# The Organizational Factors That Impact On Public Sector's Digital Transformation and On The Creation Of Social (Public) Value

**Panagiota Xanthopoulou**[1]

[1] Dr., Visiting Researcher, Department of Political Science and International Relations, University of Peloponnese/ Phd (cand.) at Department of Management Science and Technology, University of West Macedonia, p.xanthopoulou@uop.gr / pxanthopoulou@uowm.gr , ORCID: https://orcid.org/0000-0003-2503-3901

**Abstract:** The aim of the study is to investigate the internal factors that affect the adoption of the digital transformation in the public sector. We examined how digitalization impacts on the way in which the public sector in Greece organizes, produces and provides its services, identifies key success factors related to digital transformation projects and sets out a proposed framework for quality citizen service projects, creating thus a social value (value based approach). An interdisciplinary approach and comparison among selected European Union countries has been applied. In addition, a quantitative survey was conducted by distributing online questionnaires to middle and senior executives of public organizations in Greece. A total of 151 questionnaires were answered and their analysis was performed using the statistical tool of SPSS. The results showed that the internal factors that influence the adoption of digital governance and its successful implementation within public organizations include the technological factors that compose the quality of service and the organizational factors (training and evaluation of human resources, leadership, organizational strategy, and the creation of a digital culture). Our results can be useful for policy makers considering the implementation of similar systems in their public administration practices.

**Key Words:** Digitalization, Digital Transformation, Public Sector, Organizational Factors

## 1. INTRODUCTION

Implementing organizational changes is a difficult task, because although important steps have been taken towards their effective management, change programs continue to show high failure rates. Therefore, more research suggests a focus on the typical features of a successful public and private sector change program, which indicates that there is still a need for conceptual research of the field. We could also verify that most of the empirical research on digital governance and digital transformation of the public sector was qualitative using case studies, which cannot lead to generalization prospects, only to theoretical ones, and therefore it would be useful to invest in quantitative research methods in order to allow the results to be generalized. Consequently, there is also a great lack of mixed studies and, therefore, it would be more valuable to draw more attention to this. Mixed studies allow researchers or a team of researchers to combine elements of qualitative and quantitative research approaches for a broader purpose of breadth and depth of understanding and confirmation according to Schoonenboom & Johnson (2017).

Digital transformation in the public sector means new ways of working with stakeholders, creating new service delivery frameworks and new forms of relationships. However, there is little systematic empirical evidence on how public administrations currently define digital transformation in their day-to-day practices, how they approach digital transformation projects, and what the expected results are (Eggers & Bellman, 2015). In fact, terms such as digitization, digitalization, digital governance or digital transformation are used interchangeably in the literature. Second, executives need to create a climate of empowerment and continuous improvement of digital skills and, finally, align all employees with a common vision around digital transformation. It is important for leaders to understand the digital transformation and to show a willingness to take these changes into account. Leadership seems to have a direct impact on digital maturity itself (Danailova, 2014; Xanthopoulou & Karampelas, 2020). Ensuring success in the digitization of the public sector requires strong central leadership complemented by preventive local and regional initiatives promoted by local actors (Millard, 2010). Digital technologies alone provide little value to an organization (Kane et al., 2015). It is their use in a specific context that enables a company or organization to discover new ways of creating value, according to the enduring idea that organizational change is an emerging phenomenon (Markus & Robey, 1988) .The literature emphasizes change as well as redefining business models (Osterwalder & Pigneur, 2010) in the context of digital transformation (e.g. Morakanyane et al., Piccinini et al., 2015b). The success of e-governance and digital

governance systems also depends significantly on how citizens perceive the value achieved by using these systems (Scott et al., 2016).

The present study aims to investigate those factors that affect the results and the successful adoption of the digital transformation. More specifically, it examines the key success factors associated with digital transformation projects and sets out a proposed framework for creating social value to the society. Our results can be useful for policymakers considering the implementation of similar systems in their public administration and management decisions. The digital transformation in the form of substantially new organizational practices, skills and models has become the key theme in modern public administrations and management processes. However, despite growing need for digital transformation in the public sector, current research has rarely focused on adopting specific technologies (from social media to block chain) and processes (from digitized transactions to flexible contracts). As a result, we still know relatively little about whether and how the adoption of digital technologies is associated with real transformations of entire public sector organizations, with the emergence of new public administration and policy practices, and, ultimately, with new public sector reforms. The idea of the study is to contribute to ongoing academic discussions by providing new theoretical knowledge and empirical evidence on the effects of internal organizational factors on the digital transformation of public sector organizations.

## 2. LITERATURE REVIEW

### 2.1. Digitalization and digital transformation

Arnold and Wade, (2015) describe digitalization as something "paperless" and as the application of the digital tools to all aspects of society. Jurisic & Kermek (2011) observe that almost all sectors are affected by digitalization. First, it is important to make a first distinction between the terms "digitization" and "digitalization" which are used as synonyms. The "digitization" refers to the conversion of information from something analog to a digital one (Picard, 2011) or to the automation of processes through information communication technologies (Hess et al., 2016) (for example, scanning a document or typing handwritten notes in an excel file). On the other hand, as Imgrund et al. (2018) state, "digitalization" means significant improvements in the use of information technology by organizations, the implementation of information technology strategies and information processing capabilities. Thus, we can understand that if digitization refers to the conversion of data and processes, digitalization refers to a transformation and embraces the ability of digital technology to collect data, establish trends and make better business decisions. The same conclusion comes from Gartner Group (2016) for which digitalization involves the use of digital technologies to change business models, provide new revenue and value creation opportunities. Similarly, according to Legner et al. (2017), digitalization is understood as the socio-technical process of adaptation of new digital technologies, or a process of adaptation of digital technologies that occur at the individual, organizational, social and global level.

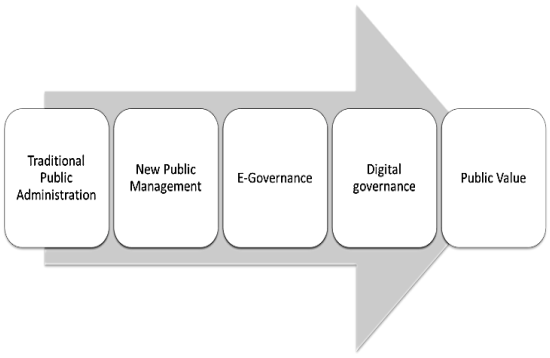
In relation to e-government, digitalization involves the transformation of traditional, bureaucratic and "paper-based" processes into digital platforms (Janssen & Estevez, 2013). In this context, digitalization is seen as the advanced form of e-government innovation that redesigns natural processes to promote efficiency and effectiveness (Irani et al., 2008; Weerakkody et al., 2011). It contributes to the promotion of democracy, transparency, accountability and freedom (Falk et al., 2017) and it also offers opportunities for governments to modernize public administration and cooperation with citizens and businesses (Falk et al., 2017). One form of public sector modernization is the simplification of procedures through the standardization of activities to increase efficiency and reduce response time (Calvo & Campos, 2017). At the same time, digitalization leads to cost savings in public administration (Falk et al., 2017; Davison et al., 2005; Grönlund & Horan, 2004; Venkatesh et al., 2012). In general, digitalization helps to streamline costly and inefficient vertical and horizontal processes (Janowski, 2015; Janssen & Estevez, 2013; Sun et al., 2020).

Digital governance according to Luciano et al. (2018) is the way that governments use ICT to provide information and government services to citizens, to improve the quality of ICT services and to provide greater opportunities for citizen participation. It includes a new leadership style and a new way of making public policy and investment decisions (Kalsi & Kiran, 2015). Thus, digital governance has evolved as a governance model that enhances the potential of the public sector to use appropriate technologies for improving governance relations - both internal and external - at various levels of government. Its objectives are to promote democracy, the right to expression and human dignity, to support economic development and to encourage the effective and efficient provision of services to society (Saxena, 2005). Digital governance refers to the use of ICT to

create public value through the cooperation of society and the provision of appropriate information and citizen participation (Kalsi & Kiran, 2015; Dawes, 2008).

In conclusion, e-government focuses on the administration and management within an organization, public or private, and it refers to the internal use of ICT (especially the Internet) for horizontal and multilevel management of organizational resources, policy and process management. Digital governance, on the other hand, can be described as a stage of e-government maturity and refers to the digital transformation required for a collaborative government / administration model, more citizen-centered that creates social, public value (Xanthopoulou, 2020). Figure 1 shows the transition from the traditional bureaucratic public administration to the creation of social value.

Figure 1: From traditional public administration to the creation of public value




## 2.2. Factors influencing the success of digitization projects

Public sector digital projects are integrated into combinations of policy reforms and organizational changes designed to establish, support, and promote transformation in public organizations (Cordella & Iannacci, 2010). In general, the nature of culture and structures / organization in the public sector can be barriers to digital innovation (Heeks & Stanforth, 2007; Irani et al., 2007; Weerakkody et al., 2011). The traditional public sector in mainly western countries is characterized by hierarchical and dissimilar structures, as well as bureaucracy and procedures based on print media (Davison et al., 2005; West, 2004) that cause deficiencies and delays (Beynon-Davies, 2007). Initially, the bureaucracy with its literal interpretation (office administration) in the public sector was initially aimed at promoting efficiency, equality and democracy (Cordella & Iannacci, 2010). Today, however, it has become a source of multiplier and recurring delays and inefficiencies (Davison et al., 2005;Wiredu, 2012). Other problems arising from the structure and culture of the public sector include functional divisions and politics (Beynon-Davies, 2007; Irani et al., 2007) as well as resistance to innovation (Seng et al., 2010; Zhao & Khan, 2013). The lack of exchange of information between departments and organizations also poses challenges to digitalization (Davison et al., 2005). Resistance by civil servants for fear of job loss (Falk et al., 2017) also limits digitalization in the public sector. Barriers identified by international research include complex and multi-layered bureaucratic structures inherited from previous forms and schools of administration (Imran, 2013), e-literacy and inadequate ICT infrastructure (Bertot et al., 2010; Heeks & Stanforth, 2007; Hendrix, 2013). Other challenges include resistance to change, power struggles and lack of cooperation between organizations (Schuppan, 2009), as well as failure to update existing laws (Basu, 2004).

Many studies have conceptually and empirically examined the challenges and barriers to the adoption of technology in public administrations. According to Fountain (2004), how a technology is applied depends on the institutional and organizational arrangements that guide decision makers in their day-to-day behaviors. The model of Fountain (2004) is commonly used to describe the interactions between organizational forms and institutional arrangements and their implications for the design of a technological system (Cordella & Iannacci, 2010; Luna-Reyes & Gil-Garcia, 2014). Both factors - organizational forms and institutional arrangements - may hinder the adoption of new technologies in the public sector. For example, Salvoldelli et al (2014) showed that institutional arrangements have prevented the adoption of e-government solutions in the European Union. Conradie and Choenni (2014) showed similar results for open data in the Netherlands on organizational factors. Thus, the acceptance of technologies depends to a large extent on their compatibility with existing institutional and organizational arrangements. Empirical analyzes of barriers to the application of ICT in the public sector have focused mainly on e-government - from a technological point of view, a previous public sector innovation. Numerous empirical studies have found barriers to the adoption of e-government, including a lack of trust (Gilbert et al., 2004), general concerns about public safety, privacy and data protection (Schwester, 2009; Wing, 2005; Zakareya & Zahir, 2005), information quality (Gilbert et al., 2004), strategy (Wing, 2005; Zakareya & Zahir, 2005), technology (Schwester, 2009; Lam, 2005; Zakareya

& Zahir, 2005), policy (Lam, 2005), leadership and management (Kim et al., 2009; Schedler & Schmidt, 2004; Schwester, 2009), accessibility (Becker, 2004; Gilbert et al., 2004) and organizational weaknesses (Chen & Gant, 2001; Schwester, 2009; Lam, 2005; Zakareya & Zahir, 2005). In their meta-analysis, Savoldelli et al. (2014) identified three groups of barriers to the adoption of e-government: technological and economic, managerial and organizational, and institutional and political. Technological factors cited in the literature as barriers to these transformation efforts include system complexity and incompatibility (Gil-Garcia et al., 2007) as well as lack of business architecture (Janssen and van Veenstra, 2005; Kamal et al., 2009), standards and interoperable systems (Ebrahim & Irani, 2005). In addition, security threats are identified as barriers (Ebrahim & Irani, 2005).

## 3. METHODS

In the present research it was chosen to distribute questionnaires to middle and senior executives of public organizations, so to conduct a quantitative survey, to executives of public organizations that use these digital services in Greece in order to evaluate the effectiveness and efficiency of this digital project (value based approach) and mainly to reveal the internal organizational factors that affect them. The analysis of the quantitative data derived from the questionnaires was carried out using statistics (SPSS) with the aim of better organizing and recording them. In order to measure the components that influence the success of digital adoption by public organizations, we used a 39-item questionnaire, a research tool that had previously been tested and validated in other studies (e.g. Abhichandani et al., 2005; Morgeson et al., 2011; Park and Blenkinsopp, 2011; Parasuraman et al., 1988; Mahmood, 2018; Al Hujran, Aloudat & Altarawneh, 2013). In total, 151 questionnaires were answered and as mentioned, the participants were middle and senior executives in public organizations, during the lockdown period from October 2020 to March 2021. This sample allows us to proceed with reasonable and reliable statistical analyzes and to draw valid conclusions. In addition, the validity of the questionnaire is ensured by the synthesis of questions of already published questionnaires in international surveys but also by the use of the findings of the literature. We examined the relationships between these components: Service Quality, Information Quality, and Perceived Impact on the organization and the dependent variable that is the Degree of Adoption (DA) of digital governance in a public organization with SOAL. Component analysis is used to reduce the number of variables to fewer component numbers, with three ultimately retained (Service Quality (SQ), the second is Information Quality (IQ) and the last is the Perceived Impact (PI) on the organization). The Cronbach Alpha reliability test was used to measure the reliability of each component. The data were analyzed using the multiple regression routine of SPSS software version 24.

### 3.1. Results and findings

The total sample of the study consisted of N = 151 respondents, 109 (72.2%) were women and 42 (27.8%) were men. The structure of the observed correlations was determined from Table 1 of the component analysis method, identifying the groups of variables that have a high correlation. As shown in Table 1 below, the first component is Service Quality (SQ), the second is Information Quality (IQ) and the last is the Perceived Impact (PI) on the organization. Table 2 with KMO and Bartlett's Test shows that the date from the sample were adequate for the components analysis (KMO = 0,803> 0,60, Bartlett's Test significance <0,001) (Yong, 2013; Kinnear & Gray, 2011).

Table 1: Rotated Component Matrix[a]

**Rotated Component Matrix[a]**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| SQV2 | 0,71 | 0,00 | 0,00 |
| SQV3 | 0,59 | 0,00 | 0,00 |
| SQV6 | 0,66 | 0,00 | 0,00 |
| SQV7 | 0,69 | 0,00 | 0,00 |
| SQV8 | 0,66 | 0,00 | 0,00 |
| SQV9 | 0,68 | 0,00 | 0,00 |
| IQV10 | 0,00 | 0,73 | 0,00 |
| IQV11 | 0,00 | 0,75 | 0,00 |
| IQV13 | 0,00 | 0,59 | 0,00 |
| PIV23 | 0,00 | 0,00 | 0,67 |
| PIV25 | 0,00 | 0,00 | 0,75 |
| PIV26 | 0,00 | 0,00 | 0,78 |
| PIV28 | 0,00 | 0,00 | 0,56 |
| PIV30 | 0,00 | 0,00 | 0,78 |

Extraction Method: Principal Component

a. Rotation converged in 5 iterations.

Table 2: KMO and Bartlett's Test

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin | | 0,83 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 614,754 |
| | df | 91,00 |
| | Sig. | 0,00 |

Subsequently we ran a reliability test Cronbach's alpha interpreted for the questions of each component. The results showed that the alpha coefficient for the first component (Service Quality-SQ) is 0.79, for the second (Information Quality-IQ) is 0.62, and for the third (Perceived Impact-PI) is 0.77. In most cases a reliability factor of 0.7 or higher is acceptable in social science research. The alpha coefficient for the second component (Quality Information) is 0.62 <0.7 which means that the data do not have high internal consistency (Kinnear & Gray, 2012; Baglin, 2014).

Table 3: Cronbach's Alpha

| SQ | | | IQ | | | PI | |
|---|---|---|---|---|---|---|---|
| Cronbach's Alpha | N of Items | | Cronbach's Alpha | N of Items | | Cronbach's Alpha | N of Items |
| 0,79 | 6,00 | | 0,62 | 3,00 | | 0,77 | 5,00 |

Table 4: Statistics

| Statistics | | | | | |
|---|---|---|---|---|---|
| | | SQ | IQ | PI | DA |
| N | Valid | 151,00 | 151,00 | 151,00 | 151,00 |
| | Missing | 0,00 | 0,00 | 0,00 | 0,00 |
| Mean | | 3,79 | 3,66 | 4,43 | 3,37 |
| Median | | 3,83 | 3,67 | 4,60 | 4,00 |
| Std. Deviation | | 0,54 | 0,57 | 0,51 | 1,05 |
| Variance | | 0,29 | 0,32 | 0,26 | 1,11 |
| Skewness | | -1,23 | -0,05 | -1,02 | -0,69 |
| Kurtosis | | 3,63 | 1,18 | 1,36 | -0,11 |
| Std. Error of Kurtosis | | 0,39 | 0,39 | 0,39 | 0,39 |

The overall regression model was significant, the value of R^2 is greater than zero (0,125). Table 5 shows the predictive power of the independent variables, in terms of the degree of adoption (DA) of digital governance in organizations. The value of R^2 is 0.125 which shows that the independent variables (Perceived Impact-PI, Information Quality-IQ and Service Quality-SQ) explain 12.5% of the variance of the dependent variable.

Table 5: Model Summary[b]

| Model Summary[b] | | | | | |
|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | ,353[a] | 0,125 | 0,107 | 0,996 | 1,901 |
| a. Predictors: (Constant), PI, IQ, SQ | | | | | |
| b. Dependent Variable: DA | | | | | |

Table 6:ANOVA[a]

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 20,82 | 3,00 | 6,94 | 6,99 | 0,000[b] |
| | Residual | 145,91 | 147,00 | 0,99 | | |
| | Total | 166,73 | 150,00 | | | |
| a. Dependent Variable: DA | | | | | | |
| b. Predictors: (Constant), PI, IQ, SQ | | | | | | |

Table 7 shows the predictive ability of the three components, concerning the degree of adoption of digital governance. Quality of service (SQ), quality of information (IQ) and perceived impact (PI) are positively related to the adoption of digital governance in an organization. Service quality, information quality and perceived impact have a statistically significant effect on the outcome variable (p value <0,05) (Yong & Pearce, 2013).

Table 7:Coefficients[a]

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -0,06 | 0,81 | | -0,07 | 0,94 |
| | SQ | 0,47 | 0,17 | 0,24 | 2,68 | 0,01 |
| | IQ | 0,17 | 0,17 | 0,09 | 1,04 | 0,30 |
| | PI | 0,23 | 0,18 | 0,11 | 1,30 | 0,19 |
| a. Dependent Variable: DA | | | | | | |

The results presented above provide support for the findings of existing research and literature. The quality of services has a significant impact on the adoption of digital governance in a public organization and refers to concepts such as perceived ease of use, i.e. the degree to which the structure of the e-service portal is clear and easy for the user to navigate and is good aligned with the needs of individual users, it also addresses issues of availability and accessibility of the online service at any time and to the extent that the online service portal performs the service successfully at the request of citizens, operates quickly and facilitates everyday life and the online transactions of the users of the service with other companies / organizations. Next, the quality of information also has an important relationship with the adoption of digital governance in a public organization. It refers to concepts found in international literature such as "trust and security" (for example, obtaining the username and password on the portal, transaction security in the online service, the availability of a data recovery plan, reliability and sequence of the GDPR, the privacy policy so that users have easy access to the respective service while browsing the

site, the use of the site of digital signatures for the authentication of users, the monitoring of citizens' activity). In terms of content, an important role is played by monitoring the activity of citizens, the updating and accuracy of information displayed on the online services portal and finally the provision of web applications for a range of services (requests, payments, etc.). Finally, the perceived impact on the organization also has a significant positive relationship with the adoption of digital governance in a public organization. In this component, important parameters related to the Equipment / Resources, the Policy / Strategy followed by the public organization as well as the Organizational culture and Leadership were examined.

## 4. CONCLUSION

In fact, terms such as digitization, digitalization, digital governance, or digital transformation are used interchangeably in the literature. In addition, we found that the majority of them focus almost exclusively on the technological factors or, if reference is also made to organizational ones, the studies concerning the public sector are few in number. Through the research of these factors in the literature, a questionnaire was created whose axes initially corresponded to four components (Quality of service, Quality of information, Perceived Impact on the organization, Other - external factors). The results of the study showed that out of the four components, only three were statistically significant for the adoption of digital governance and in particular the importance of the first three was found. The answers demonstrated the importance of both the technological factors that compose the quality of service (Perceived ease of use, Promotion of digital governance and Perceived usefulness), the quality of information (Trust and security, Content) and the perceived utility in the organization (Equipment, Policy / Strategy, Organizational Culture and Leadership) as well as organizational factors, emphasizing the importance of training and evaluation of human resources in the successful adoption of digitalization but also the impact of leadership and top management in creating a digital culture within the organization. In the context of the adoption of digital governance, the support of top management plays an important role, because the adoption of new technologies may include new regulatory requirements, a high degree of complexity, new resources, resource integration, redesign and the development of new skills and competencies.

In general, the present study confirms the findings of the literature that the barriers and conditions for a successful transformation of digital government are not limited to technological issues. Many cases that arise suggest that the introduction and adoption of new technologies by governments is often hampered by organizational, institutional, and legal issues. This is often explained by the fact that new technologies are expected to challenge almost every process, system and structure of government. However, these changes are complex and require radical transformations. The aspect of transformation is often seen in the literature as the ultimate goal of the development of digital governance and implies the transition from the digitization of public services to a wider government reforms. In order to sustain this transformation, there must be multiple processes of change and redesign, not only of the organizational processes involved, but also of regulatory and institutional aspects.

## REFERENCES

Abhichandani, T., & Horan, T. (2006). Toward a new evaluation model of e-government satisfaction: Results of structural equation modeling. *AMCIS 2006 Proceedings*, 35.

Al Hujran, O., Aloudat, A., & Altarawneh, I. (2013). Factors influencing citizen adoption of e-government in developing countries: The case of Jordan. *International Journal of Technology and Human Interaction (IJTHI)*, *9*(2), 1-19.

Arnold, R. D., & Wade, J. P. (2015). A definition of systems thinking: A systems approach. *Procedia computer science*, *44*, 669-678.

Baglin, J. (2014) Improving your exploratory factor analysis for ordinal data: A demonstration using FACTOR. *Practical Assessment, Research, and Evaluation, 19(1),* 5. doi: 10.7275/dsep-4220

Basu, S. (2004). E-Government and Developing Countries: An Overview. *International Review of Law, Computers & Technology, 18(1)*, 109-132.

Becker, S. A. (2004). E-government visual accessibility for older adult users. *Social Science Computer Review, 22(1)*, 11-23.

Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 264–271.

Beynon-Davies, P. (2007). Models for e-government. *Transforming Government: people, process and policy*.

Calvo, A.S. & Campos, C. (2017). Mexico: Single Window for Foreign Trade. In Falk, S., Römmele, A. & Silverman, M. (Eds.). Digital Government: Leveraging Innovation to Improve Public Sector Performance and Outcomes for Citizens (85-104). Cham: Springer

Chen, Y. C., & Gant, J. (2001). Transforming local e-government services: the use of application service providers. *Government Information Quarterly, 18(4),* 343-355.

Conradie, P., & Choenni, S. (2014). On the barriers for local government releasing open data. *Government Information Quarterly*, *31*, S10-S17.

Cordella, A., & Iannacci, F. (2010). Information systems in the public sector: The e-Government enactment framework. *The Journal of Strategic Information Systems*, *19*(1), 52-66.

Danailova, V.: Basic factors triggering the spelling reform in the Bulgarian Language. *Crossing Boundaries in Culture and Communication.* 5(2), 51–56 (2014)

Davison, R.M., Wagner, C., Ma, L.C.K. (2005). From Government to E-Government: A Transition Model. *Information Technology & People*, 18(3), 280-299.

Dawes, S.S. (2008). The evolution and continuing challenges of e-governance. *Public Administration Review, 68 (6),* 82–102.

Ebrahim, Z., & Irani, Z. (2005). E-government adoption: architecture and barriers. *Business Process Management Journal, 11(5)*, 589-611.

Eggers, W. D., & Bellman, J. (2015). The journey to government's digital transformation. *Deloitte. See https://www2. deloitte. com/uk/en/pages/public-sector/articles/the-journey-to-governments-digital-transformation. html (accessed 7 February 2018)*.

Eling, M., & Lehmann, M. (2018). The impact of digitalization on the insurance value chain and the insurability of risks. *The Geneva papers on risk and insurance-issues and practice*, *43*(3), 359-396

Falk, S., Römmele, A. & Silverman, M. (2017a). The Promise of Digital Government. In Falk, S., Römmele, A. & Silverman, M. (Eds.). Digital Government: Leveraging Innovation to Improve Public Sector Performance and Outcomes for Citizens (3-24). Cham: Springer

Fountain, J. E. (2004). *Building the virtual state: Information technology and institutional change*. Brookings Institution Press.

Gartner. (2016): IT Glossary, Digitalization. http://www.gartner.com/itglossary/digitalization. Sited 1st August, 2016.

Gil-Garcia, J. R., Helbig, N., & Ojo, A. (2014). Being smart: Emerging technologies and innovation in the public sector. *Government information quarterly*, *31*, 11-I8.

Gilbert, D., Balestrini, P., & Littleboy, D. (2004). Barriers and benefits in the adoption of e-government. *International Journal of Public Sector Management*.

Grönlund, Å. & Horan, T.A. (2004). Introducing E-Gov: History, Definitions, and Issues. *Communications of the Association for Information Systems, 15*, 713-729

Heeks, R., & Stanforth, C. (2007). Understanding e-Government project trajectories from an actor-network perspective. *European Journal of Information Systems*, *16*(2), 165-177.

Hess, T., Matt, C., Benlian, A. and Wiesb€ock, F. (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive, 15(2)*, 123-139.

Janowski, T. (2015). Digital government evolution: From transformation to contextualization

Janssen, M., & Estevez, E. (2013). Lean government and platform-based governance—Doing more with less. *Government Information Quarterly*, *30*, S1-S8.

Janssen, M., & Van Veenstra, A. F. (2005). Stages of growth in e-government: An architectural approach. *The electronic journal of e-government*, *3*(4), 193-200.

Jurisic, M., & Kermek, D. (2011). Taxonomy of digital economy business models. In *2011 Proceedings of the 34th International Convention MIPRO*.

Imgrund, F., Fischer, M., Janiesch, C., & Winkelmann, A. (2018). Approaching digitalization with business process management. *Proceedings of the MKWI*, 1725-1736.

Imran, A. (2013). Individual Computer Usage Pattern and Perception amongst the Public Sector Officials in a Least Developed Country: A Descriptive Study. In Proceedings of 2013 International Conference on Information Resources Management (264-281). Red Hook: Curran Associates, Inc

Irani, Z., Love, P. E., & Jones, S. (2008). Learning lessons from evaluating eGovernment: Reflective case experiences that support transformational government. *The Journal of Strategic Information Systems*, *17*(2), 155-164.

Kalsi, N. S., & Kiran, R. (2015). A strategic framework for good governance through e-governance optimization. *Program*.

Kamal, M. M., Weerakkody, V., & Jones, S. (2009). The case of EAI in facilitating e-Government services in a Welsh authority. *International Journal of Information Management*, *29*(2), 161-165.

Kattel, R., & Mazzucato, M. (2018). Mission-oriented innovation policy and dynamic capabilities in the public sector.

Kim, S., Hyun Jeong Kim, H. J., & Lee, H. (2009). An institutional analysis of an egovernment system for anti-corruption: The case of OPEN. *Government Information Quarterly, 26(1),* 42–50.

Kinnear, P. R., & Gray, C. D. (2011). *IBM SPSS Statistics 18 made simple*. Psychology Press.

Lam, W. (2005). Barriers to e-government integration. *Journal of Enterprise Information Management*.

Legner, C., Eymann, T., Hess, T., Matt, C., Böhmann, T., Drews, P. & Ahlemann, F. (2017). Digitalization: opportunity and challenge for the business and information systems engineering community. *Business & information systems engineering*, *59*(4), 301-308

Luciano, E. M., Wiedenhöft, G. C., & Santos, F. P. D. (2018, May). Promoting social participation through digital governance: identifying barriers in the Brazilian Public Administration. In *Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age* (pp. 1-9).

Luna-Reyes, L. F., & Gil-Garcia, J. R. (2014). Digital government transformation and internet portals: The co-evolution of technology, organizations, and institutions. *Government information quarterly*, *31*(4), 545-555.

Mahmood, M. (2018). *Does Digital Transformation of Government Lead to Enhanced Citizens' Trust and Confidence in Government?*. Springer.

Markus, M. L., & Robey, D. (1988). Information technology and organizational change: Causal structure in theory and research. *Management science*, *34*(5), 583-598.

Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, *57*(5), 339-343.

Millard, J. (2010). Government 1.5 - Is the bottle half full or half empty?. *European Journal of ePractice, 9*, 1-16.

Morakanyane, R., Grace, A. A., & O'Reilly, P. (2017). Conceptualizing Digital Transformation in Business Organizations: A Systematic Review of Literature. *Bled eConference*, *21*.

Morgeson III, F. V., VanAmburg, D., & Mithas, S. (2011). Misplaced trust? Exploring the structure of the e-government-citizen trust relationship. *Journal of Public Administration Research and Theory*, *21*(2), 257-283.

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.

Parasuraman, A., Valarie A. Zeithaml and Leonard L. Berry. (1988). SERVQUAL: A Multi-Item Scale for Measuring Consumer Perceptions of Service Quality, *Journal of Retailing, 64(Spring)*, 13-40.

Park, H., & Blenkinsopp, J. (2011). The roles of transparency and trust in the relationship between corruption and citizen satisfaction. *International Review of Administrative Sciences*, *77*(2), 254-274.

Picard, R. G. (2011). *The economics and financing of media companies*. Fordham Univ Press.

Savoldelli, A., Codagnone, C., & Misuraca, G. (2014). Understanding the e-government paradox: Learning from literature and practice on barriers to adoption. *Government Information Quarterly*, *31*, S63-S71.

Saxena, A. (2005). E-Governance and good governance: the Indian context. *The Indian Journal of Political Science*, 313-328.

Schedler, K., & Schmidt, B. (2004). Managing the e-government organization. *International Public Management Review, 5(1),* 1-20.

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *69*(2), 107-131.

Schuppan, T. (2009). E-Government in developing countries: Experiences from sub-Saharan Africa. *Government information quarterly*, *26*(1), 118-127.

Schwester, R. (2009). Examining the barriers to e-government adoption. *Electronic Journal of e-government*, *7*(1).

Scott, M., DeLone, W., & Golden, W. (2016). Measuring eGovernment success: a public value approach. *European Journal of Information Systems*, *25*(3), 187-208.

Seng, W., Jackson, S. & Philip, G. (2010). Cultural issues in developing E-Government in Malaysia, *Behaviour & Information Technology, 29(4),* 423-432.

Sun, Y., Yang, C., Shen, X. L., & Wang, N. (2020). When digitalized customers meet digitalized services: A digitalized social cognitive perspective of omnichannel service usage. *International Journal of Information Management*, *54*, 102-200.

Valenduc, G., & Vendramin, P. (2017). Digitalisation, between disruption and evolution. *Transfer: European Review of Labour and Research, 23*(2), 121-134.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.

Weerakkody, V., Janssen, M., & Dwivedi, Y. K. (2011). Transformational change and business process reengineering (BPR): Lessons from the British and Dutch public sector. *Government Information Quarterly*, *28*(3), 320-328.

West, D. M. (2004). E-Government and the Transformation of Service Delivery and Citizen Attitudes, *Public Administration Review*, *64(1),* 15-27.

Wing, L. (2005). Barriers to e-government integration. *Journal of Enterprise Information Management, 18(5),* 511-530.

Wiredu, G. O. (2012). Information systems innovation in public organisations: an institutional perspective. *Information Technology & People* Valenduc, G., & Vendramin, P. (2017). Digitalisation, between disruption and evolution. *Transfer: European Review of Labour and Research*, *23*(2), 121-134.

Xanthopoulou, P., & Karampelas, I. D. (2020). The Impact of Leadership on Employeesâ€™ Loyalty and on Organizational Success: Do Transformational and Transactional Leadership Ensure Organizational and Work Commitment?. *International Journal of Sciences*, *9*(10), 45-63.

Xanthopoulou, P (2020). From e-Government to Public Value Creation. *International Journal of Science and Research (IJSR)*, 9(3), 927-933

Yong A G, Pearce (2013) A beginner's guide to factor analysis: Focusing on exploratory factor analysis. Tutorials in quantitative methods for psychology, 9(2), 79-94. doi: 10.20982/tqmp.09.2.p079

Zakareya, E., & Zahir, I. (2005). E-government adoption: architecture and barriers. *Business Process Management Journal, 11(5),* 589-611.

Zhao, F. & Khan, M.S. (2013). An Empirical Study of E-Government Service Adoption: Culture and Behavioral Intention. *International Journal of Public Administration, 36(10)*, 710-722