

Understanding the Impact of E-Government Service Delivery on User Coproduction: The Case of Administrative Service Reform



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Abstract: This article examines the impact of e-government service delivery on user coproduction through a case study of administrative reform in Nanjing, China. Based on interviews conducted between 2019 and 2021, it analyzes why the government applied e-government tools to deliver public services and its impact on user coproduction in the full life-cycle service delivery. The finding suggests that user coproduction has been primarily shaped by information transformation and value creation. The case further reveals a profound change in e-government service provision in which a needs-based approach merged representing a major theme of the on-going administrative service reform in China. Implications for future service reforms and coproduction of public services are discussed in conclusion.

Keywords: E-government services, user coproduction, value creation, information transformation

1. Introduction

The rapid development of technologies and the Internet have successfully enhanced the capacity of governments around the world to improve public services and citizen participation (West, 2005; Scholta et al., 2019). As information technologies evolve, it has also provided opportunities for citizens and businesses alike to engage in various public services online (Weerakkody et al., 2019). Contrast to traditional public service delivery, e-government has enabled governments to adopt more convenient and efficient channels to deliver public services. Through e-government, administrative reforms and service initiatives are carried out that are transforming government functions and enhancing public service quality (Ma et al., 2005). This approach is perceived to be more useful and beneficial to service users (Reddick & Turner, 2012).

Over the past decade, the Chinese government has been continuously practicing e-government innovation in response to the increasing needs of the public (Mei & Wang, 2017; Schlæger & Stephan, 2017). This wave of reform has created an increased

number of coproduction opportunities for both the government and the public. In line with this trend, a group of studies have joined the debate of coproduction of public services and its potential outcomes of public service provision. The key argument is that coproduction of public services could potentially improve service outcomes and create values by engaging service users and other members of the society to make best use of their knowledge, skills and assets (Bovaird & Loeffler, 2012; Osborne et al., 2016). For instance, e-government services have enabled service users to access service information, which may facilitate their participation in decision-making process (Meijer, 2013).

Given increased scholarly work on e-government, studies on how e-government services impact public service delivery, and in particular knowledge generated from developing countries has been scarce. Enlightened by existing studies, it is essential to add insights to the current literature by unpacking and analyzing the process and outcomes of e-government service provision. Further, this article explores why the government adopted e-government tools and how does it impact user coproduction in public service delivery. It focuses on

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the government's most recent service reform and the delivery of e-services by investigating the case of "Making You Satisfied", a new e-government service project launched by the Nanjing municipal government in 2019.

This article contributes to the literature on coproduction of public services and e-government. First, it makes an effort to examine co-production practices through information approaches in developing countries, in which these practices are less examined in existing studies. Second, it contributes to coproduction theory by arguing the importance of a needs-based approach manifested in public service delivery. Third, it extends the empirical evidence base of coproduction by examining its mechanism and process, yet current studies have not fully elaborated these concerns.

In order to address the gaps, this article aims to answer the following question: how do e-government services impact user coproduction in public service delivery? It first reviews literature on e-government and coproduction of public services. It then develops a revised analytic framework built upon coproduction literature that draws on experiences generated from both public organizations and service users in public service delivery. This is followed by the presentation of method, case description and case analysis. Next, it presents the main findings with the purpose of theorizing the process of e-government service delivery and its potential impact on user coproduction. In discussion, key issues and considerations generated from the findings are provided, together with conclusions for future research.

2. Literature Review

2.1 E-government service reform in China

In literature, e-government is understood as the adoption of Information and Communications Technology (ICTs) by public organizations to integrate management and services (Ma & Wu, 2020). In recent years, the Chinese government has carried out e-government service reform to provide better quality of services to citizens. The focus of e-government has mainly been on "administrative reform" (Ma et al., 2015), which aims to enhance the government capacity of providing services and to meet the real needs of service users. By launching e-government service projects, service users are able to contribute to the improvement of services. In particular, they can participate in services and propose suggestions that enables coproduction in the process of service delivery. As challenges and

complexities in public administration increase, government has been engaging citizens and service users in public service delivery (Osborne & Strokosch, 2013).

E-government services refer to services delivered within government and between government and service users through the application of technologies. In public organizations, the adoption of social media, for example, is able to increase government's capacity of decision-making and engaging service users in collaborative processes (Mergel & Bretschneider, 2013). The ongoing wave of administrative reforms in Chinese local governments provides many examples of e-government service delivery such as "Visit Once", "Government Online-offline", "Online Approval Initiative" etc. These examples demonstrate the most updated administrative service reforms which widely adopt information technologies to improve public service delivery. Furthermore, these service initiatives were implemented with a goal of satisfying service users and the public's needs to improve service outcomes and eventually to transform the public sector into service-oriented public organizations. As e-government innovation has become an important agenda for local policymakers (Balla, 2017; Schläger & Stepan, 2017), it is essential to understand how do these initiatives facilitate user coproduction and what are the impacts on public service delivery.

Studies on e-government in China have examined different stages of development (Chen et al., 2009) and suggest that China's e-government is still locked in the one-way communication status (Ma & Wu, 2020). In real-life public service delivery, this approach could not effectively satisfy the increasing needs of service users. In face of the challenges, governments at all levels have developed their official websites. Admittedly, the massive use of information approaches over the past decade has greatly improved the efficiency of e-government and possibilities of coproduction between government and service users increase. Specifically, the application of information technology has enabled face-to-face communication between government agencies and service users, in which abundant opportunities can be created for both government and citizens to deliver public services (Chen & Perry, 2003). However, not many studies have examined the demand side of e-government, especially interactions with the government through electronic channels (Gauld et al., 2010).

More recent e-government service reform has

placed great emphasis on government-citizen interaction in public service delivery. Existing literature also indicate the positive impact of coproduction in digital public service delivery. For example, technological development may increase coproduction in response to the public's needs (Alford, 2002). There are also studies that examine how digital information platforms may facilitate public service provision through coproduction arrangement (Shen et al., 2022).

2.2 User coproduction in e-government service delivery

Coproduction is about “delivering public services in an equal relationship between professionals, people using services, their families and their neighbors” (Boyle et al., 2010, p9). It is regarded as a possible approach to improving public services by utilizing society's resources. The emphasis is on the joint delivery that involves both public service agents and citizens (Parks et al., 1981; Nabatchi et al., 2017). A widely discussed definition of Ostrom utilizes the concept of coproduction as “the process through which inputs used to produce a good or service are contributed by individuals who are not “in” the same organization” (Ostrom 1996, p1073). It implies an active role that residents can play in the provision of services. With reference to the contribution of service users, discussions in literature suggest the long-term relationship between professionals and service users (Bovaird, 2007). The active inputs of service users and citizens can potentially shape the service that they receive. This is a distinct feature of coproduction which extends beyond the boundaries of traditional public service delivery, involving a reciprocal process. This feature indicates that it is not enough to just receive a service; effective coproduction has the potential to generate positive impact on all stakeholders which occurs outside an organizational context.

When we talk about service users in public services, we conceive them as people who receive the services delivered to them (Kirkpatrick et al., 2005). In coproduction of public services, there is variation in the stages at which service users play a role that reflects a wide range of patterns of participation. Service users can be citizens of public services in different policy areas, as suggested by case evidence in literature. Sharp (1980) provides an example of curbside garbage collection where residents willingly devote their time and experiences to removing snow on major city streets in order to build a clean and safe environment. Pestoff (2006) introduces childcare services in European countries

with the involvement of parents, staff and public authorities. Frieling et al. (2014) examine resident engagement in neighborhood security programs. These studies have expanded our empirical knowledge about coproduction in terms of the role of participants and the range of participation. In such a coproduction process, the interdependence of professionals and service users result in opportunities built upon the capacity of both organizations and individuals to create transformational approaches to service improvement (Entwistle & Martin, 2005). By drawing on the above literature, user coproduction in this article is defined as a process in which both the government and service users contribute to a service to fulfill social expectations.

There are also studies that have examined coproduction in different service areas and have employed quantitative methods such as surveys and experiments (Jakobsen and Andersen, 2013; Jakobsen 2013; Van Eijk & Steen, 2016; Fledderus, 2014). These studies examine coproduction of public services at the community level (e.g. community safety, education and health). Results generated from these studies suggest that coproduction practices vary across institutional environment, policy settings and service areas. Furthermore, these studies have demonstrated that coproduction occurs in various forms and is affected by multilevel factors (Parrado et al., 2013; Harrison & Johnson, 2019).

There are also studies that suggest greater opportunities can be created for citizen coproduction (Allen et al., 2020). The development of ICTs has enabled coproduction being implemented as a governance strategy of solving wicked problems in public service delivery. At the meantime, it has reduced the distance among individuals and organizations (Ma & Wu, 2019) and face-to-face communication becomes more frequent and convenient. As argued by Ferris (1984), through co-production, it reduced the amount of resources to run a service. Recent literature on coproduction and e-government has strengthened the importance of information approaches to facilitating coproduction practices. Through online platforms and ICT-enabled processes, coproduction has become a form of deeper involvement of citizens with government (Chatfield & Reddick, 2018).

Based on the review of the literature, an analytical framework is developed to understand the impact of e-government services on user coproduction (Figure 1). It is theoretically assumed that that information approaches could potentially increase the possibility of user coproduction in

e-government service delivery. It further argues that digital approaches could strengthen government-citizen interaction in coproduction practices. Despite the increased scholarly efforts of examining coproduction, the extent to which e-government impacts coproduction is not well understood. Less is known about whether information approaches enable user coproduction and under what conditions. Concerning the significant gap, this article makes an effort to establish a framework that associates e-government services with user coproduction and analyzes the mechanism and consequences of coproduction practices in China.

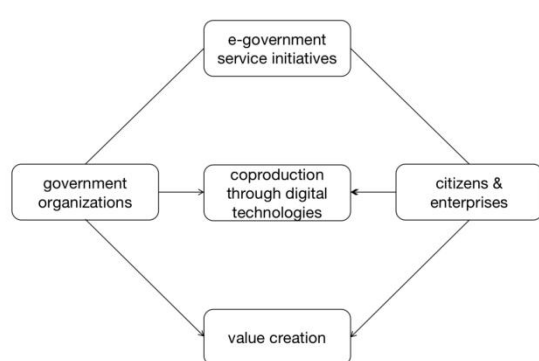


Figure 1: The analytical framework (made by author)

3. Method

3.1 The case context

In 2018, Jiangsu provincial government issued the Implementation Plan for Further Promoting Convenient Approval Services that aims to deepen current e-government service reform. In the same year, Nanjing, the capital city of Jiangsu province formulated a detailed plan in accordance with the province implementation plan. Key areas include enhancing government online-offline services, promoting standardized and integrated services and improving the application of information technology. In 2019, the municipal government launched a new service initiative called “Making You Satisfied”(Ning Man Yi) aiming at integrating current service platforms to deliver better quality services to the public. The goal is to reduce the levels between the government and citizens, thus to establish an open system so that service users can create and deliver public services together. Hence understanding the internal process and operational logic is essential to examine how service users coproduce with the government.

In order to explore the mechanism and consequences of e-government service delivery and the logic of the service design, a qualitative approach is adopted as it facilitates case studies in different contexts (Yin, 2015). A case study approach is suitable as it first enables exploration of a service delivery process in terms of the process and the interaction between actors; second it is useful for investigating the underlying logic of user coproduction through information approaches. Considering the purpose of this study, it focuses on both the theoretical themes of e-government services and the policy implication of coproduction practices. Even though a case design is a commonly-used approach to developing theories (Yin, 2015), the limitation of biasedness is also acknowledged.

The case centers on the e-government service initiative “Making You Satisfied” launched by the municipal government of Nanjing. It represents recent administrative service reform in local China. Different from traditional service provision, e-government service initiatives are implemented with an explicit focus on satisfying the demands of citizens and businesses through online channels. According to Huang and Yu (2019), services delivered mainly refer to those provided by administrative departments, such as opening new businesses and registering real estate. In the case of “Making You Satisfied”, coproduction has been demonstrated in the interaction between the government and service users and it is characterized by the government-led service reform. Through e-government service platforms, the government expects to meet the needs and to solve the problems raised by citizens and businesses. Interactively, citizens and businesses could also help the government identify problems and seek solutions to those problems. In other words, such an initiative creates opportunities for coproduction, generated from frequent interactions between government, citizens and businesses.

The case has been chosen for the following reasons. First, it represents a typical example of coproduction in e-government service delivery, which remains an under researched area. Argued by Ma and Wu (2020), coproduction in the field of e-government represents a typical type that differs from the previous citizen participation. The reason is that information platforms are able to facilitate the cooperation between the government and service users. Thus it can be treated as a typical example of coproduction because both the government and service users can benefit from the process through

participation. Second, practices have shown that recent e-government service reform in Nanjing has produced some positive outcomes recognized by the superior government and the public (People's Daily Online, 2021). Figure 2 presents the full life-cycle service delivery of e-government services which covers three main aspects: citizen services, business services and the enterprise comprehensive service platform. For citizen services, it includes areas of birth, schooling, employment, marriage, retirement and death issues. For businesses, it includes registration of new business, water and electricity, access to credit, recruitment, enterprise policy and deregistration. For businesses, it covers a wide range from registration to deregistration period.

3.2 Data

Data sources include both interviews and policy documents. First, policy documents are collected from government websites. Analyzing policy documents is helpful to obtain the most updated information of e-government services regarding the

policy objective and the overall background of launching such service initiatives. Studying relevant policy documents helps provide a holistic picture of e-government service development in terms of the key concepts, the design and the process of e-service delivery. It thus facilitates a solid understanding of the service initiatives as well as the implementation of public services. Official news reports are also collected to add insights into interpreting the actions and responsibilities of involved actors.

Interviews are conducted with government officials and researchers between 2019 and 2021. The interviews are in-depth and lasted for approximately one hour each. Key actors and observers involved in the service projects are interviewed. They are identified based on a snowball sampling technique (Noy, 2008). All together, 19 government officials and 3 researchers were identified and interviewed. All interviewees provided unique perspectives and first-hand data that helped understand the mechanism and processes of coproduction practices in e-government. Table 1 presents detailed information of interview questions. Gaining a comprehensive picture of e-government service delivery is perceived as a precondition to explore deeper and explicit aspects of coproduction in relation to how information technologies are embedded into a coproduction process.

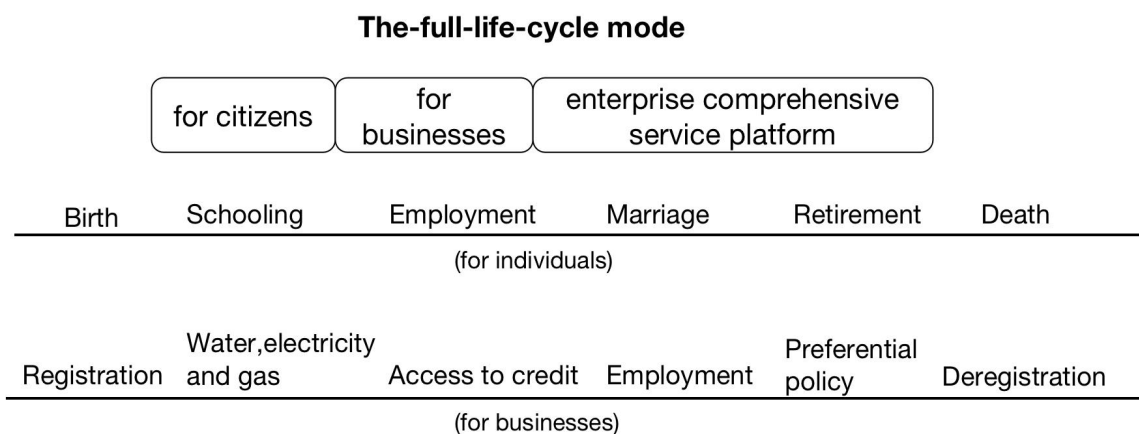


Figure 2: The full-life-cycle delivery of e-government services

Table 1: Interview questions

Category of questions	Question focus
Introductory questions	<ul style="list-style-type: none"> ·the overall plan of e-government service package ·the background of e-government service reform ·the overall structure of e-government service initiatives
Intermediate questions (delivery of service initiatives)	<ul style="list-style-type: none"> ·the mechanism of coproduction practices in e-government service delivery ·progress made since the launch of e-government service initiatives ·problems occurred during e-government service provision
Intermediate questions (evaluation of service initiatives)	<ul style="list-style-type: none"> ·factors that impact e-government service initiatives ·the evaluation process of e-government services initiatives ·challenges encountered in evaluating service initiatives ·feedback of citizens and businesses ·next steps of e-government service reform
Concluding questions	<ul style="list-style-type: none"> ·policy implication of coproduction in e-government service delivery ·long-term impact on government-citizen relations

4. Analysis

4.1 Coproduction of e-government services: government strategies and activities

In 2020, the Standing Committee of Jiangsu Provincial People's Congress issued *Regulations of Jiangsu Province on facilitating Government Services*. The regulation is implemented as further efforts to deepen e-government service reform. In the past few years, a series of service initiatives have been widely implemented in Jiangsu province with a focus on making services more convenient to citizens and businesses. These service initiatives are incorporated into the grand reform package initiated by the central government titled “*Fangguanfu Reform*”, first proposed by the State Council in 2015, aiming at streamlining administration, decentralizing power and improving regulation and public services.

Driven by the reform objective, the Nanjing municipal government has launched a series of service projects in response to achieving the policy goal. The service projects are designed for the purpose of improving the supply-and-demand relation in public service delivery through information approaches. The central theme is to apply a service-user oriented approach to delivering public services in e-government. To implement this approach, the municipal government initiated a scheme named “Making You Satisfied” to advance current practices. Service users can go to the service center or access the platform through mobile apps and government websites. By using this platform, citizens and enterprises can report and make suggestions to governments and governments are

responsible to provide responses regarding the issues raised by service users. As mentioned by director of the reform department, Nanjing Government Affairs Service Center, “Nowadays citizens order and we provide, it is a totally different mentality compared with what we did in the past. We pay much attention to what service users truly expect and their feedback are critical for us because they help us better design the services.” (20210427Z)

From the standpoint of service users, the platform is useful because they can report problems directly to government and further help the government solve problems. From the perspective of the government, service users are increasingly engaged in the coproduction process and this helps the government understand the real needs and complaints of the public. Moreover, the coproduction is embedded in the development of digitalization, user experience and service design (Trischler & Trischler, 2021), which has the potential to create values in real-life public service delivery.

The service-user oriented approach focuses on the interactive relation between government and service users. It requires an open system in which actors' expectation and demands can be satisfied (Teixeira et al., 2012). In this case, coproduction is embedded in the structure of the government. Moreover, a combination of top-down design and policy implementation at the local level has been key to coproduction in e-government. It is characterized by streamlining administration, extending the accessibility of public services and improving the responsiveness of public services. For instance, the

reform launched in 2020 targets at 13 industries, in which the documents required to open a store reduced greatly from a set of materials to one certificate and one QR code. Thus this measure has significantly improved the efficiency of services. By establishing a “15-minute reach” service circle, the first experiment of “15-minute reach” in Jiangsu province, more choices are available for service users, which means they can either go to the service center or use the platform to report issues. In addition, a “Solving Problems First” principle is established to provide timely solutions to problems reported by service users. Based on this principle, respective government departments are urged to respond and reply in a timely manner.

In e-government service delivery, coproduction is implemented cross government departments and the platform creates considerable opportunities for service users to interact with the government. As problems reported by service users increase, the platform will accordingly be updated through generating new knowledge based on the collection and analysis of data (Vargo et al., 2015). Even though most services are delivered through non-contact channel, service users can click the button and make their suggestions read. As mentioned by one staff working at Jiangning Civic Center, “Through the platform, service users can easily raise their needs and get timely reply. It’s an effective communication tool. Thanks to information technologies, nowadays we feel much closer to the public” (20210426J). More importantly, service platforms can facilitate coproduction of multiple online activities and generate space for value-creation. In other words, coproduction in e-government occurs in an integrated system across all levels of government and organizations and needs to embrace all of their elements such as relationships and experiences (Radnor et al., 2014). Thus, it is of equal importance for both sides to understand the mechanism and operational logic of coproduction. For example, people working across regions can also access the platform and enjoy the services in the city where they work, rather than travel across regions.

4.2 Coproduction of e-government services: user experience and value co-creation

The coproduction in e-government service delivery has involved multiple actors including the government, citizens and enterprises. The adoption of information approaches enabled the effective use of intelligent management system, designed to monitor and record the real-time data for the purpose of accurately addressing the issues reported by service

users. By analyzing the data, the government is able to track and evaluate the service items. Argued by Huang and Yu (2019), coproduction is the positive externality of service using. For example, in the past, service users were required to submit documents to respective government departments for approval. If not successful, they had to resubmit and wait until it meets the requirement. The whole process could be time consuming and cost ineffective. Through coproduction practices, two-way interactions were realized and citizens are increasingly interested in participating in service activities. As remarked by the director of the evaluation department, “We value service users’ feedback a lot because the feedback can help us revisit the services, and by doing so it will help us improve our work in order to address the preferences of service users. The goal is not to satisfy us, but to serve them” (20210426M).

The findings reveal that coproduction in e-government service delivery has generated tangible outcomes and value-added experiences of service users. In addition, the coproduction process demonstrated a significant change occurred that concerns the interface and frequent interactions between government and service users (Trischler & Trischler, 2021). The case has further suggested that coproduction practices have strengthened the interaction between government and service users because more communication opportunities are generated and reports from service users have the potential to impact the policy design in public service delivery. Furthermore, the values created in coproduction reflect an user-oriented approach that focuses on civic participation and service experience.

The theme of coproduction in e-government service delivery centers on to what extent the needs of service users are satisfied. Contrast to a provider-driven approach to public services, coproduction practices in e-government service delivery are implemented through a service-user approach that focuses on citizens’ needs and responses to the service items and the overall experience of a service. Typically, the overall experience includes the user’s response to service design elements measured in terms of emotional, cognitive and behavioral dimensions ranging between positive, negative, and indifferent (De Keyser et al., 2020). Furthermore, the overall experience could be immediately reflected in the information platform and government organizations could then analyze the data efficiently by interpreting recorded data such as starting date, completion date, suggestions and even complaints about services.

Manifested in the case of “Making You Satisfied”, a service-user approach has facilitated coproduction for citizens and enterprises to work with the government to accomplish service projects.

The analysis further shows that value creation has been achieved in coproduction of e-government service delivery, characterized by the public-service-logic. Based on this logic, exploring how a public service offering can be designed to facilitate the co-creation of value by service users is critical to understand this logic (Osborne, 2018). In practice, knowing what happens in people’s real life could significantly improve the service design, specifically the value propositions aimed at supporting the value creation process (Trischler et al., 2019). One interviewee working at the Reform department, Nanjing Government Affairs Service Center said, “For example, for disabled people who are not able to access the online platform, or businesses who can not apply by themselves for some reasons, we will visit them and offer help by completing things for them according to their preferences and needs. This solved their problems. In case they need help, we will definitely provide extended services to them.” (20210426C)

The coproduction of e-government service delivery generated experiences and values which has an implication of “design for experience”, termed by Trischler and Trischler (2021). Through information technologies, citizens and enterprises are engaged in a process embedded in bureaucracy that can affect the outcome of public services. In addition, technology advancements have enabled citizens and enterprises to make best use of information tools to conduct co-creation activities. As long as service items are identified, service users can access information platforms for personalized services. Mentioned by one staff interviewed: “The design of the service window always adjusts in accordance with the needs of citizens and enterprises. As service items increase in a significant number, we therefore open more service windows in order to sustain the diversified needs of service users. For example, the ‘delay service’, incorporated into the e-government service package, is designed and implemented to enhance the responsiveness of services and thus has made the process of public service delivery more convenient and interactive” (20210426Z).

Even though most of these services are not delivered face-to-face, the coproduction practices have generated personal and societal values that benefit all involved actors. At the meantime, the adoption of information technologies has greatly

reduced the distance between the government and service users. In other words, the levels between the government and citizens are decreased (Eggers, 2007), and this effectively facilitates an open and transparent platform for strengthening government-citizen relation. Under such conditions, more possibilities are created so that governments and citizens can deliver public services together (Liu, 2017). For service users, they can actively participate and report issues to the government without administrative or technological barriers. The director of Director of Reform department, Jiangning District Government Affairs Service Center, shared an experience of value creation through working with service users: “Several days ago we received an e-report from a resident saying that their residential community affected water logging and needs to be solved as soon as possible. Upon receiving this, I arrived at the site immediately with our staff and organized a field meeting to jointly solve this problem. Representatives of the residents, the police and our service center people were all there analyzing the situation and jointly made the decision. Problem solved in a very short period of time! Residents were very satisfied and we were able to talk face-to-face over these issues” (20210426Q).

5. Discussion and Conclusion

This article makes an effort to explore the impact of e-government service delivery on user coproduction. To understand coproduction practices in e-government service delivery, an analytic framework is established based on the review of existing literature. The case of e-government service reform is examined that demonstrated how coproduction is implemented in e-government service delivery through information approaches. Even though literature on coproduction has been increasing, more solid evidence is needed to enhance the empirical base of coproduction research. Currently scholars have not yet established a unified opinion on the concept of citizen participation in public service coproduction (Ma & Wu, 2019). Therefore, this article aims to contribute to coproduction literature by arguing that a full-life-cycle service delivery has enabled coproduction in both design and implementation phases, primarily shaped by information transformation and value creation. The full-life-cycle service delivery, indicated by existing studies can provide value creation activities for participants (Vargo & Lusch, 2017).

The findings show that understanding the needs

of service users is important because their participation can influence the design and implementation of e-government service delivery, thus eventually shape coproduction in a profound way. This article extends current coproduction theory by adding insights into understanding coproduction in e-government, which actually has generated values that benefit all involved actors. The case has also shown that service users are not passive recipients (Trischler & Trischler, 2021), but active participants who can create values, and as an outcome, their experiences actually shape the process of coproduction. On the one hand, by adopting information technologies, the government can better understand service users' preferences and provide timely response to their needs. On the other hand, service users can work with the government through coproduction practices in which they are able to express their thoughts, opinions and suggestions via online platforms. Even though these activities are government-led, the coproduction efforts are achieved because all these service initiatives are implemented with joint behavior that improved service quality (Huang & Yu, 2019). Furthermore, coproduction practices could potentially strengthen government-citizen relations that help nurture a solid participation base for future public service delivery. In full-life-cycle public service delivery, the findings further suggest that citizens and enterprises have expressed a strong desire to engage in services activities. In the case of "Making You Satisfied", coproduction is a key element to connect service users for a value creation process.

First, the involvement of service users is perceived to be profitable which facilitated coproduction practices in e-government service delivery. In the case of "Making You Satisfied", coproduction is manifested in different stages of service delivery through information approaches. The empirical findings suggest that the coproduction of e-government services is characterized by the frequent interaction of government, citizens and enterprises through the use of information application. As pointed out by existing research, the higher level of citizens accessing e-services, the higher level of trust in government they would have (Ma & Wu, 2020). This in turn could contribute to creating values in long-term service delivery.

The coproduction practices include a variety of service projects for instance "the Service Day", established to serve enterprises to address urgent and expect-to-be-solved matters. Analyzing the information reported by service users can help the

government improve the design and understand the preference of service users in order to improve service quality. Therefore, coproduction goes beyond participation, which is about actors making substantial resource contributions to the provision of services through long-term relationships (Bovaird, 2007). In other words, it is about the government, citizens and enterprises make the best use of knowledge, resources, skills and experiences to coproduce services that benefit a broader community.

Second, this article has provided empirical insights about understanding the key elements of coproduction practices in e-government service delivery. Activities such as "one door service", "one window service", "service station" etc. have significantly improved service efficiency and effectiveness. Through information approaches, service users are able to interact with the government to address problems. The case demonstrated that coproduction practices do not only improve service outcomes, but are transforming the mentality of how the government works. Furthermore, the findings have strengthened the empirical base of existing coproduction research by adding insights about the value-added mechanism of public service delivery through information approaches.

Third, the coproduction of e-government service delivery involves a design thinking. Coproduction literature has maintained that public service should be people-centered, and this is built on the theoretical assumption that users should have an influence on the service where they provide expertise and participate in the early design phases (Sanders & Stappers 2008). A design-led approach can potentially solve problems (Micheli et al., 2019) and create values for participants. In the process of public service delivery, both the government and service users could make the use of information tools to share ideas and opinions. For example, the questionnaires, focus groups, chat box etc. are design tools to engage all participants and to facilitate a joint inquiry and problem solving mechanism (Steen, 2013). In terms of implementing the service projects, the design thinking has been effective because the government understands what citizens want and expect more accurately. Therefore, it generates a needs-based approach which has been implemented as a governance strategy that created values beneficial to all actors. Through the active involvement of citizens and enterprises, participants can acquire the skills to provide inputs regarding matters of public importance (Jo & Nabatchi, 2019). This has also strengthened the trust of service users

and has encouraged them to speak up their minds and to express their needs.

This study also has some limitations. A single case study is not able to generalize in every context, more empirical studies are expected to extend the findings in order to explain the mechanism of coproduction in other contexts. In addition, future studies are expected to employ mixed methods to examine the impact of coproduction in public service delivery thus to supplement current findings to advance the field.

Conflict of Interest

The author declares that she has no conflicts of interest to this work.

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