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Review

E-Management as a Game Changer in Local Public Administration

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Abstract: The rapid development of digital technologies provides an efficient way to overcome the drawbacks of traditional management. E-management, a new form of management, is attracting much attention worldwide. The current research is aimed at examining the development of e-management in public sector organizations and anticipating possible alternatives for solving e-management problems. We use a qualitative strategy to explain the concept, specifics, benefits, drivers, situation, and progress of e-management in the public sector. Based on interviews with managers at local public administration institutions in Lithuania, we conclude that e-management in municipalities until the COVID-19 pandemic was applied only in exceptional cases due to legislation and workplace stationarity. However, at the moment, e-management in municipality administrations is treated not as an alternative but as the only possible choice.

Keywords: e-government; digital management; e-leadership; technologies; municipalities

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1. Introduction

With the introduction of information and communication technologies (ICT) in public administration organizations, digital solutions have been implemented to reduce the time and financial costs of providing services. In many cases, e-government is underestimated because it is poorly visible to the public. Nevertheless, e-government is a crucial aspect of any government seeking efficiency. Without e-government, the provision of services, public involvement, and high-quality operations at minimal cost, which is the prerogative of e-government, cannot be realized (Cook et al. 2002). These circumstances call for an examination of the phenomenon of e-management.

The spread of computer technology in the 20th century can be considered the beginning of the formation of e-management. In the sixties and seventies, the use of computer technology became convenient, saving time, effort, and resources. One of the consequences of the development of ICT is the emergence of the electronic exchange of information and messages between colleagues and departments. The emergence of electronic data sharing systems and networks has led to the use of the functions and roles of e-management through modern networks (especially intranets and extranets), digital spaces, the Internet, and technological infrastructure (Ellatif and Ahmed 2013). According to Demir (2019), the concept of e-management has actively developed in recent decades. Following the evolution of the Internet, the concept of e-management has also evolved. In the beginning, the dominant associations for e-management were the transmission of information through electronic channels, while at the moment, the functionality of e-management seems much broader (Demir 2019). Wart et al. (2019) describe e-management as a process employing advanced ICT to ensure internal and external management functionality. E-management includes using advanced ICT for information management, dissemination, service delivery, marketing, decision making, etc. Thus, e-management is mainly related to using ICT.

Adding the letter "e" to the term management does not mean management in a virtual environment. E-management should complement advanced management models applied in virtual and physical environments so that participants improve their skills and social interactions (Freitas and Routledge 2013). In reference to Yao et al. (2011), e-management is a strategic approach. It begins with formulating a vision and mission, emphasizing the benefits an organization gains through the potential of ICT. It focuses on the key benefits of applying e-management. Hopefully, e-management will create preconditions for achieving the highest quality result and organizational efficiency. It is possible to achieve efficiency only when the organization treats e-management as a strategic issue (Yao et al. 2011). Iulian (2008) notes that using essential tools such as Microsoft Excel or Microsoft Access does not mean that the organization applies the concept of e-management. It is only an intermediate step in transitioning from traditional management to true e-management. E-management systems connect the organization's suppliers, partners, and consumers. Almutairi (2014) identifies even a broader list of tools needed to implement the e-management concept: data disks, technological equipment (e.g., computers), communication networks, and knowledge creators.

Pursuing the high quality of public services, it becomes necessary to pay attention to the fact that public service users (citizens, business entities, etc.) value the quality of services provided under e-government. E-management orientation towards citizens serves as a new way to use ICT in policy discussions. This way of management has an impact on economic, social, and political development. The positive effect occurs because e-management acts in an electronic environment and complies with remote teams. The new e-management paradigm enables direct and immediate communication with employees, consumers, and suppliers, harnesses the potential of talent, improves organizational performance through multifunctional teams, increases customer satisfaction, reduces operating costs, and strengthens knowledge management (DasGupta 2011; Yao et al. 2011; Almutairi 2014). Despite the well-known benefits of e-management, very little is known about how public administration institutions should apply the concept to achieve efficiency simultaneously. This paper contributes to tackling this issue by exploring e-management through qualitative research in local public administration institutions in Lithuania. In the context of the COVID-19 pandemic and possible monkeypox outbreak, such research gains exceptional importance. The spread of viruses inevitably affects most public sector organizations, including local government, and moves many employees to work from home. The topic of e-management has become even more relevant in anticipation of the new industrial revolution (Industry 5.0) (Fazal et al. 2022).

Previously the phenomenon of e-management has received considerable attention from researchers all over the world (Cook et al. 2002; Cecchetti et al. 2009; Garjoaba 2011; Lee et al. 2011; Pries-Heje and Pries-Heje 2012; Chang and Lee 2013; Avolio et al. 2014; Voce 2015; Ji et al. 2016; Wart et al. 2017, 2019; Demir 2019; Waswas and Jwaifell 2019). Recent scholarship has paid attention to e-management in business entities (He and Chen 2007; Iulian 2008; Garjoaba 2011; Lee et al. 2011; Askarzai et al. 2013; Ellatif and Ahmed 2013; Freitas and Routledge 2013; Alrahahle 2014; Fan et al. 2014; Li et al. 2016; Fazal et al. 2022). The public sector as a context of e-management has received the attention of a few researchers so far (Cook et al. 2002; Auffret et al. 2010; Almutairi 2014; Demir 2019). Studies of e-management in educational institutions are quite common (Hashim et al. 2006, 2010; Kulkarni and Pougatchev 2011; Chang and Lee 2013; Garcia 2015; Voce 2015; Radonov and Videkov 2017; Shobaki et al. 2018; Waswas and Jwaifell 2019; Timoteo et al. 2021), but other public sector organizations have not been systematically analyzed in this regard. It means that we still need in-depth studies and specific research outputs to draw a comprehensive picture of e-management in local public administration. Therefore, this research aims to examine the development of e-management in local public administration and anticipate possible alternatives to solve e-management problems.

The study takes a further step to explain the concept, specifics, benefits, procedures, and progress of e-management in local public administration. Given the arguments of

previous research, the current study focuses on managers' perceptions as the basis of analysis. Such a choice provides a broad examination of e-management as a game changer in local public administration. From a scientific point of view, the analysis of the concept and structure of e-management is vital for understanding the phenomenon of e-management. We expect that the results of the empirical study of the attitudes of leading staff of public sector institutions to e-management will create preconditions for identifying problems arising in Lithuanian municipalities, applying e-management practices, and preparing possible alternatives for solving e-management problems.

The remainder of this paper is structured as follows: Section 2 presents the theoretical background for the phenomenon of e-management; Section 3 provides the methodology of the research; Section 4 analyses the results of qualitative research conducted in local public administration institutions; the paper ends with Sections 5 and 6, which provide limitations, managerial implications, possible avenues for future research, and conclusions.

2. Literature Review

The concept of e-management has developed intensively over the last few decades. Aiming to clarify its content, we have collected a variety of e-management definitions. An analysis of the scientific literature (He and Chen 2007; Iulian 2008; Seresht et al. 2008; Yao et al. 2011; Almutairi 2014; Wart et al. 2016, 2019; Radonov and Videkov 2017; Demir 2019) has shown that the concept of e-management can be interpreted emphasizing different components of e-management. Usually, scholars have emphasized human resources, material resources, organizational dynamics, organizational goals, internal and external processes, technological resources, information exchange, interactive communication, workflows, and their automation, documentation of administrative processes, social impact, organizational processes, information provision, service delivery, manual, employee referral, and motivation.

According to Wart et al. (2016), external and internal factors determine the decision to apply e-management. External factors include competition and public comparisons, technological diffusion in similar organizations (network effect), and user perceptions (adoption of technologies and concerns about technologies). Internal factors include the task needs, awareness, and leaders' facilitation (in-depth knowledge of technologies and their adoption, preferences for utilization of technology, and concerns about various technologies). Seresht et al. (2008) have classified e-management factors into the following categories: managerial (1), humanistic (2), cultural-social (3), organizational-structural (4), technical-technological (5), and environmental (6). Managerial factors typically encourage organizational activities, but they can also accidentally become the context of many failures at the organizational level. The application of e-management is hampered by management practices such as insufficient motivation, inadequate knowledge, short management lifecycle, etc. Humanistic factors, such as resistance to change, insufficient number of specialists, lack of interest, and motivation, may prevent the organization from transitioning to e-management. Cultural-social factors involve knowledge, beliefs, arts, morals, laws, customs, and other habits of people as members of society that can affect the acceptability of ICT. Organizational-structural factors include knowledge management, employees, and internal communication. They are relevant for the success and survival of an organization (Seresht et al. 2008). According to Lilian (2014), managers have to organize their work somewhat differently as organizational structures change from traditional hierarchies to more flexible ones. Environmental factors include the necessary rules and regulations in ICT policy. El-Seoud and Taj-Eddin (2018) provided a similar typology of e-management factors. The researchers mentioned managerial, humanistic, organizational culture, organizational, environmental, and technological factors. Any of these factors can have both positive and negative effects on e-management.

Seresht et al. (2008), who studied the situation of e-management in Iran, found that cultural, environmental, and organizational factors hamper the implementation of e-management. El-Seoud and Taj-Eddin (2018) concluded that in Egypt, lack of appropriate

in-service training, limited knowledge and knowledge sharing, lack of IT professionals in organizations, access to the Internet, and ICT, and limited budgets prevent organizations from the application of e-management.

Almutairi (2014) emphasized the organizational culture as an essential factor in e-management. After conducting a questionnaire survey at the Kuwaiti Public Sector Institution for Applied Education and Training, the author found a significant direct correlation between elements of organizational culture and the application of e-management.

Applying e-management in public sector institutions is a difficult task requiring significant financial resources and precise planning (Iulian 2008). First of all, the institution needs to assess whether e-management is necessary because its implementation is susceptible to time, financial, and human resources.

The implementation of e-management in an organizational context should have a specific consistency. Iulian (2008) has suggested the following procedure: (1) documentation of all processes, (2) the definition of requirements, (3) provider selection, (4) purchasing/development, (5) testing, (6) future improvements, and (7) maintenance.

He and Chen (2007) emphasized the necessity to incorporate all elements of e-management (e-technology, e-source, e-service, e-speed, and e-organization) into e-management. The process of e-management application should consist of three main stages: input, change, and outcome. The implementation of each stage requires electronic technologies, information technologies, and network technologies. E-technologies are introduced at the input stage; these technologies are the driving force behind the whole model. The phase of change includes e-resources, e-speed, and e-services. By leveraging e-technologies, all e-resources should be integrated as much as possible. Then the organization moves to e-services and e-speed in every business process to meet users' needs. In the outcome phase, the organization becomes an e-organization (He and Chen 2007).

Auffret et al. (2010) treated the application of e-management as a combination of seven actions. These actions include assessment of preparedness, regulation, organizational development, capacity building, international cooperation, inter-institutional coordination, cooperation, and commitment. Their implementation can be done in a spiral model. The spiral model is considered best suited to the specifics of the public sector, and, unlike some other models, it is not focused exclusively on the technological implementation of e-management.

The application of e-management solutions in the public sector makes research into progress in this area worthwhile. We assume that the decision to apply e-management is determined by six different groups of factors: managerial, humanistic, cultural-social, organizational-structural, technological-technical, and environmental factors. Such a set of factors is based on insights of Iulian (2008); Seresht et al. (2008); Almutairi (2014); Fan et al. (2014); Lilian (2014); Wart et al. (2016); El-Seoud and Taj-Eddin (2018). If the interaction of these factors determines the decision of the public sector organization to choose e-management, then the application of the e-management concept should follow seven steps according to the course proposed by Auffret et al. (2010). First, the organization's readiness is assessed, then the legal framework regulating e-management solutions is examined, organizational development is carried out, opportunities are increased, and international cooperation, inter-institutional coordination, cooperation, and commitment are initiated and implemented. With the implementation of the e-management concept in a public sector organization, regular and timely evaluations of the benefits, situation, and progress of e-management become necessary, creating preconditions for identifying problematic aspects and areas for improvement. Based on the theoretical background, we address the following research questions:

- What is the concept and what are the specifics of e-management in the public sector?
- What are the benefits of e-management in the public sector?
- What factors determine the application of e-management practices in the public sector?
- What is the current state of e-management and its progress in the public sector?

3. Methodology

A qualitative methodology was chosen to evaluate e-management in local public administration as the most appropriate to achieve the research goal and increase the knowledge of the e-management phenomenon in a natural organizational environment. Figure 1 presents the research flowchart.

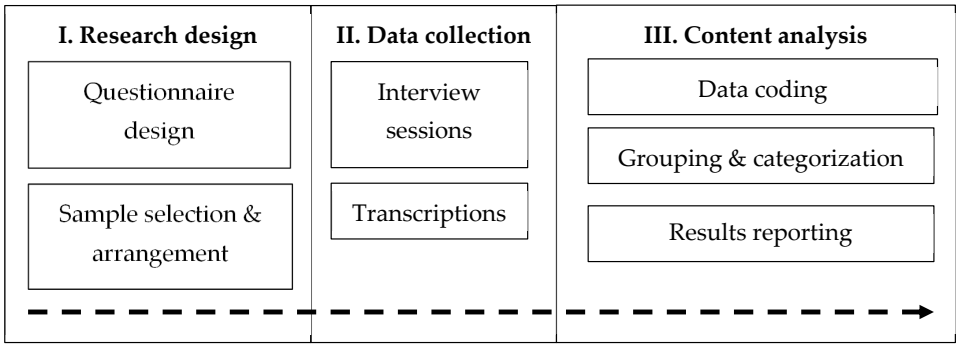

Figure 1. Research flowchart.

In order to find answers to the research questions, the expert interview method was chosen for data collection. This method explores and collects data about a specific field of interest (Doringer 2021). The expert interview method was chosen as appropriate for the study because the phenomenon of e-management is abstract and has been relatively poorly studied empirically (Savolainen 2014). Given the complexity and depth of the e-management phenomenon, the interview method was considered appropriate as the research organizers could lead a flexible discussion.

The data was collected using a structured interview guideline consisting of 14 questions. Based on recent scholarship, we built a questionnaire consisting of four main blocks: the concept and features of e-management (1), benefits of e-management (2), e-management factors (3), and e-management situation and progress (4) (Table 1).

Table 1. Questionnaire design.

Block	Questions	Theoretical Background
The concept and features of e-management	1. How would you explain the concept of e-management? Can you provide examples from your practice? 2. What specifics do you see in e-management in public sector organizations? What specifics of e-management do you see in the organization you work in? What is specific about it at your management level?	He and Chen (2007); Iulian (2008); Yao et al. (2011); Seresht et al. (2008); Ellatif and Ahmed (2013); Almutairi (2014); Wart et al. (2016); Radonov and Videkov (2017); Demir (2019); Wart et al. (2019)
Benefits of e-management	3. Why, in your opinion, is the application of e-management important in local public administration? What benefits do you see for the organization, managers, employees, and citizens? 4. During the COVID-19 pandemic, the need for e-management has dramatically increased, and in some organizations it has become the only possible management method. How has the lockdown changed the importance and need for e-management in local public administration?	Hashim et al. (2006); Iulian (2008); Hashim et al. (2010); Yao et al. (2011); Askarzai et al. (2013); Ellatif and Ahmed (2013); Almutairi (2014); El-Seoud and Taj-Eddin (2018); Demir (2019)

Table 1. *Cont.*

Block	Questions	Theoretical Background
Factors of e-management	5. How has the COVID-19 pandemic affected management in local public administration? What else (besides the pandemic) determines the need for e-management in local public administration? Furthermore, what limitations exist for e-management? 6. In your opinion, what are the success factors of e-management in the public sector?	Iulian (2008); Seresht et al. (2008); Almutairi (2014); Fan et al. (2014); Lilian (2014); Wart et al. (2016); El-Seoud and Taj-Eddin (2018)
Situation and progress of e-management	7. How was e-management implemented in the organization you work in? When did you notice it? 8. How do you assess the progress of e-management in the organization you work? How would you describe the current situation? 9. How has this situation changed during the last five years? If, in your opinion, the application of e-management has intensified, what caused it? 10. Which areas of the organization's activities have e-management benefited the most? Moreover, where would you consider it ineffective? 11. What tools and technologies are essential for e-management in your organization? Which of them are the most vital? 12. What problems do you face in the field of e-management? 13. What challenges related to e-management have you faced after the lockdown was announced? How did you overcome those challenges? 14. In your opinion, what should be done on a national level in order to strengthen e-management in public sector organizations? What could be done at the organizational level? At the executive level? At the level of individual employees?	He and Chen (2007); Iulian (2008); Auffret et al. (2010); Almutairi (2014); Savolainen (2014); Shobaki et al. (2018); Demir (2019)

Savolainen (2014) suggests interviewing managers about the e-management phenomenon. Managers of local public administration institutions have specific knowledge in e-management. At first, the study participants were selected through the purposive sampling technique. The participants were chosen based on their managerial experience in local public administration and willingness to share their experiences. Later the experts were recruited by a snowball sampling technique. Experts provided information about those whose involvement may provide additional insights about e-management. Thus, the sample comprised informants with different professional backgrounds in local public administration. Data saturation was reached after seven interviews. The empirical study involved managers whose managerial experience ranged from 4 to 26 years during the study (Table 2).

The data collection started in November 2020 and ended in January 2021. All informants were interviewed via telephone, Microsoft Teams, and Zoom. The interviews were conducted by one researcher, while the second was responsible for taking field notes and invigilating the behavior of the experts. Every interviewee was asked for permission to record the conversation; the interviewee's anonymity was ensured, and transcripts would not be available to a third party. The semi-structured interviews with experts lasted between 35 and 60 min.

The current study adopted content analysis to investigate the development of e-management in public sector organizations and anticipate possible alternatives for solving e-management problems. The analysis followed an inductive approach, moving from details to general classifications and concepts.

Table 2. Profile of the research participants.

Code	Gender	Position	Number of Subordinates	Years in a Management Position at All Levels
I1	Male	Department manager	5	17
I2	Female	Department manager	26	18
I3	Female	Director of the administration	200	4
I4	Female	Department manager	37	8
I5	Female	Department manager	18	16
I6	Female	Department manager	9	26
I7	Female	Department manager	14	12

The authors transcribed the interviews. The collected texts went through the coding procedures. Following Elo and Kyngas (2007), the coded data were categorized and grouped. The last phase of the content analysis was reporting. To ensure the validity and reliability of the qualitative study, the authors carefully read the text several times, shared the study with some participants for their approval, and involved one more researcher to act as a critic.

4. Results

4.1. The Concept and Features of E-Management

The first block of the research tool was designed to elucidate the concept and features of e-management in a public sector organization. Analyzing the interviewees' positions on the issue of collision and acquaintance with the concept of e-management, it became clear that the concept of e-management is not yet sufficiently familiar and known. Such research results confirm the theoretical assumption that the concept of e-management is still very new. Due to the novelty, some informants lack knowledge about e-management. Although there is a lack of knowledge about e-management, the concept has inevitably become familiar with the COVID-19 pandemic (" . . . *e-management has emerged through the COVID-19*", I2; *At a time when the work of an organization due to a global pandemic is being organized remotely, we are working on the principle of e-management*", I7). The COVID-19 pandemic has strengthened the need for employees to adapt quickly to the lockdown and transition to teleworking. It means that some employees had to learn to use teleworking, communication equipment, and software because there were no possibilities to come to work. For some research participants, e-management practices were new; for others, they were reasonably common.

Describing practical examples of e-management, the informants mentioned a relatively wide variety of e-management components. The research results have shown that e-management consists of organizing conferences, meetings, and providing services using ICT. In some cases, the organization of seminars and communication sessions were also mentioned. Such a structure of e-management allows us to state that practitioners demonstrate a relatively narrow position towards the contents of e-management. One informant put forth exceptional knowledge and experience in e-management. She could not only name specific examples of e-management but also share the successful experience of e-management initiatives at other institutions (previous employers). The informant described the e-management initiatives implemented in these institutions as advanced and productive.

The study also sought to highlight the characteristics of e-management in the public sector. Some informants did not notice significant differences between e-management in the

public and private sectors. Interviewees explained the lack of specification ("*e-management in public administration is the assignment of tasks, remote problem-solving, decision-making, and the solution of problems*" (I2). We assume that such a statement is disputable. Specifics of ICT can be seen as one of the peculiarities of e-management practices in the public sector. ICT can vary between public and private sector organizations, different public sector organizations, and different levels of management in one public sector organization. Likewise, the variety of communication tools and channels also differs. In some cases, other features of e-management in the public sector were mentioned: use of specific databases, regulatory gaps, strict subordination, and general purpose.

4.2. The Benefits of E-Management

Another block of interview questions was aimed at revealing the benefits of e-management. After analyzing the informants' attitudes toward the benefits of e-management, the following subcategories were identified: economy in time, financial resources, possibility to perform functions without direct participation, increase in communication efficiency, provision of services to citizens, and increase of convenience. Almost all interviewees emphasized the opportunities to save time created by e-management. Time is saved because e-management eliminates the need for employees to travel to other locations across the country. The meetings themselves are organized faster. Employees' time is saved, and less time is needed to prepare for daily work. Not only time but also financial resources are saved. Reduced costs for correspondence, job maintenance, document printing, repairs, utilities, and business trips determine the decrease in demand for financial resources. The managers also evaluate the opportunities provided to perform the functions without direct participation. It means that management is possible without being physically present in the workplace. An increase in communication efficiency was also mentioned. The efficiency increases in communication with subordinates, colleagues, and citizens. Informants also treat e-management as improving work efficiency and increasing convenience. The study results showed that e-management benefits not only the organization that applies it but also the citizens - it speeds up the delivery of services to them. In some cases, the following advantages of e-management were also mentioned: providing information to customers, saving employees' financial resources, saving transport, saving human resources, increasing transparency, improving the needs of society, improving the material base, developing communication, improving the efficiency of working time, increasing citizens' trust, increasing citizens' satisfaction with services, increasing the efficiency of management, improving control, and increasing the efficiency of decision-making.

The study results showed that e-management has a vast range of benefits, bringing local public administration institutions closer to the goals of private sector organizations. One informant noted that " . . . *by using e-management in a public sector organization, we can achieve the same goals as in the private sector*", I7). The benefits of e-management became particularly evident during the COVID-19 pandemic. In general, e-management has become more widespread ("*We did not have had any experience in e-management until COVID-19 began*", I2). For most organizations, this has become the only way to stay afloat (" . . . *it was the only way to stay afloat, stabilize all the processes and work together stably*", I3).

The COVID-19 pandemic reinforced the need for e-management. In some organizations, such management has become the only option to ensure continuity of operations. The research participants were asked how the importance and need for e-management had changed due to COVID-19. The main changes identified by the interviewees were as follows: work with the help of ICT, creating opportunities to work remotely, the need for rapid adaptation, adjustments to the legal framework, and working from home.

The study results show that the application and need for e-management in the local public administration institutions have increased due to the COVID-19 pandemic. The pandemic has led to more comprehensive practices of e-management. According to one informant, " . . . *until the COVID-19 pandemic in 2020, in the spring, the principles of e-management were only partially applied in our organization. This lockdown has enabled the complete application of e-management, and it has become perhaps the only way to ensure the security of employees and*

the continuity of the processes" (I7). The changes mentioned above have led to the broader use of ICT in enabling remote work, meeting the need to quickly adapt to the situation, adjusting the legal framework, and working from home.

4.3. The Factors Determining the Choice of E-Management

The research results highlighted the role of COVID-19 in strengthening the need for e-management applications. The theoretical analysis suggested that a comprehensive range of factors drives the need for e-management, so informants were asked to indicate what factors, apart from the pandemic, led local public administration institutions towards e-management.

The analysis of the study results shows that the application of e-management is driven by technological progress and changing needs of citizens. According to the classification of the factors discussed in the theoretical background, the mentioned factors can be attributed to the groups of technical-technological and cultural-social factors. In some cases, informants also mentioned the need to avoid contact and the desire to speed up processes in the institution.

According to interviewees, the application of e-management is limited by technical-technological factors: lack of computers and computer literacy. Participants of the study also mentioned other restricting factors: human resources, financial resources, resistance to change, lack of competence, and lack of legal regulation.

Participants in the study were asked to identify success factors for e-management in the local public administration. The dominant success factors for e-management in the local public administration appeared to be work efficiency, technology, faith in work, human capital, time, financial resources, honesty, trust in the manager, and the transition to a flexible environment.

The analysis of e-management factors has shown that the application of e-management in public administration is usually driven by technological progress and changing needs of citizens and is limited by the lack of computer equipment and skills. The success of e-management is frequently determined by work efficiency, technology, faith in work, and human capital.

4.4. Situation and Progress of E-Management

Aiming to assess the e-management situation and progress in local public administration, we asked survey participants how e-management was implemented in the organization, when they noticed the first procedures and how those procedures took place. It is probable that due to the differences in attitudes towards the phenomenon of e-management, the informants named the beginning of the implementation of e-management very differently. The informants indicated various periods from 2015 to 2020. According to one informant, the introduction of e-management in the municipal administration started five years ago ("*We noticed it five years ago*", I4). A slightly larger share of survey participants indicated the start of e-management implementation processes in 2018. It is also believed that the introduction of e-management only started with the onset of the COVID-19 pandemic. The informants mentioned various steps in the implementation of e-management. The study participants were united only on the introduction of the document management system as an action towards e-management. In reference to the attitudes of interviewees, we have crystallized a specific process of e-management implementation in municipal administrations (Figure 2).

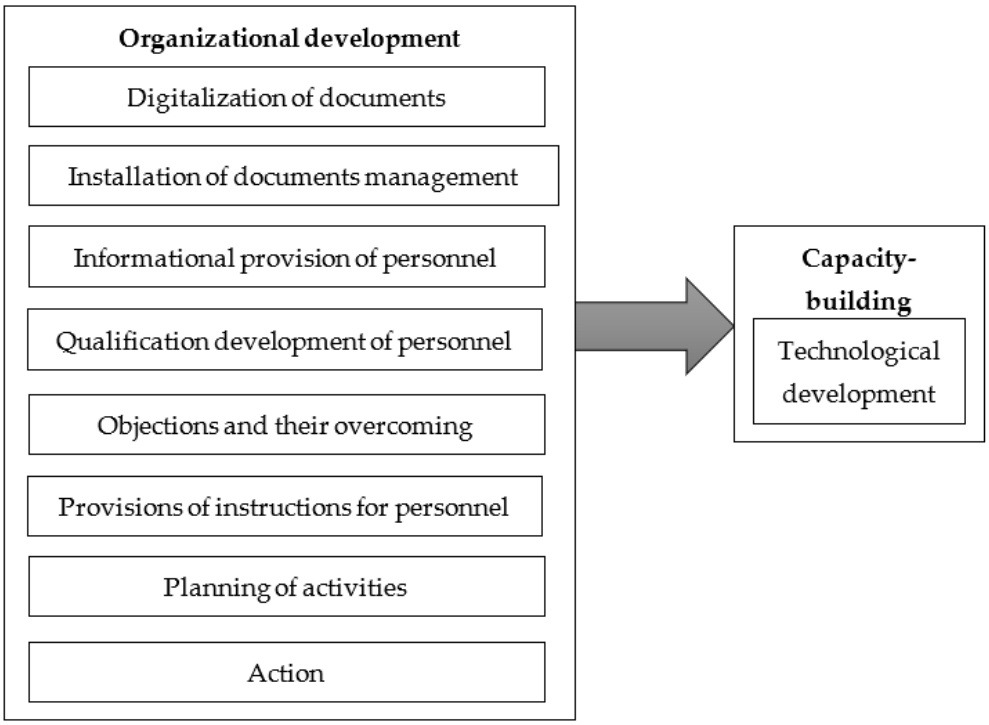

Figure 2. The process of e-management implementation in municipalities.

The research results suggested two main stages: organizational development and capacity building. The organizational development phase started with transferring documents to the digital space (" . . . *the creation of electronic files by sending documents electronically*", I4). Later, the document management system was introduced, the staff was informed about it, and training was provided for the staff (" . . . *taught us all*", I2). The phenomenon of employee resistance is often encountered in the implementation of change. The introduction of e-management in municipal administrations was not an exception; therefore, measures had to be taken to reduce resistance ("*There were many objections at the beginning, everyone wanted paper work*," I2; "*Of course, there was much resistance from people who wanted to see the original document*", I2). After solving or minimizing the problem of employee resistance, the staff was given instructions (" . . . *we just got instructions*", I2), work planning was started (" . . . *we started planning our work*", I4), and the work itself was done (" . . . *we worked*", I2). Only technological development was carried out during the capacity-building phase ("*After the system was updated . . .* ", I2). In the capacity-building phase, the implementation of e-management has stopped. Interviews with management staff did not provide any insight into the continuation of this process.

The study sought to determine how management staff assess the progress of e-management. Some informants indicated that progress was significant in this area. It meant that most of the management staff were in favor of e-management. However, opportunities for improvement were also identified ("*There are clearly no limits to improvement < . . . > . . . we will certainly have a less administrative burden and more time to work in the future*", I3). Attention was also drawn to the possible temporary nature of progress. It has been suggested that the progress of e-management may slow down after the end of the COVID-19 pandemic.

Participants in the study saw an intensification of e-management compared to the situation five years ago. According to informants, these changes were caused by the COVID-19 pandemic and the installation of a document management system. In addition to the factors mentioned above, in some cases, the informants named the following factors that led to the progress in the implementation of e-management: usage of mobile signatures, policies, social networks, websites, smart devices, and changes in the needs of the younger generations.

The study sought to identify the areas of the organization where e-management was efficient and where the efficiency was insufficient. The analysis of the research data showed that the successful application of e-management appeared in self-management and education. From the informants' point of view, in addition to self-management and education, tax administration, and document and financial management are also prime areas. According to the study participants, there is a lack of effectiveness in social support as well.

Technologies are inseparable from e-management. Research participants were asked to indicate tools and technologies essential for e-management in local public administration. The most necessary tools and technologies to ensure e-management are the document management system, video conferencing platforms, a computer, and an electronic signature. In addition to the elements mentioned above, the informants highlighted the importance of smartphones, electronic banking, video and audio equipment, e-mail, the Internet, and social networks.

Many issues were identified when informants were asked what problems they faced in e-management. Informants mentioned the following problems: the lack of direct communication, concentration at work, different schedules, fear, old technologies, need for updates, lack of interactivity, lack of financial resources, low computer literacy, difficulties in coordinating work, and high workload.

Research participants mentioned the following challenges they faced during the pandemic: absence of an employee nearby, intensive telephone communication, tedious use of headphones, complicated organization of urgent meetings, lack of IT specialists, lack of employee competencies, and lack of training.

The challenges were overcome with habituation, changes in work organization, prompt response, excellent communication, diligence, and flexibility of IT staff. There were also cases where the situation caused by COVID-19 was not identified as a challenge. According to one informant, "*it has become easier to manage because all actions are recorded with the help of technological programs*" (I7). The advantage of direct communication was also seen (" . . . *I rested from communication because there were no more coffee drinks, only a plain working environment. I am the head of the department, and I do not call unnecessarily*", I2).

Research results showed significant progress in e-management since the beginning of the COVID-19 pandemic, particularly successful solutions in self-management and education. However, there were also challenges that needed to be addressed.

4.5. Development of E-Management in Local Public Administration

Participants in the study were asked to identify what should be done to strengthen e-management in local public administration. The views of the informants on this issue differed significantly. Some of the executives in the study saw a need to improve staff competencies. Employees focused on the lack of technological and legal competencies. The variety of proposals for developing e-management in local public administration institutions is presented in Table 3.

Table 3. Solutions for the development of e-management.

Levels	Suggestions
State level	Regulatory adjustment Organization of distant meetings Strengthening the integrity of systems Ensuring the recognition of electronic documents
Organizational level	Improvement of technological competencies Improvement of legal competencies Adjustment of internal regulation Intranet installation
Individual (employee) level	Improvement of communication competence

At the state level, informants saw a need for regulatory adjustment. It was essential to establish teleworking, especially in some cases (for example, during explanatory seminars). The need to organize remote meetings in the future was seen. It was also vital to ensure the integrity of systems and more robust recognition of electronic signatures in public sector institutions. At the organizational level, there exists a need to adjust internal regulations and to install an intranet. At the level of individual employees, recommendations were received to improve employees' communication competence.

The empirical study found that only two (organizational development and capacity building) of the seven stages of e-management implementation were observed in the e-management implementation process. The municipal administration is recommended to continue the processes of international cooperation, inter-institutional coordination, cooperation, and commitment. Summarizing, it can be stated that the development should be carried out at three levels: state, organizational and individual employees. The implementation of the recommendations at every level is expected to significantly contribute to the improvement of e-management.

5. Discussion

The outbreak of COVID-19 has caused unprecedented changes for local administration institutions and their management. The previous short-sighted vision focused on traditional management techniques had to change. Therefore, it is crucial to investigate the development of e-management in local public administration and anticipate possible alternatives for solving e-management problems.

The study aimed to explore the concept and specifics of e-management in the public sector. Based on a literature review (He and Chen 2007; Iulian 2008; Seresht et al. 2008; Yao et al. 2011; Almutairi 2014; Wart et al. 2016; Radonov and Videkov 2017; Demir 2019; Wart et al. 2019) we found that it is appropriate to define e-management as a process of social influence embedded in both proximal and remote contexts, based on advanced information technology that corrects attitudes, thinking, behaviors and activities. It is a process of using advanced information technology to achieve internal and external management functionality. The representatives of local public administration were not able to identify such a broad content of e-management. Conceptualization of e-management as a structure that involves the organization of conferences, meetings, the provision of services, and the use of ICT is considered insufficient, especially in the current context of the COVID-19 pandemic, where teleworking has become the only option. The specifics of e-management in the study were refined mainly through ICT and its diversity, which does not adequately reflect the content of e-management in the public sector.

In order to answer the second research question, which is to identify the benefits of e-management in local public administration, we first draw on literature. The review shows that e-management can substantially strengthen organizational communication and knowledge management, harness the potential of talent, improve organizational performance through multifunctional teams, increase customer satisfaction, and reduce operating costs (DasGupta 2011; Yao et al. 2011; Almutairi 2014). We have observed that in local public administration institutions in Lithuania, the most visible benefits are saving time and financial resources, performing functions without direct participation, increasing communication efficiency, ensuring higher quality of services to citizens, and increasing convenience. Time is saved because e-management eliminates the need for employees to travel to other locations across the country. Moreover, the meetings rarely protract, and employees need less time to prepare for daily work. Financial resources are saved due to reduced costs for correspondence, job maintenance, document printing, repairs, utilities, and business trips. Literature confirms that costs are declining due to the wide range of capabilities of smart systems, reducing the need for human resources at the operational level (Yao et al. 2011). The management staff of municipal administrations also benefit from the opportunities to perform functions without direct participation. It means that management is possible without being physically present in the workplace. The experts

who participated in the research also mentioned the increasing communication efficiency. The benefits of increasing communication efficiency have also been identified in previous research (Yao et al. 2011; Almutairi 2014). To summarize, local public administration institutions will need e-management regardless of the pandemic situation. There is clear evidence of the benefits of this digital form of management.

Theoretical analysis of the e-management phenomenon urged us to formulate the third research question related to the factors determining the application of e-management practices in local public administration. The insights from the literature show the dominant role of managerial, humanistic, cultural-social, organizational-structural, technical-technological, and environmental factors (Iulian 2008; Seresht et al. 2008; Almutairi 2014; Fan et al. 2014; Lilian 2014; Wart et al. 2016; El-Seoud and Taj-Eddin 2018). Our study confirmed the relevance of technological progress and changing needs of citizens as the main drivers for local public administration institutions to move towards e-management. The lack of technological equipment and skills (technical-technological factors) was the main limitation for successful e-management.

The fourth research question aimed to provide insights into the current state of e-management in local public administration. Theoretical analysis of the e-management phenomenon created preconditions for refining the stages of e-management implementation in a public sector organization. As mentioned, these stages are preparedness assessment, regulation, organizational development, capacity building, international cooperation, inter-institutional coordination, cooperation, and commitment (Auffret et al. 2010). The results of interviews with the staff of municipal administrations led to the observation of only two of the stages mentioned above: organizational development and capacity building. It means that the spiral model suggested by Auffret et al. (2010) is not practically applied in local public administration in Lithuania.

The findings obtained in this study reveal remarkable insights both for managers of public administration institutions and policymakers. First, it is expedient to develop e-management at three levels: state, organizational and individual. Implementation of the recommendations at all these levels is expected to contribute significantly.

As the empirical study identified the significant benefits of e-management, exacerbated by the COVID-19 pandemic and lockdown, we encourage researchers to explore further the potential of e-management in the country's public sector organizations. Public sector organizations in Lithuania are also offered to organize remote meetings between managers and their subordinates in the future. Such meetings allow saving time traveling to meeting places.

Having established that the implementation of e-management in municipal administrations took place in only two stages (organizational development and capacity building), a proposal at the organizational level was formulated. Thanks to the study, it is recommended to continue the processes by moving into international cooperation, inter-institutional coordination, cooperation, and commitment.

The research results revealed gaps in the coordination of work; therefore, we suggest the installation of intranets in municipal administrations, which is likely to improve the coordination function performed by managers. An intranet would also become a medium for remote communication between employees.

Moreover, the research results highlighted the need to improve the application of e-management at the level of individual employees. It would be expedient for employees to improve their communication competence.

This study is not free from limitations that pave the way for further studies. During the research, there was a lockdown in Lithuania. COVID-19 pandemics limited direct contact with the research participants. For this reason, interviews were conducted via telephone, Microsoft Teams, and Zoom. It is likely that such a choice somewhat limited the study's results. Telephone communication did not provide opportunities to observe the non-verbal expressions of informants. Therefore, the research has the potential to be extended and expanded, aiming to base data collection on direct communication. Such an extension of

the study could provide researchers possibilities for a thorough examination of changes after a few years.

6. Conclusions

This research was conducted to fill the gap in e-management in the context of local public administration. Many approaches to the concept of e-management have been analyzed. Each of them contains advantages and disadvantages. In this study, the authors utilize the advantages of the explanation of e-management as a process of social influence embedded in both proximal and remote contexts, based on advanced ICT that corrects attitudes, thinking, behaviors and activities. It is a process of using advanced ICT to achieve internal and external management functionality. Furthermore, the authors propose that managerial, humanistic, cultural-social, organizational-structural, technical-technological, and environmental factors may positively or negatively affect the choice of e-management in local public administration.

Although e-management is not a new concept in the field of social sciences, its research in public administration is still limited. Therefore, our research contributes to the literature on e-management in public administration and the reality of the public sector. In this research, based on a qualitative strategy, the authors built a coherent list of factors determining e-management in local public administration. Interviewing experts with sufficient managerial experience and knowledge provided numerous insights and opportunities for improving e-management at state, organizational and individual levels. The research presents specific recommendations that may be added to local public administration's toolbox of strategies for achieving more efficient management.

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