

# CITIZEN PREFERENCES TOWARD E-GOVERNMENT CITY PORTALS - AN EMPIRICAL ANALYSIS OF FULL ONLINE, MOBILE AND SOCIAL MEDIA SERVICES

Bernd W. Wirtz and Oliver Tuna Kurtz

## ABSTRACT

*Governments worldwide increasingly provide public services via e-Government city portals. During the last decade, e-Government practice has developed from a rudimentary use to an establishment of holistic citizen platforms offering different public e-Services. Recently, public e-Service provision has shifted toward three main developments involving full online service provision, public social media, and mobile government. Despite practical significance regarding these emerging trends and corresponding adapted citizen needs, understanding city portal user preferences is a neglected research issue. Therefore, this study carries out an explorative research approach to get insights into citizen preferences in order to provide implications for an efficient portal management and to contribute to the current scientific discourse regarding user-centric e-Government.*

**Keywords** – *Citizen Preferences, e-Government, explorative study, local e-Government, city portal management, public, mobile services, full online services, public social media services, e-Government trends, e-Government development, public administration, innovative public e-Services*

## INTRODUCTION

For the past two decades, public authorities have increasingly applied information and communication technologies (ICT) to improve public administration efficiency and productivity (Wirtz and Daiser 2016). In this context, public administrations across the globe have incrementally employed e-Government city portals that are defined as “multi-functional information systems which provide a single point of access to relevant information and services via the Web-enabled interface” (eDevelopment 2012). Sophisticated city portals have been adopting and expanding innovative public e-Services for delivering these governmental information and services to citizens (Norris and Reddick 2013). The e-Government survey of the United Nations has shown that in 2014, it was the first time that all its 193 Member States have an online presence (United Nations

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2014). This expansive Web presence is necessary to meet citizens' expectations and city portal's user preferences (Carter and Bélanger 2012) since public e-Government service provision require an efficient user-oriented interaction between governments and citizens (Wirtz et al. 2015; Wirtz et al. 2016).

However, due to ICT development and changed online user habits, citizens' requirements and user preferences considerably vary over time (Venkatesh et al. 2012). Therefore, successful implementation of public processes have become a complex and challenging task for portal management and need to be reshaped toward a user-centered service provision (Wirtz and Piehler 2016) as even highly matured e-Government websites are deficient regarding citizen-centric public e-Services (Tan et al. 2013). In order to comply with the varying citizen preferences, the way of e-Government service provision has primary evolved with respect to three different developments.

First, city portal officials have begun to strongly engage in e-Government transactions by increasingly offering their services exclusively online (Bertot et al. 2013) in terms of Full Online Services (Wirtz and Daiser 2015). The term Full Online Services was introduced in the framework of a five-stage maturity model by the benchmark study of Capgemini and the European Commission in 2001. These kind of public e-Services guarantee citizens to handle public administration concerns without appearance at the competent public authority. Therefore, they enable them to perform public transactional e-Services from a single point of access within a complete and exclusively online interaction (Al-Sebie and Irani 2005). According to online user habits and citizen preferences, city portals are shifting towards being a holistic access platform for modern public administrations' service provision regarding the full online availability of public services (Capgemini et al. 2013; United Nations 2014). Despite the fact that citizens increasingly demand for executing their public administration cases fully electronically, transactional public Full Online Services have not yet been widely adopted internationally (ibid).

Second, public e-Service provision has been expanded to social media platforms offering high potentials to leverage e-Government operations (Bonsón et al. 2015). Generally, social media enables users and providers an active content design through cooperative participation with the aim to connect users and create provider and user generated content (Wirtz et al. 2014b). Public administration authorities have also recognized social media (Linders 2012) since its characteristics have various advantages for citizens and are about to transform public authority processes fundamentally (Lee and Kwak 2012; Bryer 2011). The social media presence of city portals, e.g. in terms of an official Facebook site, promotes the engagement of citizens and involve them into administrative processes; furthermore it generates higher levels of transparency, and improves citizens-to-government relationships (Bonsón et al. 2012). Considering the increased citizen's interest due to changed online user habits and preferences, e-Government service provision via social media applications offers groundbreaking possibilities (Bonsón et al. 2015; Morgeson et al. 2011).

Third, another important development is the provision of public mobile services. As the number of global smartphone users is expected to reach 2.5 billion in 2015 (Strategy Analytics 2014), public authorities definitely need to consider an m-Government strate-

gy for mobile web and mobile apps for the next wave of mobile users (Shareef et al. 2012). Implementing an m-Government strategy would fulfill persisting citizens' preferences, as public administrations are thus able to deliver real-time location-based information and services on demand, perform transactional e-Services, and provide innovative customized services independently of the citizens' location (Al-Hujran 2012).

Regarding these three main e-Government developments, a successful portal management continuously calls for new e-Government strategies in order to fulfill citizens' needs based on the current user preferences and technological possibilities. To support this achievement, the scientific discourse on e-Government should disengage from a provider-perspective and investigate innovative and up-to-date public e-Services to offer useful and valid policy recommendations for portal management regarding a user-friendly city portal that is adapted to citizen needs.

### RESEARCH OBJECTIVES

Until now, the implementation of e-Government services has been primarily guided by supply side factors and technological possibilities rather than user needs. A growing number of researchers claim that a user-centered e-Government strategy is essential for successful e-Government projects (Verdegem and Verleye 2009). Accordingly, the scientific discourse needs to be shifted to a more user and service-oriented perspective. Additionally, due to changed citizen preferences in terms of ICT development, public administrations increasingly offer innovative and up to date e-Services (Kaisara and Pather 2011) including transactional e-Services that can be performed fully online and the provision of public e-Services via mobile applications and social media. However, prior scientific e-Government contributions frequently do not consider specific up-to-date and innovative e-Government services and largely conduct aggregated adoption models (Alawneh et al. 2013). These research contributions frequently examine e-Government from a generic and broad perspective without involving specific public e-Services. Hence, the studies' outcomes do not adequately reflect the preferences of citizens. As getting insights into citizens' preferences may fundamentally influence e-Government success (Venkatesh et al. 2012), research on city portal users' preferences regarding specific innovative e-Government services remains under-investigated.

In particular, the current research is deficient considering the investigation of transactional services involving Full Online Services (Al-Sebie 2014). Since existing studies solely propose conceptual frameworks regarding the full online availability of public e-Services to understand the maturity of e-Government (Assar et al. 2011), this study will, on the one hand, investigate user preferences toward public Full Online Services. On the other hand, we will illuminate specific citizen preferences regarding public e-Service provision via social media platforms and mobile applications. In the current scientific discourse, scholars have provide only little knowledge about user preferences toward social media in the domain of e-Government. Therefore, currently several journals call for papers on this topic. The International Journal of Public Administration in the Digital Age, for instance, announce a special issue on "Social Media and e-Government" for 2016. Furthermore, both practitioners and scholars have become aware of the great im-

portance of m-Government for public service provision. However, specific user preferences toward public mobile services are not adequately researched yet (Shareef et al. 2012). In this context, the current transition from e-Government to m-Government calls for research on m-Government integration since a matchless integration of governmental m-Services has not been achieved yet (Al Thunibat et al. 2011). Beside the examination of user preferences toward Full Online Services, this study will therefore investigate user preferences towards social media and mobile services in the e-Government context.

Considering the administrative level, we will concentrate on local e-Governments since city portals have the most influence regarding governmental procedures and decisions (Lim and Tang 2006) in contrast to higher-level administrative entities. Furthermore, research on local level e-Government is regarded as being under-investigated (Wirtz et al. 2014a; Morgeson et al. 2011). Therefore, the examination of e-Government at the local level represent an ideal basis to gain insights to e-Government user preferences and the study's results will serve as a basis to partly transfer findings to higher administrative entities (Liu et al. 2010).

Facing the issues of portal management of modern public administrations and shortcomings of recent e-Government research, this study aims at understanding user preferences regarding the use of up-to-date and innovative public e-Services. Therefore, this study carries out a user-oriented investigation, examining specific e-Government services that are adapted to the current needs of city portal users. For this purpose, this study seeks to answer the following core research question: What are the preferences of city portal users regarding Full Online, mobile and social media services? To answer this question, the article is outlined as follows: In the subsequent section, we will present a review of related e-Government research. Next, the study will empirically evaluate and interpret citizens' preferences in terms of a city portal survey. Finally, we will present the findings and discuss implications for research and practitioners of e-Government city portal management.

## LITERATURE REVIEW

The appliance of ICT in public administrations has developed from a rudimentary use to an establishment of reliable and powerful tools (Dawes 2008). Emerging trends regarding e-Government projects are the performance of transactional Full Online Services as well as the integration of mobile applications and social media platforms (United Nations 2014; Obi 2014). However, empirical scientific contributions regarding the specific setting of this study including a user-centric and citizen preferences-oriented investigation of specific innovative e-Government services are very rare (Venkatesh et al. 2012; Verdegem and Verleye 2009).

The scant existing studies examining e-Government from the citizen perspective have partly investigated solely the general usage intention, user satisfaction, and adoption behavior of e-Government without considering specific public e-Services (e.g. Alawneh et al. 2013; Carter and Bélanger 2012; Udo et al. 2012; Morgeson and Petrescu 2011; Lai and Pires 2010; Carter and Weerakkody 2008). Furthermore, prior studies largely

adapt Technology Acceptance Models (TAM) applying functional constructs, such as Perceived Ease of Use (PEoU) or System Quality (e.g. Azmi et al. 2012; Carter and Bélanger 2012; Nassuora and Al-Mushasha 2012; Carter and Bélanger 2005; Wang 2002). Another research stream use quality-related constructs by extending the Delone and McLean IS Success Model (D&M) (e.g. Al-Haddad et al. 2011; Qutaishat 2013; Teo, Thompson S. H. et al. 2008). However, since a practice-oriented approach reflects the reality more than the sole observation of IS characteristics, these research approaches are often inadequate to understand citizen preferences toward specific public e-Services, which have first priority for an efficient portal management in current modern public administrations.

In this context, particularly studies analyzing citizen preferences towards transactional services are deficient (Al-Sebie 2014). Only a few studies involve the examination of individual transactional services that can be fully performed online, such as tax-filing (e.g. Chang et al. 2005; Chen 2010; Hu et al. 2009; Singha and Singh 2013) or specific services, such as the renewal of vehicle registration (Sipior et al. 2010; Li 2010). Chen (2010), for instance, confirmed that Information System (IS) quality antecedents strongly influence taxpayer satisfaction with the online tax-filing system. Particularly, they find that the factors of information and system quality are more important than service quality in measuring user satisfaction. Chang et al. (2005) also investigating tax-filing systems specifically examine determinants of intention to use the system. In this context, they find that Perceived Usefulness (PU) promote more impact than Perceived Ease of Use (PEoU) on taxpayers' intention to use. Moreover, they investigate the factors influencing the TAM-factors including IS quality aspects as well as trust, privacy, and security aspects. Findings indicate that these determinants positively influence PU. This observation show that prior findings of research contributions on transactional e-Government services rather consider factors such as privacy, security, usefulness, or trust influencing the current usage or satisfaction of public e-Services than investigating the citizen's preferences toward specific transactional Full Online Services.

Furthermore, prior contributions on social media and mobile services in the context of e-Government lack empirical research, specifically regarding insights to citizen preferences. Existing studies on social media are investigating different topics solely conceptually. Linders (2012) defines a typology for citizen coproduction in the age of social media by examining government-citizen relationship. The author identify three categories including Citizen Sourcing, Government as a Platform, and Do it Yourself Government. Another research stream provide an overall view about the use of Web 2.0 and social media tools (Bonsón et al. 2012; Dixon 2010). Bonsón et al. (2012), for example, find that governments are using Web 2.0 and social media tools to enhance transparency, but the concept of corporate dialogue and the use of Web 2.0 to promote e-Participation are still in their beginnings at the local level. Dixon (2010) support this findings as the bottom line of his study implies that despite evidence that e-government 2.0 adoption and usage is increasing, the use of Web 2.0 in government remains in its infancy. An additional research stream explore the potential impacts of e-Government and social media on cultural attitudes about transparency. In this context, (Bertot et al. 2010) frame several short-term actions which may result in long term success in terms

of transparent and open government due to social media applications. Particularly, the authors suggest developing measures of transparency and “readiness” criteria, evaluating existing systems for portability and expansion, reusing rather than reinventing, and finally creating and investing in collaborative pilot projects.

Regarding m-Government implementation being in its early stages (Al-Hujran 2012), scientific research on this topic is still at the beginning. There are two studies examining the adoption and use behavior of m-Government transferring the TAM to the m-Government context (Liu et al. 2014; Shareef et al. 2012). Essentially, both studies confirm the positive influence of the TAM-constructs on intention to use respectively adoption. Another research study investigates the current utilization of m-Government in terms of a case study exploring major issues faced by government toward the full realization (Al-Hujran 2012). Gathering data from semi-structured interviews with key e-government officials, results of Al-Hujran (2012) indicate that the main issues of m-Government are trust, public awareness, cost, infrastructural constraints, and the lack of an enabling legal framework. The study of Zamzami and Mahmud (2012) evaluates the quality of m-Government services based on the examination of mobile interface for m-Government services. Finally, Madden et al. (2013) conceptualize the potential demand of m-Government suggesting that governments in Japan should encourage the examined mobile resident register and e-tax payment system adoption and support programs to encourage smartphone ownership and mobile application subscriptions. Finally, Jahanshahi et al. (2011) carried out a research study investigating mobile services advantages in m-Government. In their study, they identify main advantages including increasing profitability, good quality of services, effectiveness transaction, and improving excellent performance.

Although research on current e-Government developments involving full online availability of public e-Services, the expansion of e-Government to m-Government applications, and the increased presence of city portals at social media platforms is in an early stage, it offers some important insights for the public sector. However, since these research contributions do not provide findings regarding specific citizen preferences in terms of exploration of single Full Online Services, specific m-Government offers, and particular public e-Services regarding social media channels, they are partly not able to provide useful and valid implications for a user-oriented portal management. Therefore, this study will empirically investigate the preferences of city portal users regarding above mentioned main e-Government developments sampling specific and individual public e-Services within an exploratory research approach.

## METHOD AND DATA

The data collection of this study was carried out within a standardized web-based survey among German local e-Government portals. The type of data collection using an online survey has been chosen since it facilitates the participation and increases response rates (Zikmund et al. 2013; Christensen et al. 2015). However, no incentives were offered to stimulate intention to participate in the survey. Furthermore, we have ensured that all participants are actual users of e-Government services as we directly

gathered data from e-Government city portals by asking 233 small to medium-sized municipalities to place our survey link on the front page of their city portals. Thus, we exclusively address actual users of public e-Services, who access their city portals to handle their public service concerns. Out of the 233 municipalities, 117 have agreed to take part in the study. Finally, the data ascertainment generated a sample of 717 citizens participating in the survey.

The final sample consists of about two thirds (69.5%) male and one-third (30.5%) female respondents with an average age of 46 years. 6.2% of the participants have finished secondary modern school, 22.4% have secondary school certificates, 21.7% have technical baccalaureate diploma, 47.8% have post-secondary school diploma, and 1.8% have other education. The majority (74.1%) of the respondents used the internet more than ten hours per week.

The sample has been tested for potential systematic bias in the data (Groves 2004). Therefore, the squared Mahalanobis distances were calculated to identify questionnaires that are completed but made no sense (Hair 2010). The results indicate that all questionnaires deliver meaningful responses.

The questionnaire include a set of questions reflecting citizens' preferences using a 5-point Likert Scale. One set of questions studying citizen preferences by retrieving the current and future usage intensity ranging from 1 "no use" to 5 "very strong use". In this context, we sample the participants' usage intensity of Full Online Services and public e-Services regarding m-Government. The other set of questions studying citizen preferences by retrieving citizens' attitude ranging from 1 "not important" to 5 "very important". In this context, we sample the participants' attitude toward Full Online Service offers regarding specific e-Government service categories (e.g. "Health", "Social Services", "Culture and Recreation", "Education", etc.) and specific single e-Government services (e.g. "application for a driver's license", "vehicle registration renewal", "application for a registration card", "application for a passport", etc.). Additionally, we have interrogated their attitude toward specific public e-Services considering mobile and social media services. The data has been analyzed using IBM SPSS Statistics Version 21.

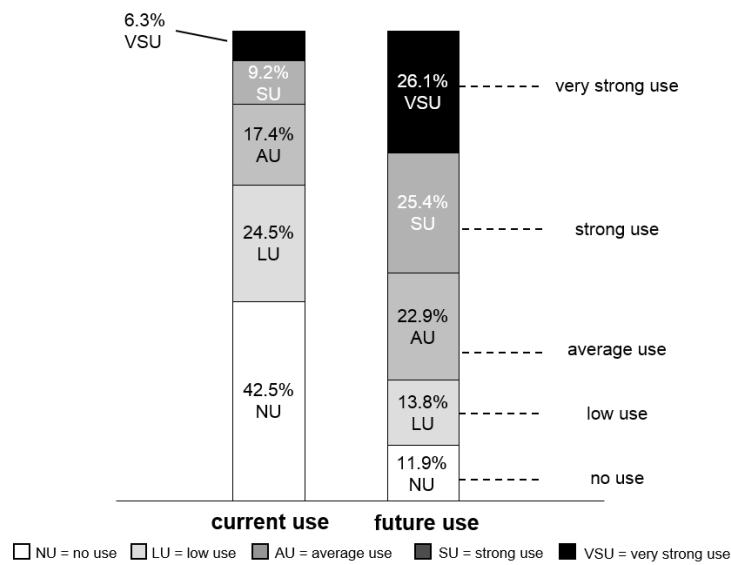
## EMPIRICAL RESULTS

In the upcoming sections, we will present findings based on an explorative citizen survey that builds upon the three identified e-Government developments. In this context see Wirtz (2015). Our research approach aims at filling the research gap regarding citizen preferences towards specific innovative e-Government services. Thus, this study contributes to a reduction of the research shortage on knowledge about the implementation of different public e-Services exclusively offered online and via social media and mobile applications from a citizen perspective. In the following, we will systematically report the survey's outcome in terms of three steps. First, we will deliver the results regarding citizen preferences toward Full Online Services. Subsequently, we will present the findings concerning citizen preferences toward public mobile services. The final subsection will evaluate and interpret the outcome covering citizen preferences toward the public service provision via social media platforms.

### Full Online Services

The increased significance of implementing Full Online Services for many local e-Governments around the world has affected interest of citizens in handling their public administration concerns exclusively online. Based on our survey’s results, currently 15.5% of the respondents are using e-Government Full Online Services. 51.5% of the respondents confirm that they intend to use public Full Online Services of their city portal strongly and very strongly in the future (within the next three years). Figure 1 illustrates this development and additionally shows that the very strong use of Full Online Services is expected to more than quadruple in the next three years.

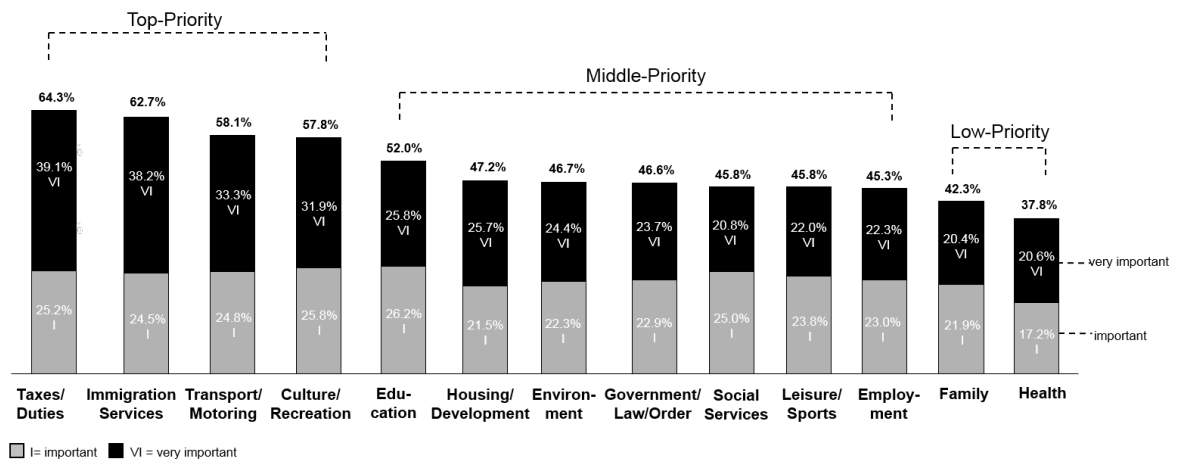
**Figure 1: Extent of current and future e-Government Full Online Service use**



E-Government city portals offer a wide range of services that are frequently arranged according to different public service categories. According to the survey’s participants, the importance for the implementation of public Full Online Services differs among the public service categories. Figure 2 illustrates the findings regarding the response options 4 “important” and 5 “very important” of the 5-point Likert Scale to present the priorities of the citizens regarding Full Online Services. Our study’s findings show that the top-priority service categories are “Taxes and Duties”, “Immigration Services”, “Transporting and Motoring”, and “Culture and Recreation”. Specifically, for the majority of the respondent citizens, the most important service category is “Taxes and Duties” with 64.3% approval that this category is important or very important for a full online performance. According to the citizens, some public service categories are less important considering a full online service provision. In particular, the survey’s participants indicate that the need for full online availability of public services is less important regarding the public service categories “Family” and “Health”.

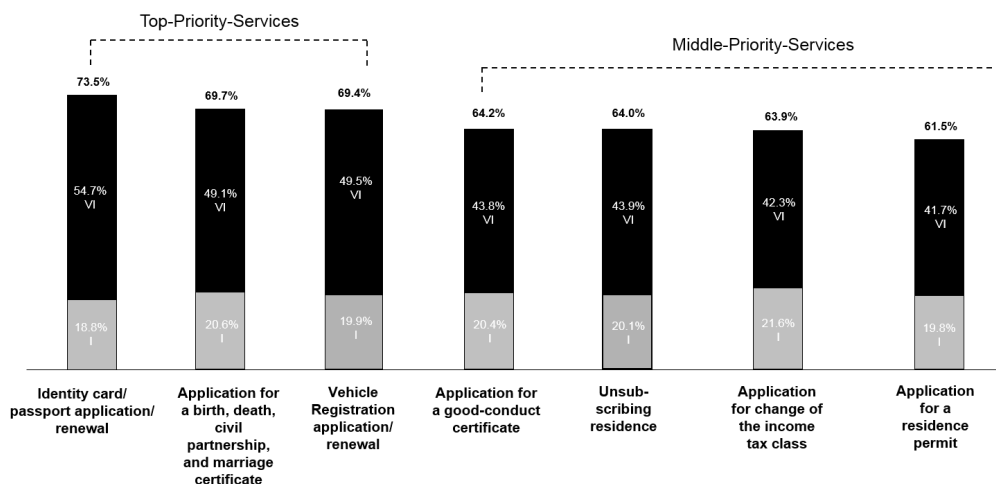


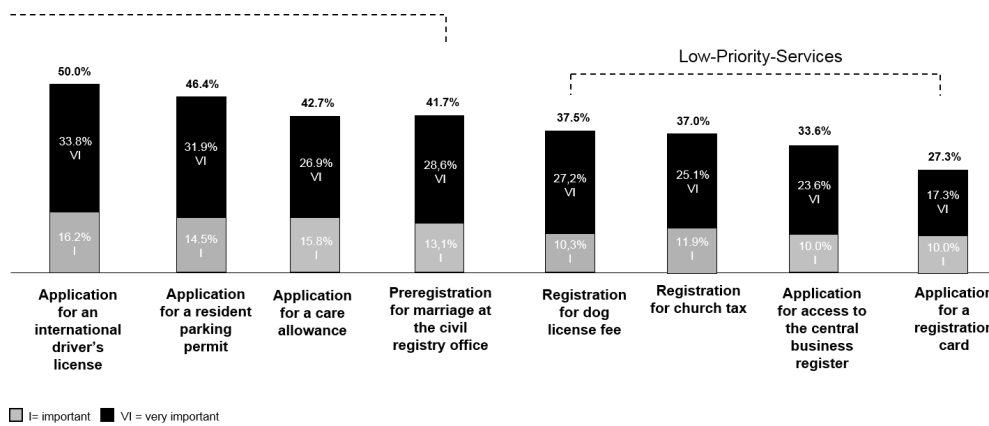
**Figure 2: Importance of Full Online Services according to public service categories**



Within the different public service categories, city portals offer manifold single e-Government services. Our survey’s results show that citizen preferences toward Full Online Service delivery differ among different single public e-Services. With 73.5% approval (important and very important), the respondents indicate that the application for or renewal of the identity card/passport is the most important single public e-Service regarding the full online availability. According to the participants, other top-priority full online services are the application for a birth, death, civil partnership, and marriage certificate (69.7% important and very important) and the application for or renewal of a vehicle registration (69.4% important and very important). Further single public services that are important and very important for citizens to be handled in terms of a complete and exclusively online interaction, are the application for a good-conduct certificate (64.2%), unsubscribing residency (64.0%), application for change of the income tax class (63.9%), and application for a residence permit (61.5%). Furthermore, according to citizen preferences, low-priority services for full online interaction are the registration for a dog license fee (37.5%), registration for church tax (37.0%), application for access to the central business register (33.6%), and application for a registration card (27.3%) (see Figure 3)

**Figure 3: Importance of full online availability for single public e-Services**

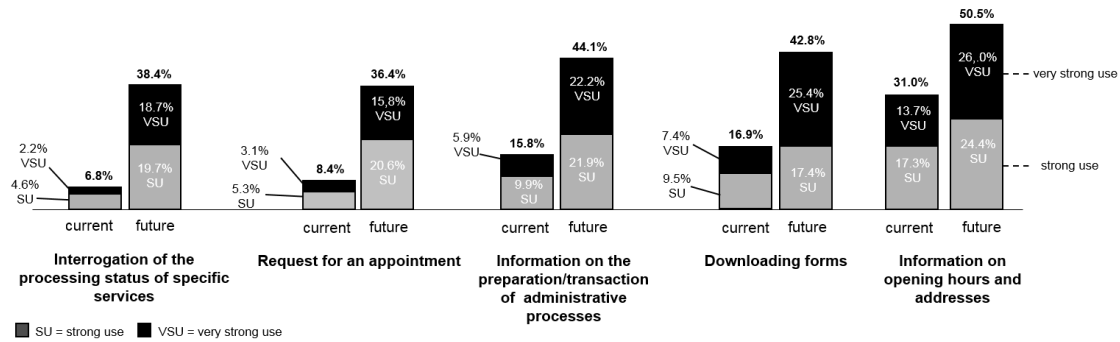




### Public Mobile Services

Beside the development regarding Full Online Service provision at the city portal website itself, the transition from e-Government to m-Government is ubiquitous in many public administrations. Figure 4 shows that 44.2% of the respondents believe that it is important to implement mobile devices for the interaction with the government in the future. According to our survey sample, the current use of mobile devices to render public concerns stands at 47.3%. However, more than one third of the responding citizens stated that their city portal do not offer public mobile services to their knowledge. In terms of the provision of mobile applications, e-Government may offer several informational, communicative, and transactional public e-Services. Our citizen survey indicates that the overall usage of mobile devices for specific single e-Services is expected to increase significantly within the next three years. Particularly, 38.4% (strong use and very strong use) of the participants confirm that they intend to interrogate the processing status of specific services via mobile applications in the future. Compared to the current use of this public mobile service (6.8% strong use and very strong use), we expect a five-fold increase of the usage intensity in the next three years. Based on the survey's findings, the mobile request for an appointment is expected to quadruple in the future. Furthermore, according to the survey's outcome, the access to information for the preparation and transaction of administrative processes (15.8% current strong use and very strong use), as well as downloading forms (16.9% current strong use and very strong use) is expected to almost triple in the next three years. Finally, 31% of the participants confirm that, currently, they use public mobile services strongly and very strongly to get information on opening hours and addresses. In the future, it is expected that the use of mobile e-Government service will rise by more than 1.5 times to 50.5% (see Figure 4).

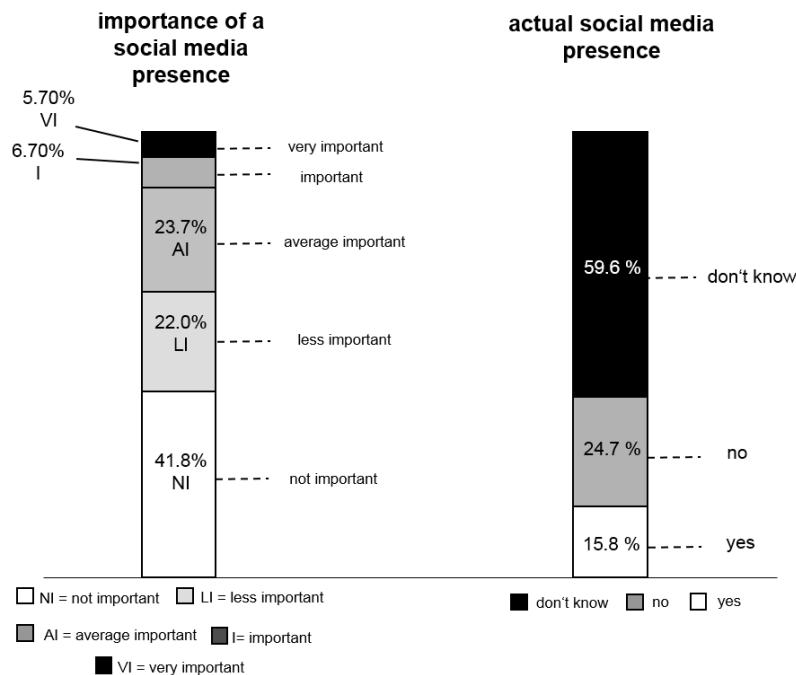
**Figure 4: Extent of current and future use of single public mobile services**



**Public Social Media Services**

According to the study’s results, 12.4% of the participants consider the presence of their city portals on social media platforms important and very important. However, approximately 60% are not aware of the city portal’s social media activities (see Figure 5). City portals that offer public social media services provide different e-Government service types ranging from communicative contact and interaction with the city portal’s staff to the delivery of transactional public e-Services. Regarding the provision of public social media services, the citizens mostly prefer the offer of frequent information on current events, e.g. cultural events, notifications (with 27.9% approval important and very important) followed by the less important availability of specific public e-Services, specifically citizen participation services (13.1% important and very important). The use of social media as a platform for public discussions and debates (13.0%), as well as the opportunity to contact the city portal’s personal (10.5%) are least important based on the citizens’ preferences.

**Figure 5: Importance of city portals’ social media presence and actual social media presence**



## DISCUSSION AND IMPLICATIONS

The incitement for conducting this study has been the increasing significance of e-Government city portals being an integral part of modern public service provision, and the scarce number of research contributions that deal with local level e-Government investigating citizen preferences towards specific innovative public e-Services. By conducting a literature review on related research, we recognized that the knowledge on city portal user preferences toward three main e-Government developments involving Full Online Services, public mobile services, and public social media services is limited despite its increased significance in the modern public administration environment. To fill this research gap, we have carried out an empirical exploratory citizen investigation, surveying city portal users of German municipalities.

The study's outcome may provide useful and valid implications for an efficient user and service-oriented portal management, as the investigation covers current user needs and preferences. In this context, we found that citizens' utilization of Full Online Services is expected to significantly grow in the future. The future perspectives that have been documented in terms of the e-Government survey of the United Nations 2014 confirm this development. Therefore, public authority officials should generally engage in implementing transactional e-Government services that can be processed without appearance at the respective public authority by means of a complete and exclusively online interaction. City portals shall be expanded to incorporate Full Online Services particularly as these kinds of e-Services equally help governments and citizens by offering several benefits, primarily in regards to effort, cost, and time saving aspects (Al-Sebie, 2014). These benefits may promote citizens' satisfaction and intention to use. According to prior studies, both satisfaction with Full Online Services and intention to use Full Online Services are influenced by several factors, such as privacy, security, usefulness, perceived ease of use, or trust.

The usefulness and appropriateness as well as the technological requirements regarding the implementation of Full Online Services may differ among the e-Government service categories. The survey's findings indicate that citizens desire the provision of Full Online Services specifically in the context of the public service category "Taxes and Duties". According to the United Nations, only 37% of the Member States offer an online submission of income taxes in the year 2014 for instance. However, according to citizen preferences, the implementation of Full Online Services by e.g. offering an e-Tax system has first priority regarding a full online service delivery. Besides online tax filling, the service category "Taxes and Duties" may provide several opportunities for the Full Online Service implementation, for example, an e-Stamping Service by which citizens can submit a stamping application, make payment online and obtain a stamp certificate instantly, e.g. for property documents. Other public service categories for which the portal management should foster the implementation of Full Online Services

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are “Immigration Services” (e.g. birth, death, and marriage registration), “Transporting and Motoring” (e.g. renewing vehicle license online), and “Culture and Recreation” (e.g. access online library services).

These findings are largely consistent with the results regarding citizen preferences toward specific single Full Online Services. Within the service category “Immigration Services”, especially the application for or renewal of the identity card/passport as well as the application for birth, death, civil partnership, and marriage certificates should be offered fully online in order to satisfy citizen demand. Regarding the category “Transporting and Motoring”, the portal management should consider the application for or renewal of the vehicle registration as being top priority for a full online implementation.

Another important development regarding public e-Service provision is the incremental transition from e-Government to m-Government. Given that citizens ubiquitously use mobile devices and that integrating mobile services into e-Government city portals deliver several advantages, a modern public administration should expand its m-government strategy. However, there are also several issues of m-Government implementation that have not been solved yet, such as trust, public awareness, cost, infrastructural constraints, and the lack of an enabling legal framework (Al-Hujran 2012). The findings of the present study also reflect the citizen’s uncertainties toward the usage m-Government. On the one hand, according to the survey’s results, the importance and usage of mobile devices for e-Government services is expected to increase significantly in the near future. In this context, citizens mostly prefer the interrogation of the processing status of specific services via mobile applications followed by mobile requests for an appointment. However, on the other hand, the importance of implementing m-Government is not completely supported by the data of the present survey. Nevertheless, the portal management is requested to offer mobile versions of their city portal website or official public mobile apps due to the sharp increase of the usage intensity in the future. In light of m-Government advantages including increasing profitability, good quality of services, effectiveness transaction, and improving excellent performance researched by prior studies (e.g. Jahanshahi et al. 2011), there is a clear suggestion for enhancing the implementation of m-Government. Regarding mobile apps, it is suggested to provide an integrated and holistic app that delivers important public e-Services in a personalized manner. Thus, citizens may have mobile access to different e-Government information such as opening hours and addresses, information on the preparation and transaction of administrative processes, or the processing status of specific services. Additionally, citizens may have the opportunity to make an appointment via the mobile app and download necessary forms without any commitment to opening hours of the competent public authority.

Furthermore, when it comes to satisfying citizen demands, e-Government portals should at least be prepared for planning a social media strategy. The emergence of the so-called We-Government that have been predicted by Linders (2012) increasingly become reality in modern public administrations. Furthermore, emerging e-Government trends involving e-Democracy that base on Social Media applications cannot be regarded as negligible (Bonsón et al. 2012). Therefore, the city portal may extend its web presence by maintaining several social media channels such as Facebook, Twitter, and YouTube.

Especially, the presence on social network sites may deliver added-value for citizens as they may interact with the city portal's personal and exchange information and opinions with other citizens, or get alerts and notifications for specific decisions of the city council and get information on current local events. An important outcome of the study is that almost 60% of the participant do not know if their city portal is present in social media. Therefore, when planning an e-Government social media strategy, city portal managers need to create awareness by promoting their social media activities. It is recommendable to integrate a clearly visible and easily accessible link to different social media channels on the city portal website.

In summary, the present study deliver useful and valid implications for an efficient user-oriented portal management as it consider the specific preferences of the citizens. In this context, the study contributes to new insights regarding the scientific discourse on e-Government success and failure. Prior research contributions have largely neglected user preferences toward specific and innovative public e-Services. Therefore, we have identified main developments of the e-Government practice to interrogate citizen preferences resulting in a comprehensive research approach as a practice and user-oriented approach reflects the reality more than the examination of technology-oriented, generic and abstract constructs. This study hence propose a realignment of scientific endeavours toward the observation of current e-Government developments and the varying citizen needs and preferences. Only in this way, scientists may provide appropriate and reasonable implications for an efficient city portal management as a service and user-oriented e-Government depends on recommendations regarding the implementation of specific public e-Services that are adapted to citizen needs and correspond to current and emerging developments of e-Government practice. In this context, the present study delivers appropriate and useful results for further examinations and may serve as an initial point for future research in the field of citizen preferences. Specifically, scholars should expand the study's findings regarding the three identified e-Government developments in the framework of a multivariate investigation. Especially, in the field of public social media as well as m-Government the knowledge on e-Government success is rather limited. Furthermore, for future works, it is important to involve other emerging trends that may affect user preferences, e.g. personalized web content in the context of e-Government websites.

The generalizability of the results to the international e-Government practice is possible only to a limited extent. As some specific public e-Service are not available in other countries due to social, historical, and political structures (e.g. church tax), a cross-cultural study is required. Non-German researches should also replicate the present study's setting in order to provide scientific and practical implications for other countries. Additionally, the data ascertainment has generated a traditionalist-sample including elder e-Government users (only 14.2 % of the respondents were under thirty years old). Particularly regarding the examination of new media trends, such a sample may result in finding biases. Therefore, further examinations may support public officials to cope with the challenges of today's city portal management by empirically investigate, validate, and expand the findings of our exploratory study.

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