of the cases. This answer was not only chosen by 5 respondents. In the case of these five respondents, their first answer is Information support to management. A total of 54.28% of the respondents opted for this answer. It is important to point out the fact that 85.71% of the respondents

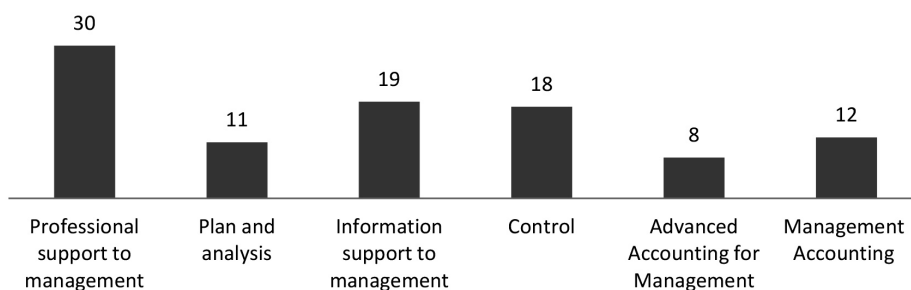


Figure 2 Understanding controlling in the analyzed companies

opted for two or more answers. Only 5 respondents opted for one answer and in all the five cases it was the answer Professional support to management. The results show that the essence of controlling reflects in the various forms of support to management. The analysis also clearly shows that the respondents view controlling in a multidimensional way.

The last question was about the ICT tools used in controlling. The results of the answers to this question are shown in Figure 3. As the previous research has shown (IMA, 2013; IMA & Deloitte's Center for Controllanship, 2018; IGC, 2020; Demko-Rihter, 2021), the use of different ICT tools is implied in controlling.

Most respondents opted for Excel and the ERP (Figure 3). The ERP has emerged as an answer to the continuously growing information needs of management (Malinić & Todorović, 2012). The ERP provided a rapid information flow, the minimum time of response to the requirements made by buyers and suppliers, better interactions with business partners, a higher quality of provided services, and an increased satisfaction of clients. The ERP provided better decision-making at all the levels, especially at the lower levels, an efficient control of the basic business functions, as well as strategic action planning. According to the respondents, the most commonly used ERP pieces of software are SAP, JAT (Oracle) and BAAN. Given the fact that not much information can be obtained directly from the ERP, it is necessary that Excel, BI and other tools should be used. The results of this research study are similar to those obtained in the previous research (Malinić & Todorović, 2012). About 45.71% of the respondents indicated that they used the mentioned tools. In a small number of the cases, the application of the *Bridge*, *Corporate Planner*, *SAP Analytic Cloud* and *Business Navigator* tools was identified.

At the end of the first group of questions, there were the questions about the respondents themselves. Concerning the age structure, 77.1% of the respondents are between 26 and 45 years of age, 14.3% are between 18 and 25 years of age, whereas only 8.6% of the respondents are over 46 years of age. Regarding the qualification structure, 32 respondents, i.e. 91.43%

have higher education, 2 respondents have a college diploma, and 1 respondent has a secondary-school diploma. All the respondents are economists. The respondents' average work experience is 9.5 years. The results of the analysis show that the respondents are employed in the following positions: a financial controller, a controller, a controlling associate, a controlling director, a chief financial officer, a finance director and a deputy finance director, the head of the controlling department, the head of controlling, a sales controller, a senior controller, a financial analyst, the planning and controlling team leader and a project controller. Bearing in mind the respondents' age and qualification structure, the dimension of their experience, i.e. the length of their work experience, as well as the description of the jobs they perform (as indicated by their work positions), the sample (although smaller) can be considered as relevant from the point of view of the research objectives.

RESEARCH RESULTS ANALYSIS AND DISCUSSION

The central part of the research study related to the examination of the attitudes towards controlling, its essence (7 statements), success factors (8 statements), tools and the controller's responsibilities (9 statements) and the controller's tasks (14 statements). The questionnaire used to collect the primary data included as many as 38 statements. The respondents expressed a certain degree of agreement on the five-point Likert scale (1 - strongly disagree to 5 - strongly agree). Table 1 shows the descriptive analysis of the respondents' attitudes towards understanding controlling.

In Table 1, a total of the 7 statements sorted by the average level of the respondents' agreement with each of them are presented. The highest average score of 4.74 is given to the statement The controller should turn the accounting language into information usable and understandable to management. Also, the statement The controller is the right-hand man/woman of management with an average score of 4.69 highly ranks. The previous research also indicates

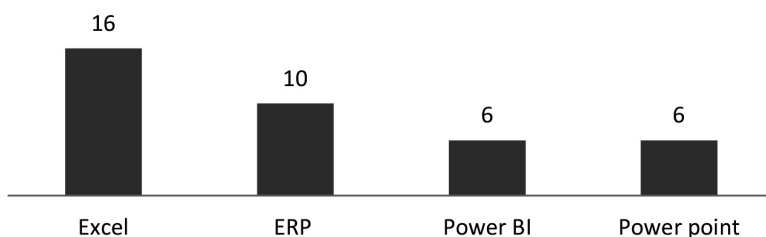


Figure 3 ICT controller tools

Source: Authors

the fact that the controller's key role is accounting information interpretation and decryption (Očko & Švigir, 2009, 12; Luković and Lebefromm, 2009, 29). Controllers should assist management in that they help management use accounting information. In fact, controllers should enable the establishment of a better connection between accounting and management. Therefore, it is not uncommon to find the view that controlling is the marketing of accounting (Blazek, Dehleh & Eiselmayer, 2014, 12).

The lowest average score of 3.46 is given to the statement The company's success primarily depends on the controlling implementation degree in the management process. When elaborating the results of

the descriptive statistics, the values of the median and the mode should be taken into account. The value of the median in all the statements is either 4 or 5, while the most common score is 5; so, it can be concluded that the respondents attributed high importance to all the foregoing statements.

Table 2 shows the 8 statements that reflect some of the assumptions (factors) of controlling and controller success. The statements are sorted by the average level of the respondents' agreement with each of them. The highest average score of 4.74 is given to the statement The controller's expertise and competence are the assumptions of controlling and controller success. The results of the other research also show the importance

Table 1 The descriptive analysis - the respondents' perceptions of controlling

Statements	Mean	Med.	Mod.	SD
The controller needs to turn the accounting language into information usable and understandable to management.	4.74	5	5	0.505
The controller is the "right-hand" man/woman of management.	4.69	5	5	0.583
The controlling processes are oriented towards the accomplishment of the goals, profit making, they are future-oriented and ensure long-term success.	4.57	5	5	0.815
Controlling includes planning, decentralization, defining responsibilities and the control of implementation.	4.43	5	5	0.778
Controlling is a subsystem of the management system.	4.37	4	5	0.731
Controlling should be viewed as an independent function at the level of the company's central functions.	4.20	4	5	0.933
The company's success primarily depends on the controlling implementation degree in the management process.	3.46	4	4	1.039

Note: Each statement was answered by 35 respondents.

Source: Authors

of hiring experts, continuous training and improving the controller's knowledge as the controlling success factor (Očko & Švigir, 2009; IMA & Deloitte's Center for Controllershship, 2018).

The next most important is the statement The highly developed accounting function is the assumption of controlling and controller success, with a score of 4.71. Such a highly ranked statement on the importance of the accounting function is a completely logical outcome, bearing in mind the fact that the analysis showed that more than 50% of the respondents understood controlling as information support to management and that the accounting and information-oriented controlling concepts dominated in the analyzed companies. The lowest-rated statement is that reading The Management accept controlling philosophy, with a score of 4.06. Thus, all the statements that reflect the assumptions of controlling and controller success are rated with the average scores greater than 4. The value of the median in the statements is either 4 or 5, while the most common score is 5; so, it can be concluded that the respondents attributed great importance to all the statements. As many as five of the eight statements concern the relationship between management and controllers. In a fashion similar to the previous research studies (Osmanagić-Bedenik, 2007, 248; Očko & Švigir, 2009), the results of this research study show that the relationship between controllers and management is a controlling success factor. Their relationship must be a partnership and can

be described as a relationship of cooperation and complementarity. It is based on teamwork, where each team member has his/her place and his/her role, i.e. he/she respects a contribution made by another team member.

Table 3 shows the descriptive analysis of the respondents' attitudes towards the controller's tools and responsibilities. Table 3 includes the 9 statements sorted by the average level of the respondents' agreement with each one of them. The highest average score of 4.57 is given to the statement The controller's tools are the budget, variance analysis, the short-term calculation of results. This result is in line with the previous research, since the controller can be described as an accountant responsible for planning, control and information (Roman *et al*, 2014). The second most important statement is The controller is knowledgeable of the operational and strategic controlling tools, with a score of 4.37. Research in the world (Guilding *et al*, 2000; IMA, 2013) especially emphasizes the application of strategic controlling tools, and the results of this research study show that the respondents in the analyzed companies are in a similar position. The lowest average grade of 1.63 is given to the statement the controller is the head of accounting, and the next lowest average score of 2.06 is given to the statement the controller is the director of the financial-accounting function. Such results are expected, logical and in accordance with the results of the analysis conducted in the sample description section, which showed that, in the largest number

Table 2 The descriptive analysis - the critical success factors

Statements	Mean	Med.	Mod.	SD
The controller's expertise and competence	4.74	5	5	0.443
The highly developed accounting function	4.71	5	5	0.519
A quality information system in the company	4.63	5	5	0.690
A partnership between the controller and the manager	4.54	5	5	0.611
Interested and dedicated management	4.49	5	5	0.658
Management ready for change	4.40	4	5	0.651
The Management think like the controller	4.26	4	5	0.919
The Management accept controlling philosophy	4.06	4	4	0.906

Source: Authors

Table 3 The descriptive analysis - the tools and the controller's responsibilities

Statements	Mean	Med.	Mod.	SD
The controller's tools are the budget, variance analysis, the short-term calculation of results.	4.57	5	5	0.778
The controller is knowledgeable of the operational and strategic controlling tools.	4.37	4	4	0.731
The controller supports management in the accomplishment of the profit-oriented goals.	4.31	5	5	0.900
The controller solves problems, develops and applies new tools.	4.09	4	4	1.011
Reports and calculations are the controller's tools.	3.86	4	4	1.033
The controller deals with data accuracy and contributes to business realization.	3.74	4	4	1.238
Target costs, lean production and strategic control are the controller's tools.	3.60	4	3	1.143
The controller is the director of the financial-accounting function.	2.06	1	1	1.305
The controller is the head of accounting.	1.63	1	1	0.877

Source: Authors

of cases, controlling is managed by the Controlling Head. Concerning the controller's responsibilities, it can be concluded that the most valued statement is the controller supports management in the accomplishment of the profit-oriented goals, with a score of 4.31. The controller's and the manager's goals are almost identical, but they use different tools to achieve them as they do not have the same responsibilities. Managers are responsible for success, and controllers for its transparency (Osmanagić-Bedenik, 2007, 97).

Table 4 shows the descriptive analysis of the respondents' attitudes towards the controller's tasks. Table 4 includes the 14 statements that represent the controller's potential tasks and the statements are sorted by the average level of the respondents' agreement with each one of them. The highest average score of 4.86 is given to the task Management Reporting, and the second most important is The preparation of information for decision-making with a score of 4.83. Such results are expected if we bear in mind the fact that the largest number of the respondents understand controlling as professional and informational support to management. It can also be concluded that the accounting and information-oriented concepts of controlling dominate in the analyzed companies, i.e. the management-oriented

controlling concept is not developed (Osmanagić-Bedenik, 2007, 81). This is evidenced by the average scores in the last two statements in Table 4. The lowest average score of 3.80 is given to the task Management activities coordination. The task Counseling, encouragement and motivation received an identical average score. These are simultaneously the only two tasks that predominantly belong to the management field and the only two tasks rated with the average scores lower than 4. Analogous to the results presented in Table 3 and in the controller's tasks, the statement Budgeting, variance analysis, proposing and monitoring the implementation of corrective measures is rated very high with a score of 4.80, which is the third most important task. The value of the median in the statements is either 4 or 5, while the most common score is 5; so, it can be concluded that all the respondents attribute relatively high importance to all the statements.

After the descriptive analysis, nonparametric Mann-Whitney's U test was conducted in order to examine the differences in the respondents' attitudes for all the four groups of statements (the perceptions, the critical success factors, the tools and responsibilities, the controller's tasks) shown in Tables 1 to 4. In order to identify the existence of a statistically significant

Table 4 The descriptive analysis - the controller's tasks

Statements	Mean	Med.	Mod.	SD
Management reporting	4.86	5	5	0.355
The preparation of information for decision-making	4.83	5	5	0.382
Budgeting, variance analysis, proposing and monitoring the implementation of corrective measures	4.80	5	5	0.473
The development and maintenance of control systems	4.74	5	5	0.505
Ensuring the transparency of the business results, finance, processes and strategies in a way that contributes to effectiveness	4.69	5	5	0.530
Goal setting, measurement (reporting), variance analysis and the implementation of corrective measures	4.66	5	5	0.482
The coordination of the sub-goals and plans in a holistic way and the creation of a future-oriented reporting system for the company as a whole	4.60	5	5	0.695
Monitoring and controlling the implementation of decisions	4.57	5	5	0.698
Defining the goals, planning and monitoring, so that decision-makers can act in accordance with the goals	4.49	5	5	0.612
Looking for the ways to reduce costs and reducing costs	4.46	5	5	0.852
Cost accounting and the product cost	4.40	5	5	0.976
Closing activities on a weekly, monthly and annual bases	4.09	4	5	1.040
Counseling, encouragement and motivation	3.80	4	4	0.933
The coordination of the management activities	3.80	4	4	0.994

Source: Authors

difference in the respondents' attitudes, the sample was divided according to the four criteria (variables):

- whether the controlling function was independent or not;
- how the controlling function was positioned - as the central function or not so;
- according to the time of controlling having been in place - up to 6 years and for longer than 6 years;
- according to the number of the employees engaged in controlling - up to 5 employees and more than 5 employees.

In the first group of the statements related to the respondents' perceptions of controlling, no statistically significant differences were identified in their attitudes according to every one of the four mentioned criteria.

In the second group of the statements (Table 2) related to the critical success factors, a statistically significant difference was identified in the respondents' attitudes

in the case of using two criteria for dividing the sample, namely: there is or there is no independence of the controlling function and controlling is or is not the central function. First, the sample was divided according to the criterion of the independence of the controlling function. A statistically significant difference was identified in the respondents' attitudes ($U = 84.000$, $z = -1.989$, $p = 0.047$) in the statement The Management accept controlling philosophy (a large influence according to the Cohen criterion = 0.788). The respondents of the organizations with independent controlling functions believe to a greater extent that management should accept controlling philosophy and that this is a success factor. In the second step, the sample was divided according to how the controlling function was positioned, i.e. whether it was the central function or not. A statistically significant difference was identified in the attitudes between the two groups of the respondents ($U = 90.000$, $z = -2.176$, $p = 0.030$) in the identical statement The Management accept controlling philosophy (a large influence according

to the Cohen criterion = 0.843). The respondents in the companies where controlling is positioned as the central function believe to a greater extent that management should accept controlling philosophy and that this is a critical success factor.

It is interesting that the use of both previously mentioned sample division criteria resulted in the identification of a statistically significant difference in the attitudes in the same statement. The independent controlling function being in place and positioned at the central organizational level implies specific forms of responsibility, the Board's direct superiority and direct communication with the highest management levels. Therefore, the respondents are in both cases more aware of the need for the management to accept controlling philosophy and they are more aware of the importance of management support to the achievement of controlling success. The obtained result can be important and serve as guidelines and recommendations in the organizations where the controlling function is in the initial stages or at the lower levels of development.

In the third group of the statements (Table 3) related to the tools and the controller's responsibilities, a statistically significant difference was identified in the respondents' attitudes when the number of the engaged employees is in question (up to 5 or more than 5 employees are engaged in controlling) as a sample division criterion. The number of the employees is viewed as the factor that determines the scope and complexity of work, the decentralization level and the task division, as well as the controlling function development level. A statistically significant difference in the attitudes was identified in the two statements: Target costs, lean production and strategic control are the controller's tools: $U = 53.500$, $z = -2.222$, $p = 0.026$ (a high influence according to the Cohen criterion = 0.989) and the controller is knowledgeable of the strategic and operational control tools: $U = 58.000$, $z = -2.072$, $p = 0.038$ (a high influence according to the Cohen criterion = 0.896). In both cases, the second group of the respondents (from the organizations where the number of the employees exceeds 5) attributes more importance to the mentioned controller's tools.

The fourth group of the statements (Table 4) related to the controller's tasks also identified a statistically significant difference in the respondents' attitudes when the time of the controlling function having been in place criterion (i.e. the controlling function being in place for up to 6 years or for longer than 6 years) was used. The assumption was that the longer this function is in place, the higher level of its development is implied. A statistically significant difference in the attitudes was identified in only one statement. This is the statement related to the controller's tasks reading: The preparation of information for decision-making: $U = 107.500$, $z = -2.169$, $p = 0.030$ (a big influence according to the Cohen criterion = 0.737). The respondents from the companies in which the controlling function had been in place for a period up to 6 years assessed this task as more important compared to the other group of the respondents, where the controlling function had been in place for a longer period of time, and a higher level of its development was assumed.

The obtained results related to the third and fourth criteria are completely logical and the same can be interpreted by the level of the development of the controlling function. At the lower levels of the development of the controlling function (a shorter lifespan and fewer employees), the controllers are more involved in routine tasks and preparing information for decision-making. The controlling information role is also emphasized, and more traditional tools are used accordingly. The evolution of the controller's role towards navigators and innovators, i.e. the development of controlling, changes the controller's focus and tasks towards support, counseling, problem solving, orientation towards the future and strategies, i.e. a more significant application of new, operational and strategic tools (Blažek *et al*, 2014, 211).

CONCLUSION

In accordance with the subject and the set goal, a theoretical analysis was performed first; it was followed by an empirical analysis of how controlling, tools and the controller's tasks were understood and which critical success factors were needed for them.

The analysis was carried out through a survey of employees in the controlling field. The questionnaire was completed by 35 controlling employees. The context of the research study which consists of the digital environment provides opportunities to draw conclusions from a particular point of view. Digitization has reached incredible proportions and brought fundamental transformations of the accounting profession. As the previous research studies have demonstrated (IMA, 2013; IMA & Deloitte's Center for Controllorship, 2018; IGC, 2020; Demko-Rihter, 2021), the application of various ICT tools is implied in controlling. This research study has confirmed the fact that the use of ICT tools is common in controlling and various ICT tools are used, from those traditional (such as Excel) to those more advanced (such as Power BI).

Based upon the performed analysis of the answers given by the 35 respondents, it can be concluded that a multidimensional understanding of controlling prevails. One of the most important results of the research study is that there is a multidimensional understanding of controlling. As many as 85.71% of the respondents chose two or more than two answers to understanding controlling. The two most common answers are, first, that controlling is professional support to management and, second, that controlling is information support to management. A deeper analysis of the respondents' perceptions of controlling is in accordance with the previously presented conclusions. The respondents predominantly believe that the controller needs to turn the accounting language into information usable and understandable to management. The results indicate that controlling is treated as a sub-function of the management function in the analyzed companies. Also, there is the predominance of the accounting and information-oriented controlling concepts in the analyzed companies. These concepts are essentially focused on the controlling information goals and connecting the management process and the information process. Controllers should provide an answer to the question how to use accounting information, i.e. they should enable accounting and finance not to be viewed as a "black box" (Očko & Švigir, 2009, 12; Luković and Lebefromm, 2009, 29). The results of the analysis

regarding the tools and the controller's tasks also support these conclusions. The most important controller's tools are the budget, variance analysis and the short-term calculation of results. It is the group of traditional tools. However, the fact is that the second most important are controlling operational and strategic tools, which speaks in favor of the positive trends in the development of controlling in domestic practice. In the tasks field, the three highest ranked tasks are reporting to management, the preparation of information for decision-making and budgeting, variance analysis, the proposal and implementation of corrective measures.

This research study has significant theoretical and practical implications. The key theoretical implications reflect in the dissemination and supplementation of the knowledge of modern trends in the development of controlling (management accounting) and financial management. The research results can contribute to a better understanding of the essence of controlling and the controller's role. Concerning practical implications, it should be noted that a special part of the research study has dealt with the controlling key success factors. The results show that the most important prerequisite for controlling success is the controller's expertise and competence, which is similar to the results obtained in the previous research studies by (Očko & Švigir, 2009; IMA & Deloitte's Center for Controllorship, 2018). In addition to the highly developed accounting function (Osmanagić-Bedenik, 2007, 248; Očko & Švigir, 2009), the results show that a partnership between the controller and management is a success factor, which may be important for the companies that are only just starting the controlling implementation process or are in the initial implementation stages. The point is that the adequate identification and management of critical success factors is essential for the implementation and improvement of controlling.

The results of the performed nonparametric testing also have significant practical implications. The fact that an independent controlling function is in place and that it is positioned at the central organizational level can be considered as a success factor of controlling, which can be an important guideline for companies in their organizational structuring

processes. Positive trends in the development of controlling in domestic practice have been identified, primarily in the direction of a greater application of various strategic and operational tools. Acquiring additional knowledge and skills is certainly a prerequisite for a further development of controlling practice.

Our research study has several limitations. The most important limitation is the sample size. Also, the sample includes the companies from only one country. Hence, the presented conclusions exclusively refer to the respondents. Increasing the sample size would allow the application of more advanced statistical methodology and may lead to different results. In future research, attention should be paid to measuring controlling success.

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