1st draft – do not cite!

Moritz Heuberger, University of Potsdam (Germany)
moritz.heuberger@uni-potsdam.de
Christian Schwab, University of Potsdam (Germany)
chschwab@uni-potsdam.de

Better than their reputation?

Comparing citizens' expectations and administration's readiness for digital change

1. Introduction

In this paper the state of the art and the perspective of digital technology use in public administration on the local level in Germany will be examined. Based on two large data samples, an empirically grounded descriptive analysis shows not only the current use but also the expectation of the citizens as well as the readiness for digital change of public administration's employees.

In the public administration research discussion, the question how (digital) technology changes and shapes communication, work routines and organizations, is a wide field. From success factors (Angelopoulos, Kitsios, & Papadopoulos, 2010) over barriers (Savoldelli, Codagnone, & Misuraca, 2014; Scholl & Klischewski, 2007) up to the discussion around trust (Carter & Bélanger, 2005; Lee, Kim, & Ahn, 2011). In this context though, it is important to focus on the expectation of citizens towards the use of digital technology in public service delivery on the one hand and the attitude and therefore the readiness of the public administration employees on the other hand. While the employees of today were trained (and mostly still work) in the administration of yesterday, the (digital) administration of tomorrow is already evolving. So, a certain need of reorientation of the employees can be seen in developing themselves from the public administration employee of yesterday towards the public administration employee of tomorrow – all along with new knowledge and skills as well as a change of their role and their self-understanding. The related questions that inevitably arise are:
Which changes for the employees are lying ahead? And is there a gap between the citizen's expectation of and the employees' readiness for digital change? And finally, those two questions have to be put in relation to the status quo of digital service provision of today, because only in that way, it can be identified which way lies ahead.

This article aims to conceptualize the readiness of public administration personnel for innovation and reorganization in the context of digital transformation of their work. This concept will be deducted from the citizens' expectations towards digital service delivery of public administration. This is a gap in existing quantitative digital government research:

> "[…] *here are basically no studies available that examine the subject from a mixed viewpoint, taking into account the user as well as the provider*" (Wirtz & Daiser, 2016, p. 159).

The empirical examination is built upon the theoretical discussion about adoption of technological innovation in public administration, especially about its drivers and barriers. The concept is structured in three consecutive steps:

First, an overview of the already existing use of digital public service delivery on municipal level is given and the status quo of digital use can be examined (use). **Second, the citizen's expectation** of digital service provision (expectation) gets into the focus to be able to describe the correspondence between use and expectation. In a **third step, the readiness of the public personnel** in digital technology use is being studied, examining their attitude and willingness in terms of digital transformation (readiness).

The case to examine the research question is the German local government, not only because on that level the government to citizen interaction (G2C) is highest, compared with other administrative levels, but also because a good access to data is possible.

The article investigates correspondingly following *research question* and sub-questions:

> **RQ**: Which are the (compared) expectations and attitudes towards the use of digital public services of users (citizens) and providers (public employees)?
>
>> **SQ1**: How is the quantified use of digital public services by citizens?
>>
>> **SQ2**: Which expectations do the citizens have towards digital public service provision?
>>
>> **SQ3**: How is the readiness of public employees to engage in digital public service provision?

The empirical analysis draws on data of two independent sources. On the one hand it is based on the results of a 2018 survey of the German Federal Statistical Office (Statistisches Bundesamt) about the satisfaction of citizens with the use of public service delivery ("Lebenslagenbefragung 2018"; n = 8761), where one only question is of used ("do you use digital public services?") to answer the first dimension of the research concept. On the other hand the analysis is based on a project funded by the German Unions' Foundation (Hans-Böckler-Stiftung) – also in 2018 – in which a survey among citizens (n = 10.000 , expected response rate is 30-35%) and municipal citizens' office employees (each 30-60) of three German cities was conducted to get an overview of changes in the work environment.

This study contributes to the literature on implementation of digital technology in the public administration with the focus on the expectation of the citizen as well as on the readiness of the public service employees. The article starts with a theoretical discussion by examining the literature. These concepts are applied then on the data – introduced in the third chapter. Finally, we combine the insights from the data with the findings in the literature to contribute to the already existing research about the administrative personnel's readiness for the digital transformation.

2. Theoretical Discussion

Previous studies have taken a look at various factors that affect digital technology adoption in public administration like organizational culture (Ahn, 2011; Pandey & Bretschneider, 1997; Wirtz, Piehler, Thomas, & Daiser, 2016), leadership (Hansen & Nørup, 2017; Ricard, Klijn, Lewis, & Ysa, 2017), external pressure (Bekkers, 2005; Chen & Thurmaier, 2009) and institutional motivation (Jun & Weare, 2011).

Still, there is the individual motivation of the public service officials to get deeper into. As the higher individual motivation makes resistance towards change less likely (Wright, Christensen, & Isett, 2013), the understanding of the individual dispositions in this field is of high value to get a broader understanding of digital government tools adoption.

Li and Feeney (2014) tested the Hypothesis that public manager's perception of personnel constraints are negatively associated with the adoption of e-government technologies – with no significance in their test-results.

Based on recent research, the presumption is, that public service officials are cautious but generally supportive of the benefits of e-government from their perspective (Baldwin, Gauld, & Goldfinch, 2012). Wirtz and others created a theoretical framework which is called "cognitive barriers" to explain the readiness towards open government data (Wirtz et al., 2016), which contains three barriers: external (perceived legal barrier), individual-organizational (perceived bureaucratic decision barrier, perceived organizational transparency barrier, perceived hierarchical barrier) and individual internal (risk-related attitude).

2.1.   Citizens' expectation and actual use of the digital administration

Early e-Government research about digital service provision was limited on government/administration website usability (Asgarkhani, 2005). Carter and Bélanger created a model to explain the "intent to use" e-government services, testing seven determining factors (Carter & Bélanger, 2005, p. 12), while only three hypothesis were significantly supported: (1) the perceived ease of use, (2) compatibility and (3) trust of internet/government (ibid., p. 17). The predictor ease of use for high usage is also supported by Davis (1989, p. 334).

If a public service is easy to use, the online use is consistent with the way people used the same government services before and the service as well as the service provider seem trustworthy to the users, the use of a service will be high – according to the findings of Carter and Bélanger, supported by others (Akram & Malik, 2012, p. 64).

To contrast current use of digital services with citizens' expectations, we first rely on recent research that identified a gap between the provision of information on digital services in German citizens' offices, the provision of an electronic communication function, i.e. such as by answering citizens' requests via email and the transaction of a digital service, i.e. the digital finalization of a public service without having media breaks in between (Schwab et al., forthcoming). As shown in table xyz below, these stages of development in local administrations so far have been achieved to different degrees. This constitutes a gap between information provision (which is already decent) and online transaction (which is poor).

For the time being, since research results from the German Unions' Foundation project are not present yet to contrast the digital service provision with our own empirical data, we fall back to more general recent research in Germany. The finding that eGovernment does not exist yet as fully digitalized transaction and interaction offer to carry out administrative operations free from media breaks, is also supported by the current eGovernment Monitor (Krcmar et al. 2017) that points out similar critical developments. Hence, citizens' use of eGovernment offers is not going forward (4 per cent less than the previous year), showing a strong reduction in citizens' satisfaction (8 per cent less) and a satisfaction level with digital administrative services of just about 54 per cent overall. Online pages for administrative services are most common on the local level. A study in Rhineland Palatinate shows that citizens mainly use online pages of the local level (43 per cent), compared to state (15 per cent) or federal level (8 per cent) (cf. ISIM 2015). This should not come as a surprise since 75 to 90 per cent of federal laws are implemented there, where also important decisions shaping citizens' life situation are taken. Nevertheless, it seems that in certain areas of application the degree of digital processing is meanwhile increasing.

Table xyz: Digital depth in German citizens' offices

Services	Information available online	Partially processed online (forms, emails)	Fully processed online	N
Passports	74.8%	25.2%	4.8%	210
Certificates (birth/marriage certificates)	71.4%	25.2%	9.2%	119
Certificates of good conduct	70.7%	27.1%	13.3%	188
Registration of residence	60.5%	36.0%	7.1%	197
Authentication of certificates	89.3%	10.1%	2.7%	149
Dog tax Registration	71.3%	32.8%	5.7%	122
Residents parking permit	75.7%	18.4%	8.7%	103
Parking permit for people with disabilities	80.2%	20.8%	0.9%	106
Housing benefits	75.6%	21.8%	3.8%	78
Vehicle registration (only county-free cities)	75.0%	23.5%	7.4%	68

Source: adapted from Schwab et al. forthcoming

As Lember et. al have shown at the case of Estonia, citizen feedback influences dynamic organizations (radical change in administrative capacity; in contrast to static organizations) positively (Lember et al., 2018, p. 227).

For the German context it exists recent research about the use of digital services of the federal employment agency (Heidemann, Muschter, & Rauch, 2013) where they found out that not only the agency as organization but also the employees underestimate the willingness among citizens to use e-services due to a huge gap between the self-assessment of citizens (73% willing to use digital services) and the assessment of the employees (27% think the citizens would be willing to use digital services) (Heidemann et al., 2013, p. 6). Two more reasons according to the findings of that study are that citizens lack information about e-services (Heidemann et al., 2013, pp. 5–6) and that bad usability holds citizens away from using e-services (Heidemann et al., 2013, p. 6).

A barrier in digital service use by citizens was found in the missing opportunity of consultation, whereas the missing personal contact is not identified as a problem (Barth & Veit, 2011, p. 9). They also found out in qualitative interviews, that saving time is a main driver of citizens to use digital administration services (Barth & Veit, 2011, p. 8). From this literature we derive several hypothesis that needs to be tested:

H1: The citizen's demand of a digital administration services is higher than the actual supply.

H2: Missing consultation is a reason of not using digital administration services, while the citizens do not miss the personal contact.

Wirtz and Kurz showed that currentness of Public Information and Services positively influences citizens' intention to use "e-Government city portals" (Wirtz & Kurtz, 2017, p. 365) and the same goes with deep integration, especially the full online use of an administrative service – and not the necessity of non-online steps (ibid.). Therefore, we postulate

H3: Fully integrated services support the use of digital administration services.

2.2. Public personnel's readiness for the digital administration

The literature about innovation adoption, foremost Damanpour and Schneider (2009) delivers already first impressions of public personnel factors, determining the success of innovation adoption. They categorized it as "Manager Characteristics" (Damanpour & Schneider, 2009, p. 505) and found that demographic characteristics (age, gender, etc.) have no significant effects on innovation adoption, while their personal characteristics (political orientation, entrepreneurship, etc.) do. Education is positively correlated with innovation adoption and tenure has a non-linear effect (positively with a limitation – then neutral (Damanpour & Schneider, 2009, p. 514).

These findings cannot be directly transferred to the debate of digital technology adoption, not only because this was not the research goal of the cited work (managers, not personnel in general) but also because their focus was on the managers' attitude towards competition and entrepreneurship rather than their attitude towards technology (use). Nonetheless these findings can be an orientation to go on from that, focusing on their use of the use of demographic characteristic. Especially the factor age is of higher interest, because other effects were proofed significantly, while the influence of the age – especially when it comes to technology adoption – is still an open question. In recent research in the Croatian public

administration context there was no influence of the age of the employees on their readiness to adopt digital technology found (Dukic, Dukic, & Bertovic, 2017, p. 532).

H4: Employees age will not have any significant effect on their readiness for digital change

Another reason for resistance in public employees' attitude can be found in a "lack of alignment between organizational goals and the IT project" (Gil-Garcia & Pardo, 2005, p. 192), which can be another reason for a rather negative attitude towards digital service delivery.

H5: Changes through digital technology in the work of public administration employees change principles of their self-understanding.

The introduction of digital service provision changes the work tasks and the skills which should be provided by the employees (Lember, Kattel, & Tõnurist, 2018, p. 221). When it comes to skills and the ability to work in a digitalized work environment, in the study about Croatia, it was found that the employees had the impression of being well skilled, while not receiving enough support from the government side (Dukic et al., 2017, p. 533). That allows the question if the employees are not only ready but much more are slowed down by the government in not having enough support.

H6: The employees are "over-"ready, they wish to have a more quick introduction of digital technology and feel well qualified for the next steps.

3. Research Design and Methods

On the one hand there is the citizen perspective and on the other hand there is the public administration personnel's perspective. To enable an operationalization, the concept is structured in three different parts – the citizens' use, the citizens' expectation and the readiness of the public administration personnel. This allows an operationalization, using answers from all three surveys (Citizen Survey = CS, Lebenslagenbefragung = LL, Public Personnel Survey = PPS).

3.1. Operationalization Citizens' Use

The citizen's use of digital administration services is not as complicated to measure, because there is no reason to assume wrong answers (social acceptability etc.). On the one hand, we retrieve the data of the LL which also delivers a huge range of demographic data for further analysis (age, gender, education, income, city/rural). On the other hand, data is used from the CS, using four questions about the contact with and the use of services of the municipal administration's citizens' office (Bürgeramt).

LL1: Do you use online services of the public administration (at least fill out online forms or e-mail contact)?
Yes/No

CS4: On which way did you had your last contact with the citizens' office?
personally present, phone, letter/telefax, digital (e-mail, online-form, chat)

CS5.8: Did you experience good information supply of the municipal administration on the internet?
4 point Likert-scale

CS5.9.: Looking at your experiences with the municipal administration, have you been able to solve your matters in a user-friendly way fully online most of the time?
4 point Likert-scale

3.2. Operationalization Citizens' Expectations

The expectation of the citizens towards digital service delivery is also operationalized via their direct answers in several dimensions. First the **importance of digital services** is asked (CS5.8, CS5.9 and CS9), second their **expected use** (CS7), third the **satisfaction** with existing digital services (CS10) and fourth their general **attitude of digital service use** (openness/risk averse) at the example of digital administration services (CS11 and CS12).

Figure 1 - operationalization of ce

a) Importance of digital services

CS5.8: How important is it for you personally to have good information supply of the municipal administration on the internet?

> 4 point Likert-scale

CS5.9.: How important is it for you personally to be able to solve your matters in a user-friendly way fully online at the municipal administration?

> 4 point Likert-scale

CS9 How important is the fully online provision of following services to you? (10 services displayed)

> 4 point Lickert-scale

b) Expected Use of digital services

CS7 Imagine your citizens' office would be able to deliver all services fully online (resident parking admit, clearance certificate), just as Amazon, Otto etc. Would you use such provision?

> Yes, Partially, No

c) Satisfaction with digital service provision

CS10: How do you rate your municipal office's supply of digital services? (each 4 point Lickert-scale + "unknown to me" and "don't use it")

10.1 Clarity of the homepage
10.2 Comprehensibility of online services
10.3 Online retrievability of the needed forms
10.4 Usability/ease of use of online services
10.5 Online appointment booking
10.6 Online payment

d) General attitude towards digital service use

CS11 Do you agree/disagree with following reasons <u>for</u> an increase of online service delivery by the municipal administration? (each 4 point Lickert-scale)
11.1 Reducing administration costs
11.2 Saving time for citizens
11.3 Cost-reduction for citizens (i.e. no parking charges for visiting the citizens' office)

CS12 Do you agree/disagree with following reasons <u>against</u> an increase of online service delivery by the municipal administration? (each 4 point Lickert-scale)
12.1 Personal contact with the public administration is more important
12.2 I need personal consultation
12.3 The use of online services is too complicated for me

3.3. Operationalization Public Personnel's Readiness

The Operationalization of the readiness of the employees follows also several dimensions: First with the **understanding of digitalization** (PPS13, PPS14, PPS15) a assessment of the status quo can be made, followed by questions for **self-assessment** (PPS8.12, PPS10.5, PPS16) of the employees to examine not only their perspective on the quality but also to see if i.e. more qualification is needed. The **expected citizen satisfaction** is asked in a third couple of questions (PPS1, PPS7.12,) – which allows a direct comparison with CS9 and CS10. Finally, their general **attitude of digital service use** (openness/risk averse) at the example of digital

administration services (PPS17 and PPS18) is operationalized the same way as it is at the CS, which also allows a direct comparison with the citizens' answers (CS11 and CS12).

Figure 2 - Operationalization of ppr

a) Understanding of citizens' satisfaction
PPS13: What would you describe as an indicator for digitalization? (each 4 point Lickert-scale)
13.1 Scanning of documents and digital storage system
13.2 Introduction of a digital file system (E-Akte)
13.3 Online appointment booking
13.4 Answering citizens' requests online (i.e. via e-mail)
13.5 Fully digital service provision by the municipal office

PPS14: Would you agree with following statements about the consequences of the digitalization at the municipal office? (each 4 point Lickert-scale)
14.1 Reduction of time effort
14.2 Higher transparency of the processing status
14.3 Lower tie to the classical opening hours/week days
14.4 Reduction of work effort
14.5 Improvement of administrative processes (processing, competences, interconnectedness)
14.6 More timely effort in the case processing
14.7 Permanent availability (i.e. via e-mail)
14.8 Technical problems (malfunction, breakdown, etc.)
14.9 Software problems, especially problems with service providers
14.10 Feeling of controllability through digitalization
14.11 Shift of work effort from the front to the back office
14.12 Problems because of unequal access of the citizens to digital services (digital divide)

PPS15: How important do you think, platform-based solutions for administrative services (as known from Amazon or Otto) will be in the future?
4 point Lickert-scale

b) Self-assessment
PPS8.12: In your opinion, to what extent a fully online-based administrative service provision is already realized at your office?
4 point Lickert-scale

PPS10.5: How would you asses the qualification of yourself and your colleagues, when it comes to competencies in the field of digitalization and digital administration?
4 point Lickert-scale

PPS16: How do you rate your office's supply of digital services? (each 4 point Lickert-scale + "unknown to me" and "not available")

16.1 Clarity of the homepage
16.2 Comprehensibility of online services
16.3 Online retrievability of the needed forms
16.4 Usability/ease of use of online services
16.5 Online appointment booking
16.6 Online payment

c) Expected citizen satisfaction
PPS1: How do you quantify a satisficing service delivery for citizens? (each with a 4 point Lickert-scale)
1.1   Quick processing
1.2   Service quality
1.3   Low quantity of complaints
1.4   High citizen satisfaction
1.5   Digital provision of information
1.6   Digital contact with citizens
1.7   Complete digital availability of services

PPS7.12: How important do you think is a fully online-based administrative service provision for the citizens' satisfaction with your office?
4 point Lickert-scale

d) General attitude towards digital service use
PPS17: Do you agree/disagree with following reasons <u>for</u> an increase of online service delivery by the municipal administration? (each 4 point Lickert-scale)
17.1 Reducing administration costs
17.2 Saving time for citizens
17.3 Cost-reduction for citizens (i.e. no parking charges for visiting the citizens' office)
17.4 Acceleration of administrative processes
17.5 More flexible dealing with citizens' issues
17.6 Higher clarity of administrative processes

PPS18 Do you agree/disagree with following reasons <u>against</u> an increase of online service delivery by the municipal administration? (each 4 point Lickert-scale)
18.1 Personal contact with the citizens is missing
18.2 Personal consultation of the citizens is not possible anymore
18.3 The use of online services is too complicated
18.4 Problems with data protection and privacy
18.5 The services are not citizen-friendly
18.6 Additional burden for citizens

4. Findings

[As this paper is an early-stage working-paper and the availability of the data of CS and PPS is not given yet, only a short part of analysis can be given. It is expected to fully answer the Sub-Questions with the answers of all three surveys.]

Using the LL data (n = 8761) of only the question "do you use digital contact with public administration", we can have a first impression of the dimension in Germany in general. Only 33,42% answered with "yes", which shows, that only one third is actually using digital administrative services.

To get a closer look at the data, a logistic regression was made with the dependent variable "use of digital administrative services" and the independent variables:
- "age"
- "gender"
- Education: "no school graduation", "high school diploma" (Realschulabschluss), "high school graduation" (Hochschulreife), "university graduation" (Hoschschulabschluss), reference: vocational extension certificate (Hauptschulabschluss)
- Income: "income1" (1500€-3000€ monthly household income), "income2" (over 3000€ monthly household income), reference: (monthly household income lower than 1500€)
- Region: 0 rural area, 1 urban area

If the odds ratio is < 1 it means, the variable has a negative effect on the dependent variable, if > 1 there is a positive effect. The effect is significant if the confidence interval does not contain 0 – which is the case in all of the variables.

Effect	Odds Ratio	95% confidence interval	
age	0.994	0.992	0.996
gender	0.834	0.781	0.891
no school grad.	0.030	0.004	0.239
high school dipl.	1.156	1.002	1.333
high school grad.	1.245	1.072	1.445
university grad.	1.216	1.060	1.394
income1	1.200	1.086	1.325
income2	1.435	1.299	1.584
region	1.154	1.076	1.239

Figure 3 - regression results of the LL data

The results show, that younger persons use digital administrative services more often than older ones and women not as often as men. The education has a positive effect in the sense that generally a higher education leads to higher use, the same effect applies to the monthly household income – the higher it is the higher the digital service use. Finally, people in rural areas tend to use the services not as often as their city-counterparts.
These results support already existing findings, were a 'digital divide' was found: older age, and less education were associated with lower digital administration service use (Gauld, Goldfinch, & Horsburgh, 2010, pp. 184–185). On the other side, the findings are

contradictory to other findings by the same authors, that Income level and gender were both not statistically significant predictors of digital service use (ibid.).

Gender	Percent
Male	50.79
Female	49.21

Highest education available	Percent
No grad.	0.3
Vocational ext. cert.	7.63
High school dipl.	27.83
High school grad.	18.32
University grad.	45.92

Income	Percent
Less than 1500 Euro/month	17.95
1500 – 3000 Euro/month	40.62
3000 Euro and more/month	41.95

Literature

Ahn, M. J. (2011). Adoption of E-Communication Applications in U.S. Municipalities: The Role of Political Environment, Bureaucratic Structure, and the Nature of Applications. *The American Review of Public Administration*, *41*(4), 428–452.

Akram, M. S., & Malik, A. (2012). Evaluating citizens' readiness to embrace e-government services. *13th Annual International Conference on Digital Government Research (dg.o '12)*, dg.o '12, 58–67.

Angelopoulos, S., Kitsios, F., & Papadopoulos, T. (2010). New service development in e-government: identifying critical success factors. *Transforming Government: People, Process and Policy*, *4*(1), 95–118.

Asgarkhani, M. (2005). Digital Government and Its Effectiveness in Public Management Reform. *Public Management Review*, *7*(3), 465–487.

Baldwin, J. N., Gauld, R., & Goldfinch, S. (2012). What Public Servants Really Think of E-Government. *Public Management Review*, *14*(1), 105–127.

Barth, M., & Veit, D. (2011). Electronic Service Delivery in the Public Sector: Understanding the Variance of Citizens' Resistance. *Proceedings of the 44th Hawaii International Conference on System Sciences (HICSS-44)*, *0*, 1–11.

Bekkers, V. (2005). The Governance of Back Office Integration in E-Government: Some Dutch Experiences. *Electronic Government*, Lecture Notes in Computer Science (pp. 12–25). Presented at the International Conference on Electronic Government, Berlin: Springer.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: citizen trust, innovation and acceptance factors *. *Information Systems Journal*, *15*(1), 5–25.

Chen, Y.-C., & Thurmaier, K. (2009). Advancing E-Government: Financing Challenges and Opportunities. *Public Administration Review*, *68*(3), 537–548.

Damanpour, F., & Schneider, M. (2009). Characteristics of innovation and innovation adoption in public organizations: Assessing the role of managers. *Journal of Public Administration Research and Theory*, *19*(3), 495–522.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, *13*, 319–340.

Dukic, D., Dukic, G., & Bertovic, N. (2017). Public administration employees' readiness and acceptance of e-government: Findings from a Croatian survey. *Information Development*, *33*(5), 525–539.

Gauld, R., Goldfinch, S., & Horsburgh, S. (2010). Do they want it? Do they use it? The 'Demand-Side' of e-Government in Australia and New Zealand. *Government Information Quarterly*, *27*(2), 177–186.

Gil-Garcia, J. R., & Pardo, T. A. (2005). E-government success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly*, *22*(2), 187–216.

Hansen, M. B., & Nørup, I. (2017). Leading the Implementation of ICT Innovations. *Public Administration Review*, *77*(6), 851–860.

Heidemann, J., Muschter, S., & Rauch, C. (2013). How to increase public e-services usage in governments: a case study of the German federal employment agency. *21st European*

Conference on Information Systems (ECIS 2013), 12.

Jun, K.-N., & Weare, C. (2011). Institutional Motivations in the Adoption of Innovations: The Case of E-Government. *Journal of Public Administration Research and Theory*, *21*(3), 495–519.

Lee, J., Kim, H. J., & Ahn, M. J. (2011). The willingness of e-Government service adoption by business users: The role of offline service quality and trust in technology. *Government Information Quarterly*, *28*(2), 222–230.

Lember, V., Kattel, R., & Tõnurist, P. (2018). Technological capacity in the public sector: the case of Estonia. *International Review of Administrative Sciences*, *84*(2), 214–230.

Li, M.-H., & Feeney, M. K. (2014). Adoption of Electronic Technologies in Local U.S. Governments: Distinguishing Between E-Services and Communication Technologies. *The American Review of Public Administration*, *44*(1), 75–91.

Moon, M. J., & Norris, D. F. (2005). Does managerial orientation matter? The adoption of reinventing government and e-government at the municipal level*. *Information Systems Journal*, *15*(1), 43–60.

Pandey, S. K., & Bretschneider, S. I. (1997). The Impact of Red Tape's Administrative Delay on Public Organizations' Interest in New Information Technologies. *Journal of Public Administration Research and Theory*, *7*(1), 113–130.

Ricard, L. M., Klijn, E. H., Lewis, J. M., & Ysa, T. (2017). Assessing public leadership styles for innovation: a comparison of Copenhagen, Rotterdam and Barcelona. *Public Management Review*, *19*(2), 134–156.

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*(1), 63–71.

Scholl, H. J., & Klischewski, R. (2007). E-Government Integration and Interoperability: Framing the Research Agenda. *International Journal of Public Administration*, *30*(8–9), 889–920.

Schwab, C., Bogumil, J., Gerber, S. & Kuhlmann, S. (2018). Digitalisierung von Verwaltungsleistungen am Beispiel der Bürgerämter [The digitalization of administrative services with the example of local one-stop-shops] (i.E.).

Wirtz, B. W., & Daiser, P. (2016). A meta-analysis of empirical e-government research and its future research implications. *International Review of Administrative Sciences*, *84*(1).

Wirtz, B. W., & Kurtz, O. T. (2017). Determinants of Citizen Usage Intentions in e-Government: An Empirical Analysis. *Public Organization Review*, *17*(3), 353–372.

Wirtz, B. W., Piehler, R., Thomas, M.-J., & Daiser, P. (2016). Resistance of Public Personnel to Open Government: A cognitive theory view of implementation barriers towards open government data. *Public Management Review*, *18*(9), 1335–1364.

Wright, B. E., Christensen, R. K., & Isett, K. R. (2013). Motivated to Adapt? The Role of Public Service Motivation as Employees Face Organizational Change. *Public Administration Review*, *73*(5), 738–747.