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The Placeness of Public Service: Redefining the Meaning of Place in the Digitalization of Public Service Delivery

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Abstract

The practices of government started from the territoriality paradigm, putting the government in the role of the main *placemaker* (Pollitt, 2012f; Szmytkie, 2019), including the provision of public services for the inhabitants inside administrative boundaries. Meanwhile, many literature around e-government mostly omits the discussion about places (Pollitt, 2012f). Since the practice of government and public administration is still connected to physical places, it is important to discuss the role of place in public service delivery amidst the trend of digitalization of public service delivery, to ensure the inclusivity and equality of public service for the citizens. Moreover, place has an important role in shaping the setting of interaction between citizens and officials in the context of public service delivery and their behavior (Goodsell, 1981 in Lindgren et al., 2019), which might further affect the relationship between the public service user and provider. This study aims to understand the placeness of public services, in order to provide a better understanding for the planning and advancement of public service delivery through digitalization, while keeping it inclusive and equally accessible for the citizens. By reviewing 103 sources of literature through hermeneutic literature review methodology, findings in this research suggest that place in public service delivery context is conceptualized as *territory*, as a *physical location for user-provider interactions*, and as *public service objects*. Emerging practices of public service delivery digitalization affect the placemaking processes by changing the interaction between the service user and provider, reducing the costs of delivery, reducing the need of physical mobility of the user, changing the cost of access from the user side, and flexibility of time and place in accessing public services. The digitalization of public service delivery also affects places, indicated by the virtualization of public service delivery, closure of physical locations of interactions, the emergence of new types of place, and the shift of the physical location of public service delivery.

This study has proposed a fresh understanding of the placeness of public service in relation to the practices of public service delivery digitalization, based on three purposes of encounters (i.e., information exchange, transaction, and control by the government). Changes related to each of the conceptualization of places and related to interactions between government and citizens in the context of public service delivery are discussed. Lastly, scenarios of the future state of placeness of public service are proposed: (1) digitalization of public service delivery will continue to augment physical places and place-boundedness of public service, and (2) digitalization of public service delivery will drive towards the placeless public services. Therefore, this study has the potential to help policymakers and researchers in understanding more about the placeness of public services, and in the planning of place-bound and place-independent public service delivery systems.

Keywords: place, public service delivery, digitalization, placemaking, physical

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Abbreviations

CCTV	Closed-circuit television
DEG	Digital-Era Governance
EU	European Union
GP	General practitioner (physicians)
GPS	Global Positioning System
G2C	Government-to-Citizen
ha	hectare
ICT	Information and Communication Technology
IDB	International Development Bank
IT	Information Technology
NCC	Neighborhood command center
NPG	New Public Governance
NPM	New Public Management
NPS	New Public Service
NWS	Neo-Weberian State
OECD	Organizations of Economic Co-operation and Development
OG	Open Governance
PA	Public Administration
PC	Personal computer
RDA	Regional development assistance
Q&A	Questions and Answer
SMS	Short Message Service
UK	United Kingdom
US	United States
VoIP	Voice over Internet Protocol

1 Introduction: Government as a Placemaker

The practices of government started from territoriality paradigm, putting the government in the role of the main *placemaker* (Pollitt, 2012f): starting from establishing administration boundaries, locates their things (e.g., schools, offices, hospitals), and directly regulate places through planning mechanisms (Pollitt, 2012f; Szmytkie, 2019), including the provision of public services for the inhabitants inside the administrative boundaries. In the 1960s, the typical use of public services meant to go to an office and to speak face-to-face with an official; therefore, the government had a face and a place (Pollitt, 2012f), making the interaction between citizens and government apparent in the designed places determined by the government.

Meanwhile, many literature around e-government mostly omits the discussion about places (Pollitt, 2012f); most of them were found to discuss its adoption, acceptance, performance, democracy aspects, usability, interoperability, public e-services, among other topics (Wirtz & Daiser, 2018; Yusuf, Adams, & Dingley, 2016). The rise of e-government (Lindgren & Jansson, 2013; Lindgren, Madsen, Hofmann, & Melin, 2019) essentially makes the services more accessible at any time and anywhere online. It has also shifted the relations between citizens and the government to become more 'virtual' (Pollitt, 2012f). Moreover, the current and latest phase of urban governance is to use digital technologies to manage cities and deliver urban services and utilities (Graham, Kitchin, Mattern, & Shaw, 2019).

The technological evolution has also facilitated mobility across geographical pathways, mainly by reducing the costs of travel and communication, strengthening migrant networks to communicate with relatives, and increasing aspirations and awareness of opportunities in other places (Czaika & De Haas, 2014). It is important to note that following the development of technology, the concept of physical residence—where an individual came from and governed—might be changed as well. There is a rise of "global village" and "global citizens," where people are moving around virtually through the Internet and physically through transportation means easily, rather than to confine to a particular nationality, or in this case, residency (Pollitt, 2012f). Through their online presence, an individual can "extend" their existence, for instance, accessing services and conducting businesses in different locations while physically residing in one location. In line with the Tiebout's "vote with their feet" theory, this means there are opened opportunities for citizens to choose where to reside (Ellickson, 1971; Li, Wang, Shi, Deng, & Wang, 2015; Schuler, 1976) and consume public services.

In the advancement of e-government and digitalization of public services, technology is mostly viewed to be taken for granted (Lindgren & Jansson, 2013). Technological change

is perceived as "*exciting, sexy, fast-moving, and replete with opportunities*," while the place is usually regarded as "*an old-fashioned kind of preoccupation*" (Pollitt, 2012f). The e-government maturity models (Layne & Lee, 2001; J. Lee, 2010) are noted to touch the technology aspect under the organizational imperative, that the technology is designed for a specific purpose in organizational changes, and that the consequences are all within the designer's control. Meanwhile, in practice, some problems arise in anticipating consequences of public service digitalization, both from the citizens and the government side (Lindgren & Jansson, 2013). Hence, this transition towards a more digital public service provision brought forth several gaps.

One of the recurring arguments in this digitalization is that time is becoming more important than place. As space shrinks, humanistic geographers have argued that *placelessness* has been an emerging topic due to globalization, and that time is "becoming more important than space" (B. T. L. Friedman, 2015; Saar & Palang, 2009). Meanwhile, since the beginning, the placemaking activities run by the government through development plans, policies, and practices have mostly gone unnoticed as both urban planning and public management literature discuss very little about it (Brenner, 1999; Pollitt, 2012f).

Through digitalization, the conceptualization of place within the public service itself is continually changing. Emerging public services are becoming more and more place-independent. One instance of this change is the access of public e-services can now be done remotely, from the most convenient place and time of the users (Lindgren & Jansson, 2013), and no longer be held in the designed place of government offices. The example of this change of interaction place imposed a new question of whether this change affects the citizen or the government (Lindgren et al., 2019), demanding further studies of how a place is conceptualized along the line of the transformation of public service provision.

Additionally, some might argue that globalization might have eliminated space—physical space in this sense, by moving it to virtual space—but not place (Sheppard, 2002). A virtual space is further characterized in Pollitt (2012) as "a world that is both removed from reality and simplified from reality." Kitchin (1998) and Dodge (2001) in Zook (2006) particularly denote that cyberspaces coexist with geographic spaces, therefore, should be perceived as an *extension* of the physical realm. With this nature of virtual space—in this research, refers to Internet-space and where the e-services are present—which can only transform parts of the reality, it is notable to question to what extent place still have meaning in the public service provision; especially, in the current practices of digitalized and more place-independent public services.

In a general sense, digitalization is bringing a sense of placelessness. In public service delivery context, digitalization is seen to be the answer to citizen needs by transferring a part or the whole delivery into a more virtual means (i.e., online portals, mobile applications), thus can be accessed by the citizens wherever and whenever they see fit. However, some types of public services still have to be place-bounded in terms of its location or its planning, such as police and fire department services. The combination of higher mobility of citizens and the opportunities brought by the evolution of ICT makes the planning and delivery of public service become more challenging; one of the challenges is that making a plan of public service delivery based on population in the area becomes more complicated. Some public services can be fully digitalized and accessed remotely; meanwhile, some public services still need to be located close to the users (Pollitt, 2012f). The government as the public service provider are faced with the question of which public services—or which part of its functions—should be able to be accessed remotely or should be physically located in proximity with the users, in order to deliver the services more efficiently for the citizens.

Since the practice of government and public administration is still connected to physical places, it is important to discuss the role of place in public service delivery amidst the trend of digitalization of public service delivery, to ensure the inclusivity and equality of public service for the citizens. Moreover, place has an important role in shaping the setting of interaction between citizens and officials in the context of public service delivery and their behavior (Goodsell, 1981 in Lindgren et al., 2019), which might further affect the relationship between the public service user and provider. Therefore, this study aims to delve into the changing meaning of place within the digitalization of public service delivery context, and further map the emerging practices in the continuum of place-bound and place-independent public service delivery. The purpose of this study is to understand the placeness of public services, in order to provide a better understanding for the planning and advancement of public service delivery through digitalization while keeping it inclusive and equally accessible for the citizens.

The main research question for this study is:

How does digitalization play a role in the placeness of public service delivery?

This main research question is studied by answering these two sub-research questions:

SRQ-1: How is the place conceptualized in public service delivery?

SRQ-2: How does the emerging practices of public service delivery digitalization affect placemaking processes?

SRQ-3: What are the changes in public service delivery places shaped by the emerging practices of public service delivery digitalization?

Placemaking here is referring to the processes of how a place acquired its meaning, and not referring to practices of collaborative placemaking as it is widely adopted in the urban design field. Further explanations about the placemaking can be found in Chapter 2 of this thesis. In addition, the conceptualization of place in SRQ-1 refers to how a place is being understood within the context of public service; the result of the conceptualization of place is the concepts of place, such as 'residence' and 'offices'.

To answer the research questions and the aims of this study, the methodology of the literature review is applied using the hermeneutic process (Boell & Cezec-Kecmanovic, 2011). Two phases of the literature review were conducted: initial phase as a preliminary literature review was done to build the theoretical foundation and research framework, followed by the subsequent phase of main literature review. The second phase was conducted to answer the research questions by discovering the conceptualizations of place related to public service delivery, the driver of digitalization of public service delivery, the emerging practices of digitalization of public service delivery and its impacts, and then the changes in the conceptualization of place shaped by those practices. Further, the results are analyzed through coding and content analysis, interpreted based on theoretical foundation and research framework from the prior preliminary literature review.

This paper is laid out in six sections. After Chapter 1 as an introduction, the second and third chapter presents the theoretical foundation and research framework based on the preliminary literature review. Chapter 2 presents the concepts of place, from physical and virtual space, while Chapter 3 explains the foundation of public service and its digitalization. Chapter 4 presents the research design and methodology of this study, revolving around the literature review methodology. The results from main literature review about conceptualizations of place related to public service delivery and its changes due to the digitalization of public service delivery are presented in Chapter 5. Further, Chapter 6 presents the discussion about the placeness of public service delivery. Lastly, Chapter 7 presents the conclusion, limitation of this research, and further avenues for research based on this study.

2 The Place and Placemaking

This chapter presents the concepts of space and place, both physically and virtually, and the ways virtual space has extended our perceptions of physical space.

2.1 Concepts of Place in Physical Space

The term 'place' has become a mundane thing intertwined in our daily lives and practices. One instance reflection of this situation is stated by John Friedmann, a renowned urban and regional planner, that "the literature on the city is filled with references to desolate placelessness and a yearning for place, for some solid connection to the earth, to the palpable physicality of cities and the everyday need for social contact" (Friedmann, 2010, p. 150). Several authors have defined place as "socially constructed and operating, including interaction between people and groups, institutionalized land uses, political and economic decisions, and the language of representation" (Massey, 1994; Agnew, 1987; Martin, 2003, in Saar & Palang 2009, p.7). These two works discussing place, among other extensive and renowned works of literature[1], have discussed the same theme of *physicality*. Further, Pollitt (2012) describes that place is "a specific, concrete, and particular bit of space," while space itself has a scale and extends from macro to micro, as a neutral and abstract thing – a dimension; some particular spaces will endow special meanings and values depending on each individual and contexts, thus will turn into 'places' (Pollitt, 2012f, pp. 15–16). Hence, before understanding further about place, we need to delve more into the definitions of space.

Lefebvre (1991) and Soja (1996) argued that space is "physical and social landscape imbued with meaning in everyday place-bound social practices and emerges through processes that operate over varying spatial and temporal scales" (Saar & Palang, 2009, p. 6). In simpler terms, both space and place are a product of social construction, and it is constantly changing. Inhabitants and/or regulators can change the materials or physicality of the space; even if it is relatively stable or hard to change (e.g., to change natural landscapes, to construct new buildings), individuals can change the meaning of the landscape, its uses, profitability, desirability, and its symbolic role (Pollitt, 2012f). Places can become meaningful depending on the social relations a person has with others in a particular location, or depends on certain activities held in a particular location (Gustafson, 2001 and Tuan, 1977 in Saar & Palang, 2009). Further, Staeheli in 2008 defined five main conceptualizations of place: as a physical location or site, as a cultural and/or social location, as a context, as constructed over time, and as a process (Pollitt,

[1] See, for example, Lefebvre, 1991, and Cresswell, 2004.

2012f). There is no best conceptualization; instead, a place must be understood as an intertwined product of several conceptualizations (Pollitt, 2012f).

The process of how a place can acquire its meaning is named as place-making. Auburn and Barnes in 2006 suggested dividing these place-making processes into four scales: individual, local, national, and supranational scale. Physical changes in place and its meanings are influenced by these various scales, mixed through individual consciousness, imbued with personal experiences and global politics (Saar & Palang, 2009, p. 7). In addition, an important note by Gordon & Koo (2008) is that place requires constant attention to nurture the meaning; otherwise, it will move into the background or be the mundane part of daily life, like memories and experiences.

Individual-level of place-making

On this level of place-making, a place acquires its meaning depending on each individual. The simplest explanation is that some places acquire meaning through specific activities (Tuan, 1977, in Pollitt, 2012). Another aspect is that a place acquired meaning because of the relations an individual has with other people in certain locations; therefore places can become meaningful through social relationships, but it also worked vice versa – certain places help create these meaningful relationships (Saar & Palang, 2009). For instance, a similar argument was also discussed by Friedmann (2010, p. 156), if the whole idea of place is an environment for sociality, then communication among people is at the core of this process, whether it is repetitive or purposeful.

A place can bring out certain feelings, which further can form the connections and place-identity for an individual; to a certain extent, people's identities are also created through their experience of reflection and introspection in relation to places (Saar & Palang, 2009). In conclusion, the process of attaching meaning to a place combines complex pattern of individual's conscious and unconscious ideas, beliefs, preferences, behavioural tendencies and skills relevant to this environment, intertwined with the influences of a larger scale of the place-making process (Vorkinn and Riese 2001 in Saar & Palang, 2009).

Local-level of place-making

The local level of place-making relies on the common interest, values, activities that a collective of individuals attach to certain places (Saar & Palang, 2009), for example, residents in a neighbourhood commonly use a certain park for a summer picnic or outdoor exercise, and thus those activities are attached as a main identity of the park. Over time, the common interests and values of the park might evolve due to the diversity of residents;

place-making activities are seen to be the way how people "mark" their boundaries, and people tend to use their background and previous identities to shape the new meaning of a place new to them (Paasi, 2002). To some extent, the local identities are said to be the counterforces to globalization, in which the local communities (or 'regions') declare their distinctive characteristics: through nature, cultural, historical, or social values (Paasi, 2002). Sheppard (2002) noted that globalization itself does not dissolve localities and places but values their distinctive character, not their position.

National-level of place-making

On this level of place-making, Friedmann (2007) specifically discussed how this process appears from the government or the state. The state creates the images of places by deciding what activities are allowed, what kind of public behaviours are permitted, what kind of structures may be built for what purposes. By stating what the purpose of a space and how they should be used, spatial plans are created to imply the place-making of certain locations. Jessop, Brenner, & Jones (2008) specifically discussed that the placemaking is one form of territorialization, and that territorialization of political power was embedded in national boundaries by states, thus also define people within those boundaries as a nationally bounded society. A similar role of government to create or define a place was also discussed by Pollitt (2012f), where the government act as a placemaker through the eight modalities of place-making.

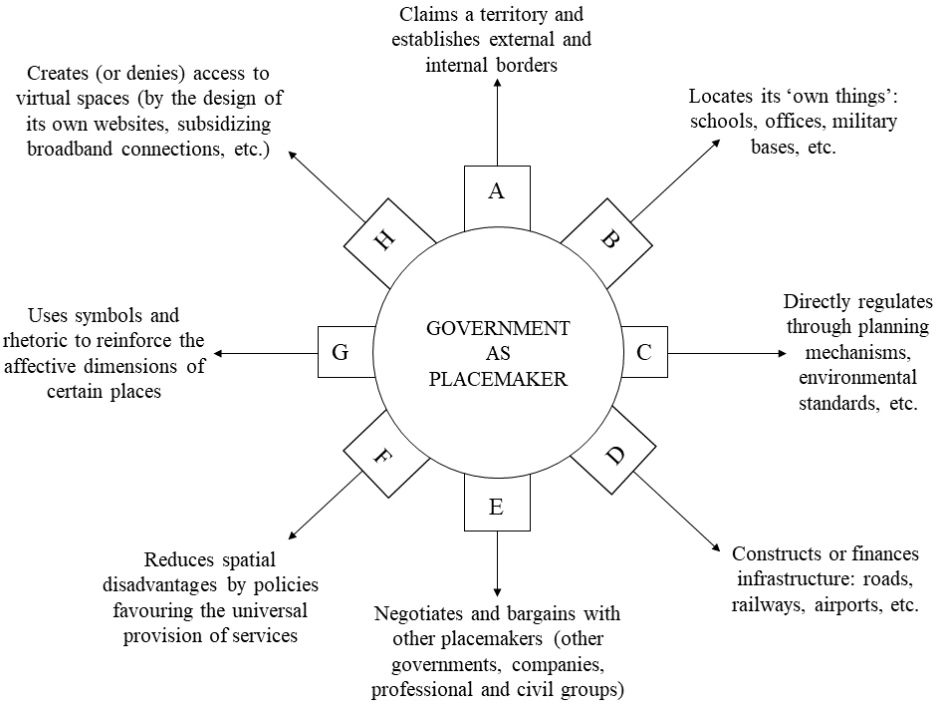


Figure 1. Government as Placemaker.

Reprinted from Pollitt (2012f, p. 72).

The explanation of these modalities are as follows (Pollitt, 2012f):

- *Modality A*. The government establishes the jurisdiction of the bordered territory and the territorial public services follow (e.g., customs, immigration). The "strength" of the boundaries itself varies between countries and usually depends on the degree of cooperation with the parties outside the border. This national territory is then politically divided into subnational divisions (e.g., provinces, municipalities), in order to divide the policy-making and administration capacity.

- *Modality B*. Within their territory, the government starts to shape places by locating, building, and putting their own things, such as town halls, monuments, and government offices. On some occasions, the government put their things outside the territory, such as military bases outside the country.

- *Modality C*. This modality mainly concerns spatial planning, which dictates what kind of physical development can be done in a specific area.

- *Modality D*. Through this modality, the government shape places by investing infrastructure, which will shape the intended development of an area. Most of these investments are usually in terms of transportation infrastructures (e.g., highway, airport, railways), but might also be the development of utilities (e.g., electricity, water pipes) that enables the life of citizens in an area.

- *Modality E*. Governments conduct negotiation with other placemakers. There are other stakeholders in play, such as private companies. An example of this modality would be the negotiation of spatial planning laws (modality C), perhaps in a case of boosting the development or restricting a construction. Governments might also negotiate with other governments on the development in the area of their borders.

- *Modality F*. Governments impose policies that are not directly spatial but bringing important spatial effects. The examples would be the setting-up and running-down of public services, or restriction policies of certain activities in an area in order to maintain public orders.

- *Modality G*. Governments attempt to endow certain places through symbolic ways. Usually, those places are related to historical values, such as battle sites or disaster-affected areas. It is also common to boost the development of a local area by marketing a particular symbol, such as imposing a certain architectural style. Public services might also embody significant symbolic meaning, more importantly for the government as its provider.

- *Modality H*. Governments also influence the public access to the Internet or virtual space, through regulations concerning the provision of telecommunication infrastructure, or direct control of governing access to certain websites. Providing public services through the Internet also might encourage citizens to access the virtual space in order to obtain public services.

The first four modalities are directly shaping a place physically, while the latter three are seen as a less direct but nonetheless are effective placemaking tools. While placemaking might seem like a planned effect of these activities, Pollitt (2012f) reinstated that the placemaking itself is usually absent in the prime objectives of the policies, thus might not be noticed. The public-service-related placemaking activities may appear in most of the modalities: (A), (B), (C), (D), (F), (G), and (H) (Pollitt, 2012f); this study is not constraining into those specific modalities, nor putting one on more importance than the others. Nevertheless, an important thing to note is that the digital aspect is separated out in one modality (H). This study is focusing on how digitalization affects the other modalities in the context of public service delivery, which discussed further in Chapter 5 and 6.

Supranational level of place-making

Aside from the national and individual level, a larger scale of place-making has also influenced the meaning of places: supranational or global level. Recent literature has discussed how globalization and global scale of places gradually change the meaning of place; however, it is not as apparent as the national and individual place-making processes. This phenomenon has changed the way states are perceived, for instance, the developing countries have become low-cost production sites, and other countries are becoming demand nodes. In the abstract sense, globalization might also have changed the discourse of researchers and planners in seeing a space and further changed the actions of city planning (Saar & Palang, 2009).

The phenomenon of globalization has been discussed to "shrank" or "flattened" the world. Castells (1996) discussed that the globalization–which later enabled the development of information and communication technology (ICT) and information economy–created a new dimension of space: space of flows. This new dimension is the organization of timesharing social practices through flows, enabled by electronic exchange, nodes of activities, and elites that direct the flows to articulated space; however, this flow do not have a specific location (Castells, 1996). The rise of ICT has also been said to create a "richer, more flexible, and more accessible for larger numbers of people" communication space. Eventually, this technological leap (development) "blends virtual spaces and physical places" in new complex geographies to enabling interaction and connections

between people and places. Therefore, the rise of ICT challenges the definition of place and encouraged theories about hybrid spaces between physical and electronic elements (Zook, 2006).

2.2 The Characteristics of Virtual Space

The impact of globalization on space and place was discussed more extensively in Friedman (2005)[2]. Friedman discussed that this has happened over the course of a long period, starting from the 15th century as Globalization 1.0 where countries were globalizing for resources and imperial conquest, shrinking the world from large size to medium size. In the 19th century, Globalization 2.0 took place, where companies started to globalize for markets and laborers, shrinking the world to its small size. The latest phase, Globalization 3.0, started in the 21st century which then brought the world to a tiny size, and moreover, flattened it. This phase was forced by individuals and small groups globalizing all around the world, and at the same time empowered them (T. L. Friedman, 2005).

The development of technology along the course of globalization has also taken an important role in this phenomenon. Friedman (2005) discussed that there are ten flatteners, started from the collapse of the Berlin Wall in 1989 which changed the global view of the world, and not so long after that, Windows-powered PC started to enter the market and brought changes to the work in individual level. The second flattener is the Netscape and the Web, which made the Internet accessible and more desirable for everyone, including the digitization of everyday things (e.g., files, words, pictures) which made it available for people around the world on a computer screen (T. L. Friedman, 2005). The third flattener is the emergence of workflow software, which allow machines to work with other machines without the involvement of human (T. L. Friedman, 2005). These first three flatteners, as Friedman stated, have established the foundation of a whole new global platform for collaboration, and enabled the next six flatteners to emerge – uploading, outsourcing, offshoring, supply-chaining, insourcing, and informing. The last flattener, called "The Steroids", is the ability of personal mobile devices to do file sharing

[2] Friedman's arguments have also received critical responses. Stiglitz (2006) agreed "that there have been dramatic changes in the global economy", but critically stated the world is only much flatter in *some* directions, creating an unlevel field for the benefit of incumbent dominant firms and resourceful countries, at the expense of the poor and developing countries. Abowitz & Roberts (2008) mentioned that the Friedman's argument mainly concerns that the main player—particularly the US—should be aware of their competitors in order to sustain their global position.

(e.g., through VoIP) wirelessly and digitally, anywhere and anytime by anyone (T. L. Friedman, 2005).

Some might argue that globalization might have eliminated space—physical space in this sense, by moving it to virtual space—but not place (Saar & Palang, 2009; Sheppard, 2002). A virtual space is further characterized in Pollitt (2012) as "a world that is both removed from reality and simplified from reality". John Perry Barlow (1996) stated that the cyberspace contains the transactions, relationships, and thoughts, which laid out like a "standing wave" in the web of our existing communications, and that the current cyberspace is "a world that is both everywhere and nowhere, but it is not where bodies live" (Gordon & Koo, 2008, p. 208).

Virtualization involves two key parts: abstraction and modularization, highlighting that there are only some parts of reality that can be represented, and moreover, in a simplified way (Pollitt, 2012f). In a more specific lens, Castells (1996) stated that the society is depicted into a web of relationship in digital networks; people and spaces are seen as the nodes, but the main organizing unit is the relationships between them (Gordon & Koo, 2008). Kitchin (1998) and Dodge (2001) in Zook (2006) particularly denote that cyberspaces are coexisting with geographic spaces, therefore should be perceived as an extension of the physical realm. The virtualization—Kitchin noted this as 'layering of the Internet onto places'—is filtered through social, cultural, economic, and political contexts, rather than a uniform effort.

In this virtual space, Pollitt (2012f) highlighted that the government also plays a role in the placemaking activities, by giving access to this virtual space (modalities H in Figure 1). For example, by regulating the provision of telecommunication infrastructures, the government might control who can or cannot access the Internet; by regulating the website access, the government might control which website can or cannot be accessed. The digital divide condition is linked to the government regulations and actions tied to the telecommunication infrastructures. With the emergence of activities conducted in this virtual space, one also should be aware of cybercrime threats. Part of government's regulations should also include law enforcement in the field of cybercrime, to protect the citizens in the virtual space (Pollitt, 2012f).

2.3 The Transcending Effect of Virtual Space: Changed Mobility and Perceptions of Physical Space

The virtual space is mentioned to be an extension of physical space, as pointed in Pollitt (2012) and Zook (2006). Meanwhile, it is worth noting that the virtual world has also expanded our horizon of the physical space. In this chapter, we highlight the changed physical movement of things and the creation of new meanings and perceptions of physical places, and further discuss its relations to public service provision.

Several literatures have discussed how the existence of ICT and Internet-space have helped to heighten physical mobility. First, locational mobility or the traditional sense of moving across space has been expanded, as the technologies lowered the constraints to travel (Czaika & De Haas, 2014; Pollitt, 2012f); second, operational mobility has emerged, as using mobile devices to coordinate daily operations or work-related matters are enabled; third, interactional mobility has enhanced, as mobile devices have been used extensively to achieve intense interactions with diverse people and data sources (Pollitt, 2012f).

> It is, in essence, that technological change, by enormously increasing both the speed and the volume of communications and computations, has shrunk both space and time, and made them less important, while at the same time opened up the possibility of mass access to public decision making. (Pollitt, 2011, p. 380)

Friedmann has supported the benefit of this phenomenon that in this era of nanotechnology, individuals can work or gain money without actually residing anywhere at all, in somewhat of an "in-between" world (Friedmann, 2010). With the ability to connect to the Internet, individuals can create their identities online without being absent from their physical place where their bodily experiences revolve around (Lim, 2014; Stalder, 2013). Moreover, as Pica et al. in 2004 stated, the virtual environment also has the potential to distract people's attention from the physical space of interaction (Pollitt, 2012f).

Aligned with this, Schmid (2014) stated that with the ubiquity of mobile phones and the Internet a person can continue working—or continue arguing, to take an example on the opposite side—anywhere and anytime, which then dragging their everyday existence in their devices along with them. This creates an overlap of detached realities; "space shrinks, distances no longer have the same meaning they had 20 years ago, and different lifeworlds begin to merge" (Schmid, 2014). All of these transcendent effects contribute to the reason why we tend to lose a sense of place nowadays, as noted by Abdel-Aziz, Abdel-Salam, & El-Sayad (2016). We might live physically 'here' in a certain physical

place, but the familiar environments for social engagements are ‘out there’, or simply able to be brought ‘here’, thanks to the technology. An example of this at the individual level is that people can reside in country A with their family and work remotely for a company in country B.

Humanistic geographers have argued that *placelessness* has been an emerging topic due to globalization and that with globalization time is “becoming more important than space” (Jessop et al., 2008; Kirsch, 1995; Relph, 1976, in Saar & Palang, 2009). Friedman in his work mentioned that a young Indian entrepreneur, Rao, highlighted that “there is no time to rest”; once he saw the vast opportunity brought by the infrastructures which have ‘flattened the world’, it is a dire need to make the best use of these technologies in order to strive in the global competition. Friedman added that in this flat world, once an individual put their pin on the global map, they will need to run a little *faster* in order to improve their standard of living (T. L. Friedman, 2005). However, on the contrary, there is an argument that physical place is not losing its meaning but instead augmented by globalization and virtual space (Blij, 2009; Paasi, 2002; Sheppard, 2002).

A study by Bertolini & Dijst (2003) found that due to the evolution of technology, people reach more spaces than before, and the activity and travel patterns became more diverse, due to the minimized cost of travel time. This condition is then heightened by the most apparent advantage that came from the Internet, which allows interactions to happen between people without the need to be physically close in the same locality. Craig, Hoang, & Kohlhase (2017) discussed that with this advantage, the participant can avoid congestion or in physical space. It concludes that “the Internet will be a complement to urban areas, and the value of physical space will be enhanced by the availability of virtual space” (Craig et al., 2017), as oppose to the placelessness argument.

The virtual augmentation of physical places is discussed by Gordon & Koo (2008) that the groups that formed around the use of common spaces (e.g., neighbourhood organizations, park communities) now utilized online networks in the placemaking process, and to bring the idea of that place to a broader context. Mobile computing and location technologies also help to put places into a bigger context of systems by translating them as data points on a digital map (Gordon & Koo, 2008), which enables the creation of relationships and placemaking between said places with people or other places in a constellation.

Further, we are taking the examples of physical changes in the urban areas as a ‘container’ of daily activities in the physical space, where the majority of population lives and the

number is projected to keep growing (UNDESA, 2018)[3]. The urban areas or translated simply as a *city*—a densely permanent human settlement with non-agricultural sectors as the main activity and established administrative boundaries (Caves, 2004)—was divided into two main areas in the previous pre-industrial times: the planned core with a concentration of economic activity (e.g. places for work and business), and the 'residual zone' of residential surrounding the core as household settlements where the known number of households residing (Gurstein, 1996; Moses & Williamson, Jr., 1967). Only after technological evolution in the transportation sector, Gurstein (1996) noted, that the non-core areas start to appear as strategic and valued. In the evolution of urban planning itself, the advancement of transportation has opened up the horizon in planning the megaregions of metro-connected cities and surrounding areas, after decades concentrating in smaller-scale planning such as Ebenezer Howard's Garden City and neighbourhood unit theory (Badger, 2012).

More and more people are transforming the way they live and work to be independent of administrative and physical boundaries (Bertolini & Dijst, 2003), such as by working across cities and regions through commuting or working remotely enabled by the help of ICT. The daily physical spaces experienced by individuals might transcend the administrative boundaries, in which the government based their public service provision upon; as consequence, seen from the public service perspective, an individual might access the public service across regions, depending on their necessities.

Bertolini & Dijst (2003) also stated that the cities nowadays could not be seen as an integral of the social dimension ("*civitas*", as the intensity and diversity of social and economic interactions) and the physical dimension ("*urbs*", as the density of built structures) anymore, since the link between them is fundamentally changing and the spatial coincidence between these two dimensions is questionable. Through the digital accessibility of services, the city or physical urban space has been reduced to an assembly of interchangeable parts where an individual's needs are provided just by pushing a button (Friedmann, 2010, p. 162), perhaps on the citizen's mobile phone, similar to what Pollitt (2012) suggested before as modularization. It is then common for the citizen to expect that the public services should also be available by pushing a button at the utmost convenience. The use of digital networks in the mundane life of people is also adding an extra layer of the physical landscape, where the cities—and the components inside it, including the public and private services within an urban territory—can now be

[3] The population in urban areas worldwide is projected to reach 68% by 2050, compared to 32% in rural areas (UNDESA, 2018).

experienced *directly* through physical contact or *mediated* through virtual technologies (Abdel-Aziz et al., 2016).

In between the debate within the urban studies field about dematerializing the city and whether the technologies can fully overtake the function of a cityscape, it is noted that for various types of economic and non-economic activities the physical contact is still irreplaceable, which makes the physical places still running an essential role (Bertolini & Dijst, 2003). Sassen (2001) added that the disperse of territorial boundaries facilitated by ICT is not pushing agglomeration of the population to be obsolete; instead, it is encouraging a new logic of agglomeration of the population.

2.4 Conclusion

Physical places undergo their transformations, and their meanings are constantly changing. The meaning of a place is shaped through the intertwine of four-level placemaking: individual, local, national, and supranational. Globalization and virtualization have brought a rise of presence in virtual space, but it is undeniable that physical places are still of paramount importance. However, as an extension of physical space, the activities in the virtual space are changing the perceptions towards the physical place. Two arguments arise: physical places are losing their meaning, and at the opposite side, the physical places are augmented through the help of virtual space.

Virtualization also changed the behaviour of citizens and the government as the place-maker actors. Through the eight modalities of placemaking by the government (Pollitt, 2012f), government-imposed their policies and establish administrative boundaries based on physical space. Virtual space is only taken care of under one separate modality, while in fact, the effect of virtualization transcends beyond the borders of virtual space itself. The evolution of technology has also changed the mobility of citizens, both virtually and physically, enabling them to be independent of the state-based administrative boundaries for their necessities, such as for work and leisure. Citizens can experience the cityscape and its components, including the public and private services, both physically or mediated through digital devices.

3 Digitalization of Public Services

Digitalization can be defined as "a sociotechnical process of applying digitizing technologies to broader social and institutional contexts" (Tilson, Lyytinen, & Sørensen, 2010, p. 749). Before moving further, what is technology here itself? The broad definition of it came from the distinction between a technical device and technology. Barry (2001) in Pollitt (2011) defined that technical device is conceived as a material or immaterial artifact, while technology is the range of environment (i.e., knowledge, skill, diagrams, charts, calculations, energy) to make the use of the device possible. Arthur (2009) added in a broad sense, technology has three main characteristics: (1) it should be purposeful for human; (2) it is a collection of practices and components, and the components might also consist of the software and hardware; and the largest term is (3) "the entire collection of devices and engineering practices available to a culture" (Arthur, 2009). As there are multiple forms of technology, in this research, we are focusing on digital technology, more importantly the information and communication technology (ICT).

This chapter presents the shifts of digitalization within the public sector, the nature of public services, public e-services, and lastly, synthesize of the two main concepts of this research in the form of research framework.

3.1 Digitalization, Public Services, and Shifts of Paradigm in Public Sector

> What is most significant, and most valuable, about public administration is that we serve citizens to advance the common good. Public administrators are responsible for improving the public health, for maintaining public safety, for enhancing the quality of our environment, and myriad other tasks. (Denhardt & Denhardt, 2007, p. 4)

Public organizations and governments across the globe are adopting digital technologies to support the interaction between citizens and the state (Goodsell, 1981 in Lindgren et al., 2019), with the aim to improve efficiency and service quality, through reduction of service time, increase transparency, and integration across organizations (Layne & Lee, 2001). The digital transformation within the government and in public sector context is known to be discussed under the term "e-government", in which the definition itself is evolving. The definition of e-government by World Bank in 2015 is presented below:

> E-government refers to government agencies' use of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that can transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more

> efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth and/or cost reductions. (United Nations Department of Economic & Social Affairs, 2018, p. 220).

Another takes of e-government is defined by Bekkers below:

> E-government can be described as the use of modern ICT, at this moment especially internet and web technology, by a public organization to support or redefine the existing and/or future (information, communication and transaction) relations with 'stakeholders' in the internal and external environment in order to create added value (Bekkers, 2003, p. 2)

The steps of modernizing state's operational activities are linked to the larger context of globalization, and further separated and redefined the main three functions of government: operations, policymaking, and regulation (Finger & Pécoud, 2003). From the side of the government as a service provider, e-government is being deployed not only to deliver services to society, but also for efficiency purposes in the public sector, improving transparency and accountability in government functions, and cost savings in government administration.

Mechanization of public sector dates back to the late 18th century where the first information technology notably used in the UK was paper and quill pens, and the use of computers started around the 1940-1950s in the UK and the US (Agar, 2003)[4]. Globally, it is believed that adopting technology—especially ICT—for government operations will significantly help governments to be more effective and transparent in fulfilling their duties towards their citizens (Mahmood, 2019). It is said that the appropriate utilization of ICT in the public sector has the potential to increase citizen satisfaction, through the more convenient public service, more accessible information, and better communication channels between citizens and the government (Welch, Hinnant, & Moon, 2005). Thus, e-government is being dubbed as the answer to the declining trust and general attitude of citizens to the government (Mahmood, 2019; Welch et al., 2005).

It is seen that the right ICT (as *technology*) should be applied within the right business process to improve processes and organizational performance; this is conditional based on appropriate complementary investments (i.e., workplace practices, non-ICT facilities, human resources) and organizational structure, coupled with external forces of the market (Melville, Kraemer, & Gurbaxani, 2004); within public sector context, it is influenced by politics as the external forces. Bekkers and Homburg (2009) in (Pollitt, 2011) stated that

[4] For more detailed works please see Agar (2003) and Margetts (1999).

the involvement of ICT in public administration is actually a form of social intervention in the policy network—in line with the view of digitalization as proposed by Tilson et al. (2010) above that digitalization is a sociotechnical process—which further, influences the environment around them: position, interests, values, information domains. Not only ICT, but the involvement of technology occurs alongside the shifts of paradigm in the public administration field.

In the oldest two paradigms of public administration, Old Public Administration and New Public Management (NPM), the involvement of technologies—let alone ICT—were not explicitly recognized (Henman, 2010)[5]. Old Public Administration, is said to be rooted from rational or public choice theory, which relies on the rational individuals whose based their relationship to the public sphere by self-interest; the main objectives of the government was to deliver goods and services efficiently and to ensure individual rights (Brainard & McNutt, 2010). Mechanical devices are used to achieve certain objectives of improving the efficiency and effectiveness of the government. For example, typing machines pools are used by government agencies to write letters faster, up to the point in the 1980s the civil servants should acquire the knowledge to operate them individually (Pollitt, 2012f). In the 1980s-1990s, the New Public Management (NPM) paradigm emerged, which introduced how citizens should be seen as the customers and that the government as a service provider should respond to citizens' needs, especially by involving the methods of private sector players (Brainard & McNutt, 2010; Denhardt & Denhardt, 2007; Henman, 2010; Sangiorgi, 2015). There are three main themes of NPM: disaggregation, competition, and incentivization (Dunleavy & Margetts, 2018). Later on, as the technology was advancing, it played a role in progressing the NPM paradigm, for example, the capability of computing to measure performance indicators and targets, and the deployment of networked infrastructure to monitor contractual obligations under public funds (Henman, 2010).

As some key literature argue that we are leaving the paradigm of NPM, the most recent post-NPM paradigm shifts emerged around various concepts such as New Public Governance (Osborne, 2006), New Public Service (Denhardt & Denhardt, 2007), Neo-Weberian State (Pollitt and Bouckaert 2017), and Digital-Era Governance (Dunleavy & Margetts, 2018). New Public Governance (NPG) focuses more on power-sharing and collaboration (Sangiorgi, 2015) and highlighted the inter-organizational relationships (Osborne, 2006). NPG recognizes that the government itself is plural, meaning that the

[5] Dunleavy, Margetts, Bastow, & Tinkler (2006, p. 469) particularly noted that there is a lack of reference of IT in the literatures of public administration, indicating the separation between the field of public management and the practical and empirical changes in information and technology.

public service delivery and policymaking are done by multiple interdependent actors through multiple processes and uses multiple inputs (Robinson, 2015), embodying the networked coordination model (Pollitt & Bouckaert, 2017).

New Public Service (NPS) was proposed around the same time with NPG (although some dubbed that NPS is rooted from NPG, thus is more coherent (Robinson, 2015)). The NPS recognized the role of the government not as a 'steering' entities as Old Public Administration and NPM, but rather as a 'serving' and 'facilitating' the participation of citizens and collaborate with them as partners (Brainard & McNutt, 2010; Denhardt & Denhardt, 2007). Further, the duality of service users as citizenship from the collectivist approach and customer from the consumerist approach are both coexist in both NPG and NPS (Denhardt & Denhardt, 2007; Sangiorgi, 2015). Another post-NPM paradigm is Neo-Weberian State (NWS). The NWS agreed that although the public sector requires modernization to be more efficient and to be more citizen-centered, NPM is not fully suitable since the adoption of private-sector methods do not provide all the solutions; hence, NWS argued that the government should be put back as a distinctive actor with its own set of rules and practices (Pollitt & Bouckaert, 2017). Broadly summarized, NWS depicts a professional state: a modern and efficient government while answering the needs of citizens and holding a representative democracy role (Pollitt & Bouckaert, 2017).

Another proposal of the new paradigm is of Digital-Era Governance (DEG), proposed by Dunleavy et al. (2006). The main focuses of the DEG paradigm are digitization, needs-based holism, and reintegration, in the argument that the main themes of NPM have been reversed or stalled in nowadays practice (Dunleavy & Margetts, 2018). Compared to NPG and NPS that began to put the technology-related changes within government under the light (Brainard & McNutt, 2010; Denhardt & Denhardt, 2007; Henman, 2010), DEG put the recent technological change and opportunities in the society as its center, arguing that the ICT development brought civil society to be more autonomous and enhance their social problem-solving skills (Dunleavy & Margetts, 2018). On the same note, Open Governance (OG) proposed by Meijer, Lips, & Chen (2019) encouraged radical openness and connected intelligence in the governance, under the core function of massive collaboration in producing information enhanced by the evolution of ICT.

The networked ICT has brought the potentials of better coordination between organizations and to interact with citizens resulting in a higher degree of collaboration (Henman, 2010). It can be argued that new tasks for the civil servants with regards to the involvement of technologies—by transforming the previous tasks or create the newly required ones—will eventually change the civil servants who perform the tasks, for example by requiring more knowledge or different skillsets from them; hence the

technological capacity within the government bodies have changed (Lember, Kattel, & Tõnurist, 2018; Nygren, Axelsson, & Melin, 2013; Pollitt, 2011). For citizens, ICT evolution might have already changed our perceptions of time, space, and the government: we want to be heard, we are accustomed to faster and individualized services, and we hope that they would be available to be contacted on-demand, at anywhere or anytime (Pollitt, 2011). The involvement of ICT has paved the way, if not to the end state of proposed paradigms, to a new paradigm that we might embark on (Pollitt & Bouckaert, 2017). The common themes of post-NPM paradigms are *better coordination between government organizations*; a *collaboration between the government, citizens, and other stakeholders*; and more importantly *citizen-centricity in delivering public services*. In the next sections, technological investments in public service itself will be discussed.

3.2 The Nature of Public Services

Garcia (1998) defined that public service is "an activity with respect to which the public administration fulfils a fundamental role", taking a broader interpretation of Leon Duguit's explanation that public service includes "any activity that has to be governmentally regulated and controlled" (Garcia, 1998, p. 62). Building upon these definitions, we will delve more into the characteristics of public service from two points: *public* and *service*, as suggested by Lindgren & Jansson (2013).

First, looking into the *public* component, the most fundamental way to differentiate the public sector, in contrary to the private, is that public organizations work for the interest of citizens (Lindgren & Jansson, 2013). In this research, public organizations are defined as "the formal public entities that decide on and organize public administration of different sorts (e.g., state authorities, ministries, municipalities, regional authorities)" (Lindgren & Jansson, 2013, p. 167). Hence, the work of public organizations involves a different and comprehensive legal framework, as well as embedding a different set of logics—the "public ethos"—to ensure that the overarching aim of the organization is to serve the public, in line to the public and collective interest.

James (1997) and Lovelock & Weinberg (1990) in Laing (2003) stated that there are three core public service characteristics that distinguish them from private-sector practices: (1) served to achieve more political objectives rather than economic objectives; (2) the user is primarily bound to the citizenship concept rather than consumership; and (3) the 'customer' is multi-dimensional. These three characteristics are said to be the core of public ethos mentioned before, which perceived as diametrically and centered around

equality and community, contrary to private sector works which are competitive and individualistic (Laing, 2003). Other characteristics of public organizations are the legal obligations to conduct service delivery for all citizens; the need to balance between democratic and economic values by accommodating principles of equality, responsiveness, cost-efficiency, availability and social inclusion; and the need to ensure legitimacy and accountability through democratic decision-making and efficient output (Lindgren & Jansson, 2013).

Second, looking into the *service* component, it can be understood that it is "a process in which someone is being served, and value for the user must be created" (Lindgren & Jansson, 2013). Recently, a more dynamic view has emerged in understanding a service, as "a dynamic process with value fulfilment for the customer as its main objective" (Grönroos, 2008 in Lindgren & Jansson, 2013), which then makes the interaction between provider and customer as a main point of interest.

Laing (2003) mentioned that "the majority of public goods are in fact services rather than physical products" (p.431). In contrast to goods, there are four main characteristics of a service (Parasuraman et al., 1985; Zeithaml et al., 1990; Kotler & Keller, 2009 in Lindgren & Jansson, 2013):

- *intangibility*: services are considered as 'performances' than objects, which makes it difficult to measure, test, and verify before use or sale;
- *inseparability*: production and consumption of services cannot be separated, in the sense that the quality of a service is created at the same time of its delivery, within the interaction between customer and provider;
- *heterogeneity:* services often vary between each provider, each customer, and overtime; and
- *perishability*: services cannot be stored; therefore, it must be available to the right customers at the right time and place.

Aligned with all of these characteristics, the quality of service is highly dependent on the judgement of the consumers, both on the outcome of the services and its delivery (Zeithaml et al., 1990 in Lindgren & Jansson, 2013), implying that there is an asymmetrical relationship between consumer and the provider to determine the quality of service.

In addition to the aforementioned characteristics above, there are two more important characteristics due to the nature of public organizations. First, the users' role as citizens

needs to be taken into account, rather than as consumers. While the NPM paradigm highlights the consumer-perspective of the citizens, this implies a consistent need to ensure individual rights and obligations of citizenship and also to ensure access to services for all of the citizens. The concept of citizenship is centering in the collective needs of society and social justice, along with the rights and obligations of citizens, rather than the needs of an individual (Laing, 2003; Lindgren & Jansson, 2013). Second, there usually is a lack of exit, which means there is an asymmetrical relationship between government and citizens in the provision of service since the citizens cannot choose other providers for certain welfare services (Lindgren & Jansson, 2013).

Continuing from the definition of service, it has been found that interaction plays an important role. In the context of public service, these interactions can be studied under the term of *public encounter*, coined by Goodsell, which is defined as "the interaction of citizen and official as they communicate to conduct business" in relation to administrative services (Goodsell, 1981 in Lindgren et al., 2019). Further, there are four aspects of this public encounter, summarized in this table below.

Table 1. Aspects of Public Encounter

Aspect	Focus
Nature and purpose of the encounter	• The purpose of interaction in relation to administrative services[6] • Three general purposes: 1. Exchange of information (e.g., inquiring certain services, census studies) 2. Provision of public services 3. Control or constraint initiated by the government (e.g., penalties, tax collection)
Communication form and setting	• Types of media and settings or communication channels (e.g., face-to-face, letters, telephone, combination, digital)
Central actors involved	• The specific roles are taken by the citizen and public official involved, in a form of power relationship • The relationship is typically asymmetrical: the citizen is inexperienced, while the public official is professional on the task and has legal powers; lack of exit
Initiation, duration, and scope	• Lateral dimension: the extent of public service's influence on the citizen's life (e.g., renewal of driver license has different influence than imprisonment) • Longitudinal dimension: the time period of public encounter (e.g., singular event, the sequence of repetitive events)

Summarized from Goodsell (1981) in Lindgren et al. (2019)

[6] Other purposes of public encounter that has not been included by Goodsell (1981) is encounter for the process of co-production of services. Typically it involves public participation in three stages: information, consultation, and participation, which requires interaction between citizen and the government (OECD, 2001) and supported with ranging use of ICT, from sensing, communication, processing, and actuation technologies (Lember et al., 2019). However, since this study is focusing on the public service delivery aspect, this type of public encounter is omitted from discussion.

The three purposes of public encounter in Table 1 above indicates the general types of public service itself: (1) information exchange services, (2) transaction services, and (3) government control services. In relation to the government-citizens relationship within the public encounter context, van der Hart (1991) in Laing (2003) examined the involvement direct or indirect payment mechanisms in public service interactions, which was useful to determine the relevance of marketing concepts (Laing, 2003). Indirect payment services involve frequent interaction with a large size community, but only a periodic interaction with individual citizens; thus, imposing the relation between government and citizens to be based on citizenship, the government organization is independent of the service users or their agents for their income and survival (van der Hart, 1991 in Laing, 2003). In contrast, the direct payment services—whether in full or partial contribution with subsidies—involve multiple interactions with the public or individual citizens, and their income is dependent on the delivery of discrete services to individual users who receive the benefits; thus, making the relationship between government and citizens to be based on consumerism (Laing, 2003). In consumerism, the government is more likely to be seen as a service provider and citizens are the customers; but in citizenship, both government and citizens have more multi-dimensional aspects, one of them being government to be seen as agents of change (Laing, 2003). For example, in public housing, postal services, and customs, citizens directly pay for the services; whereas in criminal justice, emergency services, and central government departments, citizens pay indirectly through the mechanism of tax. Regarding the contact with the public, in public housing, postal services, criminal justice, and emergency services, the government is highly in contact with the public to deliver the services; while in customs and central government services, the degree of contact is low (van der Hart, 1991 in Laing, 2003, p. 436).

In types of public services where the consumer is individual citizens, the quality of the services are judged by its consumer; whereas when the consumption is collective, the judgement came from professionals, since its benefits are received by a larger society (Laing, 2003). In some public services, although there is a direct payment by individuals, the consumption of the service is communal by nature; for example, in environmental protection, defense, and economic development (Laing, 2003). Laing (2003) then further stated that such services are best described as “being produced primarily for collective public consumption rather than individual private consumption” (p.438). Based on the beneficiary and types of judgement, Laing (2003) classified the public services along the spectrum of social benefits and professional judgement dominant (e.g., customs, criminal justice, education) to services which have private benefits and consumer judgment dominant (e.g., health care, public transport, public housing) (Laing, 2003, p. 438).

All of the typologies above showed that interaction plays a key role in public service delivery and that the degree of interaction depends on its purpose and type of public services, thus it further shapes the relationship between government as the public service provider and citizens as the user. In the next section, we will discuss more into public e-services, as the digitalized public service delivery indicates the change in the interaction between the two actors.

3.3 Public E-Services

The first step taken by most of the government around the world for their e-government initiatives was said to be focused on providing information and services to the citizens while keeping service delivery platforms separate and parallel across government agencies (United Nations Department of Economic & Social Affairs, 2008). Essentially, the digitalization of services is intended to create more efficient encounters for the government and at the same time easier encounters for citizens in conducting public services (Lindgren et al., 2019). In practice, public e-services are also discussed under different terms, such as e-government service, digital public services, e-public service, or government website channel (Lindgren & Jansson, 2013). To understand more about public e-services, we will first delve into the understanding of e-services.

The “e” part in e-services stands for electronic, indicating something is done “electronically”, thus representing the involvement of electronic artefact (Lindgren & Jansson, 2013). While services itself, as discussed in Section 3.2, is a process in which value is created in an interaction between user and provider (Lindgren & Jansson, 2013). Hence, e-service is a service mediated by information technology, which is not only constrained in Internet mediation but also other communication technologies that involve interaction, such as SMS and mobile applications; another key characteristic is that the e-service is connected to other information systems (Lindgren & Jansson, 2013).

It is important to note that technologies are not just objects that can be separated from human skills and relationships since they exist in relation to each other, and mostly only able to be observed in practice (Orlikowski & Scott, 2008). In this case, the digitalization of public services—and to a greater extent the e-government—might use different ICT artefacts depending on business processes related, and this involvement of technology will inevitably bring forth the changes in technical and social aspects of the system, including the interactions between citizens and the government (Henman, 2010; Lindgren et al., 2019). In terms of public e-services, it usually does not involve the delivery of actual end-product compared to physical services (e.g., teaching in schools, health care

services); it typically deals with an exchange of information to receive the end products (e.g., receiving permits, disbursements, paying the tax), thus it became more of a matter of information management and transforms the government-to-citizen (G2C) relationships to be information-based (Lindgren & Jansson, 2013). This is aligned with the concept of virtual spaces discussed before in Chapter 2, where transforming something into the virtual or digital world means modularization and simplification of reality; not everything can be virtualized or digitalized (Pollitt, 2012f).

Most public e-services are designed to be similar with the analogue or 'traditional' services, for example using the digitalized version of the paper-based form (Heeks, 2006; Lindgren et al., 2019), or retaining official's involvement in the service process (e.g., cases preparation, discretion, making formal decisions) (Lindgren et al., 2019). This emphasizes that although the service might appear as fully digitalized by the citizens, public e-services are mostly functioning as a mediator in accessing the actual public service (Lindgren & Jansson, 2013). In practices where automation is involved in public service provision, the whole processes can be actuated by digital technologies, such as business registration and tax declaration where citizens without special cases can interact with digital technologies, have their data processed automatically by an algorithm, and the deliverables (i.e., documents, license) are handed remotely through digital means. However, some offline or human support still needs to be provided for citizens who have special cases that need to be dealt with extra care that cannot be replaced by algorithms.

As the technology is used to mediate the public services—which essentially creating a new requirement for citizens to access the service and interact with public officials—availability, usability, accessibility are vital (Lindgren & Jansson, 2013), adding more characteristics of services. Another core characteristic of this e-service is the involvement of citizens is higher than the traditional public services, enabling them to do self-service, since the basic idea is that citizens should be able to access government services remotely using ICT (Layne & Lee, 2001; Lindgren et al., 2019). The mediation of technology also enables citizens to be engaged in the delivery of personalized services with the aid of a provided digital platform (Lember, Brandsen, & Tõnurist, 2019) – essentially to meet their needs proactively. In this way, the use of digital technologies empowered the citizens, which can be categorized into co-production, since the delivery of services are met by sharing the resources and decision-making (Lember et al., 2019). Examples of this type of service delivery are remote learning and remote health care assistance, where the pupils and patients shared the resources for the provision of materials and allocate a place of their home to conduct the public service delivery if needed, instead of being in government-provided places (i.e., schools and hospitals). At the same time, citizens need to be skilled enough to obtain the service by themselves, by having digital literacy on how

to use the digital devices and the platform at the minimum, and to understand necessary steps or elements of the services if necessary.

Compared to the physical delivery of services, e-services have an additional set of actors and users, which are the actors who design and supply the technology, and the users who consume the output of e-service to be an input of their work (Lindgren & Jansson, 2013). There is a tendency that the designer of the technology is more subjected to the provider, rather than to the citizens who are accessing the public service. Furthermore, restating the four characteristics of services—*intangibility, inseparability, heterogeneity, and perishability*—the inseparability and perishability of e-services are dependent on the type of service and mediation occurred (Lindgren & Jansson, 2013). Some public e-services may consist of simple information-oriented e-services, for example registering vital events or declaring residency, in which the production and consumption are simultaneous, thus, they are inseparable. Some other services may need to have a separate production and consumption functions, for example in the case of reimbursement, where the citizens need to input their data through electronic means, and then receive the reimbursement in different means. In cases where the government provides services proactively, which needs to be triggered by the life events occurrence of citizens (see below regarding proactive and predictive services), the production and consumption of services may not be as clear: services might be prepared beforehand and then consumed later when the life events has occurred. Hence, the inseparability and perishability of these services are arguable.

Digitization of public services is started as the first step of the e-government movement; by then, only selected services were available on the web, depending on the feasibility to put them online (Falk, Römmele, & Silverman, 2016). The web channel exists as an add-on channel to ensure the inclusivity for citizens who were not online (Falk et al., 2016). The main objective thus was to increase the efficiency of the government in delivering the services (Falk et al., 2016). A study that classifies the public services is done by Bekkers (2003), which classified it by the kind of services provided in the e-government context. There are five types of services proposed:

1. *information services*, which focused on disclosing government information (e.g., publication of policy reports, official documents, regulations, brochures);

2. *contact services*, which focused on providing contact of public administration bodies or officials (e.g., complaint channel, Q&A channel of civil servants and politicians);

3. *transaction services*, which allows the inquiry and handling of requests and applications of rights, benefits, and obligations (e.g., tax assessments, render of permits, licenses);

4. *participation services*, which allows citizens and government to interact closely (e.g., e-voting, electronic forums, virtual communities to evaluate policies); and

5. *data transfer services*, which focuses on the exchange and sharing of information between organizations. (Bekkers, 2003)

After modernizing the front offices of service delivery through the e-government website portals, it does not take long for the government itself to realize that the bigger challenge is to improve coordination horizontally within the government itself (Apostolou, Stojanovic, Lobo, Miró, & Papadakis, 2005; Frach, Fehrmann, & Pfannes, 2016; Pollitt, 2012f), rather than a whole service transformation. Fancy terms are started to come up: 'joined-up government', 'cross-cutting services', 'integrated service delivery', 'collaborative public management', 'holistic government'; but there are only a few recorded cases of it in action (Pollitt, 2012f). It is noted that coordination always has its costs and benefits, and the joined-up government should not be assumed to always have more benefits than its costs, or that more coordination is always better (Pollitt, 2012f). At the same time, since the joined-up government is much more desirable with the help of digital technologies, a wide gap is found to exist between the instrumental perspective of policymakers of how the system should be and the technical realization (Apostolou et al., 2005). Despite the internal challenges, ICT-facilitated service delivery is still highly popular with citizen users and said to bring the potential of significant savings of public funds (Pollitt, 2012f).

An example of the joining-up effort of the government is the existence of one-stop-shop. Essentially, it is a single point of access to deliver government services, which integrates the services from the citizen's perspective (Scholta, Mertens, Kowalkiewicz, & Becker, 2019). In some practices, the point of access still taken place in a physical single front office, or a "one-place" service integration, where citizens can access or inquire more than one public service in one service points of different government offices in one location. In some cases, this physical integration is put in public places, referred to as "public service hall" or "public service mall" (CPI, 2016; OpenGovPartnership, 2018; The Jakarta Post, 2019). Another fully one-stop-shop practice is that the point of access is in the form of a centralized web portal, with an integrated interface for different kinds of public services (Scholta et al., 2019). Alongside this trajectory of integration, the back office or procedures of public service delivery are on its way to be integrated, to enable

citizens to submit only one inquire or documents for several public services (Pollitt, 2012f; Scholta et al., 2019).

The level of integration between government agencies and their capacity of storing data might allow them to extend their services delivery to be more than reactive service, in which the services require the citizen to initiate or request it to the government in the first place (Ayachi, Boukhris, Mellouli, Ben Amor, & Elouedi, 2016), harnessing the computational view of the ICT devices. The next stage of the service delivery is to be more proactive – where the government delivers a service to the citizens when a life event occurs without waiting for the citizen's request, and predictive – where the government delivers a service even before the life event occurs based on a prediction (Ayachi et al., 2016; Scholta et al., 2019). The data gathering and analytics capability enabled by e-government is one of the main requirements to fully provide these types of service delivery, where the citizen does not need to submit any forms, but relied on their data stored within the government administration (Ayachi et al., 2016; Scholta et al., 2019).

On the other side of joined-up government effort, there is a tendency of centralization. Snellen and van de Donk (1998) noted that ICT has a tendency to encourage centralization within government organizations (Lember et al., 2019). The potential negative impact of involving communication technologies within the decision-making component of public service also might enable greater centralized control by the government, by making automated and programmed decisions without direct inputs from citizens (Lember et al., 2019). The practice of proactive and predictive services might also encourage centralization since it requires a certain level of data gathering and analytics capability (Ayachi et al., 2016; Scholta et al., 2019), that might be more efficient if run centrally.

In correlation with the virtualization and heightened mobility of individuals discussed in Section 2.3—that a physical space can now be experienced through the mediation of virtual technologies—the same goes with a governed territory and the public services within those places. Regions who are able to provide their public services online have a higher potential to have positive branding as a whole since their services are deemed to be easier to access for its users (Go, Della Lucia, Trunfio, & Presenza, 2014; Govers & Go, 2016). Citizens or businesses can access public services without having to reside there. At the same time, this poses another financial challenge in providing the services, more importantly, if numerous users are not contributing financially to the corresponding public service provider, e.g., through paying taxes that will fund the service provision (Mello & Ter-Minassian, 2020).

3.4 Conclusion: Digitalization of Public Services and Place-making Processes

Public service is defined as "the services provided by public organizations to citizens, both collectively and individually, either directly or by financing private providers" (Christensen et al., 2005 in Lindgren & Jansson, 2013). The involvement of ICT in public administration should be seen as a sociotechnical process that influences the environment around them. Digitalization of public service provision—or public e-services—is one of the main milestones in the digital transformation of the government, which transform key aspects related to citizens and government.

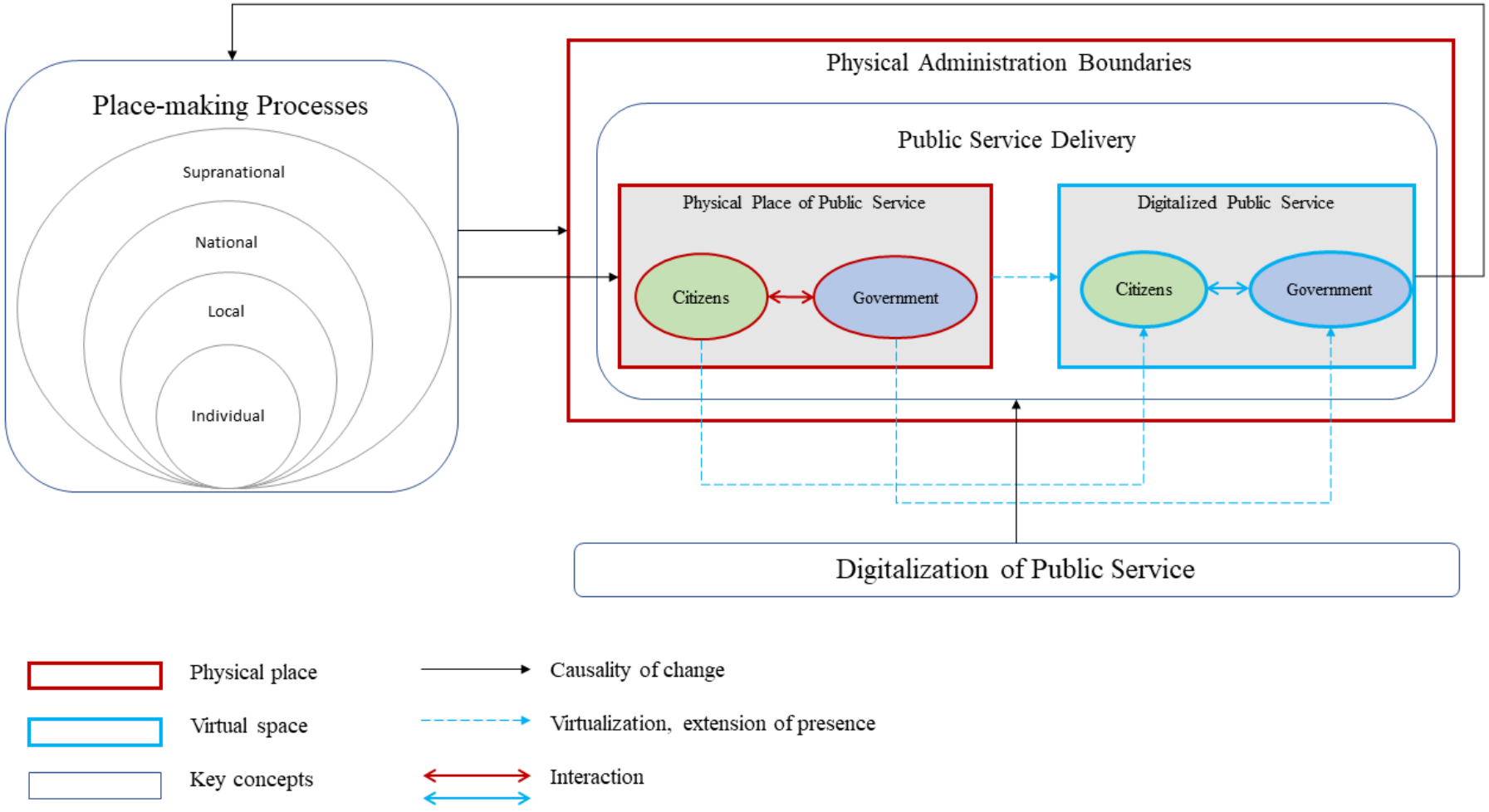
To summarize the theoretical foundation of two main concepts in this thesis, in Table 2 below we classify the key changes brought by the evolution of ICT—in general, and in digitalization of public service provision—which is related to places, citizens, and government, based on the levels of changes.

Table 2. Changes in Citizen and Government Behavior Related to Place and the Evolution of ICT

Level	Key Changes
Individual	• Heightened mobility of individuals, spatially and virtually • Mediated interaction between citizens and officials • Citizens are (dis)empowered through the self-service capability to obtain public services
Local	• An administrative area can be experienced virtually by accessing its public services, making the area more competitive, interesting or disadvantaged in relative to other areas • Users might access public services without paying the taxes that fund its provision
National	• Citizens can work across cities or administrative boundaries, by enhanced physical mobility or through remote working • Joined-up government enabling coordinated service provision across public sector • Tendency of centralization of public service provision • Encouragement of proactive and predictive services
Supranational	• Citizens can work across countries and access its public services remotely • Threat of international crimes and cybercrimes

Source: Author, 2020

Conceptually, the changes brought by the evolution of technology and digitalization of public services can affect how the physical places and public-service-related places are perceived. The relation between these two concepts discussed in Chapter 2 and Chapter 3 are summarized in the conceptual framework presented in Figure 2 below.



Source: Author, 2020

Figure 2. Framework of Digitalization of Public Service and Changes in Placemaking

As visualized in Figure 2, the physical administration boundaries (e.g., country, municipalities) are shaped by multi-level place-making processes. Inside the physical administration boundaries, the public services are in place, in which the physical place related to public services itself is also imbued with meaning from the place-making processes. The physical delivery of public services is extended to digital public services in virtual space through digitalization, in which the citizens and government need to extend their presence to the virtual space. Here, the digitalization of public services affects the concept of public service delivery as a whole or through each component as explained throughout this chapter; for example, the citizens are empowered (or coerced) to obtain the services by self-service, the mediated interaction between citizens and government, and that the government is able to think in a more citizen-centric way. Further, the digitalized public service affects the place-making processes of the physical space of both the physical administration area and on a smaller scale the physical place of public services. The effects of the digitalization of public services to the place-making processes, as discussed in Chapter 2, might be in the form of decreasing meaning of the physical place (i.e. placelessness), or augmentation of the meaning of the physical place in the opposite way.

Let us take the path of the framework through the example of business registration services. In A country, business owners who want to establish a business within Y region should register their business with the Y region administration. At first, the procedure is done by going physically to a government office, starting with the office of trade agency, where business owners are expected to bring required documents and hand them in to an official, wait for a decision, and then come back to collect the permit of establishing a business to bring to other government offices, e.g., tax office and office of labor agency. Let us suppose that a business owner from region X, C, wants to open a business within Y region. This means that the business owner needs to travel across the region to conduct all the registration needed. Overtime, digitalization of the procedures is applied in region Y: online portals are established, where the procedures can be done one time and bypassing multiple government offices. Business owners now do not need to go physically to those government offices and the processes are now centralized in a new one-stop-shop department, making other offices potentially lose its meaning as a place to meet between business owners and officials on the eyes of both parties, since now they only need to interact virtually. C can now register their business without needing to travel across the region. Moreover, since the database between those multiple government agencies are integrated, information package about available support and opportunities for businesses are given upon the registration. Overall, the meaning of Y region now might be imbued as a place with a healthy business environment as an effect of the service delivered to business owners, while region X is deemed to be in less favor to business

owners. On a larger scale, due to the huge number of business owners wants to open their business across region, the national government of country A decided to centralize the business registration, essentially allowing future business owners to register their businesses online regardless of their region of residence and their region of establishment. In this way, the meaning of business registration offices and one-stop-shop offices in each region might go obsolete; business owners only go there if there is any complicated case needs to be settled with the government. The competitiveness of each region based on the business registration is now changed; rather, the country A as a whole might be gaining the positive image in the business environment now.

4 Research Design and Methodology

This research is exploratory in nature, in order to understand what is currently happening and gain new insights (Saunders, Lewis, & Thornhill, 2009). This is mainly due to the topic of interplay between place and digitalization in public sector is underdiscussed, and that the research questions are guiding to explore *how* the interplay in reality happens. Moreover, this research is using the qualitative approach, where the research is done in natural, uncontrolled setting (Creswell, 2009). The researcher here is the key instrument to collect data and examine documents (Creswell, 2009).

This research is using inductive data analysis, where the patterns or themes are built from bottom up, along the process of research and from the findings emerged (Creswell, 2009). Qualitative research also forms the interpretive inquiry, aiming to interpret what the researcher see, hear, and understand, without separating it from the wider context of the findings, and that multiple views of the problem can emerge (Creswell, 2009). In addition, the qualitative research enable us to develop a complex, holistic picture of the issue under study (Creswell, 2009).

Since the concepts are currently understudied as pointed in the introduction earlier, this study began by exploring the main concepts place and digitalization of public service. Then, to answer the research questions, the main needs are to find patterns and trends of the conceptualization and meaning of place and the emerging practices of digitalization of public services. In-depth multiple case studies (Saunders et al., 2009; Yin, 2018) is not preferred here since the level of generalization in this study is high to find main patterns and trends in an exhaustive manner, and to show evidence on a meta-level. Grounded theory (Willig, 2008) is also not the best choice since this study still relies on analytical constructs of pre-existing theories around the main concepts, rather than building theories from the findings itself.

One of the principal means in conducting exploratory research based on Saunders et al. (2009) is the search of literature. The complexity of searching and reviewing the literature themselves made it notable to categorize it as research methodology (Snyder, 2019). Integrating perspective and findings from theoretical and empirical findings in literature review allow the researcher to address research questions appropriately in a manner that other methodology has (Snyder, 2019). Moreover, as the main concepts are not limited in one field of study, literature review is an excellent choice to provide an overview of disparate topics (Snyder, 2019).

There are six main steps in conducting a literature review: (1) formulation of research questions and objectives; (2) searching the extant literature; (3) screening; (4) assessment

for quality of primary studies; (5) extracting data; and (6) analyzing the data (Paré & Kitsiou, 2017). While it is logical to do the steps in sequential order, it should be noted that the review process might be done iteratively (Paré & Kitsiou, 2017). This is the essence of hermeneutic process of literature review as proposed by Boell & Cezec-Kecmanovic (2011). This process places the searching and reading phase as equal, since the findings in both empirical and theoretical studies may lead to a new horizon of search terms and requirements, rather than developing the rigid criteria of searching and selecting the literature beforehand like the systematic literature (Boell & Cezec-Kecmanovic, 2011). The hermeneutic process is more suitable for new and emerging concepts; thus, it is decided to be used in this research. The process of searching the literature itself is using the combination of database search along with common forward and backward search of literature.

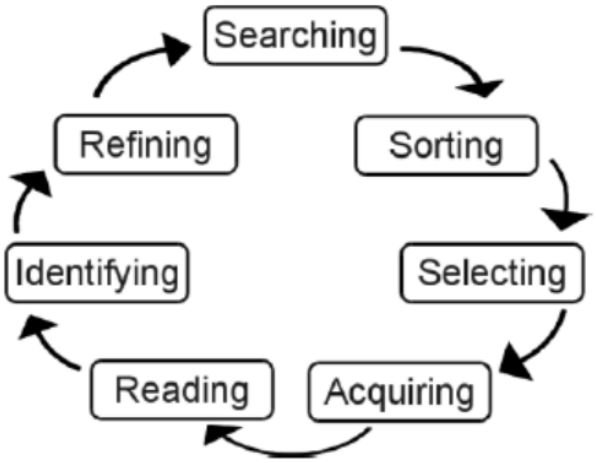


Figure 3. Hermeneutic circle for literature reviews

Reprinted from Boell & Cezec-Kecmanovic (2011)

In this research, 2 phases of hermeneutic cycle are used. The first phase, preliminary literature review, was conducted to provide overview of the main concepts and pre-existing theories of place and digitalization of public service. Based on the theories, conceptual framework to approach this research is built, and further guide the search and analysis in second phase.

4.1 Initial Phase: Preliminary Literature Review

The first phase of this research, preliminary literature review, resulted in the theoretical foundation which is presented in Chapter 2 and Chapter 3. The theoretical foundation is also used to establish definitions and theoretical perspectives of the research problem, to guide further in scoping the subsequent search cycle of literature, and to develop the research framework presented in section 3.4 above.

This stage of preliminary literature review involved literature that are relevant to provide an overview of the two main concepts: *place* and *digitalization of public service*. The search was conducted in February 2020 through online database of Web of Science and GoogleScholar due to its multidisciplinary coverage (Cornell University, 2020; UCLA, 2020). The combination of keywords between the concepts are used, i.e., "*place*", "*concepts of place*", "*digitalization of public service*", "*ICT*". Also, the search is not limiting to the field of public administration only, but also into theories in urban and regional planning, urban studies, and geography. The selection of literature is based on availability online in full-text and published in English. After that the results are screened manually based on the relevance of the title, abstract, and full-text to explain the concepts within the research questions. This first cycle of search resulted in 43 literatures comprised of academic articles and book sections. However, it is important to note that this database search is conducted as a starting point, as pointed by Boell & Cezec-Kecmanovic (2011) that the search terms included is assumed to be relevant terms rather than the actual terms used in important literatures. Therefore, 19 literatures are added based on its relevance to explain the main concepts, along with forward and backward search. In total, there are 60 literatures used for the theoretical foundation; 24 literatures are used in Chapter 2 to explain the theories of place, 34 literatures are used in Chapter 3 to explain the digitalization of public services, and 2 literatures explaining both main concepts. In addition, 6 online articles are cited to help support the arguments in the development of literature review presented in Chapter 2 and 3.

In the course of conducting this research, the definitions of important terms are derived from the theoretical background in Chapter 2 and Chapter 3, which served as a summary from preliminary literature review. To refresh a little, it is mentioned in Chapter 1 that the purpose of this research is to understand the changing meaning of place in the context of public service delivery digitalization, and map the emerging practices of place-bounded and place-independent public service delivery.

First, the term **place** in this study refers to: a specific, concrete, and particular bit of *physical* space, which is "socially constructed and operating, including interaction between people and groups, institutionalized land uses, political and economic decisions,

and the language of representation"; derived from two definitions from Pollitt (2012) and a synthesize from several authors from Massey (1994), Agnes (1987), and Martin (2003) in Saar & Palang (2009, p.7). To study the conceptualization of place in this study itself means to examine further how place in general plays a role in the public service context. Here, the term *conceptualization* is used in refer to 'breaking and converting research ideas into common meanings to develop an agreement among the users' (Sequeira, 2014). Thus, in this research *conceptualization of place* refers to how a place is being understood within the context of public service, especially within the literatures; the result of conceptualization of place is the *concepts* of place, such as 'residence' and 'municipal boundaries'.

Second, the term **digitalization** refers to "a sociotechnical process of applying digitizing technologies to broader social and institutional contexts" (Tilson et al., 2010, p. 749). In this research, the digitizing technologies understudied are emphasized in ICT, which also enabled the virtualization in the virtual space ("a world that is both removed from reality and simplified from reality", from Pollitt (2012)).

Third, the term **public service** anchors to "the services provided by public organizations to citizens, both collectively and individually, either directly or by financing private providers" (Christensen et al., 2005 in Lindgren & Jansson, 2013). This research emphasizes on studying the *delivery* part of public service.

Regarding the perspective of involvement of ICT tools in regards of the digitalization of public services, in the information systems research field the perspective of IT artefacts has been studied by Orlikowski & Iacono (2001), where there are 5 different treatment of the IT construct: (1) *tool view*, in which IT is assumed as a tool to generate value (i.e., productivity enhancement, improving relationships between suppliers); (2) *proxy view*, in which IT is defined by financial units to perceive individual perceptions of usefulness; (3) *ensemble view*, focusing on the interaction between technology and people, including in organizational structure and innovations context; (4) *computational view*, focusing on the algorithm, data modelling, and systems development; and (5) *nominal view*, where IT appears in the name, but not conceptualized. In this research, the digitizing technology devices—particularly ICT devices—are placed mainly within the *ensemble view*, which based on Orlikowski & Iacono (2001) is studying the interaction between technology and people, including in organizational structure and innovations context. Nevertheless, along the course of studying the findings, other views might be taken into supporting consideration, for example the tool view (assuming IT is a tool to generate value) and computational view (assuming IT is used for its algorithm, data modelling, and system development capabilities).

This implies that there is a causal relationship between IT and organizational changes, which mainly categorized in three different perspectives as discussed by Markus & Robey (1988): (1) *technological imperative*, in which technology is viewed as the determinant and constraint of the individual and organizational behaviour, thus as a cause of organizational change; (2) *organizational imperative*, in which the impact of technology investment on organizational change is a result of the motives and actions of the designers of IT, implies there are "unlimited control over both technological options and their consequences"; and (3) *emergent perspective*, in which the impact of technology investment on organizational change is unpredictable and emerged from complex social interactions, focusing on the interplay between technology and its context. In this study, it is assumed that the digitalization of public services leads to the change in the conceptualization of place within the public service delivery context. Along the course of this study there are two adopted perspectives on the relationship between IT and organizational (government) changes based on Markus & Robey (1988): *organizational imperatives*, where the changes of conceptualization of place is the overseen result of IT investment; and *emergent perspectives*, where the impact of technology investment is unpredictable and emerged from the interplay between technology and its context.

The research framework in Section 3.4 and definitions of main concepts above are then used to guide the main part of the research in subsequent phase, which is the main literature review.

4.2 Subsequent Phase: Main Literature Review

The subsequent phase, which is the main literature review, was started with the search of literature in database searches. Similar to the initial phase, here the database searches acted as a starting point to review the literature. This is firstly because as noticed by Pollitt (2012), that while placemaking might seem as a planned effect of government actions, it is usually absent in the objectives of policies thus might not be noticed or apparent in the literatures. Secondly, as we are aware the main concepts within this research are not limited into one disciplinary and as we are studying the changes itself, the possibility of keywords or search terms might not reflect the actual terms to compass all disciplines discussing the concepts, hence potentially infinite in numbers and cannot be determined prior to the search (Boell & Cezec-Kecmanovic, 2011).

The database search was conducted in May-June 2020, mainly using the Web of Science to find the peer-reviewed literature in multidisciplinary fields (UCLA, 2020). The search

terms were defined through the main concepts, and combination of strings using Boolean operators below were used:

1. place AND digitalization AND public service
2. place AND “public service”
3. place AND digit* AND “public service”
4. place AND digit* AND “public service delivery” NOT broadcast
5. place AND “public service delivery” NOT broadcast
6. physical AND “public service” NOT broadcast NOT health

In the first cycle, search with strings number 1-6 was performed. The first keyword in the strings (i.e. place, physical) reflects the search for conceptualization of place. Several terms are used to try to collect the relevant literature. The second part of the strings (i.e. digit*, digitalization, public service) reflects the search for the digitalization of public service. However, it is found during the search that the combination of *digitalization* and *public service* returned the topics of public service broadcasting and television; hence most of the result are deemed to be irrelevant to the research and thus the string “NOT broadcast” is included in several search strings. Further, when searching the literature containing the physical delivery of public service, the term “physical” returned literature about medical and health.

In addition to the search strings above, two filters are applied: English language and availability of full text. Because the research questions points to the change of conceptualization, implying the longitudinal research (Saunders et al., 2009), filter based on year of publication is omitted from the search. The number of search results is included in Appendix 7.2A. The literatures are then screened based on its title and abstract to determine its relevance to answer the research questions. Further, the full texts of the screened literatures are then read for final inclusion check. A literature is excluded from the review if it does not contain any explanation of place in public service delivery context, whether explicitly (e.g., discussing the role of place or spatial distribution) or implicitly (e.g., mentioning name or types of places in discussing the public service but not as a main point of research) in either conceptual research or empirical cases.

As a result from this first cycle, it was found that one of the main keywords to explain the position of place in public service delivery is “office”. Therefore, another search is conducted with these search terms:

7. office AND “public service”
8. office AND “public service” AND digitalization NOT broadcast

In addition of Web of Science database, GoogleScholar is used as a support to search non-peer reviewed literatures and supporting documents (i.e. reports, book sections) (Cornell University, 2020). The same filters as the first cycle are applied (i.e. English language, full text availability). Following the similar steps, the title and abstract of literatures are screened to check its relevance with the research purpose, and then full texts are read for final inclusion. Additional forward and backward search are conducted to include highly relevant literatures that explains the role of place in public service delivery and digitalization of public service.

From the cycles above, the number of literatures used in this review is summarized in the table below.

Table 3. Summary of Number of Literatures

Steps	Number of literatures
Screened literature from database search (filter 1-8)	43
- Exclusion based on full-text relevancies	9
Addition (forward and backward search)	69
Total literature reviewed	**103**

Source: Author, 2020

Out of 103 literatures included in the review, 67% are journal articles, 23% are book sections, and 10% are report of empirical cases published by international organizations (i.e. EU, OECD, IDB), as shown in the Figure 4 below.

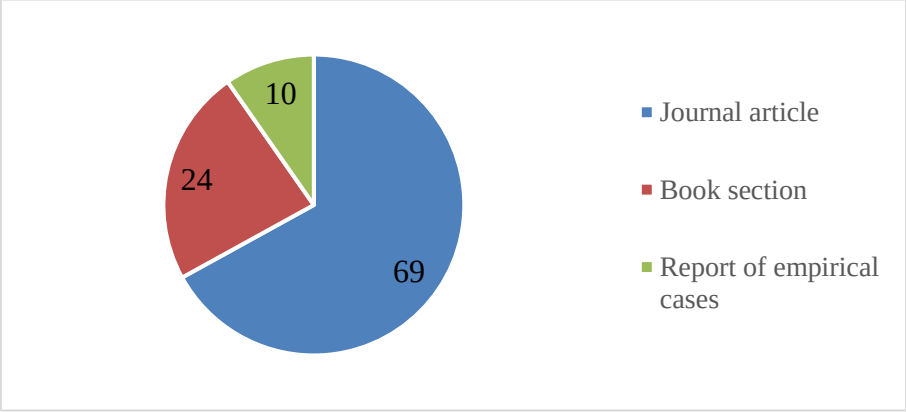


Figure 4. Number of Literatures based on Type

Source: Author, 2020

The discussion of both components of *place* and *public service* are in multidisciplinary field. Disciplinaries that discussed both concepts vary, as shown in Figure 5 below. Most literatures are within public administration disciplinary (42%) and geography (16%).

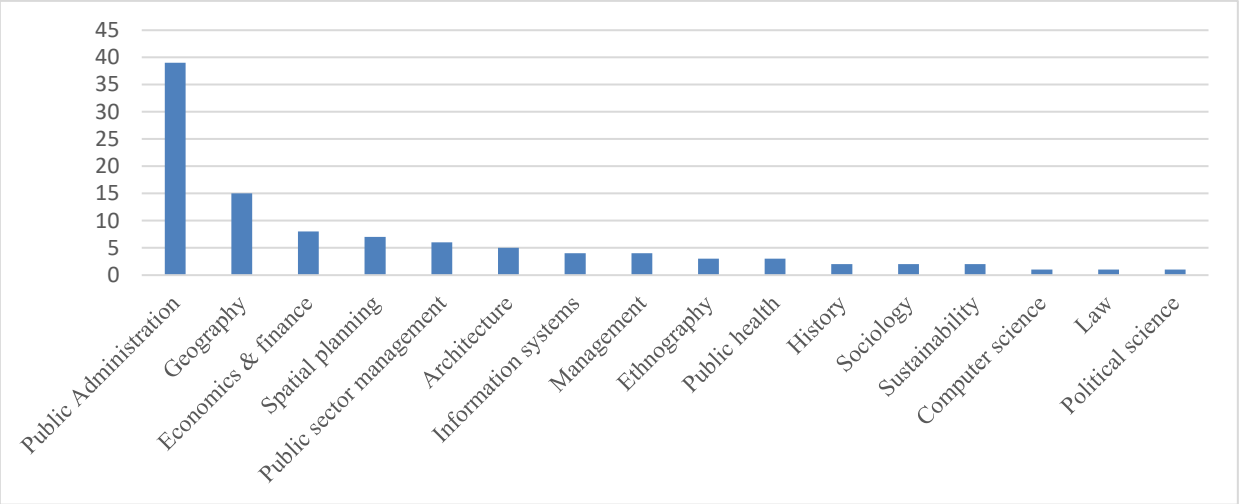


Figure 5. Number of Literatures based on Discipline

Source: Author, 2020

After literatures are acquired and read, the analysis was conducted in May-June 2020. There are three main processes in analyzing the literature: summarizing, categorizing, and structuring. Here there are two techniques used, which are coding and content analysis. Coding is used to categorize and organize data around concepts or key ideas (Recker, 2013). In this research the coding is supported with NVivo software. Content analysis is used to uncover the presence of dominant concepts semantically, both conceptually and relationally (Recker, 2013). In addition, memoing is also done alongside the analysis to take note of possible interpretations of the data (Recker, 2013). These analyses also help to determine whether another search should be done to add more literature or not; literature search is considered enough when the code is repeated, reflecting that information derived from the literatures is saturated.

The coding analysis is conducted using a mixed approach of deductive and inductive. With the main concepts already determined beforehand (i.e. conceptualization of place, digitalization of public service, types of public services), deductive approach is used to categorize the code found in the texts. Further, inside the two themes, inductive coding is used based on the content of the texts, for example for the types of conceptualizations of place. Another theme emerged from inductive coding of the literature, which is the impact of digitalization on the placemaking processes. The complete code tree can be found in Appendix A.

The result of coding and content analysis is then interpreted based on the theoretical foundation and research framework. In this study, since the main strategy to answer the research questions are to synthesize patterns and trends from the findings, the suitable design of the literature review would be a mapping review (Paré & Kitsiou, 2017). A

mapping review seeks to find interpretable patterns and trend in the literature examined, with respect to propositions and theories (Paré & Kitsiou, 2017).

5 Results: Places and Emerging Practices of Digitalization in Public Service Delivery

This chapter is devoted to present the results of the main literature review, which is divided into three main sections: explanation of places in public service delivery context, digitalization of public service delivery and its impacts on placemaking processes, and lastly the changes related to places brought by the digitalization of public service delivery.

There were 103 sources included in the main literature review. Based on the year of publication, 79 literatures (77%) of the distribution were published in the last decade (2011-2020). 19 literatures (18%) were published between 2000-2011, and 5 literature (5%) were published between 1970-1990. The longitudinal time horizon of literature publication, as explained before, enables a more apparent analysis of change in the literature review. The distribution of literatures based on the publication year is shown in Figure 6.

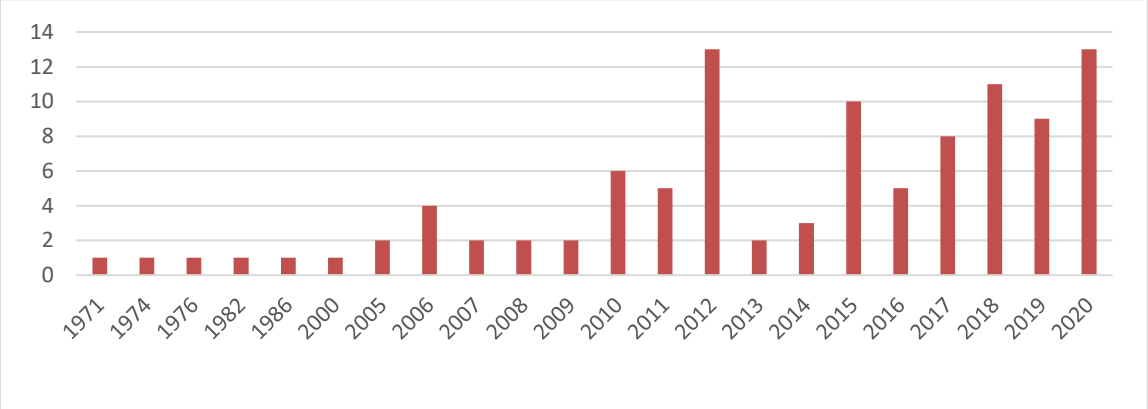


Figure 6. Number of Reviewed Literatures Based on Year of Publication

Source: Author, 2020

The first five literatures dated before 2000 were focusing on explaining the concepts of residence and its relation to public service provision. Literatures published between 2000-2010 are mixed between mentioning the physical public service provision (such as offices and physical utilities) and mentions of digitalized public service delivery were present (such as online portals and mobile itinerary planner in public transportation). Most digitalization of public service delivery practices was found in recent literatures published between 2011-2020, along with the studies about place in public service delivery context and its physical accessibility.

5.1 Places in Public Service Delivery

This section presents the conceptualization of place in public service delivery gathered from the reviewed literatures. As explained in the section 4.1 on methodology, in this research conceptualization of place refers to how a place is being understood within the context of public service; the result of conceptualization of place is the *concepts* of place, which is the main words or phrases used in referring a place within the conceptualization. There are three main conceptualizations found: *territory*, *physical location of user-provider interaction*, and *object* of public services.

5.1.1 Territorial Conceptualization

The first conceptualization found is place as the territory of government to provide the public services. Most of the literatures mentioned administrative boundaries with its relations to the obligation to provide public services for the citizen within the territory. Other two categories found are residence and service area, as shown in Table 4 below.

Table 4. Place as Territory of Public Service Provision

No.	Concept	References
1	General administrative borders	(Lyubashits, Razuvaev, Mamychev, Duravkin, & Hotsuliak, 2019; Mattfolk & Emfeldt, 2019; Mirea, 2018; Park & Rogers, 2015; Pollitt, 2012g; Zayed, 2015)
	• National borders	(Blix & Jeansson, 2020; Christensen & Albrecht, 2020; European Commission, 2019; Henman, 2010; Larsson, Elf, Gross, & Elf, 2019; Lewan, 2020; Pollitt, 2011; Rohleder & Moran, 2012; Timpka, Nordqvist, & Lindqvist, 2009)
	• Local authorities	(Brainard & McNutt, 2010; Ellickson, 1971; European Commission, 2019; Ewen, 2006; Hambleton, 2011; Henman, 2010; Karlsson, 2019; Pollitt, 2012g; Schuler, 1976; Tsou, Hung, & Chang, 2005)
	• Supranational (cross-border)	(Domenichiello, 2015; Drobne & Bogataj, 2015; European Commission, 2019; Ewen, 2006; Lewan, 2020)
2	Residence	(Brainard & McNutt, 2010; Brueckner, 2009; Clayton, Donovan, & Merchant, 2015; Ellickson, 1971; Ferlie, 2017; Flumian, 2018; Freimann & Putnam, 2017; Karashima, Ohgai, & Motose, 2015; Lahana, Pappa, & Niakas, 2011; Li et al., 2015; McLafferty, 1982; Neutens, Delafontaine, Scott, & De Maeyer, 2012a; Park & Rogers, 2015; Pollitt, 2012a; Reichmant, 1976; Schuler, 1976; Wang, Hu, & Zhu, 2016; Wei, Cabrera Barona, & Blaschke, 2017; Zayed, 2015)
	• Neighborhood unit	(McLafferty, 1982; Schuler, 1976; Tsou et al., 2005; Wei et al., 2017; Zayed, 2015)

No.	Concept	References
3	Service or functional area	(Brueckner, 2009; Christensen & Albrecht, 2020; Drobne & Bogataj, 2015; Ferlie, 2017; Mahaley, 2019; Øvretveit, 2020; Pollitt, 2012f; Tsou et al., 2005)

Source: Author, 2020

The first category of concepts, **administrative boundaries**, is aligned with the modality of government as placemaker by Pollitt (2012) explained in Section 2.1, as the first modality that shape the boundary of state actions, including the provision of public services. One type of public service—policing—is directly mentioned several times as closely linked to the enactment of borders and the efforts to tackle negative externalities within the territory (Christensen & Albrecht, 2020; Ewen, 2006; Mattfolk & Emfeldt, 2019; Pollitt, 2012g). Also, when talking about administrative boundaries, two literatures mentioned that it is operationally translated as census-based units (Park & Rogers, 2015; Wei et al., 2017).

Some literatures mentioned that administrative boundaries also functions as *territory of political constituencies* in which the politicking also shaped the way public service is perceived and in what way it should or should not be designed, whether by politicians (Brown, Ryan, & Parker, 2000; Pollitt, 2012f, p. 156) or by the local or national government (Larsson et al., 2019). This is also aligned with the modality of government as placemaker where the government communicates and negotiates with other placemakers, in this context, regarding to the public service provision within the territory. In relation to that, cross-border service is also mentioned, importantly in EU (European Commission, 2019; Lewan, 2020) where two or more national governments came into agreement to provide services for citizens of other countries.

The second category of concepts is **residence**. This concept has been discussed for a substantial amount of time, starting from the year 1971, and mentioned within four out of five literatures dated before the year 2000. One of the fundamental points regarding this concept is that it is related to the citizenship concept:

> When an individual takes up residence in a city, he automatically establishes a set of complex legal relations with the local municipal government: he is subjected to a comprehensive set of rules, granted a variety of rights, and is entitled to participate in the local political process. (Reichmant, 1976, p. 254)

This is intertwined with the administrative boundaries concept, which also agreed by Brueckner (2009) and Pollitt (2012a). Under the corresponding administration, the residency status is linked to the entitlement of rights and obligations of that territory. One of the key information of civil registration is where the citizens are physically residing.

This information is important, especially when we delve into the extension of public choice theory proposed by Tiebout in 1956, named Tiebout's model of local public goods, where it is argued that fragmentation of local governments enables residents to "shop" for political jurisdictions with different packages of public services and tax rates offered (Ellickson, 1971; Li et al., 2015; Schuler, 1976)[7]. Further, this implies that households, especially in urban environment, can "vote with their feet" to choose the residential location that best suites them, considering the options of public services and tax rates offered by different local governments (Ellickson, 1971). Once households move into a jurisdiction, the tax and expenditure program of the government will be recalculated, including the original prescription of public service allocation; hence the nature of local government is the product of the simultaneous interaction of local political process and residential location decisions (Ellickson, 1971; Schuler, 1976). Their policies are valid within their boundaries, and their public services are provided for residents within their jurisdictions; therefore, it implies that the provision of public services by the government are *place-bounded* to the users' residence in nature. To know who are their public and how large is the public is important for the government in order to plan for public service provision (Kimble, Boex, & Kapitanova, 2012).

The local government's interest is primarily focused on how to boost the strength of their region's economy, by attracting middle and upper-income households and businesses (Li et al., 2015). Governments with more resources (e.g., central district governments) then can invest more in public services to attract more people, compared to suburban district governments who have fewer resources (Li et al., 2015). On the other hand, as the government also shapes the residential through spatial planning by determining which areas are allowed to be built as residentials targeted for specific income populations, on top of the provision of public housing in planned locations (Pollitt, 2012c). Consequently, the social and economic characters of population might influence their use of public services (Flumian, 2018), which then triggers the spatial differences in public service provision, for instance, between urban and rural areas (Freimann & Putnam, 2017; Lahana et al., 2011; Li et al., 2015; Lörincz et al., 2010).

Several research have indicated this phenomenon. Schuler (1976) calculated how the patterns of population density might influence public service provision. Using the

[7] Tiebout's model has received criticism; one of the main critics is that the equilibrium in the public sector is agent-sensitive, that if one of the actors changes their assumptions then the desired equilibrium (i.e., efficient allocations of local public goods) may not exist, especially through decentralization (Bewley, 1981; Conley & Wooders, 1997; Trice, 2006). Another critic argued that there are actually limited number of communities that citizen/voter can choose between (Rose-Ackerman, 1983 in Trice, 2006). The public choice theory itself also has received criticism, e.g., it cannot explain why people vote, changes in voting behavior, and behavior of the politicians (Pressman, 2004).

perspective of taxing as revenue and public service provision as production function and the goal is to maximize welfare, local government are found to have four variables in considering where to locate the public service: amounts of capital and labor to use in producing public services, how those services are to be distributed spatially, and the optimum level of expenditures on public services (Schuler, 1976). In a more egalitarian community where the neutral financing is used to distribute the services equally, maximum welfare is attained where public services are located in denser areas, while in less egalitarian community the reverse direction is more optimum to encourage households to occupy more land throughout the city and reduces the need for public services (Schuler, 1976). Another research by Lahana, Pappa, & Niakas (2011) also found that place of residence and ethnicity define the difference in access to health care services in Greece, wherein remote areas (e.g., rural areas) the residents are facing more barriers, such as long travelling distances and transportation issues. By making variations of health care service provision based on place of residence, more explicit targets for policies and resource allocations can be made (Lahana et al., 2011). Residents of public housing also found to have different access to public services than non-residents (Li et al., 2015)

In general, the house or residential area of citizens is perceived as a starting point of the service user, in regards to accessibility and spatial equity in obtaining a public service (Neutens, Delafontaine, Scott, et al., 2012a). One particularly important concept in this category is the *neighborhood unit.* It is highly mentioned in literatures within architecture and spatial planning fields, which mainly discuss the neighborhood unit theory, originally coined by Clarence A. Perry in 1929 (Byun, Choi, & Choi, 2014). This theory centered around the number of blocks and people to be basic unit of cities in order to develop local communities (Byun et al., 2014; Park & Rogers, 2015; Zayed, 2015), which quickly became the basis of spatial planning and allocation of services. Hence, this theory is combining the concept of residence and spatial allocation of public services. The main definition of this theory is presented below:

> This theory proposes a housing block composition principle based on population. It suggests 6 basic principles of spatial planning for housing blocks; size, boundary, open space, institution, local shop, and internal street system … According to Perry, the size of a neighborhood unit is an area of 160 acres (65ha) and population density of 37.5 persons/acre. It is a housing block where 3,000~9,600 people, with a maximum limit of 10,000 people, live around an elementary school with 1,000~1,600 students in an area with a diameter of 1/2 mile (800m).

The concept of neighborhood unit is then closely tied with the positioning of one public service: elementary school, where one neighborhood unit should be supported with one

elementary school (Byun et al., 2014; Zayed, 2015). Aside from that, the positioning of other utilities and services were schemed as below to be spatially equitable from all edges of one neighborhood, therefore easy to reach from the house of the users (Zayed, 2015, p. 142):

- wide arterial streets should bound neighborhood sides to facilitate accessibility;
- network of internal streets planned to ease vehicular internal mobility without intersection with non-motorized one and that discourage through traffic;
- existence of services center located in the center to provide basic needs of community especially elementary education and open space;
- basic commercial services are to be located on the peripheries of the neighborhood and preferably at the traffic nodes; and
- open spaces and recreational areas are to be efficiently distributed (Zayed, 2015, p. 142).

One literature extended the concept of neighborhood unit to develop a hierarchy of neighborhoods for a more comprehensive planning (Park & Rogers, 2015). A four-level hierarchy is identified:

1. *Face-block*: smallest unit, formed by several houses located nearby, where personal relationship is critical but inadequate to organize a political voice;
2. *Residential neighborhood*: formed by several face-blocks, residents of similar income and life cycles, preferably includes one or two central activity point(s) (e.g., elementary school, small retail store for daily needs);
3. *Institutional neighborhood*: formed by several residential neighborhoods, preferably includes a range of public services (e.g., health centers, schools, recreational and social centers, shopping centers), might have an administrative boundary; and
4. *Community*: formed by clusters of institutional neighborhoods thus covers relatively large geographical area and population, might be in form of a city, includes cultural centers, administrative centers, or colleges (Park & Rogers, 2015, p. 21)

While this theory is popularly used in many cities, several fundamental changes in its preconditions have taken place which possibly make this theory obsolete for current situation. These changes include the changed walkability habit, utilization of motorized transportation, and changed distribution of land use (Byun et al., 2014; Zayed, 2015).

The third category of concepts is the **service or functional area** of public service. Discussion of functional area of public service comes with digitalization of public service in several literatures. It is mentioned as a proposal to better allocate public service for the citizens in complement to the traditional administrative boundaries foundation (Drobne & Bogataj, 2015; Ferlie, 2017; Mahaley, 2019; Øvretveit, 2020; Pollitt, 2012f; Zayed, 2015). Regarding this functional service area, several types are mentioned in the literatures, including *regional area* aside from the definition of administrative boundaries (Drobne & Bogataj, 2015), *urban areas* (Brueckner, 2009; Christensen & Albrecht, 2020), *community-based boundaries* (Ferlie, 2017; Tsou et al., 2005), *hospital service area* (Øvretveit, 2020; Pollitt, 2012f), and *school district* (Mahaley, 2019). The service area is essentially the geographical extent of the users served by a public service facility, which best exemplified by this explanation of spatial equity of public facility:

> For example, the service range of municipal facilities such as town parks, universities, museums and dump sites covers the entire city. The service radius of community facilities, including junior and senior high schools, transformer stations, etc., are typically in the 2 km range. … Various levels (municipality, community, and neighborhood) possess different service/impact ranges. If the spatial unit (i) is out of the service range/impact range of facility A, then it is not suitable to include the facility A into the consideration of spatial equity. (Tsou et al., 2005, p. 426)

The neighborhood unit theory also explains the service area, where "Perry's neighborhood unit can be characterized as a neighborhood around an elementary school with its boundary defined by trunk roads" (Byun et al., 2014, p. 618). Service area is also closely linked to the residential, since the "demand areas [of a public service center] are similar to residential neighborhoods, these assumptions imply that no neighborhood can have more than one service center" (McLafferty, 1982, p. 350).

5.1.2 Physical Location of User-Provider Interactions Conceptualization

The second conceptualization found is the place as physical location of user-provider interactions. There are three main categories: government-designated locations, location-based services, and home of the users. The interactions here are focused on the concept of public encounters (Goodsell, 1981 in Lindgren et al., 2019, see also Section 3.2 above).

Table 5. Place as the Physical Location of User-Provider Interactions

No.	Concept	References
1	Government-designated locations	
	• Office of government agencies	(Chaturvedi & Sriram, 2017; Cordella, 2007; De Sa, 2005; European Commission, 2019; Flumian, 2018; Heeks, 2006; Karwan & Markland, 2006; S. Y. Lee & Kim, 2014; Lörincz et al., 2010; Neutens, Delafontaine, Schwanen, & van de Weghe, 2012; Neutens, Delafontaine, Scott, et al., 2012a; Neutens, Schwanen, Witlox, & de Maeyer, 2010; Pollitt, 2012c, 2012a; Pors, 2015; United Nations Department of Economic & Social Affairs, 2018)
	• Integrated service center	(De Sa, 2005; Flumian, 2018; Heeks, 2006; Janenova & Kim, 2016; Madsen & Kræmmergaard, 2015; Pors, 2015; Zayed, 2015)
	• Workshop and facilitation centres	(Heeks, 2006; The World Bank, 2019)
	• Youth centres and nursing homes	(Clayton et al., 2015; Lember et al., 2019; Øvretveit, 2020; Pedersen & Wilkinson, 2018)
	• Hospital and health care provider	(Blix & Jeansson, 2020; Domenichiello, 2015; Ferlie, 2017; Karashima et al., 2015; Lahana et al., 2011; Pollitt, 2011, 2012f)
	• School	(Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; McGrath & Åkerfeldt, 2020; OECD, 2016; Pollitt, 2011)
	• Government-owned shops	(Chaturvedi & Sriram, 2017)
	• Post office	(Chaturvedi & Sriram, 2017; Pollitt, 2011)
	• Collaboration with private businesses	(Heinonen, 2006; Saul & Gebauer, 2018)
2	On-demand locations	
	• Crime hotspots	(Pollitt, 2012g; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018)
	• Disaster-affected areas	(Aditya, Laksono, & Izzahuddin, 2019)
	• Real-time based on mobile GPS	(Clarke & Wigan, 2011; Codagnone et al., 2020; Farrelly, 2014; Fleischer & Rother, 2017; Huang, Gartner, Krisp, Raubal, & Van de Weghe, 2018; Mahaley, 2019; Michael & Michael, 2011; Raper, Gartner, Karimi, & Rizos, 2007; Saul & Gebauer, 2018; United Nations Department of Economic & Social Affairs, 2018; van Schaick, 2010)
3	Home	(Blix & Jeansson, 2020; Codagnone et al., 2020; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2012f, 2012c; Rohleder & Moran, 2012)

Source: Author, 2020

The first category of concepts, **government-designated locations**, is the place where the citizens need to go to conduct a traditional, face-to-face means of public service delivery. Most of the locations mentioned is built by the government, particularly the *offices of government agencies*, making the relationship between citizens and government apparent since "the relationship between citizens and the PA is mediated by the offices of the PA

and therefore by the civil servants who work to provide the services" (Cordella, 2007, p. 270). One of the locations is designed by the government through *collaboration with private businesses*, in the form of assignation of payment channel in pharmacy and banks as both of them are located in strategic places for the citizens (Heinonen, 2006; Saul & Gebauer, 2018), possibly through outsourced payment services. In these private places, the services are delivered in a separate time and other places, for example the payment is done through designated channel prior to the waste collection at home (Saul & Gebauer, 2018). Meanwhile, in other places (i.e., youth centres and nursing homes, hospital and health care provider, school, government-owned shops, post office) the services are typically delivered at the same time and location as the interaction happened.

Regarding *the integrated service center*, some literatures mentioned the physical one-stop-shop where the representative of government agencies are located in the same place to conduct integrated public services for citizens (De Sa, 2005; Flumian, 2018; Heeks, 2006; Janenova & Kim, 2016); others mentioned a e-service center equipped with ICT infrastructure and supported with representative of government agencies, as a channel option for citizens to get assistance or introduction to access the services through digital means (Madsen & Kræmmergaard, 2015; Pors, 2015; Zayed, 2015). A similar thing is also conducted in the *workshop and facilitation centres*, where the facilitation or training organized by the government is to disseminate the information on how to access public services or any change newly deployed in the system, more importantly in regards to business registration procedures (Heeks, 2006; The World Bank, 2019).

The second category of concepts, **on-demand locations**, is an emerging topic. Within this location the public service is not delivered continuously, but depends on the certain conditions, such as conditions of negative externalities like *crime hotspots* (Pollitt, 2012g; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018) and *disaster affected areas* (Aditya et al., 2019). The ICT-supported monitoring of a government's territory helps to identify the locations, for example for the disaster relief:

> The study showed the potential use of mobile apps for local communities to help the government validate hotspots for haze mitigation and environmental protection. The platform could be used by decision makers to gain insights on fires and to mitigate disasters, especially in tropical peatland areas. (Aditya et al., 2019, p. 265)

The support of ICT also helps to deliver *real-time on-demand location based services*, relying on the utilization of mobile GPS (Codagnone et al., 2020; Farrelly, 2014; Fleischer & Rother, 2017; Raper et al., 2007), for example for public safety (Clarke & Wigan, 2011), waste treatment (Saul & Gebauer, 2018), education (Mahaley, 2019), public transportation (Raper et al., 2007; van Schaick, 2010), health (Huang et al., 2018;

Michael & Michael, 2011). The service then will be delivered to where the users are exactly located, through mobile devices or by triggered physical means such as the arrival of technical staffs (Saul & Gebauer, 2018).

The third concept, **home**, is also a recently emerging topic. Most of them mentioned how the home-based are benefitting health care provisions; only one of them discussed the application in education (Codagnone et al., 2020) and one literature discussed the raised expectation of citizens of public service delivery due to changed lifestyle, to be able to receive services without moving from home (Mattfolk & Emfeldt, 2019). The benefits of health care are mostly linked to the needs of elderly patients to stay home and reducing unnecessary visits to hospital which can worsen the patient's condition (Blix & Jeansson, 2020; Lember et al., 2019; OECD, 2016; Pollitt, 2012c).

5.1.3 Public Service Object Conceptualization

The third conceptualization of place in public service is categorized as object-based places, where the location itself is the object of public service. Some literature mentioned the nodes or certain discrete locations or nodes, while others mentioned the lines of utilities.

Table 6. Place as an Object of Public Service

No.	Concept	References
1	Nodes	
	• Public facilities	(Brueckner, 2009; S. Y. Lee & Kim, 2014; McLafferty, 1982; McLauchlan, 2017; United Nations Department of Economic & Social Affairs, 2018; Wang et al., 2016; Zayed, 2015)
	• Publicly registered locations	(European Commission, 2019; Lörincz et al., 2010; Pollitt, 2012a; The World Bank, 2019)
2	Place of physical utilities	(Brown et al., 2000; Brueckner, 2009; Davidsson, Hajinasab, Holmgren, Jevinger, & Persson, 2016; Øvretveit, 2020; Pollitt, 2012c; Timpka et al., 2009; Weise, Coulton, & Chiasson, 2017; Zayed, 2015)

Source: Author, 2020

The first category of concepts, **nodes**, comprised of two main groups: public facilities and publicly registered locations. The *public facilities* are the place where its presence is deemed as the public service delivery itself, including the presence of public places like piazza and parks (McLafferty, 1982; Zayed, 2015), public housing (Brueckner, 2009; United Nations Department of Economic & Social Affairs, 2018; Wang et al., 2016), assembly halls and sport centres (S. Y. Lee & Kim, 2014; McLauchlan, 2017), library

(McLafferty, 1982). The construction of these places is publicly funded and therefore delivered to serve the citizens in the form of the space that can be used by citizens to conduct their personal or social activities. Another group, *publicly registered locations*, might be built by private or individuals, including general land and buildings (Pollitt, 2012a; The World Bank, 2019) and company's formal locations (European Commission, 2019; Lörincz et al., 2010; The World Bank, 2019). Their location should be registered with the government to maintain order under the administrative boundaries, and also as the basis to support the citizens activities themselves, as mentioned below:

> By keeping records of a company's formal existence and of land ownership rights, business and land registries play a critical role in any economy's business environment. (The World Bank, 2019, p. 33)

> In terms of supporting information, about two third of web sites provide information about the catchment area (local population, environment, housing/medical/school/leisure facilities etc.), the local workforce, business properties and industrial estates, and/or about local finance available (RDA, grants, services for business, etc.). (Lörincz et al., 2010, p. 94)

The second category of concepts is **place of physical utilities**. This includes roads (Brueckner, 2009; Øvretveit, 2020; Weise et al., 2017; Zayed, 2015); provision of electric powers, energy, sewerage, water supply (Brueckner, 2009; Øvretveit, 2020; Pollitt, 2012c; Timpka et al., 2009; Zayed, 2015); water resources (Brown et al., 2000); provision of telecoms and network infrastructure (Timpka et al., 2009; Zayed, 2015); and locations connected with public transportation routes (Brown et al., 2000; Davidsson et al., 2016; Weise et al., 2017). The delivery of these physical utilities are vital to run other public services and to support place-making in general, as noted by Pollitt (2012b) that "we should not underestimate the capacity of basic public infrastructural utilities to unmake places when they fail." (p. 80).

The usage and provision of these physical utilities by the users might also be the important basis in public encounters as mentioned in Section 3.2 before, where there are three main purposes of public encounters: exchange of information, provision of public services, and control by the government (Goodsell, 1981 in Lindgren et al., 2019). Whether the citizens should pay for the usage of the utilities are also tied to the kind of relationships formed between the government as the service provider and the citizens as mentioned by Laing (2003), whether it is based on consumerism or citizenship perspective. Further, monitoring of the usage and condition of these utilities might also be supported by ICT, as proposed by Zayed (2015) below:

> Today, the ICT applications offer a real opportunity to convert the traditional infrastructure of neighborhood, including telecom networks, into smart infrastructure systems. Through utilizing such applications, it will be possible to efficiently manage these systems. This efficient management includes monitoring, operating, decision making, optimizing operation and decommissioning [61]. The concept of establishing a neighborhod command center (NCC) that offers such opportunity of managing the neighborhood networks of roads, electric power, energy, water supply, sewerage and telecomms helps achieving higher levels of optimal usage of these networks [62]. It integrates data from multi sources to create a common operational picture of the whole neighborhood [63]. This enhances the quality of life as it enables for the first time to have a unified and integrated managing entity of neighborhood components. (Zayed, 2015, pp. 152–153)

5.2 Digitalization of Public Service Delivery and its Impacts on Placemaking Processes

Before discussing the changes in places due to digitalization of public services, first we will discuss the changes in the public services itself brought by digitalization. The changes here are analyzed based on the selected examples of emerging practices found in the literature. In

Table 7 below, the changes are presented based on the public service type.

Table 7. Examples of Changes in Service Delivery Brought by Emerging Practices of Digitalization

Public service type	Changes in service delivery	References
Civil registration	• (Part of) registration can be done online through a portal, from home or integrated from hospital, instead of from registrar office • Dissemination of information started from the hospital for birth registration • Confirmation should still be done face-to-face in some cases	(Flumian, 2018, p. 9; Pollitt, 2012a, pp. 164–165)
Business registration	Registration can be done through integrated portal instead of visiting multiple offices	(Bruhn, 2013; Codagnone et al., 2020; De Sa, 2005; Lörincz et al., 2010)
Disaster relief	Utilization of mobile app for remote monitoring	(Aditya et al., 2019)
Education	Teaching activities conducted through virtual classroom and remote learning, instead of from classroom in schools	(Codagnone et al., 2020; Mahaley, 2019; Mattfolk & Emfeldt, 2019; McGrath &

Public service type	Changes in service delivery	References
		Åkerfeldt, 2020; OECD, 2016)
Health care	• Tele-consultation with specialists • Home-based care for elderly people • Delivery of medicine to home • Decentralization of simple health procedures to smaller hospitals, GP offices, or at home • Centralization of sophisticated procedures like surgery or treatment for chronic diseases to bigger hospitals with newer technologies • Closure of hospitals with decreasing number of visits or financial incapability • Digitization of health records, which can be shared between hospitals and for remote monitoring of patient's health	(Blix & Jeansson, 2020; Chen, Walker, & Sawhney, 2019; Codagnone et al., 2020; Domenichiello, 2015; Ferlie, 2017; Henman, 2010; Huang et al., 2018; Lahana et al., 2011; Larsson et al., 2019; Larsson & Sabolová, 2020; Laya & Markendahl, 2020; Lember et al., 2019, 2019; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2011, 2012f; Rohleder & Moran, 2012; Zhao et al., 2019)
Law enforcement and policing	• Cybercrime law enforcement • Traffic law enforcement using remote detection devices and GPS • Criminal law enforcement • Remote monitoring of public facilities by CCTV and crowdsourcing information from citizens through virtual interactions	(Brainard & McNutt, 2010; Christensen & Albrecht, 2020; Clarke & Wigan, 2011; Lember et al., 2019; Michael & Michael, 2011; Pollitt, 2011, 2012g, 2012a; Timpka et al., 2009)
Post office	Significant closure of branches due to reduced visits and services conducted in post offices	(Langford & Higgs, 2010; Pollitt, 2011)
Public transportation	• Mobile itinerary-planner for citizens, including for visually impaired users • Collection of real-time data of vehicle occupancy and waiting time in bus stops through IoT, resulting in better operations management	(Brown et al., 2000; Davidsson et al., 2016; Koutsikouri, Lindgren, Henfridsson, & Rudmark, 2018; Raper et al., 2007)
Sanitation	• Digital payment portal • Improved distribution of sanitation kits with support of analytics • Near real-time monitoring of sanitation kits allowing for better-scheduled collection	(Saul & Gebauer, 2018; United Nations Department of Economic & Social Affairs, 2018)
Social benefits	• Registration can be done through online portal • Digital payment (disbursements) of financial aid through card • Integration with databases for better case management • Online case management	(Codagnone et al., 2020; European Comission, 2012; Madsen & Kræmmergaard, 2015; Mirea, 2018; OECD, 2016)
Tax	Calculation of tax, payment, and return can be done through online portal	(Codagnone et al., 2020; Henman, 2010; Mirea, 2018)
Vehicle registration	Registration can be done through online portal, leads to reduced physical transaction volumes	(European Commission, 2019; Karwan & Markland, 2006)

Source: Author, 2020

From the table above, it can be seen that interaction between users and service provider is mainly pushed to be done through digital means for *exchanging information, payments,* and *the actuation of the service*. Websites and online portals are being used to exchange information in the form of documents, ranging from civil registration services to tax and social benefits. If the public service delivery needs the physical interaction since it is physically-bounded—such as in confirming the birth in civil registration (Pollitt, 2012c) and delivery of health care (Blix & Jeansson, 2020; Codagnone et al., 2020; Larsson et al., 2019; Larsson & Sabolová, 2020; Øvretveit, 2020)—then efforts are made to ensure that only that physical interaction needs to be done face-to-face in a more convenient way to the user, for example by delivering it in home in the case of health-care, while the rest is done digitally before (e.g., tele-consultation) (Blix & Jeansson, 2020). Payments are also pushed to be done in digital means, causing apparent changes in post office services (Langford & Higgs, 2010; Pollitt, 2011) and social benefits (Codagnone et al., 2020; European Comission, 2012; Madsen & Kræmmergaard, 2015; Mirea, 2018; OECD, 2016). In terms of education services, more and more interactions are pushed to be done remotely or through virtual classrooms instead of physically delivering it through schools; however, while this is enabled by the evolution of ICT, there is an ongoing debate whether it will affect the learning process, especially for children (Mahaley, 2019; McGrath & Åkerfeldt, 2020).

Remote monitoring is also one of the main changes happened with the support of new technologies, in the field of disaster relief (Aditya et al., 2019), law enforcement and policing (Brainard & McNutt, 2010; Christensen & Albrecht, 2020; Clarke & Wigan, 2011; Lember et al., 2019; Michael & Michael, 2011; Pollitt, 2011, 2012g, 2012a; Timpka et al., 2009), and public transportation (Brown et al., 2000; Davidsson et al., 2016; Koutsikouri et al., 2018; Raper et al., 2007). Essentially, the emerging practices of remote monitoring allows the government to see more places under their territory, and also see deeper, within the same amount of time, compared to physical monitoring done by dispatched officials before (Pollitt, 2012g).

In health care services, the instalment of new technologies to handle health procedures are deemed to be costly, and therefore pushed the centralization and decentralization strategies in delivering health care. Simple health procedures are pushed to be done in smaller hospitals, GP offices, or even at home, while the sophisticated procedures are done in bigger hospitals with newer technologies (Pollitt, 2012f). Combined with the emergence of telemedicine (Blix & Jeansson, 2020; Larsson et al., 2019), number of hospitals with low number of patient's visits and financial incapability are keep being decreased to cut incurring costs (Ferlie, 2017; Pollitt, 2012c).

With the digitization of individual records, more integrated services can be delivered. For example, digitized health record allows for telemedicine delivery (Blix & Jeansson, 2020). Digital databases and its integration also allows for more tailored and personalized service delivery, including in social benefits (Karlsson, 2019; Rohleder & Moran, 2012).

Following the digitalization in multiple aspects of public service delivery, the main impacts on placemaking processes are found and summarized in the Table 8 below.

Table 8. Impacts of Public Service Delivery Digitalization on Placemaking Processes

No.	Impact	References
1	Changed interaction between service user and provider	(Cordella, 2007; Dalal & Sharma, 2019; European Comission, 2012; Henman, 2010; Karwan & Markland, 2006; Madsen & Kræmmergaard, 2015; Mirea, 2018; Nygren et al., 2013; OECD, 2016; Øvretveit, 2020; Pedersen & Wilkinson, 2018; Pollitt, 2011, 2012g, 2012a, 2012e; Wänn, 2020; Zayed, 2015)
2	Reduced costs of delivery	(Dalal & Sharma, 2019; Drobne & Bogataj, 2015; Falk et al., 2016; Lörincz et al., 2010; OECD, 2016; Pollitt, 2012e)
3	Reduced physical mobility needs of user	(Blix & Jeansson, 2020; Brown et al., 2000; Chen et al., 2019; Codagnone et al., 2020; Dalal & Sharma, 2019; Kimble et al., 2012; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2012a, 2012f; Rohleder & Moran, 2012; Zayed, 2015)
4	Changed cost of access from user side	(Blix & Jeansson, 2020; Brainard & McNutt, 2010; Bruhn, 2013; Dalal & Sharma, 2019; De Sa, 2005; Heinonen, 2006; Janenova & Kim, 2016; Lahana et al., 2011; Mahaley, 2019; Pollitt, 2012f; Pors, 2015; Seda et al., 2019; United Nations Department of Economic & Social Affairs, 2018; Wänn, 2020)
5	Flexibility of time and place	(Dalal & Sharma, 2019; European Comission, 2012; Gil-Garcia, 2012; Heeks, 2006; Heinonen, 2006; Lindgren et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; Neutens et al., 2010; OECD, 2016; Pollitt, 2012e, 2012a; Pors, 2015; United Nations Department of Economic & Social Affairs, 2018)

Source: Author, 2020

The first impact found on the placemaking processes is the **changed interaction between service user and provider**. The apparent change is the reduction of face-to-face contact between citizen as the user and government as the service provider (Mirea, 2018; Pollitt, 2012e, 2012a), importantly by eliminating the need of both of them to be in the same location to conduct the interaction (Zayed, 2015, p. 151). Moreover, the two-way communication between citizens and public officials is established with the support of ICT, for example in the UK (Cordella, 2007, p. 269). These new interactions further changed the relationship between public officials and the citizens, for instance, citizens are becoming less dependent from public health care providers (Wänn, 2020, p. 108); in

the case of policing with the help of ICT for monitoring, it leaves the public or citizens as passive subjects (Pollitt, 2012g, p. 177). In the realm of placemaking processes as discussed in Section 2.1, this changed interaction is affecting the individual level of placemaking. The reduction or elimination of face-to-face contact is particularly noted to affect the work of public officials:

> Since there are very few personal contacts with customers nowadays, talking to customers on telephone is the only contact when the case officer is "visible" to the customer. In general, the case officers describe their relationships to customers as very important. They also feel that a more personal contact is desirable. Today, the personal touch only takes place on the telephone which means that it is only through that channel they have a slightly more "visible" contact with the customer. When handling e-mails and web-based case work the relationship is invisible. It is also telephone errands that are the most complex, which makes the case officer role more specific and consultative. (Nygren et al., 2013, p. 463)

This affects the job satisfaction levels of public officials, which predominantly reached by helping customers and getting appreciation; when direct face-to-face contact is not possible through the digital interfaces, the only channel left for public officials is through telephone services (Nygren et al., 2013, p. 465).

Another note within this concept is the raising participation of citizens to co-deliver the services, or the *self-service empowerment*. This might be in the form of self-assessment or filling the form (Cordella, 2007, p. 269), or sharing the decision making and resources available in order to make personalized and tailored services, mostly in health care services (Dalal & Sharma, 2019; European Comission, 2012; Henman, 2010; OECD, 2016; Øvretveit, 2020; Pollitt, 2011; Pors, 2015; Wänn, 2020).

The second impact found is the **reduced costs of delivery** for the service provider. As expected from the cost-saving drivers in Section 5.2 above, the digitalization helps to reduce the cost of service delivery, for instance, in the form of freeing up labour to be put in other labour-intensive works (OECD, 2016); in the case of health care, one strategy is to co-locate different specialities in one site to provide integrated services and reduce the duplication of inefficient services (Pollitt, 2012e, p. 62). The cost to deliver digital public service is dubbed to be significantly cheaper than telephone, postal, and face-to-face transaction (Falk et al., 2016, p. 7; Lörincz et al., 2010, p. 28). As mentioned in the health care example before, centralization and decentralization of health procedures are also strategies that can be applied to reduce the costs concerning the instalment of new technologies (Pollitt, 2012f).

The third impact is the **reduced mobility needs of users** to obtain the public service. In terms of mobility, personal activity area of users (e.g., home, office) is perceived as the reference point of users; the further the designated point of interaction (e.g., office of government agencies) as the destination, the further the distance that users need to go through in order to obtain the services (Hero, 1986; Neutens et al., 2010; Tsou et al., 2005). The digitalization of processes enables the integration of public service delivery; if one citizen wants to inquire multiple public services, obtaining them in one integrated service center reduces the collective distance of visits to multiple government offices (Zayed, 2015). Reduction of distance and physical mobility also achieved by delivering the services at the "doorstep of the people" (Kimble et al., 2012), at their workplace (Zayed, 2015), or other location tailored for the citizens (i.e., on-demand location-based services, as explained in Section 5.1.2). In the case of the EU, the Services Directive explicitly stated that Member States should ensure all procedures to a service activity should be easily completed at a distance (Lörincz et al., 2010, p. 13), meaning that the services should be *delivered to* the users, not the other way around that the users should go physically to a designated place.

Services which can be accessed from home (Blix & Jeansson, 2020; Codagnone et al., 2020; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2012f, 2012c; Rohleder & Moran, 2012) also practically eliminate the needs of mobility of the users, as explained in Section 5.1.2.

The fourth impact is the **changed costs of access from user side**. As pointed in the physical mobility of users to obtain the services, one of the cost of access is the cost of transportation (Lahana et al., 2011; Pollitt, 2012f; Seda et al., 2019). When there are multiple physical facilities reachable from users' residence or starting point, there are cost differences between each location alternatives that should be bore by the user (Heinonen, 2006). Other forms of cost of access are time, in which it is noted that e-services has reduced the amount of time needed to complete an inquire of public service, especially in the business registration cases (Bruhn, 2013; De Sa, 2005).

Further, another indirect cost occurred is the possession of digital devices and digital literacy as the precondition to access the digitalized public service. The digitalized public service is expected to solve the spatial inequality issues of physical public service interaction, particularly in the favor of remote and rural areas (Blix & Jeansson, 2020, p. 22; United Nations Department of Economic & Social Affairs, 2018, p. 30) by lowering the barrier to access: "all that is required for access is a smartphone or a reasonably modern computer with an Internet connection" (Blix & Jeansson, 2020, p. 22). However,

some cases showed the digital divide as a result of this indirect costs. For instance, in the case of remote access education in the US, the unequal number of computers is still apparent:

> What has failed to keep up, however, are smart regulations that ensure that infrastructure is equally available across school systems and that options are available for the many students who do not have reliable (or any) Internet or computer access outside of school. (Mahaley, 2019, p. 161)

The case of Sweden—the country with the highest Internet penetration—where the telemedicine is expected to benefit the elderly, disabled people, people with chronic diseases, and rural areas residents, is also showing contradictory results. Instead of those targeted categories, patients in large cities and young children of age 0-4 years made up the majority of digital visits (Blix & Jeansson, 2020, p. 22). In summary, the technological infrastructure of a country might either enable or constrain the delivery of public services, especially to answer the problem of accessibility in remote locations and vulnerable groups (Janenova & Kim, 2016, p. 329).

The fifth impact found is the **flexibility of time and place**. This is correlated with the reduced mobility of users (Dalal & Sharma, 2019; Gil-Garcia, 2012; Heeks, 2006; Lörincz et al., 2010), but more importantly in relation to the availability of services in terms of time. Most of government-designated locations, particularly government offices, have specific opening hours, which made the interactions and further delivery of services are available only for a limited time (Neutens, Delafontaine, Schwanen, et al., 2012; Neutens, Delafontaine, Scott, & De Maeyer, 2012b; Neutens, Delafontaine, Scott, et al., 2012a; Neutens et al., 2010). This makes the digital means of access—most importantly websites—are of high temporal advantage, as it is available 24/7 (Dalal & Sharma, 2019; European Comission, 2012; Gil-Garcia, 2012; Lörincz et al., 2010; Madsen & Kræmmergaard, 2015; Pollitt, 2012h; Pors, 2015; United Nations Department of Economic & Social Affairs, 2018). Essentially, it allows users to access the services “at the pace of the citizen him/herself” (Lörincz et al., 2010, p. 28).

5.3 Changes related to Places due to the Digitalization of Public Service Delivery

The digitalization of public service delivery has affected the placemaking processes. Thus, there are changes in public-service-delivery-related places due to the digitalization of public service delivery found in the literature review. Aligned with the emerging

practices of digitalization and its impacts on the placemaking processes, there are four main changes found in places related to public service delivery, as shown in Table 9 below.

Table 9. Changes related to the Public Service Places due to the Digitalization of Public Service Delivery

No.	Changes	References
1	Reduction or closure of physical locations	(Chaturvedi & Sriram, 2017; Langford & Higgs, 2010; Pollitt, 2011, 2012e, 2012b, 2012f, 2012a; Rohleder & Moran, 2012; Zayed, 2015)
2	Emergence of new types of place related to public service delivery	(Aditya et al., 2019; Brainard & McNutt, 2010; Madsen & Kræmmergaard, 2015; Pollitt, 2012g; Pors, 2015; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018; Zayed, 2015)
3	Shifted location of public service delivery	
	• Shift of physical location	(Blix & Jeansson, 2020; Clarke & Wigan, 2011; Codagnone et al., 2020; De Sa, 2005; Farrelly, 2014; Fleischer & Rother, 2017; Flumian, 2018; Heeks, 2006; Huang et al., 2018; Janenova & Kim, 2016; Kimble et al., 2012; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mahaley, 2019; Mattfolk & Emfeldt, 2019; Michael & Michael, 2011; Neutens, Delafontaine, Scott, et al., 2012a; OECD, 2016; Øvretveit, 2020; Pollitt, 2012f; Raper et al., 2007; Rohleder & Moran, 2012; Saul & Gebauer, 2018; United Nations Department of Economic & Social Affairs, 2018; van Schaick, 2010)
	• Virtualization of public service delivery	(Benouareth & Gacem, 2019; Codagnone et al., 2020; Dalal & Sharma, 2019; De Sa, 2005; European Comission, 2012; European Commission, 2019; Flumian, 2018; Gil-Garcia, 2012; Heeks, 2006; Henman, 2010; Janenova & Kim, 2016; Lörincz et al., 2010; Madsen & Kræmmergaard, 2015; Mahaley, 2019; Mattfolk & Emfeldt, 2019; Mirea, 2018; Nygren et al., 2013; OECD, 2016; Rohleder & Moran, 2012; Schwaiger Calvo & Campos, 2017; Seepma, de Blok, & Van Donk, 2020; United Nations Department of Economic & Social Affairs, 2018)

Source: Author, 2020

The first place-related change is the **reduction or closure of physical locations**. This is particularly happened in government-designated locations, such as *government agency offices* (Chaturvedi & Sriram, 2017; Pollitt, 2012f; Rohleder & Moran, 2012), *post offices* (Langford & Higgs, 2010; Rohleder & Moran, 2012, p. 24), and *hospitals and health care centres* (Pollitt, 2011, 2012e). In some cases the closures of the places happened is not directly related to the virtualization of the front offices; one case of post offices closure is due to enhanced data analytics in forecasting the number of visits (Rohleder & Moran, 2012, p. 24), and another case is a closure of family records centre due to the digitization of the records (Pollitt, 2012e, p. 58).

The second change found is the **emergence of new types of public-service related place**. One of them is the integrated service center as *public electronic centres* (Madsen & Kræmmergaard, 2015; Pors, 2015; United Nations Department of Economic & Social Affairs, 2018; Zayed, 2015), as touched briefly in the Section 5.1.2. Here, the service center is equipped with ICT infrastructure to be used by citizens, and citizens come there to have an assistance or introduction on how to access public services online, without necessarily completing the service delivery in physical means itself (Janenova & Kim, 2016; Zayed, 2015). The officials in the service center tend to encourage the citizens to do self-service for the subsequent access, by involving the education aspect for the citizens (Pors, 2015).

Another concept of public-service related delivery is *home* (Blix & Jeansson, 2020; Codagnone et al., 2020; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2012f, 2012c; Rohleder & Moran, 2012). As pointed earlier, before the emerging practices of home-based care, home is considered the reference point of the users, which can be considered as the private space of citizens to conduct their personal activities. With the remote communication technologies, home is now 'opened' to be the place where public service is delivered to users, and becoming the place of interaction between the government as public service provider and citizens as the users.

Another emergent concept of place is the *control room*. This is associated with the capability of distanced-monitoring of a territory, for example in policing (Pollitt, 2012g; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018), disaster areas (Aditya et al., 2019), and public transportation (Brown et al., 2000; Davidsson et al., 2016; Koutsikouri et al., 2018; Raper et al., 2007). The distanced monitoring is enabled by the support of ICT, in the form of CCTV (Pollitt, 2012g; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018), crowdsourcing (Aditya et al., 2019; Brainard & McNutt, 2010), even analytics (Rohleder & Moran, 2012). This new practice of monitoring is dubbed to help agencies strategize the dispatchment of personnel more effectively (Rohleder & Moran, 2012), and in the longer term it can support a better planning and allocation of resources, for example in public transportation (Brown et al., 2000; Koutsikouri et al., 2018). Under the collaboration with private businesses, the interaction for public service delivery is also might happen in new places like pharmacies and banks that are appointed to be the location for digital payments in order to obtain the public services (Heinonen, 2006; Saul & Gebauer, 2018).

The third change found is the **shift of public service delivery location**, including the *shift of physical location* and the *shift to virtual space*. With the emergence of new types of physical places related to public service delivery as explained before, the delivery of services is being shifted to those particular places, importantly to *home* (Blix & Jeansson, 2020; Codagnone et al., 2020; Larsson et al., 2019; Laya & Markendahl, 2020; Lember et al., 2019; Lörincz et al., 2010; Mattfolk & Emfeldt, 2019; OECD, 2016; Øvretveit, 2020; Pollitt, 2012f, 2012c; Rohleder & Moran, 2012) and *on-demand location-based services* (Clarke & Wigan, 2011; Codagnone et al., 2020; Farrelly, 2014; Fleischer & Rother, 2017; Huang et al., 2018; Kimble et al., 2012; Mahaley, 2019; Michael & Michael, 2011; Raper et al., 2007; Saul & Gebauer, 2018; United Nations Department of Economic & Social Affairs, 2018; van Schaick, 2010), essentially delivering the services from the distance and based on the convenience of the users. Another place used to deliver the services is the integrated service center, as the *physical one-stop-shop* where representative of multiple government agencies are co-located (De Sa, 2005; Flumian, 2018; Heeks, 2006; Janenova & Kim, 2016; United Nations Department of Economic & Social Affairs, 2018). The last and less mentioned way, *mobile government*, is basically the delivery of public service away from the government offices to an area with higher demand (e.g., shopping mall), by means of setting a temporary and smaller unit of main office (Neutens, Delafontaine, Scott, et al., 2012a).

Another shift of public service delivery is the shift from physical places to the virtual space, or simply *virtualization*. This is the most apparent shift brought by digitalization since it dealt with the change of front-face or front office of public service provider. The virtualization found to take form in *websites* (Dalal & Sharma, 2019; European Comission, 2012; European Commission, 2019; Gil-Garcia, 2012; Lörincz et al., 2010; Mirea, 2018; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018), *one-stop-shop online portal* (Benouareth & Gacem, 2019; De Sa, 2005; Flumian, 2018; Heeks, 2006; Henman, 2010; Janenova & Kim, 2016; Lörincz et al., 2010; Rohleder & Moran, 2012; Schwaiger Calvo & Campos, 2017; Seepma et al., 2020; United Nations Department of Economic & Social Affairs, 2018), and *virtual classroom* (Codagnone et al., 2020; Mahaley, 2019; Mattfolk & Emfeldt, 2019; OECD, 2016). Shift of interaction to non-physical space also happens in the form of *call center*; however the interactions are limited to the exchange of information and remote transactions rather than the actuation of service delivery (Heeks, 2006; Madsen & Kræmmergaard, 2015; Nygren et al., 2013).

6 Discussion

After presentation of the result in the previous chapter, this chapter present the synthesis of the findings on the placeness of public service, changes within the conceptualization of public-service related places, future of interactions between public service user-provider, and scenarios regarding the future state of placeness of public service.

6.1 Synthesis of Findings: the Placeness of Public Service

Based on the findings presented in Chapter 5, public service and its delivery to date is place-bounded by the administrative boundaries in general. Under the regulation in place, different public service is delivered under the government administration; some services are delivered by national government, some by municipal or local governments, or some types are delivered by all levels of the government but with different scope or specifications. However, the importance of these administrative boundaries might be diminished due to the dynamics of virtual-physical public service delivery, which will be discussed further in Section 6.2.

Based on the emerging practices of public service delivery digitalization, place-boundedness of public services from the public encounter perspective are bound to change. In the Table 10 below here each type of public service is divided into the three purposes of encounter based on Goodsell (1981) in Lindgren et al., (2019) (see Section 3.2.). Whether the public service is related any place-bounded data or object (other than the administrative boundaries discussed earlier) is also indicated in the Notes column. Place-bounded here means that encounters for that purpose should be done in certain designated places; while place-independent means that encounters under that purpose can be done anywhere, regardless of the place. The type of public services here is used an example to categorize the placeness feature of public services based on the selected examples presented in Section 5.2.

Table 10. Placeness of Public Services based on Purpose of Public Encounter

Public service type	Information Exchange	Transaction	Control by the government	Notes
Civil registration	P*	I	-	Using data of place as object: publicly registered location
Business registration	I	I	-	Using data of place as object: publicly registered location
Disaster relief	I	P	-	
Education	I	P*	-	
Health care	I	P	-	

Public service type	Information Exchange	Transaction	Control by the government	Notes
Law enforcement and policing	I	-	P*	Place as object: public facilities
Post office	I	I	-	
Public transportation	I	P	-	Place as object: physical utilities
Sanitation	I	P	-	Place as object: physical utilities
Social benefits	P*	I	-	
Tax	I	I	I	Using data of place as object: publicly registered location
Vehicle registration	I	I	-	

Note: P: place-bounded, P*: partially place-bounded, I: place-independent, (-): not applicable

Source: Author, 2020

As seen in Table 10, most of encounters of information exchange can be done regardless of the place, usually through online portals or virtual places. Only civil registration and social benefits are partially place-bounded, since parts of the information exchange is the confirmation of physical presence of citizen as the subject of information, importantly to the government officials. There is a place-related data included in the civil registration and business registration which is the publicly registered location or address; this mainly relates to the determination of which administrative boundaries and legal rights of the citizens and business are entitled to.

The second purpose of encounters, transaction, also mostly can be done regardless of the place, except where the transaction involves physical objects, i.e., in disaster relief, education, health care, public transportation, and sanitation. Disaster relief transaction is place-bounded since place is the object of the service delivery, similar with public transportation which is the physical utilities itself which the transaction is to accommodate physical mobility between places. Sanitation and health care are both dealing with physical object or bodily form which has to be placed somewhere, thus makes it to be place-bounded; with the digitalization, transaction of both these services are pushed to be located in the place most convenient for the users, which is their home. Lastly, the transaction of education, i.e., the learning activities, is pushed to be done remotely and through virtual means, making it less place-bounded; however, there is an ongoing debate on its effect, therefore there is also preference to deliver the services in face-to-face manner due to its importance for the pupils and parents. In recent times of

Coronavirus crisis, online learning has been dubbed as the panacea of educational activities[8].

The third purpose of the encounter, control by the government, are only present in law enforcement and policing and also tax services. Control by the government through policing is partially bounded by place, since the purpose of policing is the enactment of order within the administrative boundaries (Christensen & Albrechtf, 2020; Pollitt, 2012g), and therefore police officers are often dispatched in many places within the boundaries, including on the edges of the boundaries and in public facilities; meanwhile the monitoring itself can be done remotely with the support of ICT (e.g., CCTV, virtual communities). However, as cited in Section 2.2 about virtual space, policing now exists in virtual space as well to handle the cybercrime. In the case of encounters for taxation to control its users, while it is using data of place as the object (i.e., publicly registered location or address), it can be done regardless of places, such as through online communication between citizen and the government.

6.2 Changes within the Conceptualization of Places

Our findings from literature suggest that, with the digitalization of public services, several changes in places have happened: reduction or closure of physical locations of interactions, emergence of new types of place related to public service delivery, shifted physical location of public service delivery, and the shift of public service delivery to the virtual space. In this section, we discuss further the relation of these changes with each of the conceptualization of place: place as territory, place as physical location of interaction, and place as the object of public service.

6.2.1 Changes related to Places as Territory

Within the territorial conceptualization of places—administrative borders, residence, and service areas—there are several changes happen in relation to the digitalization of public service delivery. While administrative borders seem to stood the test of time and holds a paramount importance in placemaking by the government, the importance of territory might be diminishing in general due to the higher rate of cross-border mobility of citizens and the delivery of online public services that are available for users outside the territory. The centralization of delivery, which tends to be hand in hand with the closure or dissolution of smaller units of delivery points, also leads to lower the importance of

[8] See, for example, Dhawan (2020).

smaller territory units such as residence and subnational administrative boundaries. The concept of residence also might be less relevant for the public service provision, by only being the determinant of which government jurisdiction a citizen is entitled to—and further which services are within their rights to receive—but the role as the determinant of physical public service allocation and planning is diminishing. In addition, someone being or residing in a territory does not always make them a citizen, and the term "citizen" in the public administration research itself is sometimes overlooked (Roberts, 2020).

The concept of service area might become obsolete sooner than later; at first, it is found that the concept of service or functional area was discovered to measure and propose a better allocation of public service (Drobne & Bogataj, 2015; Ferlie, 2017; Mahaley, 2019; Øvretveit, 2020; Pollitt, 2012f; Zayed, 2015). Since the physical facilities are deemed as an 'option' rather than the main way to obtain public services, the concept of service area of a physical delivery facility should be revisited.

It is deemed that within an administrative boundary a public service should be delivered equally accessible for the inhabitants and citizens, in line with the public values. The concept of accessibility is now changed with the digitalized public service delivery. Virtualization of public service delivery made the services can be accessible from anywhere according to user's convenience – which creates a *sense* of *placelessness*, since theoretically, with virtualization, any place can be a place where citizen can reach the government. If we discuss this in terms of service area (see Section 5.1.1), the hypothetical service area of an online portal is then the whole desirable territory; however, the actual service area might be limited due to the provision of ICT and network infrastructure, or 'digital divide'. Before, the accessibility of physical provision of public services is measured through geographical distance between the facility and the users (Hero, 1986; Neutens et al., 2010; Tsou et al., 2005); now, the concept of accessibility is changed—or added—with the digital accessibility, which includes the possession of digital devices, ability to connect to the Internet, and digital literacy. The digitalization of public service is meant to solve the spatial inequality issues of physical public service provision, for instance in differences between urban and rural areas (Lahana et al., 2011); however, the condition of digital divide might hinder the intended purpose of digitalized public services, or even heightened the overall inequality of public service provision. Therefore, in contrast to placelessness, *some places might have more meaning* or simply more attractive to the public because it has more telecommunication infrastructure. Due to this reason, assuming that the flexibility of time and place to access public services can happen equally in all places is not advised, in order to keep delivering the public service equally for the citizens in accordance with the public values. Hence, the digital delivery of public services needs to take into account the condition of connectivity and ICT

infrastructure availability, which in some places need to be concerned due to the initial low demand, for instance in rural and suburbs (Freimann & Putnam, 2017).

In addition, from the findings of remote monitoring cases it can be argued that ICT enables the users and government to see more places in more detail within the territory (Pollitt, 2012g), for example, in the detection of crime hotspots and disaster areas (Aditya et al., 2019; Brainard & McNutt, 2010; Pollitt, 2012g; Rohleder & Moran, 2012; United Nations Department of Economic & Social Affairs, 2018). In a sense, the places are enhanced by ICT to be explored by the officials without having any personnel detached physically, which helps to produce place-based solutions; in this case, ICT helps augment the features of these physical places.

6.2.2 Changes related to Places as Physical Locations of User-Provider Interaction

Between the three conceptualizations of places discussed, the physical locations of user-provider interaction have the most significant changes due to the digitalization of public service delivery. Firstly, virtualization of public service delivery has shifted the location of public encounter from physical space to the virtual space, e.g., to the online portals, website, call centers. This leads to the diminishing importance of physical places; fewer physical places will be related to public service delivery, and to some extent might lead to the closure of those places itself.

The virtualization has also brought forth the changes in inseparability aspect of a service as discussed in Section 3.2 and Section 3.3 earlier. With the nature of virtualization—modularization and abstraction—now the service processes that leads to the delivery can be separated. This brings along the places related to the processes; if there are more steps or parts of public service delivered separately that each involves different places, there might be more places related in constellation of related public service. For instance, in the birth registration service discussed in Section 5.2, information regarding the birth registration service has been introduced to parents in the *hospital* (Flumian, 2018), the initial registration can be done *virtually* through an online portal, and further the last step is to confirm the birth by conducting face-to-face interaction with *registrar in the government office* (Pollitt, 2012a). Payments can also be separated from the actual service delivery, and can be done through another new place to provide more convenience for the users, for example through pharmacies or banks then the actuation of service itself is conducted in user's house; for example, in sanitation and waste treatment (Heinonen, 2006; Saul & Gebauer, 2018). As a matter of fact, services involving direct payment and generate income for the government (e.g., taxation) are found to be the most digitalized

cluster (Karwan & Markland, 2006; Lörincz et al., 2010). In contrast, the modularization of tasks also opens up opportunity for automation or involvement of algorithm in some tasks—if not all—to be done in a more seamless manner. Thus, these tasks disappear from citizen's eyes, and so does the involvement of places related to those tasks which previously function as physical locations of public encounters.

Secondly, ICT is enabling the integration and virtualization of both the back office and front office of public service delivery. In between the physical and virtual public service delivery, four channels are found based on its integratedness and its form of public encounter.

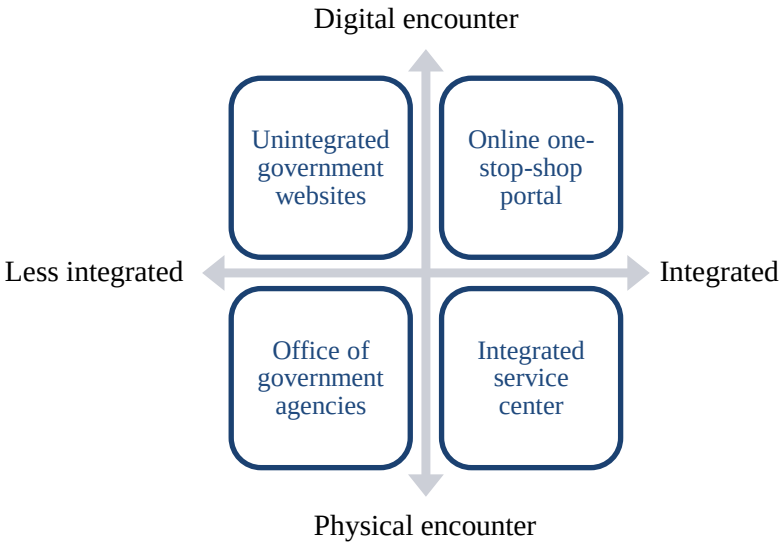


Figure 7. Types of Public Service Delivery Channels based on Integratedness and Form of Encounter

Source: Author, 2020

The office of government agencies is a channel of the unintegrated service delivery and needs of physical encounter, which means the citizen needs to have a face-to-face interaction, to obtain the inquired services or to consult with the officials as the 'expert' of the services. The unintegrated government websites are a type of channel where each office of the government has 'extend' their presence and able to interact or conduct transaction with citizens through the websites; however, the citizens need to know in prior which office is delivering which services. The integrated service center is essentially a physical one-stop-shop, where several representative of multiple government agencies are being co-located to deliver the services for the citizens (De Sa, 2005; Flumian, 2018; Heeks, 2006; Janenova & Kim, 2016). This is an example of reduction of places related

to the public services delivery; from multiple government offices, now citizen only needs to go to one center. The last one, integrated one-stop-shop portal, is utilizing ICT in integrating both in the back office to some extent and importantly in the front face of the government to the citizens. These four channels are not in a sequence of steps of virtualization, and are not mutually exclusive; there are cases where some services are being prioritized to be integrated, for instance the business registration services (De Sa, 2005; Flumian, 2018; Heeks, 2006; Janenova & Kim, 2016) while the rest are still not integrated.

The ability to support integration of processes by reducing redundant tasks and handling more tasks in shorter time encourage *centralization* of public service delivery, especially for the complicated tasks that occur infrequently. For example in the case of health care, it was found that to reduce the cost of delivery, there is a tendency to centralize the handling of patients needing advanced care in bigger hospitals, while the less complicated cases that occurs frequently are handled by smaller hospitals or even decentralized to GP offices or even through telemedicine (Blix & Jeansson, 2020; Pollitt, 2012f). Furthermore, datafication tends to trigger centralization; vast data collection and data analytics made it possible to observe trends and patterns from huge datasets, which is dubbed to be more targeted and precise for delivery of services, e.g., in co-production and predictive service delivery (Lember et al., 2019). As decision is made in the center with the help of datafication, the smaller level of places might not be needed anymore in these decision-making processes.

Thirdly, there are notable changes in the function of these places. Significant changes are found in the office of government agencies. As the front-office of the public services is being virtualized, the offices of the government are slowly gaining its new meaning as the place where government officials work and the place where processes of delivery happens, which then might not be able to be visited physically by the public anymore. The contact details of government offices as noted by Pollitt (2012e) has moved away from physical addresses, as to encourage citizens to contact them not through a visit in the office:

> One interesting feature of the general shift to Net-based services is that the actual physical location of many government offices has now virtually disappeared. ‘Contact us’ the websites say, but when a citizen hits that button he or she often gets, not a (postal) street address, but a telephone number and an email enquiries address. Postal correspondence, it seems, is actively discouraged, no doubt for reasons of cost and efficiency or, in some cases, security. (Pollitt, 2012e, p. 61)

The remaining accessible front-offices are now considered as an *option* of public service delivery channel (Domenichiello, 2015; European Comission, 2012; Gil-Garcia, 2012; Heinonen, 2006; Madsen & Kræmmergaard, 2015). It is noted that people still prefer the face-to-face interaction with public officials for a more complete understanding of the inquired public services, including when exploring the options or solving irregular and complicated cases (Madsen & Kræmmergaard, 2015); meaning that while information exchange in public services are mostly digitalized as shown in Table 10, not *all* of the information can be exchanged in digital manner – or at least not yet shown in the examples of emerging practices.

When talking about the closure of physical public-locations, first it must be understood that the public-service related places are imbued with meaning. For instance, the then UK family record centre was a place where citizens could visit and reminisce their family histories in old ledgers (Pollitt, 2012e, p. 57); thus when the records are digitized and the centre was closed, that function was taken away from the citizens. Another instance is the case of hospital, where it is noted as a civic asset to symbolize the presence of a caring state, certain fulfilment of political commitment, booster for regional economy, a social or communal place for patients (Pollitt, 2012f, pp. 145–146). Noted by Tsou et al. (2005), aside from the physical accessibility there is also a dimension of social accessibility: "to urban residents, each type of public facility possesses its own unique characteristics and satisfies particular needs. Thus, residents have different preferences for different types of public facilities, known as variant attraction/repulsion" (Tsou et al., 2005, p. 424). Hence, the closure of hospitals and physical locations of public service might trigger a set of new meanings of related places and new conceptions of public services and its related actors. For instance, there are cases where the remaining space of government-owned locations are then turned to be rented or leased for other agencies or private businesses, in support for monetizing government assets and adding government income (Chaturvedi & Sriram, 2017; Rohleder & Moran, 2012).

Another significant change of functions is found in home. Other than being citizen's place of residence, home can be the place of interaction for health care services (Blix & Jeansson, 2020; Lember et al., 2019; OECD, 2016; Pollitt, 2012c) and education (Codagnone et al., 2020). Home can also be the physical point to access services virtually through websites or online portal, as dubbed several times that online portals enabled the services accessible from the comfort of home (Dalal & Sharma, 2019; OECD, 2016). The mixture of functions means that the citizens needs to share their resources for public service delivery activities. The function of home for citizens can now be added as a place to receive public service from the government on top of a place for personal activities (e.g., have government-provided equipment for health care put at home); essentially,

sharing a part of citizen's private space to (indirectly) interact with the state for public service delivery. Aside from home, other places can hypothetically be a place to interact with the government, as noted in Section 6.1 above. As other placemaking activities discussed in Section 2.1, this might go unnoticed. However, pushing the citizens to share their space for interacting with the government might also lead to the blurring boundaries between "government-marked" places and private/personal places, since conceptually, in the context of public service, the government is everywhere.

6.2.3 Changes related to Places as Public Service Objects

Within this conceptualization, the presence of the places itself is considered as a public service delivery that enables physical matters delivery or provision of spaces for physical activities. Some sources has mentioned a proposal to shift the delivery of these places to the virtual places, through virtual community or virtual neighborhood center (Brainard & McNutt, 2010; Gordon & Koo, 2008; Zayed, 2015), as a new ways in providing platforms of social ties development within the society.

On the current public service objects, remote monitoring on these places are enabled with ICT, for example monitoring of usage of utilities and CCTV. This provides a significant help in delivering some public services, such as policing, as the dispatchment of officers can be done more effectively. However, since places have multiple meaning and functions imbued by multiple actors, a concern should be put in deciding which places should be monitored and which places should not, especially in relation to the 24/7 surveillance activity, something that is widely discussed within the smart city discussions[9]. In Belgium for example, there is a new consensus of 'segregation of place', in which the public agreed that the ground level of main market should be monitored and equipped with cameras, but the level above them is off-limit since it is private residential areas (Pollitt, 2012g, p. 177).

Digitalization of public services and its shift to the virtual space also encouraged the development of digital identity. It is not only required for citizens to be able to access the services digitally, but also for buildings and other objects as well (Pollitt, 2012e). In some cases, creation of digital identity needs to be done in a certain place (e.g., government offices, post office) to confirm the physical presence of the person or building (Chaturvedi & Sriram, 2017). For citizens, development of biometric identification renders a person to be digitized in data (Pollitt, 2012e); for a land or building, these physical places are rendered as dots and lines on a digital map, which might be used further for archival (e.g.,

[9] See, for example, Ball & Webster (2018) and Galdon-Clavell (2013).

for lands and buildings that needs to be registered) and in digital cartography (e.g., for location-based services).

6.3 Potential Changes in Interactions between Government and Citizens in Public Service

We have discussed that interaction plays an important role in public service delivery, and at the same time, changes are observed in places of interactions due to the digitalization of public service delivery. Here, we examine further the potential changes in interaction between the government as a public service provider and citizens as the user due to this dynamic.

- *More asymmetric relationship between government and citizens in public encounter*

In nature, the relationship between government and citizens in public services is already asymmetric (Lindgren & Jansson, 2013). With all the changes in digitalized public service delivery and in public service related places, the purpose of visiting a government-designated location is now added with getting an assistance to access public service digitally, importantly on the visits to public electronic centres (Madsen & Kræmmergaard, 2015; Pors, 2015; United Nations Department of Economic & Social Affairs, 2018; Zayed, 2015), making the relationship between citizen and public officials even more asymmetric (see section 3.2). If before, the public officials are deemed as an expert in public service, now they also have to be an expert to explain the how-to in accessing and navigating the online portals or the technicalities in using the devices to the citizens.

- *Co-location is currently still important for personalized case management*

It is obvious that the most apparent impact of public e-services is the emergent use of new channels of communications (Lindgren et al., 2019). Undoubtedly, this affects the aspects of communication itself which brought along by the nature of digital technology. ICT created new possibilities for transmitting messages, and thus affect the kind of relationship the parties involved in sending and receiving the messages (Leamer & Storper, 2001). ICT can help advance the transmission of codifiable information, which is information that has a stable meaning, determined with symbol systems in which it is expressed (i.e., linguistic, mathematical, visual); on the other hand, uncodifiable information that requires an understanding of the context is hard to be transmitted through ICT, since it is largely committed to specific pair of sender-receiver based on their mutual

trust and understanding (Leamer & Storper, 2001). Building a relationship of trust requires physical presence (i.e., *co-location* of both sender and receiver of a message) for visual contact and emotional closeness (Leamer & Storper, 2001). Thus, in some cases of public services which requires a deeper understanding of sensitive cases (e.g., in health care or social benefits), the physical or face-to-face encounter are still preferable. At the same time, citizen and businesses expect the same levels of access and personalization in the same way they expect from private companies (Mattfolk & Emfeldt, 2019; Pollitt, 2012d). Since the individualization of service through fully digital means is still in a long way to go, if not unlikely to achieve (Leamer & Storper, 2001); thus, this poses new challenges for the public sector to achieve the satisfaction of the citizens, as public e-services tend to be generalized for mass citizens. Personalized case management should still be provided importantly for solving irregular cases, preferably in a face-to-face manner so that the citizens can feel the emotional support from the government officials. However, the evolution of technology and the adaptation of individuals might further enable this trust relationship to be built in a new way without needing a face-to-face interaction and fully utilizing the mediation of ICT.

- *Citizen needs to share their resources to obtain a public service*

Earlier in Section 3.3, it has been discussed that the fundamental nature of public e-service is that the citizens can do *self-service* at their own convenient time and place (Layne & Lee, 2001; Lindgren et al., 2019). However, aside from having online presence and means of identification, there are several conditions before a citizen can perform the self-service: they need to know that the particular service exist digitally, they know how to *find* it through digital channel, and the Internet access works for the online interaction and no offline support is needed (Lindgren et al., 2019). Hence, accessing the services thus requires a set of skills; for citizens who are willing and able to develop these skills, they will be benefitted by being able to access the public services more easily, but for those who do not, this will highlight the question of accessibility and usability of the e-services. The first example is the submission of tax return through online form; citizens need to understand the form first and, in some cases, self-assessment is conducted in order to calculate the amount of tax should be paid. Further examples are the delivery of health care and remote learning, in which the users should learn the how-to of those services first to get the best quality of service.

- *The blurring boundaries between time for public service delivery and personal activities*

In addition to sharing the place and willingness and ability to learn more skills, resource-sharing also means to spend the time as a cost to obtain public services. With the

flexibility of time and place, citizen can choose which part of their day is best allocated to be used to obtain important public services; or, in the case of proactive and predictive service delivery, the public service might be delivered in an unexpected time for the citizens. As individuals has their own time-budget and develop their time based on mandatory routine schedule (Neutens, Delafontaine, Scott, et al., 2012b), this means citizens should allocate their time to be shared with the government. Before, the public service delivery time span is related to the opening hours of government offices (Neutens, Delafontaine, Schwanen, et al., 2012). With the availability of online portal, the government essentially can be accessed 24/7 in the context of public service, which in further might lead to the blurring of "public service delivery-time" and time for personal activities; similar with the case of remote working which blurred the working/personal time of individuals due to its flexibility[10].

- *The raise of "physically distant, virtually present" government*

The virtualization of public service delivery means that ICT is present to mediate the interaction between citizen and the government. To be able to interact to conduct encounter for public services, both the citizen and government officials should have their "extended" presence in the digital world. For the government side, they are collectively represented by an interface. However, for the citizens, they need to initiate making the online presence for themselves, for example by creating an account of the portal or having a digital ID or other means as identification (Lindgren et al., 2019). In some cases, the citizens might be anonymised (Pollitt, 2012f), and at the same time, the citizens does not know in precise the persona of the government, which before digitalization is represented by the officials. On top of that, the physical location of government offices is now 'disappeared' as discussed by Pollitt (2012a); instead of physical addresses, citizens are encouraged to contact them through ICT means such as call center, e-mail, or online contact form.

While being physically disappearing, government can reach more places deeper by remote monitoring and 'present' in more places in public service delivery as mentioned earlier; not only through digitalization of public services, but also the collaboration and contracting services to private sector, as mentioned in Section 3.1 on post-NPM paradigms. This combination might further make the government to be sensed not physically but mainly through virtual means; essentially starting the virtual organizations and virtual government[11]. Concept of government-made places might become obsolete,

[10] See, for example, Jarvis & Pratt (2006) and Kelliher & Anderson (2010).
[11] See, for example, Fountain (2001), Sturgess (1996).

leaving only the administration boundaries to define the border of different administrations.

6.4 Scenarios: The Future State of Placeness of Public Service

In previous sections, we already mapped the changes happened to places and the placeness of public service delivery; however, those changes are based on the emerging practices of public service delivery digitalization reviewed from the literature. Future evolution of technologies might unravel more capabilities and changes to the placeness and public-service-related places. Sketching from the trajectory of current emerging practices and the nature of physical and virtual spaces, we drew potential implications of digitalization of public service delivery on physical places and the placeness of public service. The implications here are categorized based on the conceptualizations of place.

The first scenario is that the *digitalization of public service delivery will continue to augment physical places and the placeboundedness of public service*. Places as territorial concepts, particularly administrative borders, continue to exist. However, in places with higher connectivity, higher digital literacy, more advance levels of digitalization and virtualization, they gained more benefits, as those areas can be experienced through digital means. Centralization might also heighten the benefits and competitiveness between administrative areas. For example, if some registration needs to be processed in the capital area while the feedback to the areas distanced from the capital takes more time, then the capital will benefit more from the public service delivery compared to other places. Thus, administrative borders might be gaining more importance, functioning as a limit who are the beneficiaries and the provider of public services; at the same time, one person can be linked to more than one administrative border, due to the public service they received or connected to.

Places functioning as physical locations of user-provider interactions might be fully utilized to be the answer of digital divide, or to help encourage people in using the online public service, when most of the interactions are moved to the online space. These kind of places (e.g., government offices, integrated service centers) might be the last places where citizen can see the physical embodiment of government, and the citizens are most likely to feel benefitted by the faster and clearer delivery of public service in these places.

For places functioning as public service objects, public service objects like parks might emerged to substitute the void from the reduction of physical places of public encounters. Also, those physical places can be experienced through digital means, e.g., virtual

rendering in online maps, online exhibition in public museums, but not leaving to encourage people to visit the physical places.

In contrast, the second scenario is that the *digitalization of public service delivery will drive towards the placeless public services*. This scenario will more likely to happen if there is full connectivity and centralization of processes is utilized and functioned to the maximum extent. In places with territorial concepts, administrative borders still exist but with less importance, especially the subnational boundaries. Citizens can easily interact and experience other territories or "crossing" the borders through online means, such as working, studying, establishing business in other territories, enabled by the ability to access and obtain other territories' and government's public services remotely. Instead of being linked to one small definitive unit of subnational administrative jurisdiction, the most important administrative boundaries for citizen might only be their nationalities, since all of the processes and information are centralized. Full and equal centralization also drive the placelessness of public service and the territory itself; all territories are equally treated in public service under one command or central standard.

As the main implication here is that all of the places are treated equally, the physical locations of public encounter will most likely cease to exist. If they exist, citizens who are accessing public services through these places might be disadvantaged through slower delivery. More and more public services are being delivered at home, especially for services involving bodily form of delivery (e.g., sanitation, health care). To the extreme extent, public-facing government offices are all vanished due to the full centralization and virtualization. As all public services are delivered equally, centrally, and through integrated online means, physical embodiment of government and its officials are starting to move to the background of citizen's daily life, as they interact mainly with the government through integrated portal, without needing to know who are the officials or the agencies and where are they located.

Public service objects delivered as a space for citizens might be moved to virtual neighborhood centers, where government is the provider of those virtual platforms. Activities are delivered through online means like online exhibitions or online community gatherings, so people can be socially connected or feels to belong to a certain group from anywhere without needing to move anywhere. To the extreme extent, those physical public spaces might be diminished to make way for more beneficial spaces.

The categorization of implications within these two scenarios does not mean that they will happen exclusively to one scenario. There is a potential where the conditions of placelessness and placeness of public service delivery are intertwined, or where the combination of scenarios between conceptualizations are happening at the same time.

7 Conclusion

Since the practice of government and public administration is still connected to physical places, it is important to discuss the role of place in public service delivery amidst the trend of digitalization of public service delivery, to ensure the inclusivity and equality of public service for the citizens. This research has studied the placemaking and placeness in public service delivery and the changes related to places driven by public service delivery digitalization. The main research question is *how does digitalization play a role in the placeness of public service delivery*? which is studied with three sub-research questions: (1) *how is place conceptualized in public service delivery*?; (2) *how does the emerging practices of public service delivery digitalization affect placemaking processes?*; and (3) *what are the changes in public service delivery places shaped by the emerging practices of public service delivery digitalization*? Through the methodology of hermeneutic literature review, 60 literatures were reviewed in the preliminary literature review to develop the theoretical foundation and research framework. Following that, 103 literatures were reviewed in the main literature review to further answer the research questions by mapping the emerging practices of public service delivery digitalization and the changing conceptualization of public-service related place.

Findings in this research suggest that place in public service delivery context is conceptualized as *territory* (section 5.1.1) which includes concepts of administrative boundaries, residence, and service area; as *physical location for user-provider interactions* (section 5.1.2) which includes concepts of government-designated locations, on-demand locations, and home; and as *public service objects* (section 5.1.3) which includes nodes and physical utilities. The examples of emerging practices of public service delivery digitalization (section 5.2) showed its impacts to the placemaking process of public-service-delivery places, by changing the interaction between service user and provider, reducing the costs of delivery, reducing the need of physical mobility of user, changing the cost of access from user side, and flexibility of time and place in accessing public services. The emerging practices of public service delivery digitalization and the changed placemaking processes then brought forth the changes in public-service related place (section 5.3), indicated by the virtualization of public service delivery, closure of physical locations of interactions, emergence of new types of place, and the shift of physical location of public service delivery.

In terms of contribution, this study has proposed a fresh understanding of the placeness of public service in relation to the practices of public service delivery digitalization. The placeness of public service based on three purposes of encounters (i.e., information exchange, transaction, and control by the government) is proposed as shown in section

6.1. In general, public service and its delivery is place-bounded by administrative boundaries to this date, although the importance of these boundaries might be diminished due to the dynamics of virtual-physical public service delivery. Most encounters of information exchange and transaction can be done place-independently, except where the transaction involves physical objects. Meanwhile, control by the government is partially bounded by place for law enforcement and policing, while taxation is less place-bounded. Further, the changes related to each of the conceptualization of places is discussed in section 6.2. Due to the digitalization of public service delivery, the importance of territory itself and service area might change; rather than the placelessness, features of areas might be heightened due to the digital divide and competitiveness. In places which functions as physical locations of user-provider interactions, virtualization has diminished the importance of physical places by shifting interaction to the virtual space; modularization might pull more places into the constellation of public service delivery, or in the case of automation it might push out some places by making the automated tasks invisible to the citizens; four channels are found based on integratedness and form of public encounter; there are notable changes in functions of places, with significant changes in the office of government agencies and in home. In places which functions as public service objects, new ways of providing public services in virtual space is mentioned in some literature; remote monitoring has helped public service delivery in those places, but concern of surveillance should be raised; digital identity and rendering of places have emerged.

This research further discusses the changes in interactions between government and citizens in the context of public service delivery (section 6.3). First, the relationship between government as public service provider and citizens as the users is becoming more asymmetric, since now the government officials is deemed to not only be an expert in the public service, but also in using the digital interface and devices needed to access the digital public services. Second, considering the current nature of ICT which works less effectively to transmit uncodifiable information that requires an understanding of context and built a relationship based on trusts, co-location is still important for management of personal cases that needs high level of care and sensitivity (e.g., in health care or social benefits delivery); this might change depends on the evolution of ICT. Third, citizen needs to share their resources in order to obtain a public service, in terms of skills, devices, physical space in their homes for home-based care, and their time space; these might further lead to the blurring boundaries between time for public service delivery and personal activities. Further, with the mediation of ICT in citizen-government interactions and the disappearing of physical location of government offices, government tends to be more “physically disappeared but virtually present”; they can reach more places through public service delivery, but can only be sensed and contacted virtually. Based on all the findings above, two scenarios concerning the future of placeness of public service are

proposed (section 6.4): (1) digitalization of public service delivery will continue to augment physical places and place-boundedness of public service, and (2) digitalization of public service delivery will drive towards the placeless public services. Therefore, this study has a potential to help policy makers and researchers in understanding more about the placeness of public services, and in the planning of place-bound and place-independent public service delivery system.

7.1 Limitation of Research

Readers of this study should be aware of several limitations of the research. In the literature review part, the search is done by combining database search and forward and backward searches. Since the filter of English language is used to search the literatures, this might hinder other non-English but equally relevant literature to be included in the review. The database used in this research was selected due to its multidisciplinary content; however, the limited reach of every databases might omit the inclusion of some other relevant literature outside the used databases. Since the main concept of place is studied under multidisciplinary fields, therefore the keyword that leads to the same meaning or relevant to the study is hypothetically indefinite, thus selection of keywords might hinder the inclusion of relevant literatures. To avoid that situation, backward and forward search of literatures are also applied; however, the selection of these literatures might pave the way for researcher bias. Despite these limitations, the researcher believe that this study still offers important and fresh insights into public service delivery aspects.

7.2 Suggestions for Future Research

This research can pave the way for further avenues in understanding the relation between place, government and citizens relation, and public services. Empirical research using in-depth case studies can be done in assessing the longitudinal changes happened on places due to digitalization of public service delivery. Degree of changes and impacts might be different depending on the type and context of each public service, which can be studied further. In places where physical encounter and virtual encounters are co-existing, comparison can be made to assess impacts between different kind of encounters to both the government as public service provider and the citizens as service users. Moreover, since this study is limited to service delivery part, further research can assess the place aspects of other processes in public service (e.g., the back office and planning of public service). Digitalization and aspects of places can also be studied in wider contexts of public sector reform (e.g., division of tasks and authority, restructuration of public administration).

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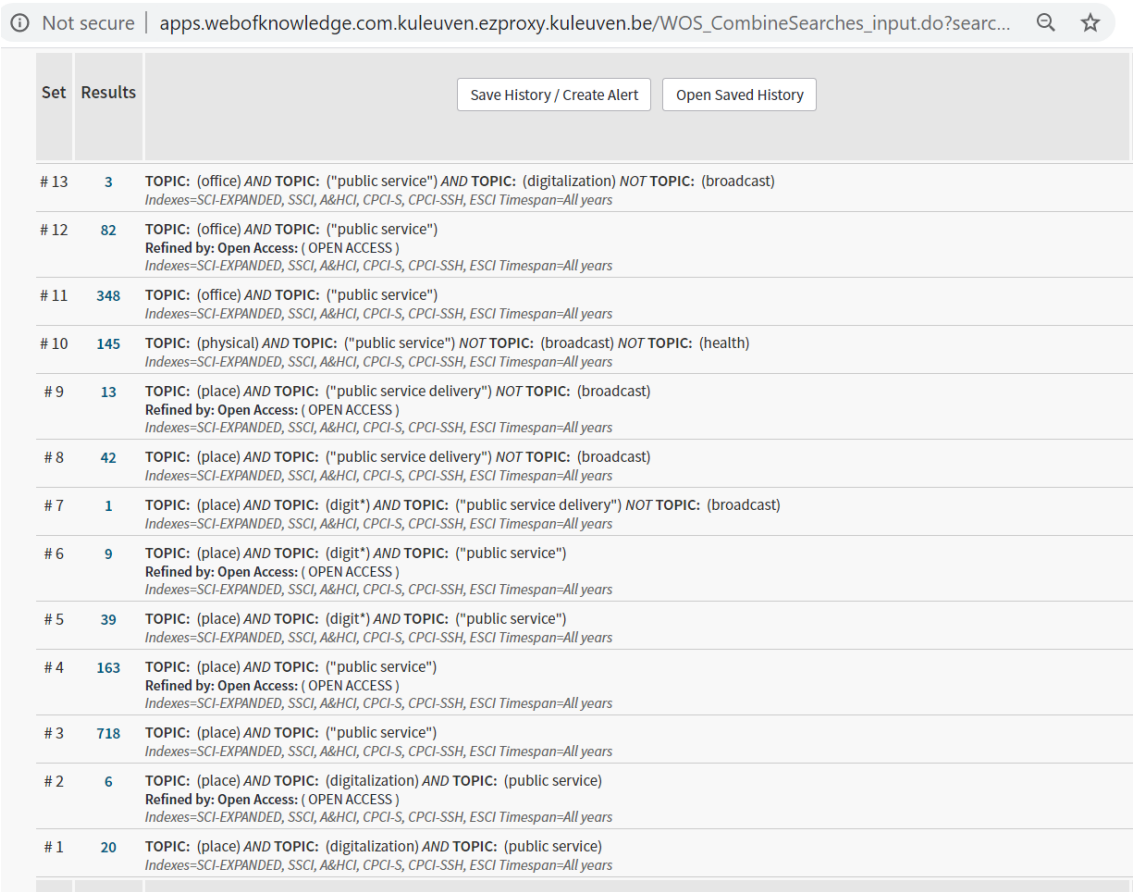
Appendix

A Search Results in Web of Science



Not secure | apps.webofknowledge.com.kuleuven.ezproxy.kuleuven.be/WOS_CombineSearches_input.do?searc...

Set	Results	Save History / Create Alert	Open Saved History
# 13	3	**TOPIC:** (office) *AND* **TOPIC:** ("public service") *AND* **TOPIC:** (digitalization) *NOT* **TOPIC:** (broadcast) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 12	82	**TOPIC:** (office) *AND* **TOPIC:** ("public service") **Refined by: Open Access:** (OPEN ACCESS) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 11	348	**TOPIC:** (office) *AND* **TOPIC:** ("public service") *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 10	145	**TOPIC:** (physical) *AND* **TOPIC:** ("public service") *NOT* **TOPIC:** (broadcast) *NOT* **TOPIC:** (health) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 9	13	**TOPIC:** (place) *AND* **TOPIC:** ("public service delivery") *NOT* **TOPIC:** (broadcast) **Refined by: Open Access:** (OPEN ACCESS) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 8	42	**TOPIC:** (place) *AND* **TOPIC:** ("public service delivery") *NOT* **TOPIC:** (broadcast) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 7	1	**TOPIC:** (place) *AND* **TOPIC:** (digit*) *AND* **TOPIC:** ("public service delivery") *NOT* **TOPIC:** (broadcast) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 6	9	**TOPIC:** (place) *AND* **TOPIC:** (digit*) *AND* **TOPIC:** ("public service") **Refined by: Open Access:** (OPEN ACCESS) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 5	39	**TOPIC:** (place) *AND* **TOPIC:** (digit*) *AND* **TOPIC:** ("public service") *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 4	163	**TOPIC:** (place) *AND* **TOPIC:** ("public service") **Refined by: Open Access:** (OPEN ACCESS) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 3	718	**TOPIC:** (place) *AND* **TOPIC:** ("public service") *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 2	6	**TOPIC:** (place) *AND* **TOPIC:** (digitalization) *AND* **TOPIC:** (public service) **Refined by: Open Access:** (OPEN ACCESS) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	
# 1	20	**TOPIC:** (place) *AND* **TOPIC:** (digitalization) *AND* **TOPIC:** (public service) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*	

B Complete Code Tree

Note: Number of files here does not reflect the actual citation, since some files of book sections are merged together in a form of one e-book. References reflects number of sentences related to each of the corresponding code.

Nodes

Code Name	Files	References
Digital	21	31
Delivery channels	7	13
Drivers	1	1
Flexibility of time and place	13	33
Public e-services	3	6
Driver of digitalization	0	0
Cost of public service	13	18
Cost of access	9	12
Cost of delivery	6	13
Agglutination	2	7
Expenditure	5	8
Impact of digitalization	0	0
Changed interaction	19	40
Self service empowered	7	12
Virtual identity	1	1
Infrastructure	1	1
Law enforcement	1	1
Location or Place	22	60
Government as Placemaker	18	48
Meaning of place	2	6
Movement or mobility	7	11
Accessibility	6	29
Centralization	3	6
Decentralization	1	6
Greater mobility	11	20
Less mobility	3	3
No mobility	4	7
Online navigation	4	9
Object-based	25	43
Location-based services (LBS)	7	14
Physical services utilities	1	1
Point of interaction or transaction	17	30
Physical office	14	43
Assets management	4	8
Assistance for digital service	2	8
Change due to digitalization	11	48
One-stop shop	3	6
Residence	12	19
Citizenship	3	3
Differences in public service provision	5	9
Digital divide	5	8
Vote with their feet	3	8

Code Name	Files	References
Territory based	23	53
Local authority	1	5
Political constituencies	1	1
Service area	6	9
Neighborhood unit	3	27
Critics	2	3
Virtual neighborhood	2	3
Public value	6	6
Accessible	2	2
Typology of public service	7	18
Welfare services	1	1

Cases (Examples of Emerging Practices on Public Service Delivery Digitalization)

Case Name/Public Service Type	Files	References
Birth registration	1	1
Business registration	3	14
Impact	1	4
Closure of physical offices	3	3
Co-production	3	3
Cross border services	3	5
Data management	3	10
Identification in virtual space	2	4
Integrated public service	9	13
One stop shop	3	5
Proactive	1	2
Disaster	1	2
Education	4	9
Electronic Delivery (transaction)	3	4
Health care	12	56
Home-based	7	20
Hospital	4	22
Law enforcement	2	7
Safety regulations	1	1
Mobile government services	1	3
Natural resources	1	1
Police	7	23
Virtual interaction	1	1
Population registration	1	9
Post office	2	4
Public transportation	4	23
Rate of transformation	4	5
Sanitation	2	5
Social benefits	5	7
Family-benefit registration	1	3
Tailored local service	1	2
Tax	2	3
Vehicle registration	1	4

Declaration of Authorship

I hereby declare that, to the best of my knowledge and belief, this Master Thesis titled "**The Placeness of Public Service: Redefining the Meaning of Place in the Digitalization of Public Service Delivery**" is my own work. I confirm that each significant contribution to and quotation in this thesis that originates from the work or works of others is indicated by proper use of citation and references.

Jakarta, 10 August 2020

Pritta Andrani Widyanarko

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