

Developing and testing digital transformation model for public administration: the case of Slovenia

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Abstract

A constantly changing social environment requires public administration systems to develop accordingly if they strive to successfully identify and put in place public policies, strategies, legal, financial, and information-based foundations, and other resources to face the challenges successfully. Besides the complexities like global pandemics, migrations, globalisation, environmental change, etc., public administration must also deal with accelerating technological shifts impacting how people live and interact with the public administration. In the face of such challenges, public administration needs to understand the present situation to be able to embed new ways of doing things.

Accordingly, the aim of the paper is two-fold. Firstly, to establish the theoretical framework for the digital transformation model's development for the Slovenian public administration. The core elements are defined based on the literature review of eGovernment maturity models and broadening Leavitt's diamond model for the organisation, namely: technology, processes, structure, people, and organisational culture. Additionally, the model builds on a comprehensive set of principles influencing administrative and service design that lead to targeted digital governance maturity, enacted technology, and ultimately the desired public administration outputs and outcomes. There are three sets of encompassing dimensions, complementing core elements: digital principles, good governance principles, and elements of the external environment. Based on the established model, the second aim of the paper is to develop a questionnaire, offering the values of the answers in the form of simple evaluation scales for individual statements, which describe the situation in the institution by individual content sets. The questionnaire is being conducted on two distinctive levels of Slovenian public administration: ministries and local government.

The preliminary results reveal interesting insights. Digital strategy for public administration is central to the Ministry of public administration. Several public managers would like to digitally accelerate their operations; however, preliminary results show several internal and external limitations to do so. On the other hand, local governments state the need for a systemic solution that would enable easier interoperability with other public administration institutions.

Public institutions will be presented with the current state of digital transformation within the institution and the referential values based on the best-performing institutions. For relevant policymakers and citizens, the aggregate results will be beneficial, focusing on raising awareness about the least exploited elements of digital transformation and defining the referential trajectories needed for the targeted digital maturity.

Keywords: digital maturity, digital transformation model, public administration organisation, Slovenia, theoretical framework

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Introduction

People expect the public administration to provide high-quality public services accessible to all segments of the population, meeting citizens' needs and expectations (OECD, 2019). These demands and expectations have been further shaped by technological shifts, globalisation, and the interconnected ecosystem of citizens and other stakeholders (OECD, 2020a; OECD, 2020b). Other global, long-term challenges exist alongside this, such as global warming, natural resource depletion, migrations, growing inequalities, demographic trends, the rise of extremist right-wing parties etc. The Covid-19 pandemic emerged as a challenge on top of everything and posed severe challenges to governments and citizens worldwide, revealing the digital divide and underscoring the importance of leveraging digitalisation (OECD, 2020c; Whitelaw et al., 2020; Aristovnik et al., 2021). Digital transformation is not a choice but a need for governments to respond to these issues in this circumstance (Fletcher & Griffiths, 2020). Public administration systems are required to continually develop if they are to successfully identify and put in place public policies, strategies, mechanisms, legal, financial, and information-based foundations and other resources to address the modern complexities (Hammerschmid et al., 2019; Aristovnik et al., 2021).

The digital government keeps developing and continuously transforming to adjust to social, economic, political, and other constraints (Janowski, 2015). Governments are already providing citizens with more advanced public services, anticipating higher precision, and simulating complicated systems on account of existing and emerging technologies (Margetts & Dorobantu, 2019). Analysing 23 different definitions, Vial (2019) defined digital transformation as “a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies”. It refers to more fundamental, broader governance structures and industry changes facilitated by information and communication technology (ICT) (Fountain, 2019). The implementation of ICT in and by public administration has inspired a significant research effort into the many facets of digital transformation. Academics, consultants, governments, as well as international organisations, such as the European Commission, the United Nations (UN), Organisation for Economic Co-operation and Development (OECD), the World Bank and others, have investigated the phenomenon (Misuraca, 2019). Consequently, measuring and evaluating digital maturity has been the focus of equally comprehensive research on several maturity models. Measuring digital maturity is critical for various reasons, including progress tracking, accountability, understanding successful initiatives and learning from the failed ones to keep improving (Mergel, Edelmann & Haug, 2019).

Accordingly, the paper aims to measure and evaluate the state of digital maturity in Slovenian public administration and examine the differences between state administration and local government. Firstly, the theoretical framework was established for the digital transformation model for public administration organisations. Further on, the model is empirically verified with a comprehensive questionnaire developed for public managers and heads of IT departments (where applicable). The remaining sections of the paper are organised as follows. The development of the digital transformation model is presented in the next section. The second section describes the materials and methods, including the study participants and procedure in section 2.1 and measures in section 2.2. The research's current selected results are presented in section 3 together with the discussion, followed by a conclusion (section 4) and acknowledgements.

1 Developing a digital transformation model for public administration organisations

The so-called stage and maturity models for ICT in public administration were considered first upon developing the digital transformation model since they have been an important stream of study research on e-government or digital government since 1999 (Meyerhoff Nielsen, 2017). The maturity models are used to represent a process that evolves through time; they assist in defining the capabilities needed and guide the progress from one stage to the next. They are intended to help policymakers and public managers avoid implementing ICT that would support dysfunctional processes by first redesigning them and avoiding investing in underutilised or non-functional ICT (Ibid; Bakar, Ibrahim & Yunus, 2020; Henriques & Tanner, 2017).

1.1 eGovernment maturity models

Internationally recognised frameworks and models, developed by academics, governments and consultants, namely the four-stage maturity model (Layne & Lee, 2001), the technology enactment framework (Fountain, 2004), the four-stage strategy and maturity model (Davison et al., 2005), the eGovernment maturity model (eGov-MM) (Iribarren et al., 2008), the Manchester eGovernment Maturity Model (Heeks, 2015), the Digital Government Evaluation Model (Janowski, 2015), and several others, have been considered.

Layne and Lee's (2001) four stages of maturity are defined as: (1) catalogue (online presence, catalogue presentation and downloadable forms); (2) transaction (services and forms online, working database supporting online transactions); (3) vertical integration (local systems linked to higher-level systems and within similar functionalities) and; (4) horizontal integration (systems integrated across different functions, real one-stop shopping for citizens). This model focuses on technology and integration within an organisation and is the most cited to date. It was developed based on the earlier models and observations in the USA.

Davison et al. (2005) four-stage strategy and maturity model covers services, strategy alignment processes (vertical and horizontal integration), and government transformation within the four elements: (1) government strategy; (2) government infrastructure, processes and culture; (3) eGovernment strategy and; (4) eGovernment infrastructure and processes. It focuses on internal and external factors in the government (public administration in general) and eGovernment domain (ICT within the public administration).

Iribarren et al. (2008) proposed a multi-dimensional, IT-focused eGovernment Maturity Model (eGov-MM) based on four domain levels: (1) eGov strategy; (2) IT governance; (3) process management and; (4) people and organisation. Additionally, there are the domain levels on manageability, compliance, availability, integrity, confidentiality, efficiency, and effectiveness on one axis, IT resources like applications, data, infrastructure and facilities on the second axis and leverage domains (key domain areas, critical variables) on the third.

Heeks (2015) adapted Layne and Lee's (2001) model and suggested Manchester eGovernment Maturity Model, differentiating between the front and back office. The model was developed accordingly with practical situations from developed and emerging economies worldwide (Meyerhoff Nielsen, 2017). The model presents two dimensions, Sophistication of digitised interaction ("front-office") consisting of three elements and Extent of a process change ("back-office") consisting of four elements, forming a matrix. The "front-office" include: (1)

informing (one-way) interaction, (2) interacting (two-way) interaction and transacting (completed service) interaction. The “back-office” dimension include: (1) digitisation (simple automation), (2) improvement (process integration), (3) redesign (e.g., proactive transaction) and (4) transformation (fundamental change e.g., process elimination).

The review of the maturity models for measuring the government’s digital maturity showed the models focus on multiple dimensions, areas, elements and sets of best practices. Many maturity models include measurements for interacting with the government or digital service availability and maturity. However, most of them are primarily focused on the technology and process aspect. Most models also presented elements of an individual service (information, transaction, personal data) as different maturity levels (Meyerhoff Nielsen, 2017). However, these are elements of a public service request and delivery. Hence, the development of our digital maturity model resulted in maturity levels being reflected inside each of the elements in the form of questionnaire items.

1.2 Adding the elements to the digital transformation model

While technological factors are the centre of discussions on eGovernment maturity or digital transformation, other aspects, such as organisational structure, culture, people and organisational environment are equally important preconditions for successful digital transformation (De Vries, Bekkers & Tummers, 2016). In addition to academic debate, international organisations, like European Union (EU), UN, OECD, and others, are publishing important assessments and guidelines. They began focusing on the notions of accountability (UN, 2014), effectiveness (OECD, 2014), user-centricity, and transparency (European Commission, 2014) as crucial enablers of digital government in their reports a few years ago because simply introducing ICT in an organisation does not bring additional value creation or success (Meyerhoff Nielsen, 2017).

Therefore, the foundation for our digital transformation model for the organisational level began with Leavitt's definition of organisation, which is best depicted by Leavitt's well-known Diamond Model (Leavitt, 1964) in order to include all of the important organisational elements. Leavitt’s Diamond is one of the most well-known conceptual representations of organisations in the organisational literature. It presents an organisation as a system of four elements – people, structure, tasks, and technology. This model was created primarily for private sector organisations and stands as a useful foundation for representing the key factors that influence the development of public sector organisations (Nograšek & Vintar, 2014). Other authors later extended Leavitt’s diamond model (Burke & Peppard, 1995; Kovačič et al., 2004). Organisational culture was added as a fifth element and the element ‘task’ was changed to ‘processes’. These key elements of the organisation are interdependent. Changes in one of them cause changes in the other (Nograšek & Vintar, 2014).

Nograšek & Vintar (2014) additionally proposed a different perspective that allows the combination of two different views, namely: (1) ICT is an important tool, key enabler and driver of digital transformation; and (2) ICT’s transformational potential is interrelated and dependent on ‘readiness’ of all other key elements of the organisation (processes, people,

structures, culture) as a socio-technical system, which represents that foundation of our digital transformation model (Figure 1).

The model was supplemented with three additional dimensions: (1) digital principles, (2) good governance principles, and (3) external environment dimension, taking into account the bigger picture and considering the public governance perspective that influences the public administration organisations and impacts of the external environment.

(1) The eGovernment Action Plans, prepared by the European Commission, are political tools for accelerating the modernisation of public administrations across the European Union (European Commission, 2016). All citizens and businesses in the European Union should have access to efficient and inclusive, borderless, personalised, user-friendly, end-to-end digital public services delivered by public administration and public institutions in the EU. Therefore, the eGovernment Action Plan 2016-2020 (*ibid.*) suggested the following underlying principles: digital by default, once-only principle, inclusiveness and accessibility, openness and transparency, cross-border by default, interoperability by default and trustworthiness and security.

(2) Good governance gained significance and emerged as a result of a combination of policy analysis and interdisciplinary application. It refers to concerns and theories of social coordination, as well as the nature of all rule patterns (Kovač et al., 2016; Bevir, 2011). Good governance focuses on eight fundamental principles: the rule of law, participation, consensus-oriented, equity and inclusiveness, transparency, responsiveness, accountability, efficiency and effectiveness (OECD, 2004). It is a governmental “well-functioning bureaucracy” with its administrative functions, which include other societal networks, aiding coordination (Peters, 2012; Aristovnik, Murko & Ravšelj, 2022). Good governance suggests functioning through networking and open structures, rather than a top-down approach (Bever, 2011).

(3) Early contributions to the study of organisations concentrated mostly on the structures, and rarely paid attention to the aspects regarding tasks, processes, incentives, and people. The organisation’s environments did not receive a lot of emphases, nor did its managers’ responses to them (Rainey, 2009). Organisational environments and the challenges of dealing with them are today regarded as critical in the analysis and managing of organisations (Misuraca, 2019). One common approach to working through the difficulties of environmental analysis is to list the general sectors or clusters of conditions that an organisation faces: technological, legal, political, economic, demographic, ecological and cultural conditions (Rainey, 2009).

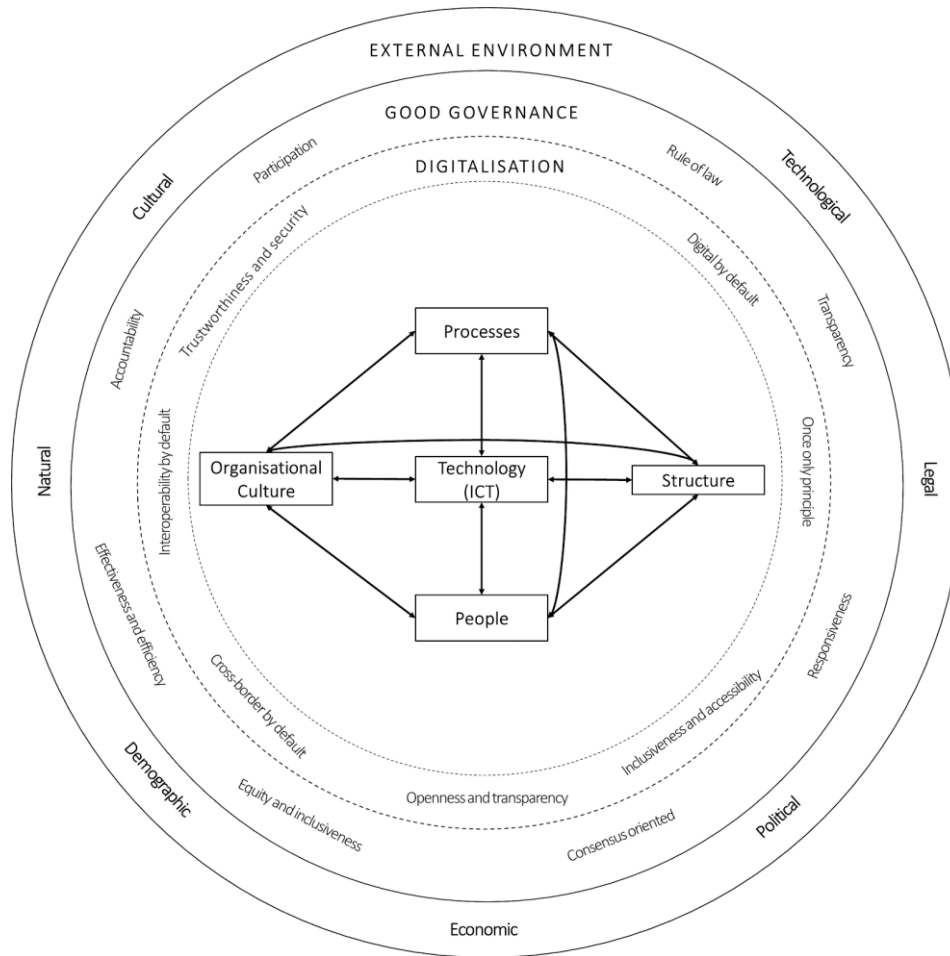


Figure 1: Digital transformation model for organisational level (Sources: Nograšek & Vintar, 2014; Layne & Lee, 2001; Iribarren et al., 2008; European Commission, 2016; OECD, 2004; Rainey, 2009)

2 Materials and Methods

2.1 Study Participants and Procedure

The target population of participants entailed public managers or directors of Slovenian public administration institutions, responsible for managing public administration authorities competent for conducting administrative procedures and providing public services. The respondents in the target population were recruited by non-probabilistic, convenience sampling facilitated by the use of information communication systems and channels. Participants were assured that the survey was strictly confidential and anonymous. Encircling numerous aspects of the public administrative organisation, which were tailored to the core organisational elements (technology, processes, people, structure and culture), principles of good administration governance, digital principles and elements of the external environment, a comprehensive questionnaire was prepared to address selected technological, authoritative, structural, cultural and service-oriented public administration segments so as to obtain information on the current and optimum state of the digital maturity. The survey started in 2022 and is still ongoing through personal interviews with public managers and heads of IT departments, which allows for a critical assessment of individual question items. The preliminary sample consists of 26 participants or public managers (see Table 1).

Table 1: Sociodemographic characteristics of the survey respondents and institutions.

Sociodemographic characteristics	Number (%)
Gender	
Male	15 (57.7)
Female	11 (42.3)
Total managerial work experience in years	
Less than 1 year	1 (3.8)
1-5 years	4 (15.4)
6-10 years	3 (11.5)
11-15 years	6 (23.1)
16-20 years	2 (7.7)
More than 20 years	10 (38.5)
Total work experience in years	
Less than 10 years	3 (11.5)
11-20 years	5 (19.2)
21-30 years	9 (34.6)
More than 30 years	9 (34.6)
Field of the highest educational attainment	
Arts and humanities	1 (3.8)
Social sciences	20 (76.9)
Applied sciences	2 (7.7)
Natural sciences	3 (11.5)
Institution size by the number of employees	
Less than 20	8 (30.8)
21-40	3 (11.5)
41-60	1 (3.8)
61-80	2 (7.7)
81-100	0
More than 100	12 (46.2)
International involvement of the institution	
Yes	18 (69.2)
No	8 (30.8)
Level of public administration	
State administration (ministries)	10 (38.5)
Local government (municipal administration)	16 (61.5)

Note: The preliminary sample consists of 26 participants.

According to the sociodemographic characteristics, the current sample's structure is as follows. Considering gender, 57.7% of the respondents were male and 42.3% were female. The most common answer regarding the total managerial work experience in years was "more than 20 years" (38.5%), for total work experience in years were "21-30 years" and "more than 30 years", both 34.6%, while the most frequent field of the highest educational attainment was social sciences (76.9%). With respect to the institution size by the number of employees, the most frequent answer was "more than 100" (46.2) and the second-highest was "less than 20" (30.8) which shows the limitation of the current sample. 69.2% of the institutions are internationally involved. The current sample consists of 10 units of state administration (ministries) with 38.5% and 16 units of local government (municipalities) with 61.5%.

2.2. Measures

The data were obtained through a comprehensive questionnaire composed of 97 closed-ended question items, including all supplementary questions, whereby six questions referred to respondents' general demographic characteristics and 91 questions referred to elements of the institution's functioning, divided into five thematic sections. The questionnaire's content was

formulated based on a theoretical literature review by academic experts in the information technology, economic, legal, and public administration fields, which was further tested, revised and evaluated by considering practical experiences and recommendations from public managers. The demographic section covered six questions about demographic data on gender, total managerial work experience in years, total work experience in years, the field of the highest educational attainment, institution size by the number of employees, international involvement of the institution and the level of public administration. The first thematic section, technology, comprised 26 question items (52 including supplementary questions) regarding the ICT solutions, their interoperability and integration, information security policy, open data and data analytics usage, digital channels for communication and collecting feedback, crucial internal and external barriers to digitalisation, inclusiveness and participation of users when it comes to creating new ICT solutions, etc. The second section covered processes and included 7 question items (12 including supplementary questions) on measuring characteristics of business processes, their documentation and diagrams and having process managers appointed, etc. This was followed by a section with 7 questions on structure addressing the digital influence on the institution's functioning, whether implementation of new ICT solutions influences the time of decision making, changes hierarchical levels, influences the reallocation of the tasks or authorities. The fourth section concerned organisational culture and had 10 questions on values, attitudes, and practices with regards to the digitalisation that characterises an institution. Finally, the last section included 10 questions on people, regarding the digital HRM approaches. Individual aspects of a public manager's perception of elements of the institution's functioning (i.e., agreement or frequency) were measured on a 5-point Likert scale ranging from 1 (lowest) value to 5 (highest value) (Croasmun & Ostrom 2011). Since the surveyed types of institutions varied in nature, an extra option "not applicable" was offered. In order to identify differences in mean values between state administration and local government, an independent samples t-test was performed. This parametric statistical technique is considered a very robust method and is the most commonly used method for detecting differences in mean values between two unrelated samples (Rasch et al., 2007).

3 Results and discussion

Before we discuss the selected aspects of the preliminary results, we should briefly explain that the Ministry of Public Administration (MPA) is responsible for the national digital government policy and coordinates different levels and sectors of government in line with the Informatics development council. Within the MPA, the Directorate of Informatics is responsible for the implementation and coordination of the digital transformation policy of the public sector. The government communicates with the public and directs them to the relevant public services through the central website for accessing the digital services and the comprehensive information on the organisation and functioning of the state administration (GOV.SI, 2022). The GOV.SI is the centre for the information, additionally complemented by the SPOT website, Slovenian businesses point, and eUprava, a state portal, providing various services for citizens, accessible through the GOV.SI website and OPSI, a portal for open government data (OPSI, 2022).

To start with the statements from the questionnaire that reflect the user-driven indicator and the digital principle of inclusiveness & accessibility, but firstly mentioning that the OECD

Digital Government Index (DGI) monitors the implementation of the recommended Digital government strategies by the OECD from 2014; it assesses the adoption of the strategies regarding ICT and the use of data. In the 2019 DGI assessment report (OECD, 2020d), Slovenia ranked highly for the User-driven (8th) and Open by Default (7th) indicators. According to the Digital government policy framework, a digitally mature government becomes user-driven “by according a central role to people’s needs and convenience in the shaping of processes, services and policies; and by adopting inclusive mechanisms that enable this to happen” (OECD, 2018). When allowing citizens and businesses to express their needs regarding public services through engagement and collaborative mechanisms, leads to a higher level of responsiveness. Mirroring digital principles, the inclusiveness & accessibility principle partially contextually correlates with the user-driven indicator, stating that the design of public services should be inclusive by default and cater for different needs, including the elderly and people with disabilities (European Commission, 2016). The following statements from the questionnaire reflected the user-driven indicator and principle of inclusiveness & accessibility.

When designing new ICT solutions, ministries take into account the recommendations of relevant external stakeholders (users, researchers and policy-makers) significantly more than municipalities. Policy-makers (4.11) and users (4.00) are considered more frequently than researchers (3.60) in ministries’ design of new ICT solutions and users (3.06) more than researchers (2.63) and policy-makers (2.56) in municipalities’ design. Representatives of NGOs are least frequently considered on both levels when it comes to designing new ICT solutions (2.88 in ministries and 2.38 in municipalities). Overall, the willingness to accept external stakeholders’ involvement in designing new ICT solutions is not problematic, but the capacity to achieve this in practice throughout the public administration. The Digital government review of Slovenia, a study by OECD (2021), found similar conclusions regarding the user-driven approach in the Slovenian government. And in relation to the high scores for the User-driven indicator in the DGI index (OECD, 2020d), their review also found that most organisations were not actively engaging external stakeholders. Additionally, those organisations that were, used the ways that were not always user-driven, such as workshops with others, also private sector suppliers for consensus-building (Ibid.). This complies with the result of our question regarding the analysis of business processes in cooperation with service users (citizens, companies, NGOs) with the help of either surveys or workshops where both levels, ministries and municipalities, reported a frequency of doing so below 2.50. The results are higher (3.50) on both levels for recognising all the needs of vulnerable groups of users and adapting e-services accordingly, which corresponds to the digital principle of inclusiveness & accessibility.

When it comes to collecting user feedback (suggestions/initiatives, complaints, compliments), the most frequently established digital channel was e-mail for both levels, with a statistically higher frequency for municipalities (4.81 vs 4.50). The special web application is evenly established for both levels (3.50) and social media just the same, with slightly higher frequency for municipalities (3.81 vs 3.44), yet the difference is not significant. According to the respondents, Facebook is the most common type of social media and is also used for public relations.

The digital principle of openness & transparency partly covers the user-driven approach as it includes “enabling users to monitor administrative processes that involve them and engaging with and opening up to stakeholders (such as businesses, researchers and non-profit organisations) in the design and delivery of services” (European Commission, 2016). The second part of this principle explains that public administrations “should share information and data between themselves and enable citizens and businesses to access control and correct their own data” (Ibid.) which is another incident of contextual correlation with the open by default indicator. According to the Digital government policy framework, a digitally mature government is open by default when government data and policy-making processes are available publicly, in correspondence to the existing legislation (OECD, 2018). It includes promoting collaboration and innovation with open government data. As was already mentioned, OPSI is a website for open government data in Slovenia. When asking about the policy regarding the publication of open data, the results are significantly higher for the ministries (3.44), meaning they identify and publish open data more frequently than municipalities (2.19). The expectations for open data publishing were higher. The MPA prepared the technical solution, together with the guidance materials under the National interoperability framework, and municipalities are among the rightful beneficiaries.

Table 2 shows questionnaire statements for which statistically significant differences were found between ministries and municipal administration (local government). Most of the statements regarding any aspect of digital maturity showed higher results for ministries than local governments. Nevertheless, as was stated earlier, these are preliminary results that can be biased due to the limited sample size. Out of 212 Slovenian municipalities, the current sample consists of 26 units as the research is still ongoing, and 11 of those were considered rural and 5 urban municipalities.

However, the reason for the situation that municipalities are less digitally mature is quite complex, besides the small sample, and can only be lightly explained at this point of the ongoing research. Starting with the barriers to digitalisation that we measured, the lack of technical standards is considered an outside barrier significantly higher in municipalities (3.25) than in ministries (2.11). Several respondents from the municipal administration stated the need for a systemic solution that would enable easier interoperability and expressed the desire for a standardised and unified arrangement regarding ICT solutions. Now they are outsourced, with each municipality dealing with this area independently. The OECD (2021) review team heard similar desires that the centre could apply more direct leadership in introducing a “service standard”. The problems with weak digital skills of employees were reported on both levels, as well as lacking the possibility of hiring IT specialists. Municipalities also stated weak digital skills of users of the digital services (citizens, companies, NGOs) as a barrier to digitalisation significantly higher (3.63) than ministries (2.30), leading to another important societal issue, that is digital literacy.

Table 2: Empirical results of the t-test for ministries and local government (municipal administration)

	mean ministries	mean municip.	std ministries	std municip.	p-values
TECHNOLOGY					
q_01_02 The ICT solutions we use are technically integrated with the ICT solutions of other public administration institutions.	3.56	2.69	0.88	0.70	0.013
q_01_07 We use intelligent document processing (artificial intelligence, i.e. smart automation).	2.30	1.13	1.57	0.50	0.006
q_01_08 We have established a data analytics system supported by modern IT.	2.80	1.44	1.32	1.03	0.007
q_01_09 We have a policy regarding the publication of open data.	3.44	2.19	1.01	1.33	0.022
q_01_10a We have established digital channels for collecting feedback (suggestions/initiatives, complaints, compliments) from our users: e-mail	4.50	4.81	0.53	0.40	0.053
q_01_12c The key EXTERNAL barriers to the digitalisation of our institution's operations are: lack of technical standards	2.11	3.25	1.45	1.13	0.039
q_01_12d insufficient use of the Internet among users of our services (low number of users with access to a quality Internet connection)	1.40	2.88	0.52	1.31	0.002
q_01_12e weak digital skills of users of our services (citizens, companies, NGOs)	2.30	3.63	1.06	1.09	0.005
q_01_17a When designing new ICT solutions, we take into account the recommendations of relevant external stakeholders: users	4.00	3.06	0.67	1.39	0.059
q_01_17b researchers	3.60	2.63	1.07	1.20	0.047
q_01_17c polymakers	4.11	2.56	0.93	1.15	0.002
q_01_20 In addition to the official language, our website is also available in English.	3.90	2.50	0.88	1.26	0.005
q_01_12c Citizens of other countries can communicate with us digitally when using all our services: via video conferencing	3.11	2.00	1.45	1.15	0.046
q_01_12d through talking robots	1.25	1.00	0.46	0.00	0.045
PROCESSES					
q_02_03c Due to the digitalisation of our institution, we notice improvements in all core business processes: lower process execution costs	4.20	3.50	0.79	0.73	0.03
q_02_05 We have documented business processes in our institution, including process diagrams.	3.67	2.47	0.71	1.36	0.023
STRUCTURE					
q_03_01 When introducing new ICT solutions, we adapt regulations and other internal acts or introduce new ones.	4.30	3.44	0.67	1.15	0.043
PEOPLE					
q_04_03 When working with other institutions, we establish transfers of digital competencies between employees of our and other institutions.	2.90	2.13	0.88	0.92	0.048
q_04_09 Our institution has a system in place to reward existing staff in the field of informatics.	2.89	1.60	1.36	1.06	0.016
q_04_10 Our institution has a system in place to attract new staff in the field of informatics.	2.44	1.40	1.24	0.74	0.016

Note: Only statistically significant results are presented. Ministries are state administration and municip. stands for municipal administration – local government. Std stands for standard deviation.

4 Conclusion

The preliminary results reveal additional insights into the problematic areas of Slovenian public administration's relatively stagnant digital transformation. Slovenia, however, ranks above the EU average in the digitalisation of the economy and society. While having made some progress in the last year, this slight advantage with respect to the EU is slowly being lost (IMAD, 2021). The country currently holds an unenviable position in overall competitiveness, lagging significantly behind Scandinavian, Central European and Baltic countries (IMD, 2021). Two of the biggest problems are government inefficiency and the lack of digital transformation. Moreover, in the case of the Slovenian public administration, the initial e-government success in the early 2000s turned into a significant drop in digitalisation's performance during the economic crisis (Bavec et al., 2019). Understanding the most important barriers to digitalisation and the digital as-is state in the state administration and local governments is the starting point to understanding the overall view and overarching reasons for slow digital development.

The digital transformation model was developed upon consideration of the most significant eGovernment maturity models, the extended Leavitt's diamond model for an organisation with five essential elements: technology, processes, structure, people and organisational culture. Empirical verification of the model showed the importance and relevance of all five elements. We expect to see the further significance in relation to the encompassing dimensions of digital principles, good governance principles and environmental elements with a bigger sample. The initial results revealed that local governments scored significantly lower in various aspects. The initial sample of local governments stated the need for a systemic solution that would enable easier interoperability and expressed the desire for a standardised and unified arrangement regarding ICT solutions. Regarding the barriers to digitalisation, the problems with weak digital skills of employees were reported on both levels, as well as lacking the possibility of hiring IT specialists.

Being a geographically small country with a relatively centralised administration, we have the capacity to move in an agile manner and climb up the digital government maturity ladder. The GOV.SI is already established as the information centre, complemented by the SPOT website for businesses, eUprava for citizens, and OPSI for open government data. These four portals are the basis for the future direction, but there is a legacy of challenges that needs to be understood to be solved. The digital transformation model proved to be a valuable and essential tool for measuring digital maturity on both levels of public administration.

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