LEADERSHIP FOR DIGITALIZATION IN PUBLIC SECTOR

Staniulienė S., Lavickaitė K.*

Abstract: This paper aims to evaluate the leadership for digitalization in the case of public sector in Lithuania. Like private companies, public organizations are in the process of digitizing their activities in order to increase the efficiency of public services in the public interest. The Covid-19 pandemic has provided an additional unplanned impetus to maximize the digitalization of operations, although the process is not always running smoothly. To investigate this issue, a quantitative method of survey was conducted in the case of Lithuanian public sector organizations. Organizational leaders are perceived as axial individuals who could facilitate a smoother digitalization process. This is what employees expect of them, so leaders need to develop the specific skills needed in the context of digitalization in a leadership style that affects them, and they need to develop and use specific competencies relevant to the digitalization process.

Key words: leadership, digitalization, public sector, public administration.

Introduction

Public sector is increasingly adapting to change and improving the provision of public services accordingly while taking on change management activities in the field of digitalization. Followed by the good impetus of Covid-19 pandemic, EU and national e-democracy, e-government initiatives in public sector are increasing in the public interest. Digitalization is a rapidly developing sphere, recently getting much attention from scholars (Corydon, Ganesan, & Lundqvist, 2016; Dilmegani, Korkmaz, & Lundqvist, 2014; Fusko, Rakyta, Dulina, Sulirov, & Edl, 2018; Lindqvist & Pettersson, 2019; Rydning, 2018).

Digitalization could open up many new opportunities for organizations, but the process should be well led to ensure a smooth implementation for greater consumer satisfaction and operational efficiency. In recent years, many scholars have tried to explain the phenomenon of leadership (Kouzes & Posner, 2006; Dobrinevskaja & Valatkaitė, 2016; Petrulis, 2017; Gandolfi & Stone, 2018; Kesari & Verma, 2018; Swanson, Kim, Lee, Yang, & Lee, 2020). Adair (2011) notes that the success of each institution depends on the individual leaders within it. According to Matelyte (2018), leaders who ignore the digitalization process and do not invest in digital technologies

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* **Sonata Staniulienė**, assoc. prof. dr., **Karolina Lavickaitė** M.Sc., Department of Management' Faculty of Economics and Management; Vytautas Magnus University, Lithuania.

✉ corresponding author: sonata.staniuliene@vdu.lt
✉ karolina.lavickaite@stud.vdu.lt

will face more challenges. Thus, the research problem is how to lead the digitalisation process in the public sector.

Recently Khan (2016), Hesse (2018), Larjovuori, Bordi, and Heikkilä-Tammi (2018), Schwarzmüller, Brosi, Duman, and Welpe (2018) and Cortellazzo, Bruni, and Zampieri (2019) analyse leadership for digitalization, but there is lack of research in a public sector context. Continuing dynamism requires organizational leaders to be responsive to the changing needs of society towards digitalization, especially in the public sector. Therefore, the research object is leadership for digitalization in the public sector in Lithuania, and the research aim is to evaluate the leadership for digitalization in the case of the public sector in Lithuania.

Research methods used for that purpose were scientific literature review and quantitative method of survey.

Literature Review

According to Kouzes and Posner (2006) and Sharma and Jain (2013), leadership is a complex and multidimensional phenomenon understood as a continuous process that can be measured by how many people and at what level they choose to follow a person in complex relationships, systems and set of processes.

Abosede, Obasan and Alese (2016) argue that the concept of leadership depends on the organization in which the leader works. It is argued that a leader in the public sector is an executor of political will (Rakšnys and Valickas, 2017), although the new public administration become increasingly relevant, where leaders may need different competencies because, as Stokker (2015) observes, collectivism is increasing power distribution between the public and private sectors.

Plesner, Justesen and Gleurp (2018) point out that digitalization is currently a major driver of change in the public sector, therefore, requires significant investment in digital technologies. Digitalization is a tool to improve customer satisfaction, introduce new technologies and improve employee work processes (Rydning, 2018). Digitalization in the public sector is institutional transformation, and it includes the improvement of processes, such as internal communication, staff appraisal and structure, skills, change management, logistics, changes in public service provision, etc. (Pauliukaitė-Gečienė, Juozapaitienė & Kriaučiūnas, 2021).

Corydon, Ganesan and Lundqvist (2016) point out that digitalized public organizations should develop digital service delivery, automatized processes, large-scale cloud data storage and sharing, strategic links among stakeholders, and focus on users experience, commitment to leadership, awareness of trends, technologic support and cyber security measures. Haldrup (2018) identifies how digitalization should be successfully implemented: conducting a context analysis, securing the support, focusing on technical components of digitalization, ensuring a balanced mix of skills, and following an iterative and experimental approach to implementation.

Fusko et al. (2018) found that all the desired changes in digitalization will not necessarily be feasible because the organization itself may not be ready for them. Dilmegani, Korkmaz and Lundqvist (2014) note that digitalization as a change in the

public sector is quite difficult to implement, but the experience of the private sector makes it possible to implement this process properly in the public sector as well.

Leader's approach to innovation is singled out as a factor of digitalization, as it is related to the implementation of mostly IT innovations. Bos-Nehle, Bondarou, and Nijenhuis (2017) argue that digitalization is often influenced by the fact that many public sector organizations operate as monopolies and do not feel competitive pressure. This can affect innovation in such an organization with too much bureaucracy. Public organizations are increasingly under pressure from society to digitize their services and thus are forced to digitize, even without realising the need. According to Kesari and Verm (2018), in a given organizational environment, managers rely on a certain leadership style to perform their functions properly. Kesari and Verm (2018) distinguish two main leadership styles: transformational and transactional, Petrulis (2017) distinguishes charismatic, transactional, and transformational styles, Gandolfi and Stone (2018) describe servant style, Morkevičiūtė, Endriulaitienė and Stelmokienė (2019) elaborate ethical style, and Dobrinevskaja and Valatkaitė (2016) distinguish between democratic and liberal leadership.

Efforts should be put to identify the prevailing leadership styles applied in the digitalization process of public sector organizations and their appropriateness for the success of this process, so the subsequent research hypothesis is developed:

H1: "The prevailing leadership styles in the public sector correspond to the appropriate leadership styles in the digitization process".

Rakšnys and Valickas (2017) list the main competencies of a leader: analytical thinking, sociability, management through imagination and critical reflexivity. Swanson et al. (2020) note that successful leaders need cognitive, emotional, and social intelligence competencies. Tallinn (2020) states that the key competencies that a leader needs in digitizing are technical and data use, mobility and flexibility, networking, social, and soft skills. Haseeb et al. (2019) note that trust and counselling are needed throughout IT-related change. According to Khan (2016), leadership skills are essential for the successful implementation of digitalization. We see the various complex elements of leader's competency argued by scholars. Therefore, the next research hypothesis is developed:

H2: "Leaders develop a whole complex of different competencies needed for digitalization in the public sector".

Nefas (2010) highlights the general activities and functions needed to be performed by leaders for digitalization: forecasting, organization, planning, control, regulation and coordination, activation and motivation, development (training) and resource management. Lindqvist and Pettersson (2019) point out that in digitalization process, leaders must inspire and encourage their organization's employees to use emerging digital technologies. Managers also need to envision the future of new digitized activities, processes, or tools so that they can properly present them to employees. During the implementation of digital change, the leader must be able to create a vision of digital innovation and communicate it to employees. It must also be able to

involve employees in the implementation process and focus on managing digital change. Larjovuori, Bordi, and Heikkilä-Tammi (2018) list the key steps in a digital transformation guide: anticipating strategic vision and actions, acting in an organized manner, monitoring digital change, ensuring empowerment, and building a leading network. Leaders must be able to perform specific management activities for digitalization. Therefore, it is important to determine whether managers perform enough to support the digitalization process in public organizations during its implementation. For this reason, the following hypothesis is raised:

H3: "For the digitalization in the public sector in Lithuania, managers perform sufficient specific management activities".

In order to investigate leadership for digitalization, quantitative research is carried out. The statements are verified in the case of public sector organizations in Lithuania.

Research Methodology

The quantitative method of the questionnaire survey was chosen because it allows obtaining a lot of quantitative information, from which the conclusions are drawn from the behaviour of a sample of the population (Creswell & Creswell, 2018).

Each survey question is related to the aim of the research, and thus the questionnaire survey allows to identify or evaluate certain connections, respondents' opinions, and attitudes toward the raised problem. It was aimed for the questions in the questionnaire to be clear and easy for the respondent to understand and to encourage answers to the questions as accurately as possible.

A questionnaire based on the content of review of the scientific literature was prepared for the quantitative research, substantiating the relevance of the questions to the research on the topic. The questions were categorized: an overall assessment of the level of digitalization, the role of the leader in digitalization, the level of digitalization in the organization, leadership factors in implementing digitalization change in the organization, leadership in digitalization, leadership style used during digitalization process, demographics of organizations and hierarchical level.

The questionnaire was compiled in Lithuanian and created on the survey platform apklausa.lt. The survey was sent to various public sector bodies by their general e-mails, requesting that it be shared with the institution's staff and directly to the staff's e-mails found on the institutions' websites. This quantitative study was conducted from February to March 2022. The questionnaire could be completed within 10-15 minutes. All questions in the questionnaire were marked as mandatory. The questionnaire consisted of 11 questions, though some of them consisted of statements to be rated on a Likert-type scale, ranging in 10 points scale or from totally agreeing to totally disagreeing on the relevance of the statement. Based on scientific ethics, the survey was anonymous.

According to Pallant (2020), Cronbach's alpha coefficient should be at least 0.70, and then the scale is considered consistent. It can be stated that the reliability of the questionnaire is sufficient (Cronbach alpha>0.70): in the category of level of

digitalization - 0.95, leadership factors of digitalization - 0.84, leadership activities for digitalization - 0.95 and leadership competencies for digitalization - 0.97.

When assessing the reliability of the results, according to Kolmogorov-Smirnov and Shapiro-Wilk tests, if p<0.05, the evaluated variables are not normally distributed (Quraisy, 2020), so the assumption of normality is not satisfied. A Spearman correlation coefficient that does not require a normal distribution (Sarmento, 2020) was calculated. The acceptability of hypotheses is tested using means (M), medians (MD), standard deviation (SD) and Spearman correlation coefficient (r, when p<0.05. The value of Spearman's correlation coefficient *r* is estimated according to Evans (1996): very weak correlation - 0.00-0.19, weak - 0.20-0.39, average - 0.40-0.59, strong - 0.60-0.79 and very strong correlation 0.80-1.0.

The study data were processed using SPSS IMB Statistics 22 software.

Assessing the limitations of the survey includes the limitations and completeness of the information received and the fact that the respondents do not have the opportunity to ask questions while completing the survey.

The population of the quantitative survey is the respondents who currently work in the public sector. According to Ministry of the Interior (2020), 354 thousand people work in the Lithuanian public sector. The study sample was determined using the Paniotto sample formula (standard error allowed in the social sciences research -5% probability - 0.95). The required sample size was set at 400 respondents, but 495 responses were collected. The study is considered to reflect the opinion of the whole population, and the results are reliable.

70.7% of participants work in a state or municipal budget institution, 17.2% in public institutions, 9.9% in the state/or municipal enterprises and 2.2% in JSC in which the state or municipality is a shareholder. 53.1% work in large public organizations (over 150 employees), 26.1% work in medium-sized institutions (50-150 employees), 10.7% work in micro-organizations (up to 20 employees), and 10.1% work in small public organizations (20-50 employees). 51.9% of the surveyed employees classified their manager as the top manager, 39.4% as the lowest level manager, and 8.7% as middle-level manager.

Research Results

According to the quantitative survey results, the majority of Lithuanian public sector employees rate the level of digitalization of their organization with 8 points (32.5%) or 7 points on the scale of 10 (22.2%). Assessing the means of digitalization in public sector organizations in Lithuania, respondents chose a website (96.2%), document management systems (76.6%), Office 365 package (86.1%), cloud computing (65.7%) or various online databases (69.1%).

It can be stated that almost all activities have been digitized on average (M - 3.38-3.99 from 5; MD - 4). Supply and logistics (M - 3.38) are rated as the worst digitized activities of all. It can be assumed that a significant part of the activities is digitized, such as the provision of various services (M - 3.76), communication (M - 3.99),

information management (M - 3.86), internal communication (M - 3.75), accounting (M - 3.93), etc.

Assessing the leader's role in the implementation of digitalization, 40.4% believe that the leader initiates digitalization changes in the organization, 43.2% that it is the responsibility of an IT specialist or CEO. Only 20.8 % noted that the leader is responsible for implementing digitalization in the organization.

Identifying the leadership-related factors of digitalization in the public sector (see Figure 1), it can be seen that respondents agree with employee engagement (77% of respondents agree, M - 3.80) and involvement in digitalization (48 %, M - 3.41), as well as confirm the appropriateness of leadership style used (64%, M - 3.71). Bureaucracy limits digitalization in public sector organizations in part (46%, M - 2.66), lack of information on digitalization (36%, M - 2,92), lack of leadership (32%, M - 3.04), negative attitude towards digitalization (26%, M - 3.16) and some resistance (24%, M - 3.13).
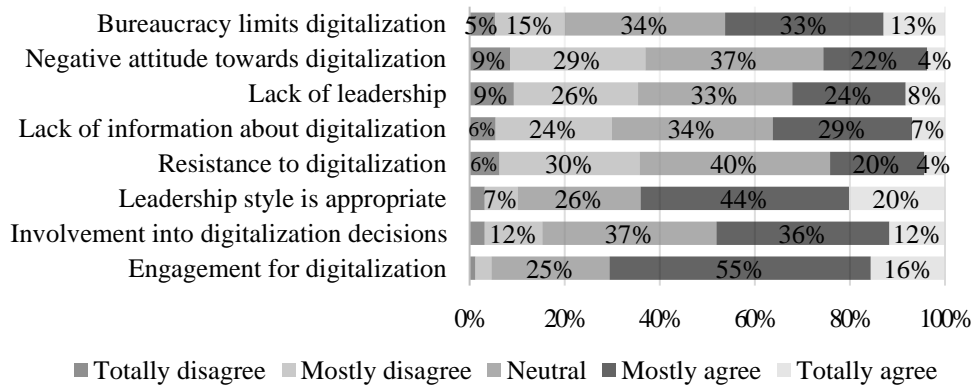

Figure 1: Factors in leadership for digitalization in public sector.

As seen in Figure 2, employees feel a lack of clear digitalization change planning (only 38% supports the level as appropriate, M - 3.24, MD - 3), while the proposition on initiative leader's role for digitalization appears to be true (MD - 4). The leader inspire and encourages employees to engage digitalization (70%, M - 3.86), provides vison of digitalization change (60%, M - 3.63), show interest to IT innovations (61%, M - 3.68), studies the ways of digitalization before implementing (68%, M - 3.79), then enable employees to act (64%, M - 3.70). Organization of digitalization process appears less developed (M - from 3.55 to 3.63).
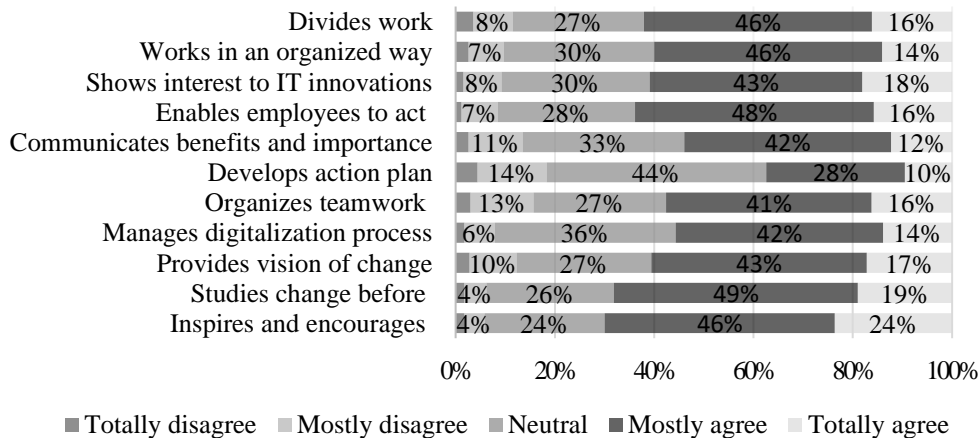
Figure 2: Defining the role of the leader in digitalization in public sector.

The strongest link was observed between digitalization activities, such as the leader's focus on change management and the delivery of planned change (r=0.760), the leader's efforts to inspire and encourage employees to use IT innovation, and their implementation (r=0.718) and a stronger link between activities, when the manager gets acquainted with the innovations first and then communicates about the digitalization change to the employees (r=0.715).

Assessing the extent to which leaders have certain competencies, M - 3.74 and MD - 4 show their appropriate levels. While analytic thinking (M - 3.97), problem identification (M - 3.86), sociability (M - 3.82), strategic thinking (M - 3.82) and fast decision making (M - 3.81) are evaluated better, empathy (M - 3.54), technical skills (M - 3.55), innovativeness (M - 3.56) and risk management (M - 3.63) competency could be in a higher level, being important to digitalization.

However, the small but still different evaluations between the leaders' competency level (M - 3.74) and the extent of activities they carry out (M – 3.62) show that leaders have the potential to perform activities at a better level.

In determining the leadership style of leaders in public organizations, democratic leadership (55.8%) prevails in the public sector. 31.7% chose a liberal style, 31.1% ethical leadership style, and just over 20% voted for a transactional, charismatic, and transformative leadership style. The most appropriate leadership style for digitalization process is democratic (r=0.352), charismatic (r=0.337), and transformational styles (r=0.313), while autocratic is not suitable (r=-0.326). Democratic leaders are better at organizing teamwork (r=0.393), envisioning (r=0.389), organizing activities (r=0.382), and communicating (r=0.380) digitalization in public organizations; in the case of transformational style, the same slightly weaker relations are observed. The following style combinations are the most suitable: charismatic and transformational (r=0.479) and servant and transformational (r=0.426).

It's very important to use appropriate leadership style when digitalizing, because it relates to better execution of leaders' activities for digitalization: a strong correlation to acting in an organized manner (r=0.667), being sociable (r=0.613), identifying problems (r=0,603), team orientation (r=0.613), flexibility (r=0.616) and direction forecasting (r=0.604). This will contribute to the successful implementation of digitalization in public organizations.

Discussion

It can be assumed that the overall level of digitalization found in the public sector is quite high, but not entirely. The main means for digitalization are similar to those of Corydon, Ganesan, and Lundqvist (2016), which distinguish when talking about the characteristics of digitalization in the public sector: the presence of online platforms and various systems, as well as cloud computing.

Research results coincide with the propositions of Bos-Nehles, Bondarou, and Nijenhuis (2017) that the role of the leader in the digitalization of activities is one of the most important, where the leader is seen as the initiator of change. However, less attention to leaders' collaboration with IT managers was observed compared to its increasing need (Vidgen et al., 2017). The factors and ways for this cooperation could be explored in future research.

High level of employee engagement achieved via appropriate leadership style was observed, which did not coincide with the findings of Bos-Nehle, Bondarou, and Nijenhuis (2017) of a too bureaucratic approach to digitalization in the public sector but went in line with Lindqvist and Pettersson (2019) suggestion to lead by inspiring, envisioning and encouraging employees.

Leaders have the appropriate level of certain competency as described by Tallinn (2020), Rakšnys and Valickas (2017) and Swanson et al. (2020), i.e., leaders can integrate social skills with the ability to master digitalized communication as suggested by Roman et al. (2018). They are even forced to make decisions more rapidly, as Lynn Pulley and Sessa (2001) outline, as well as to apply problem-solving abilities, as discussed by Horner-Long and Schoenberg (2002), as well as show interest in the use of various technologies and manage digitalization process. Certainly, IT knowledge and skills are high in demand for leaders (Horner-Long and Schoenberg, 2002) because leaders are responsible for verifying the suitability of technological tools being adopted in relation to the organizational needs, as stated by Cortellazzo, Bruni, and Zampieri (2019), so they first study intended changes.

After assessment of Khan (2016), Larjovuori, Bordi and Heikkilä-Tammi (2018), Hardrup (2018), and Nefas (2010) distinguished leader's activities for digitalization in the public sector, it can be stated that the overall performance of these activities is assessed as mediocre, while the use of digital instruments could facilitate better communication and coordination between the leader and followers (Toepfl, 2018).

Democratic style was found prevailing in the public sector in digitalization context. These results are consistent with Hesse (2018) that most of the leaders saw themselves as conducting a participative or cooperative leadership style and that

authoritarian, hierarchical styles are not appropriate. Rakšnys (2019) distinguishes hierarchical leadership style as prevailing in the public sector with no relevant digitalization context. It is in line with the proposition of David and Baden (2018) that authoritarian leadership can be broken down by digital tools, and leaders are expected to adopt a more inclusive style of leading (Schwarzmüller et al., 2018). This presupposes that digitalization can enable leaders to improve their leadership style by choosing to be more acceptable and influential in modern society.

Based on the study results, testing H1, participants identified that the democratic leadership style currently prevailing in the public organizations is appropriate (r=0.352). Still, the next prevailing liberal and ethical styles show no significant correlation with appropriateness, while less prevailing charismatic and transformational are appropriate for digitalization, but not prevailing. H1 is partly confirmed.

In testing H2, all the complex observed in leader's competencies appears to be important for digitalization process. All of them Spearman correlation coefficients indicate that there is a moderate to strong correlation between the leader's competencies *in corpore* helpful for digitalization (from 0.463 to 0.616, M - 0.566). Therefore, H2 is confirmed.

While examining H3, the leaders' performance in many and varied activities for digitalization in the public sector in Lithuania could be generally evaluated as sufficient (average M - 3,62, MD - 4). Digitalization level in public organizations significantly correlates to all analysed leaders' activities proposed for digitalization (from 0.342 to 0.452, M - 0.412). Thus, H3 is confirmed.

Conclusion

A review of the scientific literature suggests that public sector institutions need to digitalize the processes in the same way as private ones and that leaders appear to be axial on which the smoothness and results of the digitalization will largely depend.

The study reveals that many activities in public organizations in Lithuania are still not sufficiently digitalized, except for communication, accounting and information management activities. The success of this process depends on the activities performed by leaders of public organizations during digitalization, such as inspiring and encouraging employees, keeping aware of innovation, communicating change, taking an interest in IT innovation, strategic skills, etc. Employees consider the leader to be the initiator of change, who becomes responsible for implementing digitalization change. It has been confirmed that leaders need specific competency for the digitalization of activities in the public sector in Lithuania, where still less developed are related to the process rather than initiating. In order to improve leadership for digitalization, leaders of public organizations are encouraged to develop the competencies required for digitalization: problem identification, rapid decision-making, teamwork and risk management. Digitalization in public organization is found to be related to the leadership style; thus, rethinking some prevailing styles could be suggested. It has been confirmed that for the digitalization

in the public sector, leaders perform sufficiently specific management activities. For effective digitalization in a public organization, it is advisable to use democratic, charismatic, and transformational leadership styles or combinations thereof, as they are more influential in the digitalization process. When digitalizing, leaders are encouraged to carry out more activities related to actual planning and organizing digitalization change, simultaneously reducing the level of bureaucracy. It can be stated that leaders still have the potential to develop activities for smoother digitalization, as their competencies; evaluation exceeds the performance of activities, and it might be influenced by the factors of motivation, commitment, etc., suggested for further research.

Other possible directions for further research on the scientific problem could be to compare leadership for digitalization in public and private sectors, drawing lessons for improvement, as well as to analyse in detail the inclusion of digitalization in the process of achieving strategic goals and the impact of strategic management on the success of digitalization of activities in the public sector.

Acknowledgement

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PRZYWÓDZTWO W CYFRYZACJI W SEKTORZE PUBLICZNYM

Streszczenie: Niniejszy artykuł ma na celu ocenę przywództwa w zakresie cyfryzacji w przypadku sektora publicznego na Litwie. Podobnie jak firmy prywatne, organizacje publiczne są w trakcie cyfryzacji swoich działań w celu zwiększenia efektywności usług publicznych w interesie publicznym. Pandemia Covid-19 dała dodatkowy nieplanowany impuls do maksymalizacji cyfryzacji operacji, chociaż proces ten nie zawsze przebiega płynnie. Aby zbadać ten problem, przeprowadzono badanie ilościowe w przypadku litewskich organizacji sektora publicznego. Liderzy organizacyjni są postrzegani jako osoby osiowe, które mogą ułatwić płynniejszy proces digitalizacji. Tego oczekują od nich pracownicy, dlatego liderzy muszą rozwijać konkretne umiejętności potrzebne w kontekście cyfryzacji w stylu przywództwa, który ich dotyczy, oraz muszą rozwijać i wykorzystywać określone kompetencje istotne dla procesu cyfryzacji.

Słowa kluczowe: przywództwo, cyfryzacja, sektor publiczny, administracja publiczna.

公共部门数字化领导力

摘要：本文旨在评估立陶宛公共部门在数字化方面的领导力。与私营公司一样，公共组织正在将其活动数字化，以提高公共服务的效率，以符**合公共利益。** Covid-19 **大流行**为最大限度地实现运营数字化提供了额外的计划外动力，尽管该过程并不总是顺利进行。为了调查这个问题，对立陶宛公共部门组织进行了定量调查。组织领导者被视为轴心个人，可以促进更顺畅的数字化过程。这是员工对他们的期望，因此领导者需要以影响他们的领导风格发展数字化背景下所需的特定技能，并且他们需要开发和使用与数字化过程相关的特定能力

关键词：领导力、数字化、公共部门、公共行政