Walking a mile in their shoes—A citizen journey to explore public service delivery from the citizen perspective

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Abstract. Up to now, public administrations have taken a supply-oriented approach to the design of electronic services for citizens resulting in low usage rates. In contrast, companies in the private sector have been relying on demand-oriented service design for many years. They make use of so-called 'customer journeys' to better understand the perception of services by customers and to tailor the design of electronic services to that perception. Although also governments and public administrations have been increasingly recognizing the benefits of customer journeys, there is still a lack of research on the application of customer journeys in the public sector. Especially, there is no customer journey that is applicable to a wide range of public services and serves as a general blueprint for public services. Therefore, in this paper, we present a generic citizen journey that depicts the delivery process for transactional public services from a citizen perspective. The citizen journey depicts the points of interaction that citizens have with public services. We evaluated the citizen journey in a focus group with public servants and a survey with citizens. The evaluation reveals the citizen journey's general usefulness. Researchers benefit from our citizen journey through a better understanding of the service delivery process and the different steps that could impact citizen experience. Practitioners can use the citizen journey in the design of citizen-centric services and during the actual service delivery to guide citizens through the delivery process.

Keywords: Customer Journey, User Journey, Service Design, Digital Government, Citizen Journey.

1   Introduction

The digitalization of the public sector progresses and public administrations have been increasingly offering more of their services to citizens electronically. While e-services in the private sector have been used by customers for many years (e.g. online banking), the usage rates for public e-services are still at a low level [1–4]. One reason for this discrepancy between the use of private and public e-services is, among other things, the different role of customers and citizens. In contrast to the private sector, where service designers focus on the customer perspective, researchers repeatedly point

out that a more demand-driven perspective is needed in the public sector and that public administrations must design their (electronic) services according to the needs of citizens [5].

In service design, an established and widely used instrument to achieve a high level of customer orientation and customer satisfaction is the customer journey [6, 7]. A customer journey consists of the sequence of all points of contact, so-called touchpoints, between the customer and the company, brand or product in the course of a purchase, for example when placing an order [8]. Customer journeys are used to visualize, analyze and ultimately improve these points of contact [8]. The points of interaction are viewed from the customer's perspective. Customer journeys create an understanding of the ideal steps that customers ideally go through in order to purchase a product. This reveals artefacts and activities that are of high importance in the interaction between customers and companies and which should, therefore, be given high priority in service design, such as relevant websites. Customer journeys enable the identification of weaknesses and potential for improvement in these artifacts and activities. Thus, their application is particularly valuable as customers are involved in the creation process of a customer journey and complement the company's internal evaluation of the points of contact [9].

Meanwhile, also public administrations recognize this trend and move from a more supplier- and service-oriented perspective to more user-centric and demand-oriented approaches [10]. For example, the Danish Digital Strategy 2016-2020 explicitly refers to the development of customer journeys as a means of increasing transparency for citizens' rights and obligations [11]. Also, the promotion of demand-driven services with a high degree of personalization is an important trend, as citizens want services to be more closely tailored to individual needs and want to be more involved in the design and delivery of services [12]. Therefore, customer journeys have been increasingly used by public administrations and governments to ultimately improve the quality and use of public e-services [e.g. 13–17]. Particularly with the increasing complexity of digital technology and the growing importance of e-services, it becomes increasingly important to understand and address the needs of citizens [18].

Although there are various examples of public administrations that apply citizen journeys in practice, there is scarce research on the use of the customer journey concept in the public sector [19–21]. Especially, researchers have not created a generic citizen journey that is applicable to a wide range of government services. To become more citizen-centric and understand the needs and desires of citizens, public administrations should create and analyze citizen journeys in public service design. To release public administrations from the necessity to design each journey and service from scratch, a blueprint for citizen journeys is deemed useful. Thus, we aim to support the application of the customer journey concept in the public sector by addressing the following research goal: *Design of a generic citizen journey that depicts the delivery process for transactional public services from a citizen perspective*. We focus on transactional services such as applying for child benefit. Other types of services such as informational (e.g. information on public events on websites), communicative (e.g. e-mail interaction) or participatory (e.g. participatory budgeting) services are not covered.

Despite their usefulness, the transfer of strategies from the private to the public sector is repeatedly criticized because of the sectors' fundamental differences. Several aspects need to be considered before implementing approaches that have been proven to be useful in the private sector. For example, customers and citizens cannot be treated equally, as they have different roles in the service process. In section 2, we briefly review central differences between the public and the private sector. Thus, during the design of our citizen journey, which is presented in sections 3 (method) and 4 (results), we put specific emphasis on the differences between the public and private sectors. The citizen journey is intended to support service design in public administrations. It enables administrations to incorporate not only internal considerations in the service design but to consider also the citizens' needs and desires. Additionally, administrations can use the journey during service delivery to guide citizens through the process. Further implications for research and practice are discussed in section 5.

2   Research Background

In the following section, the central concepts used in this study are delineated. Furthermore, we discuss their general applicability to the public sector context and shortly introduce the scarce extant public sector literature.

Customer Journeys and the Public Sector. The idea of customer journeys originates in the field of marketing research [22]. Hence, the majority of research and established design principles of such a journey are tailored to customer-company relationships. A customer journey describes how customers experience the totality of touchpoints between a customer and company. The fact that greater attention is now being paid to the customer's perspective is due to a paradigm shift in recent years, leading companies to increasingly focus on creating value for their customers that goes beyond the mere product [23]. Whereas in the past, customer management was mainly concentrated on generating maximum monetary success from customer relationships, the focus is now more on conveying a positive customer experience.

Similarly, the public sector has witnessed paradigm shifts in the past decades, first moving from traditional public administration to New Public Management (NPM) and, more recently, moving from the NPM paradigm to what Bryson et al. call the 'emerging approach to public administration' [24]. Under NPM, public administrations are viewed from an economic and managerial perspective and, as a consequence, citizens are treated as customers [24]. However, lately, this approach has been criticized for being shortsighted and reducing the citizens' role in the public sector too much. Instead, researchers point to the importance of appreciating the citizen as being multifaceted and considering the different roles the citizenry can take during the service process [25], from being a passive receiver of services to being involved in the policy process [26]. Thus, it is important to not only change the term 'customer journey' to *citizen journey* but to take into consideration the different notions this term encompasses.

Marketing research uses the concept of customer experience which describes "a multidimensional construct focusing on a customer's cognitive, emotional, behavioral, sensorial, and social responses to a firm's offerings during the customer's entire purchase

journey." [23] Companies are eager to understand the customer experience because "[t]he key objective of tracking the experience at customer touchpoints is to develop an understanding of how an experience can be enriched for the customer throughout what marketers call the 'customer decision-making process'." [7] Companies use customer journeys to document and understand the experience a customer makes while interacting with a product [6]. Ostensibly, the same rationale might drive the use of citizen journeys in the public sector. Citizen-centricity is often claimed as desirable, both by practitioners and researchers, but the application of citizen journeys is more complex than that. Improving the perceived quality of public services impacts the efficiency with which public policy is put in practice [27]. Public administrations are accountable to the citizenry and the administration's overall goal is to "[c]reate public value in such a way that what the public most cares about is addressed effectively and what is good for the public is put in place" [24]. In this sense, citizen-centricity is about more than just satisfaction with the services provided; it is about the assurance of public values.

As mentioned in the introduction, only few examples of citizen journeys can be found in academic literature. One of the earliest applications of the customer journey concept to the public sector is provided by Parker and Heapy [20] who provide insights into service design from the public and private sector. Although they provide extant cases of customer and citizen integration, neither do they provide a template for a user journey nor do they focus on digitized services. Another example is given by Crosier and Handford [21] who provide a customer journey for the blind and partially sighted people. However, the journey they present is less tied to a specific good or service and more focused on the on-site shopping experience of disabled people. A recent example of an application of the concept is given by Trischler and Scott [19] who propose new methods for public service design, among which are customer journeys and visualization and mapping techniques.

Design and Visualization of Customer and Citizen Journeys. Customer journeys are typically divided into different subsequent phases. However, there is no consensus in literature on how broad or narrow these phases are. While Nenonen et al. [28] differentiate between orientation, approach, action, depart, and evaluation, the most basic definition of customer journey phases can be found in the work by Lemon and Verhoef [23] who distinguish a pre-purchase, a purchase and a post-purchase phase. The pre-purchase phase includes a customer's touchpoints before purchasing a service. This refers to all activities that fall in the period from the point where a customer recognizes a need to search for a solution to the point of his or her consideration to satisfy this need by purchasing the service. Subsequently, in the purchase phase she or he makes the choice to order a service, and finally pays for it. The purchase phase is generally seen as the heart of the customer journey with companies concentrating their efforts to improve customers' shopping experience. Finally, the post-purchase phase encompasses a customer's experience after buying a service. This includes consumption, usage, customer engagements, and service requests. A customer journey is not an isolated process as previous experiences are included as well, which influence future customer journeys. Furthermore, customers can quit their journey in any phase.

To enhance the understandability of a customer journey its visual representation has become increasingly important, for instance, in a diagram or a storyboard with pictures,

sketches, and photos [6, 20, 22]. Although no standard for modelling a customer journey exists, visual representations allow a company to compare different service experiences and to compare the offered services to those of competitors [8]. Since these journeys represent experiences from a customer or citizen perspective, users are actively involved in their creation [9, 20, 29]. This helps in identifying factors that influence user satisfaction, including problem areas and opportunities for future innovation.

3   Research Design

This paper follows the design science research (DRS) paradigm which aims at the development of IT artifacts, namely constructs, methods, models and instantiations [30]. This paradigm is suitable for our paper since we propose a generic citizen journey which is a model and abstract representation of the public service delivery process from the citizens' perspective.

In order to conduct DSR to design our citizen journey, we follow the research process proposed by Österle et al. [31] that consists of the steps analysis, design, evaluation and diffusion. In the *analysis* step, we identified and investigated our research problem. We found the need and anchors for our research in practice-oriented and academic literature as presented in sections 1 and 2. This literature provided us with insights on current practices in government agencies and what knowledge we can build on from academic literature, especially on customer journeys applied in the private sector.

Subsequently, we developed the citizen journey in the *design* step. We built our citizen journey based on a well-established customer journey [23]. This is appropriate since the concept of customer journeys has been widely researched in academic literature on the private sector. Despite commonalities between the private and public sector, there are substantial differences so academic results cannot be transferred unreflectingly between them. Therefore, based on differences between the sectors and during discussions within our research group, we developed a first version of our citizen journey.

The *evaluation* step is essential to provide evidence for the usefulness of the developed artifact. We conducted two evaluations to redesign and develop further our version of the citizen journey. These evaluations were not focused on one specific service but on public services for citizens in general. In both evaluations, we asked our respondents to report on their experiences across situations and different public services. The *first evaluation* was conducted by means of a focus group. We aimed at interviewing public servants from different departments who do not hold a management position to get insights from different administrative perspectives and to ensure that the participants are in contact with citizens in their daily routine. This group of employees has the best insights into the processes and contact points of the citizens with the public administration. We structured the focus group interview along with six key questions with an evaluation of the first version of the citizen journey being the core of the discussion. A total of six employees from three different departments (social welfare, citizens' office and registry office) took part in the discussion, which lasted 105 minutes, was recorded and then transcribed. We conducted the analysis with a focus on the completeness and

correctness of the citizen journey's phases, the sequence representing the delivery processes and the appropriateness of presentation and visual design. The results from the first evaluation were transferred to an additional *design* step in order to iteratively revise our citizen journey. Based on the insights gained through the focus group, the citizen journey was refined. Specific suggestions of the focus group participants but also statements on the general use of citizen journeys were evaluated and translated into a refined version of the citizen journey.

This step was followed by a *second evaluation.* As highlighted in sections 1 and 2, it is of utmost importance to include citizens into the development of citizen journeys in order to adequately capture their experiences with public service delivery. Thus, following the focus group and the re-design of the citizen journey, we carried out a survey to identify the steps and critical points of contact that are relevant from the citizens' perspective. The survey was conducted in person at the citizens' office of a small town in Germany. In order to reach as many different citizens as possible, we opted for a paper-based survey. The questionnaire consisted of several questions that revolved around the requested service, the citizens' preparation for this service request, and reasons for showing up in person. The respondents were also shown the refined citizen journey and were asked to evaluate the phases, their sequence, and their particular steps and order of steps. In total, 44 citizens took part in this non-representative survey. Similar to the analysis of the focus group discussion, the answers from the survey were evaluated qualitatively and with regard to the phases and steps of the citizen journey, their form of presentation and critical points of contact. After the analysis of the survey results, the citizen journey was re-*designed* a second time to adequately account for the citizens' experience with public service delivery.

Finally, the *diffusion* step will be conducted through dissemination activities such as scientific conferences and articles as well as workshops with practitioners.

4   Citizen Journey

4.1   Design

A customer journey can be divided into three phases [23]: prepurchase, purchase and postpurchase. This subdivision is also suitable for a transactional citizen journey (cf. Fig. 1). We renamed the three phases to *preparation*, *application* and *result* since a transactional service in the public sector—in contrast to the use of a service in the private sector—is typically characterized by the processing of an application [32–34]. In contrast to a customer journey, where the customer usually completes the journey successfully, i.e. receives a product after the necessary steps have been taken, the outcome for a citizen in the public sector is more uncertain, as there may be no entitlement to a service. In the following paragraphs, we describe the three phases in detail.

Preparation phase. The subdivision of this phase from a customer journey [23] in need recognition, consideration and search is adopted here with minor changes. Most citizen journeys start with a *need recognition*, which is either triggered by the citizen or by law [18]. Most of the interactions between a citizen and the public administration are prescribed by legal regulations and are therefore mandatory [9, 35]. Needs triggered

by law include, for example, the extension of a passport or driver's license, which becomes necessary due to reaching an expiry date. In such cases, a public administration may also inform a citizen of the need to apply for a renewal. In addition to the needs enforced by law, there are voluntary needs that are triggered by citizens themselves, such as marriage, business registration or parental allowance. Such needs are not triggered by law. There may also be needs for which no public services are available, for example, for a permission to open a shop on Sundays, as this may be prohibited for most businesses in some countries. Citizens can become aware of a situation both online (e.g. through information on a web portal) and offline (e.g. through conversations with other people), which can create a need.

Once the need has been detected, the citizen makes the *channel choice* for the subsequent activities of this phase, and various online (e.g. app) and offline options (e.g. city hall) are available. Here, a substantial difference to a customer journey becomes apparent: The citizen journey does not include the identification of different potential providers, since there is mostly only one provider for a service, usually the local government. For example, a parking permit may only be applied for at the respective municipal administration of the place of residence. Exceptions are, for example, the selection of a public school or kindergarten. As these are exceptions to the rule, the focus is on the choice of channel and not on other choices. The discussion on the online and offline use of public services and according usage rates indicate the importance of the channel choice for the public sector.

Afterwards, the citizen starts to *search for information* about a service to address the need, which can take place online and offline. This search can be different depending on the need. For example, a citizen can conduct a general search to gain more insights into the topic. This kind of search focuses exclusively on general information and does not address a specific service or public administration (general search). In some cases, citizens already know which service they are looking for and collect information about this service independently of the responsible public administration (service-specific search). An example is searching for the amount of child benefit to which a family is entitled according to the number of children. As the use of public services is usually accompanied by the submission of documents and forms, this search also includes searching for forms (e.g. online forms and PDFs) and information on what additional documents are generally required to be submitted—regardless of the responsible administration. While the search for information in e-commerce also includes the comparison of different services and providers (e.g. with regard to price and quality), these aspects are rare when searching for information on public services, as the responsible administration is often determined by the place of residence of the citizen or other properties such as his or her employer. It may also happen that citizens know the service and responsible administration and search the administration's website to find the opening hours, contact persons or online forms of this administration (administration-specific search). Finally, it can happen that all the necessary details of the service in question are known and therefore no search for information is necessary (no search). It is possible that citizens want to use electronic services, but are forced to use services onsite because the requested service is not offered electronically.
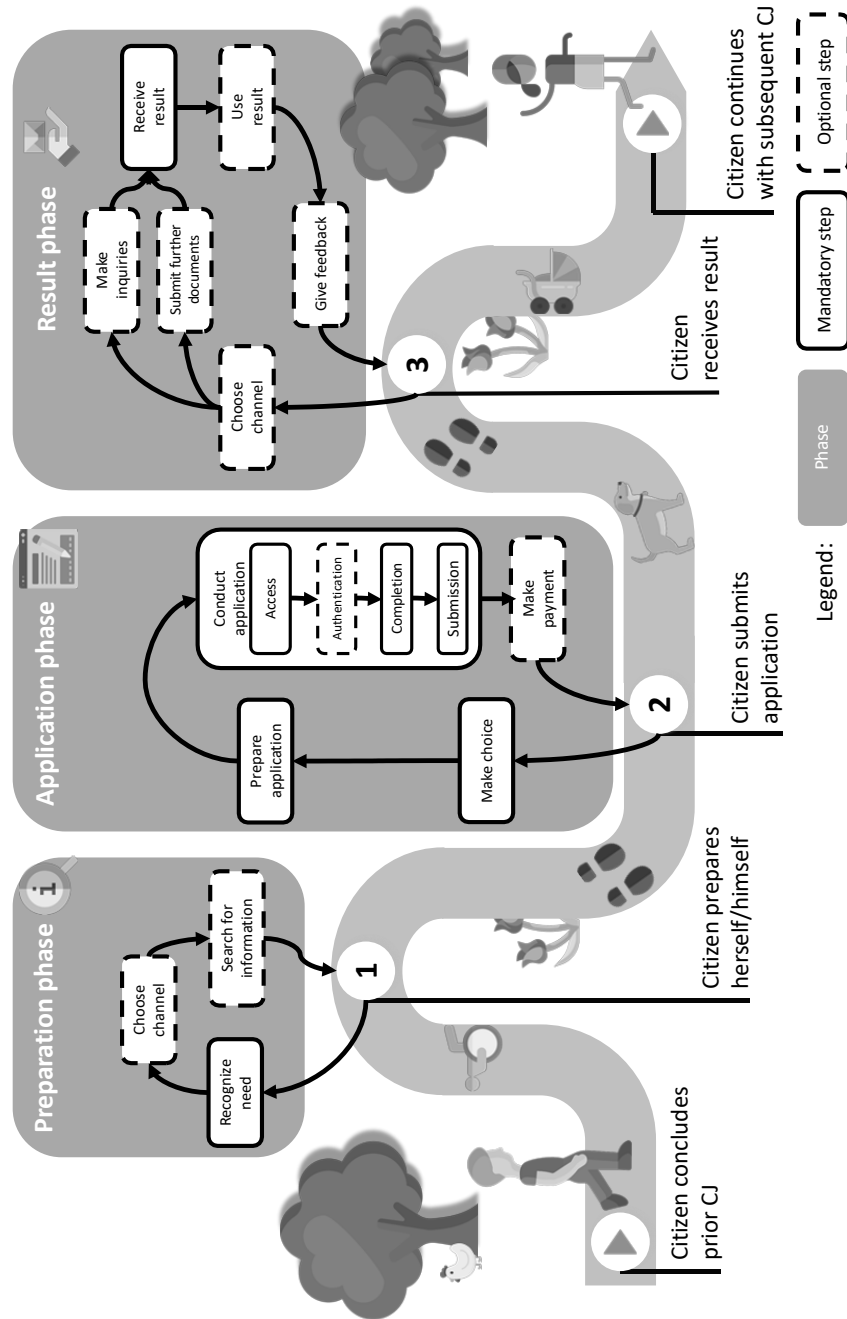
Fig. 1. Citizen Journey

Application phase. Similar to the second phase of a customer journey with the steps choice, ordering and payment [23], the second phase of our citizen journey begins with a *choice*. This includes, among other things, the decision to receive a voluntary service, such as parental allowance, or the choice of when to apply. If several people are entitled to receive a service for a certain case, the decision can also be made as to which one of them will receive it. In most cases, the choice of channel for the subsequent steps of this phase is the only choice citizens have since service and responsible administration are often predetermined.

In contrast to e-commerce, the next step of this phase is not ordering but *preparing the application*, because citizens have to fill in forms and submit documents that are checked by the administration in order to receive a service. For example, when applying for a building permit, an applicant may need to submit a drawing from an architect [34]. The citizen must collect the documents and in the case of a postal application also the forms to be filled in before an application for a service can be made.

After preparing the application, the citizen *conducts the application*, which corresponds to the order in a customer journey. The conduction step is again divided into individual substeps. In the offline channel, *access* to the service can consist of visiting the city hall and contacting public servants or—as with a postal application from home—sitting at a desk. When choosing an online channel, the access consists of visiting the administration's website or opening an app.

Some services require the *authentication* of citizens. The public administration must, therefore, ensure that the citizen is the person he or she claims to be. The authentication is specific to a citizen journey and barely occurs in a customer journey. However, exceptions are, for instance, purchases of a banking product. Depending on the level of security required, there are a number of options for authentication in the online channel, such a user account with password for services with a lower security level, or identification with an eID for a high security level. For services such as booking an appointment at the city hall, authentication may even be completely unnecessary. In the offline channel, authentication can be done by personal appearance and an ID card.

During the subsequent *completion*, the necessary forms are filled in and necessary documents are attached. In electronic solutions, a service can be handled completely online, so that the citizen can fill in forms and upload additional documents. When using an online portal, the documents can be automatically checked for completeness. Portals can serve as online storage for electronic documents so that a document can be uploaded only once and then used in applications for various services.

The final *submission* of the application with the attached documents can be done online or offline. Digitalized service offers enable the online submission of an application. It may also be possible to electronically fill in and print out forms and then submit them by mail. Another possibility is that forms can be submitted online, but additional paper documents must be sent to the administration via mail. Essentially, the submission can be made by mail, fax, digitally or in a personal meeting.

Depending on the service, a *payment* may be required, either at the time of submission or at an earlier or later stage in the process. While this step is mandatory in e-commerce, citizens do not have to pay for every public service.

Result phase. The result phase of our citizen journey has commonalities but also differences to the according phase of a customer journey which contains the steps consumption, usage, engagement and service requests [23]. In our case, first the *channel choice* for the next steps of this phase takes place. Here too, various online and offline options are available, such as contact by e-mail, telephone and mail. This step is optional, as in this phase only the receipt of the result is mandatory and the channel for this notification is often specified by the public administration.

Afterwards, citizens have the opportunity to *make inquiries*. For example, the current status of the procedure can be inquired by telephone or via an online portal, or questions can be asked about the understanding of information and documents requested by the administration.

While questions from citizens are directed to the administration, the administration can also contact citizens. This happens if the documents submitted by the applicant are unclear or incomplete and therefore missing documents or information must be submitted. In such cases, the administration informs the applicant of the need to *submit further documents*. The citizen then provides the necessary documents via the previously chosen channel. This step differs from a customer journey as there are usually no missing documents to be submitted after the purchase. An exception can be, for example, the submission of a direct debit mandate after the online acquisition of an insurance.

Irrespective of whether inquiries have been made and further documents have been submitted, the next step is to *receive a result*. One difference to e-commerce is this result of a service, that is, the notification. The public administration has made a decision based on the information provided and the citizen now receives this decision. In the positive case, the applicant receives the requested service. This can be a unique action such as issuing a certificate of good conduct or regular actions such as paying housing benefits. In contrast to e-commerce, where the purchase of a product is less frequently refused, the negative case of an application not being granted can occur more frequently in e-government. Of course, purchases can also be refused in the private sector, for example in insurance companies. However, these are exceptions when considering the entire private sector. In addition, customers in e-commerce often receive the product immediately after purchase; in the case of public services, the notification is issued only after the application has been examined in detail. Here, too, there are exceptions in the private sector, such as online shopping, and administrations can also transmit documents automatically and immediately online after the application was submitted such as resident parking permits. The result is received in person, by mail or by electronic means.

The next step is the *use of the result*. Citizens can use a notification and the according permissions, for example, to travel (passport), send a child to school (school registration) or invest the payments received (child benefit). Although this step is similar to the corresponding step in a customer journey [23], the use in a citizen journey is different. Public services often refer to a special entitlement and citizens cannot choose between different service providers and, therefore, the relevance for future 'buying' decisions is comparatively low. Since a service is not always granted, this step is optional in a citizen journey. Citizens might also decline to use the permissions granted. For instance, a

citizen might receive a building permit but then he or she declines to construct a building.

Finally, the applicants can *give feedback* to the public administration, for example on the quality of the service or user satisfaction. Citizens can point out weaknesses in the process and provide ideas on improvements to the service. Additionally, inquiries regarding the individual notification, its understandability and use can be part of the feedback. In contrast to e-commerce, results of public services are more difficult to return and reverse. For example, it is more difficult to cancel a divorce than to return a product to an online retailer. Nevertheless, a citizen may wish to appeal against an administrative decision. This takes the form of a new citizen journey, i.e. an objection or appeal triggers a new citizen journey.

4.2   Evaluation

During the first evaluation with the focus group, the participants evaluated the citizen journey overall positively. They rated the general approach of a citizen journey as valuable and highly relevant as it facilitates a better understanding of administrative processes from the citizens' perspective. The participants argued on basis of their daily routine in which they often face citizens who have problems to understand the administrative processes. Here, a citizen journey would provide guidance for applicants to indicate in which sequence to receive a certain service. Moreover, the actual sequence of the initial citizen journey was rated as a good approximation to the real-world phenomenon as summarized by one interviewee: *"Well, I actually think, it all fits to get an understanding of [the process]."* Especially, the preparation phase offered little room for controversies as the participants commonly agreed on the three suggested steps.

The discussion also revealed some inaccuracies in the concrete sequence and completeness of steps in phases two and three. For the practitioners, the lack of an authentication step in the application phase was crucial and criticized. Here, the participants argued for the importance of authentication in public administration being mandatory in numerous service delivery processes. Consequently, we adopted this suggestion as an optional substep since not every service requires the citizen's authentication.

Additionally, it turned out that the steps of the result phase needed some redesign. The interviewees argued that in most cases the service delivery process is not finished with the result, i.e. the actual service delivery and its usage. After receiving the result and using it, two distinct kinds of feedback could arise depending on the legal quality: first, feedbacks could occur that are legally irrelevant acts such as claims, simple requests and other statements. This step was incorporated as a final step in the result phase after the first evaluation. Second, feedback can occur in terms of legal means to challenge a certain public service, such as legal objections or appeals. This underpins the relation to subsequent citizen journeys since concrete legal actions would trigger a new citizen journey as outlined in section 4.1.

Furthermore, our first plain design of the citizen journey stimulated a discussion on the visual representation and possible embedding into websites. The participants suggested to design the journey comparably to a pathway that leads citizens through the

process of consuming a public service. We did not follow suggestions to implement the citizen journey into a website or app as this suggestion is out of scope of our research.

After the first evaluation and re-design of the original journey, citizens were asked for their experiences with public service delivery and their evaluation of our re-designed citizen journey. Again, the overall feedback was positive. More than half of the respondents (26) stated that they would not change the citizen journey and overall experienced the service process as depicted.

Most of those who did experience the service delivery process differently reported differences for the preparation phase and the result phase. Thus, we applied changes to both phases in the second re-design of the citizen journey. Based on the insights gained through the survey, the step to choose a channel in the preparation phase was made optional as for some services citizens reported to have no choice after all because the requested services are simply not provided electronically. For the result phase, we added the channel choice to this phase, because citizens can decide how they want to make inquiries or give feedback irrespective of the channel used in the phases one and two.

However, the most obvious and profound change resulting from the survey was the visual depiction of our journey. Nearly all surveyed citizens stated that they perceived the original visualization as complex and not easy to understand. As this aspect was also raised in the focus group interview, the design of the citizen journey was changed to the pathway shown in Fig. 1.

5 Discussion and Conclusion

This paper contributes a generic citizen journey that depicts the steps of public service delivery from the citizens' perspective. We developed the citizen journey for transactional public services based on a customer journey from the private sector. The citizen journey was assessed in two subsequent evaluations with public servants and citizens. The results from the evaluations indicate the journey's general usefulness. Additionally, we used the feedback from the focus group and survey to improve the journey.

Our citizen journey provides implications for research and practice. Researchers benefit from our journey through a better understanding of the service delivery process and the different steps that could impact the citizens' experience. The journey can also be used to classify research endeavors and even trigger further research activities on those steps that are crucial for the citizen experience. For instance, the citizen journey can be used to identify how public administrations can design the service delivery process at the citizens' convenience. Additionally, through our citizen journey's derivation from a customer journey, researchers gain a better understanding of the differences between the private and public sectors and how they are reflected in citizen interactions.

Practitioners can use our citizen journey to design their services under specific consideration of their citizens' needs. It enables a more efficient co-design with citizens since a new citizen journey does not need to be developed from scratch for each service. Instead, our citizen journey can be reused for the various transactional services in a public administration. The journey serves as a basis for the design of artefacts that are

relevant to its individual steps such as websites, apps and forms. The citizen journey is not only useful for service design but also during the actual service delivery. Citizens are often confused and do not know how public services work and what they need to do. Public administrations can use the citizen journey to explain how the delivery process for a certain service works. The citizen journey depicts the most relevant steps that need to be undertaken. Enriched with service-specific information, it could also yield information on which fees need to be paid, which documents need to be submitted, and who is responsible for the service. In consequence, we incorporated both stakeholder groups—public servants and citizens—into the evaluation of our citizen journey so it is constructed in a way that it becomes useful and understandable for public servants during service design and for citizens during service delivery.

Our work has also limitations and potential for future work. First, our citizen journey serves as a general blueprint for public services. We are aware that our journey might abstract from some details and specific cases, for instance when it comes to the differences between the public and private sector. However, we did not aim for covering all specifics since we intended to provide a citizen journey that is applicable to a wide range of transactional services. Therefore, slide adaptions might be necessary in exceptional cases if a public administration applies the journey to its services due to different kinds of administrations and services. Second, our journey focuses only on transactional services and the citizen journey might look different for other kinds of services such as participatory services. Future work could design citizen journeys for other kinds of services. Third, researchers can extend the citizen journey to more advanced models of public service delivery such as the no-stop shop [36, 37] where the citizen does not perform any action until she or he receives the notification. Fourth, researchers can undertake further evaluations with more citizens and public servants.

Despite these limitations and ideas for future work, we believe that our citizen journey constitutes a further step towards more citizen-centric operations in public administrations.

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