



WP2 Governance Models

# D2.1- Preliminary Governance Model

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## Glossary

ENTRY	DEFINITION
Co-production	Co-production refers to the generally voluntary (not regulated nor mandated) and active involvement of citizens alongside public employees in the co-engagement, co-design, co-implementation and/or co-sustainability of public services (Loeffler & Bovaird, 2020; Brandsen & Honingh, 2018).
Co-engagement	During the engagement phase, suitable participants are identified, screened, and engaged systematically, in relation to the underlying problem that needs to be addressed (Trischler et al., 2019). After the relevant stakeholders are identified and engaged, the participants try to gain an initial impression of the underlying problem that needs to be addressed.
Co-design	Whilst being a sloppy term, co-design can be defined as a method to address complex societal problems and drive public sector innovation collaboratively (Dudau et al., 2019; Voorberg et al., 2015). During a co-design process, users are allowed to take part in a design team since they are the experts of their experience (Sanders & Stappen, 2008).
Co-implementation	During the implementation sub-phase, the public service is first piloted, evaluated and if necessary re-designed. It is hereby important to note that we can only speak of “co-”implementation if users are actively involved.
Co-sustainability	The most crucial question during the sub-phase of service handover/maintenance is how to continuously ensure clarity about ownership and responsibilities, in order for a co-production initiative to become viable and sustainable.
E-services	“Activities provided by provider to a recipient; these services are non-material; they are provided by means of information and communication devices and the result of their consumption can be a benefit, service or acquisition of property” (Kvasnicova et al, 2016, p. 193)
Governance issues	During co-production processes several issues might emerge that need to be taken into account or answered during a particular sub-phase.
Public services	“A public service is an aggregation of all activities that realize a public authority's commitment to make available to individuals, businesses, or



	other public authorities some capabilities intended to answer their needs, giving them some possibilities to control whether, how and when such capabilities are manifested” (Guarino 2017).
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## ACRONYMS

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ABBREVIATED	EXTENDED
C2C	Citizens-to-Citizens (Do-it-yourself government)
C2G	Citizens-to-Government (Citizen sourcing)
C+G	Citizens-and-Government (Public-civic partnership)
G2C	Government-to-citizens (Government as a platform)
PA(s)	Public Administration(s)
WP(s)	Work Package(s)



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## Executive summary

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The main objective of this deliverable is to propose a preliminary collaborative governance model, based on partnership between private actors (citizens and companies) and public administration. Co-production through government platforms is a promising avenue for the re-development of public services. However, to make this work, it requires a clear system of ground rules, a model, on how public services can be delivered in partnership, for instance, individual and collective responsibilities, rules of interaction and management of access.

Task 2.1 is focused on how collective action takes place in the context of digital public service provision. To study this, we systematised the state-of-the-art on traditional and digital co-production processes in order to identify key variables and conditions that must be met for co-production to be effective. Even though we planned to conduct research into the successful and unsuccessful cases of co-production in the context of digitally co-produced services, we were hindered by the corona pandemic. However, the comparative analysis will be conducted in 2022 and will eventually be incorporated in task T2.2 and D2.2.

D2.1. describes the first outcomes of our performed research activities in order to define the advanced governance model. The output of this deliverable is useful for other deliverables and other Work Packages (WP). For example, the co-business model (D2.4) addresses challenges identified in this deliverable and the governance model is related to the identification of INTERLINKERS in WP3.

This report presents a preliminary model, developed during the first year of the project. First, we will define the meaning of co-production and public services. We will then conceptualise the key elements of the co-production process: the different steps, issues to be addressed and stakeholders to involve. Finally, we will identify the steps forward in the next phase, to work towards an advanced governance model.



## 1 Introduction

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The main objective of Work Package 2 (WP2) of the Interlink project is to propose a new collaborative governance model, based on partnership between private actors (citizens and companies) and public administration. This report presents the **preliminary governance model** developed during the first year of the project as part of Task 2.1.

Co-production through government platforms is a promising avenue for the re-development and new development of public services. However, if it is to work, it requires a clear system of ground rules on how public services can be delivered in partnership, for instance rules on individual and collective responsibilities, rules of interaction and management of access to the network of co-producers. Fortunately, we do not have to start from scratch. Social scientists have long studied how collective action takes shape and there is a solid theoretical basis at a general level. The objective of WP2 of the INTERLINK project is to translate this towards co-production in the context of digital service delivery. This preliminary model will offer guidelines on how to organize a co-production process and provides the background knowledge for the development of the collaborative platform that aims at supporting collaboration among public and private actors for the co-production and co-delivery of public services. Besides, this model will set standards for the evaluation of co-production processes implemented both inside and outside the INTERLINK.

To achieve this, we have systematised the state-of-the-art of available evidence into a coherent preliminary framework, identifying the main phases of the co-production process and the issues that must be addressed in each phase. This work has resulted in a preliminary model, which we present in the following sections. In section 2 we will define the meaning of co-production and public services. Both terms are used and abused often, so it is important to be clear what they are (and what they are not). Next, in section 3 we will conceptualise the key elements of the co-production process: the different steps, issues to be addressed and stakeholders to involve. Finally, we will identify the steps forward in the next phase of WP2, to work towards an advanced governance model.

## 2 Theoretical framework and literature analysis

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In this paragraph we clarify the concepts ‘public services’ and ‘co-production’. This is all but a jump through a scientific hoop. Public services, co-production and governance are in practice intertwined. As such there is a practical need to clearly define these concepts and to link them to options and choices that will structure the governance model and co-production processes.



## 2.1 Definition of public services

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The term ‘public services’ can be found in several disciplines and has various interpretations. According to Guarino (2017), there is still no standard way of describing and documenting public services. Basic definitions on what constitutes a public service differ and there is no standard global interpretation of what types of public services exist. Here we need to reduce the conceptual fuzziness around the term ‘public services’, by capturing the core notion that underlies this concept.

There are some complications in pinning down its meaning. It is not particularly helpful to start from the premise that public services affect the public interest. Bozeman (1987) famously noted, ‘all organisations are public’. Meaning that all activities can be said to have an element that touches upon the public interest. Think for example about the pollution produced by private industries. In a similar vein, when we refer to the source of funding it is not possible to make an unambiguous distinction. Not all public services are publicly funded. The past decades have seen a growing use of market mechanisms (Osborne, 2010). While public funding is important, it is often complemented by other funding streams. Public authorities can initiate or support the development of services which are then taken up by businesses (the Internet being an illustrative and famous example). Moreover, the idea that public services are state-provided is incorrect. In many countries this was never true as private non-profits played a large role in the provision of public services. And again, over the last decades we have witnessed an increasing involvement of private actors (businesses, civil society) in the provision of public services.

The three provided criteria illustrate that it is impossible to come up with a set of universal straightforward criteria to define public services. Anyhow, the role of public authorities in public services has shifted towards one of systemic responsibility: even where they do not fund or provide a concrete service directly, they may commit to ensuring or supporting that such a service is provided.

Guarino (2017) offers a refined definition of (public) services, which we will follow here, which emphasises the continuous commitment of public authorities in making services available: ‘*A public service is an aggregation of all activities that realize a public authority's commitment to make available to individuals, businesses, or other public authorities some capabilities intended to answer their needs, giving them some possibilities to control whether, how and when such capabilities are manifested*’ (Guarino 2017).

### 2.1.1 Types of services

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One can think of numerous public services like safety, education or childcare. In INTERLINK particular emphasis is given to e-services (or services relying on digital technologies). Kvasnicova et al. (2016) define e-services as ‘*activities provided by provider to a recipient; these services are non-material; they are provided by means of information and communication*’.



*devices and the result of their consumption can be a benefit, service or acquisition of property’’* (p. 193). A distinction can be made between wholly digital services and human services that are digitally supported, but which also rely heavily on ‘social technologies’. An important challenge for the project is to clarify to what extent a service depends weakly or deeply on particular software to be provided effectively. Sheth & Sharma (2007) further distinguish different types of e-services by the degree to which a service can be digitised (1) and the ability for co-creation (2), involving citizens in aspects of the (co-)design and (co-)delivery of the service.

Given our focus on public e-services and the emphasis that is on the commitment of public authorities to ensuring or supporting the availability of e-services we need to look at the notion of co-production.

## 2.2 Definition of co-production

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The use of the terms ‘co-creation’ and ‘co-production’ is varied and there is no uniformly accepted standard, although some definitions are regularly used. This is not the place for an elaborate discussion, for which we refer to existing literature (e.g. Bovaird & Loeffler, 2020; Brandsen et.al., 2018). In this deliverable, co-creation will refer to a process in which services are jointly designed and/or delivered by public authorities and other stakeholders. The term ‘co-production’ is in practice often used interchangeably with co-creation, but is generally seen as referring to the delivery stages of a service (Brandsen & Honingh, 2018).

There are different ways to categorise such processes. In this project, since the aim is to carry out a service from inception to long-term delivery, we will use a categorization based on phases. This roughly fits both concepts of business development and of a policy cycle, but there are different understandings of what occurs in each phase. According to this conceptualisation, there are two main phases in the process: (1) one during which the service is (re-) designed and (2) one during which it is delivered: design and delivery, respectively.

To add the prefix ‘co’ to concepts, there must be active involvement of users of a service at one or several points in the process:

1. Co-design concerns of activities that incorporate “the experience of users and their communities” into the creation, planning, or arrangements of public services” (Bovaird and Loeffler, 2012).
2. Co-delivery is a joint effort by public authorities and stakeholders to provide and improve public services (Alford, 2014; Nabatchi et.al., 2017).

Within the two main phases, different types of subphases must be identified, because they are very different in nature. This leads to the identification of four subphases: engagement, design, implementation and sustainability (see Table 1). As regards the design phase, there can be both



an open, participatory part that involves many actors as well as one focused on the development of concrete service design and tools within smaller teams. In addition, delivery can consist of an active piloting/testing phase and a routine phase in which the original participants are less or no longer involved.

*Table 1*

Approach	Phase	Subphase	What occurs during each phase
Co-production	Co-design	Engagement	This is an open process during which users and/or other stakeholders interact to define the nature of the problems and the direction of the solution.
		Design	This is a closed process in which the solution is developed within a smaller team, which may or may not include stakeholders, from a basic concept towards tools and modules (instantiation).
	Co-delivery	Implementation	The service is first piloted, evaluated, and if necessary re-designed. Users may have a role in producing the service.
		Sustainability	The service is continued as a routine process and is periodically evaluated

In conclusion, the services upon which INTERLINK focuses have the following characteristics:

1. They are public services, in the sense that public authorities have committed to realising them or making them available.
2. They have an element of co-creation/-production, meaning that private organisations and citizens are engaged and collaborate with public government in their design and/or their delivery.

Additionally, the services are realised through the use of digital technologies, either as a fully digital service or as a human service supported digitally.

### *2.2.1 Citizen engagement*

While a major body of literature already exists on the engagement of citizens in the co-design and co-delivery of public services, there is still little evidence on the impact of digital technologies on the engagement of citizens in co-production processes (Lember, 2018). We, therefore, reviewed the literature on citizen engagement in traditional and digital co-production processes, focused on the influential factors and methods of citizen engagement. As the first



iteration of the INTERLINK project mainly focuses on the engagement of stakeholders within each pilot, the focus of this literature review is on the first phase of a co-production process: the engagement phase. The literature review is included in the appendix (5.1) and will be summarized here. Moreover, this work-in-progress paper will be developed further, also taking into account co-design, co-implementation and co-sustainability. We aim to finalize the final version of the literature review in 2023, as this version will be included in deliverable 2.2 ‘Advanced governance model’ in M32.

In order to review the literature, two theoretical frameworks developed by Meijer (2015) and De Vries et al. (2015) are adapted and combined. The framework of Meijer (2015) is based on a distinction between the government and the citizen domain. Personnel capacity, attitudes of public officials and leadership styles are exemplary characteristics of a government organization, whereas personal profile, intrinsic motivations and awareness are examples of citizen characteristics. These differences result in the distinction between the two domains. The second framework originates from De Vries et al. (2015). De Vries, Bekkers and Tummers divide their findings into four categories, whereas each category refers to a level: the environmental level (1), the organizational level (2), the individual level (3), and the innovation level (4). The first three categories are relevant for this study, and the fourth category is changed to the technological level. The framework used in this study to analyse the literature consists of four types of influential factors: environmental/external factors, governmental-/ organizational factors, technological factors, and individual/citizen-related factors. For reporting the systematized review, the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) is applied.

The results on methods of citizen engagement within co-production processes are divided into type of services, perspectives, research design, methods of engagement and influential factors. The findings on type of service shows that while governments’ use of digital technologies in co-production processes is increasing and the body of literature is expanding, most studies mainly focus on traditional co-production. When it comes to perspective, the literature shows that most authors applied the end-user perspective. Furthermore, the results on research design show that case study is the most adopted approach. Finally, the results on engagement shows that digital methods or digital and traditional methods combined are most often mentioned.

The results show that when it comes to environmental/external factors, there are a multitude of factors that influence the decision of citizens to join a co-production process. Social capital and political motivations are the two environmental/external factors that are mentioned the most within the literature. The other factors are the location of co-production, well-defined and clear regulations and trust in the government or politics that are mentioned to have influence on the decision of citizens to participate.



The literature on organizational factors shows that attitude, administrative culture, compatibility and support are the most recurring factors in the literature. The attitude of a top manager or public official could determine the co-production efforts and available resources within their organization, but there are conflicting results on this in the literature. Organizations need to be adapted to actively involve citizens in co-production processes. An organization's administrative culture is a predictor of co-production because the administrative culture is defined as the level of risk-aversion whereby a more risk-averse culture can hinder co-production processes. Support is also a recurring factor because public employees can encourage citizens to co-produce. There are other factors that have been mentioned in the literature. These being the easiness for citizens to join in, the gender balance, the incentives of government to involve citizens, the responsibility to inform citizens, citizen's motivation to join, the level of personalization and user-centricity, the delivery of high-quality services, active recruitment of citizen engagement and the presence of sanctions.

The most recurring technological factors are skills and access, with skills referring to the possession of digital skills enhancing citizens' willingness to engage in digital co-production processes and access referring to the decision of citizens to engage depending on the accessibility to specific devices. The additionally mentioned factors are attitude towards digital technologies and service user information systems being used to tailor co-production offers.

The results on individual/citizen-related factors show that salience, internal/self-efficacy, resources, rewards, skills, socio-demographic factors and community are the most recurring factors. Salience refers to citizens' perceived importance of a service, which depends on whether the service affects them, their loved ones and their lives, and if their lives can be changed indirectly or directly. Citizens with a high sense of self-efficacy are more likely to be motivated to engage. The availability of time influences whether participants get engaged or not. Intrinsic rewards are powerful motivators, due to the fact that citizens are seldom solely motivated by self-interest. Second, extrinsic rewards often refer to self-centred motivations, which can be linked to the calculated costs of participating. In most cases, citizens will get engaged when the rewards outweigh the costs. Even though socio-demographic factors are one of the most recurring factors in the literature, there seems to be no agreement on the effect of socio-demographic factors on citizen participation. Citizens taking responsibility for their community is a primary mechanism in citizens' willingness to participate. The other mentioned factors are altruism, awareness, external efficacy, interest, medium, normative appeals, ownership, self-interest and trust.

It becomes apparent that the studies that focus on digital co-production mostly focus on the method of engagement, whereas the studies on traditional co-production focus more on the influential factors. It seems as if the literature indicates a change. In conclusion, this study shows that there is little evidence on the impact of governments' increasing use of digital technologies in public service provision processes on citizen engagement.



### *2.2.2 Government-citizen relationship*

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Building on scholarly literature, Linders (2012) presents three categories of co-production. Therefore, one has to pay attention to a couple of dimensions such as the provider versus beneficiary dimension and the distribution of power and responsibility. Here we present three co-production categories, with the government's role progressively decreasing in favour of the people.

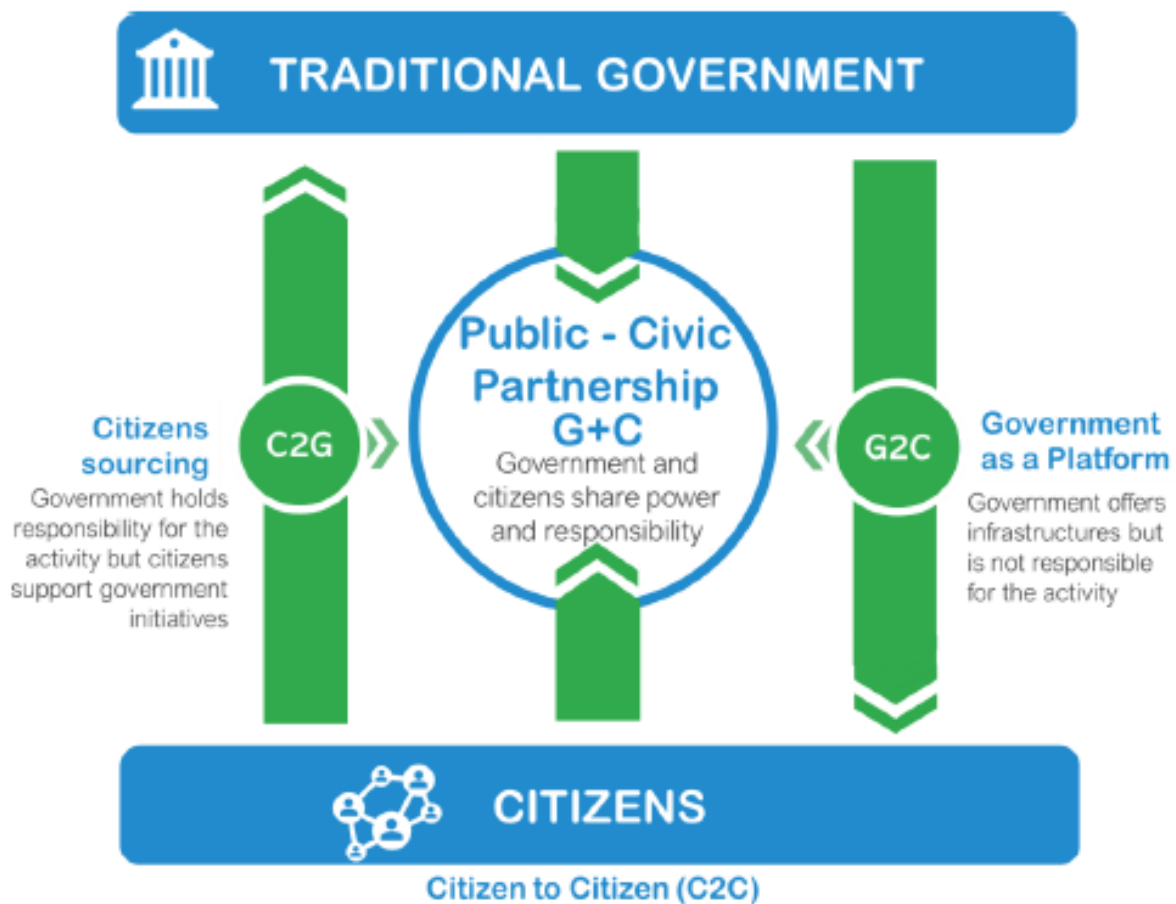
1. Citizen Sourcing (Citizens-to-government = C2G)
2. Government as a platform (Government-to-citizens = G2C)
3. Do it yourself Government (citizen-to-citizen = C2C)

**Citizen Sourcing:** The public helps governmental organisations to become more responsive and effective. The government holds primary responsibility, but citizens are able to (in)directly influence decisions, procedures, direction, and outcomes. In some services citizens may even help execute government services on a day-to-day basis.

**Government as a platform:** Due to the marginal cost of digital data dissemination and computer-based services, the government is enabled to make its knowledge and IT infrastructure available to the public that pay for their development. These platforms offer citizens the opportunity to improve their day-to-day activities. These platforms can even foster public values.

**Do it yourself Government:** As soon as citizens are wired they are able to get involved in citizen to citizen co-production. Compared to the other two types of co-production this one is more informal and the government does not really play an active role and only facilitates the network. One can therefore doubt whether this third type of co-production can be understood as co-production and thus really fits into this project.

Comparing these three types of co-production raises the question on how much control citizens have vis-à-vis the government in daily practice. We, therefore, introduce a fourth co-production category: public-civic partnership (Government-and-citizens = G+C). A partnership among government and citizens indicates that they share equal power and responsibility, since each side brings their unique advantages to the table to collaboratively solve problems and create public value. The four co-production categories are visualized in Figure 1.



*Figure 1*

The co-production categories can be linked to the two main phases of a co-production process. In practice, however, not every phase is set up in a participatory manner. One should thus be careful not to add ‘co-‘ to everything in advance. To give an illustration, all phases should have a participatory element in public-civic partnerships (G+C) as government and private actors share equal power and responsibility. Yet, in a more traditional approach like citizen sourcing (C2G), public authorities only ask users for the voluntary commitment of resources to improve the service itself, such as their voluntary labour or personal data.

### 2.3 Definition of participants

According to the Quadruple Helix approach for innovation (Schültz et al., 2019), possible participants of the co-production teams can be divided into four main groups: public authorities (1), citizens, citizens experts and potential end users (2), businesses and private non-profit organisations (3) and research organisations (4). They can be divided further into sub-groups that each have different motivational factors to join the work. It is very important to understand why these stakeholders would become interested in co-production. The list below gives some



examples of typical motives but is not intended to be a complete list of possible reasons to participate:

– *Public authorities*

- Public servants who would benefit from the co-produced service in their work, e.g. by simplifying their regular duties. Besides, they could foster the co-production of services prioritised by the public administration (PA).
- Politicians whose constituents/voters include end-users of the service.

– *Citizens, citizens experts and potential end-users*

- Potential end-users who would benefit from the co-produced service directly as an end-user and/or want to help in creating a service which they believe to be useful. They bring in experiential knowledge, valuable in (re-)designing a service. These can be individual or organised in groups (associations).
- Expert citizens who enjoy participating in co-creation projects and have the relevant skills to take on a more specialist role (knowledge activists).

– *Private businesses and non-profit organisations*

- Small and medium-sized enterprises (SME) who are looking for new business opportunities and ways to utilise their skills and technology.
- Freelancers who are looking for new customers and ways to demonstrate the benefits of their services.
- Large companies who are looking for new customer relationships (with involved public organisations or companies), investment opportunities or ways to improve their brand or corporate image.
- Private non-profit organisations (e.g. foundations, charities) who are willing to support the service.

– *Research organisations*

- Universities and other research organisations who support the service as part of their research mission.

The presented stakeholders have diverse reasons and expectations to get involved in co-production processes. The same goes for the expected benefits as they will differ in practice. It is very important to understand the motives of different stakeholders and ensure that they receive the kind of benefits they are looking for. Otherwise, they will very quickly lose their interest to contribute. From both an analytic and practical perspective we need to differentiate between personal benefits, societal benefits, financial benefits, governance benefits and research benefits. We refer to D2.4 for further insights on the expected benefits.



### 3 Preliminary governance model

Co-producing (e-)governmental public services involves a number of crucial steps and questions in order to be successful. Based on the existing literature on co-production, we thus suggest the following governance model as conceptualised guidance throughout the decision-making process (visualised in Figure 2). It thus enables structured choices: how can the process be differentiated? What are the important aspects of each step? And when can we move on to the next (sub-)phase. We hereby understand ‘governance’ of the co-production process as active steering of multiple stakeholders - from engaging them to ensuring a sustainable collaboration.

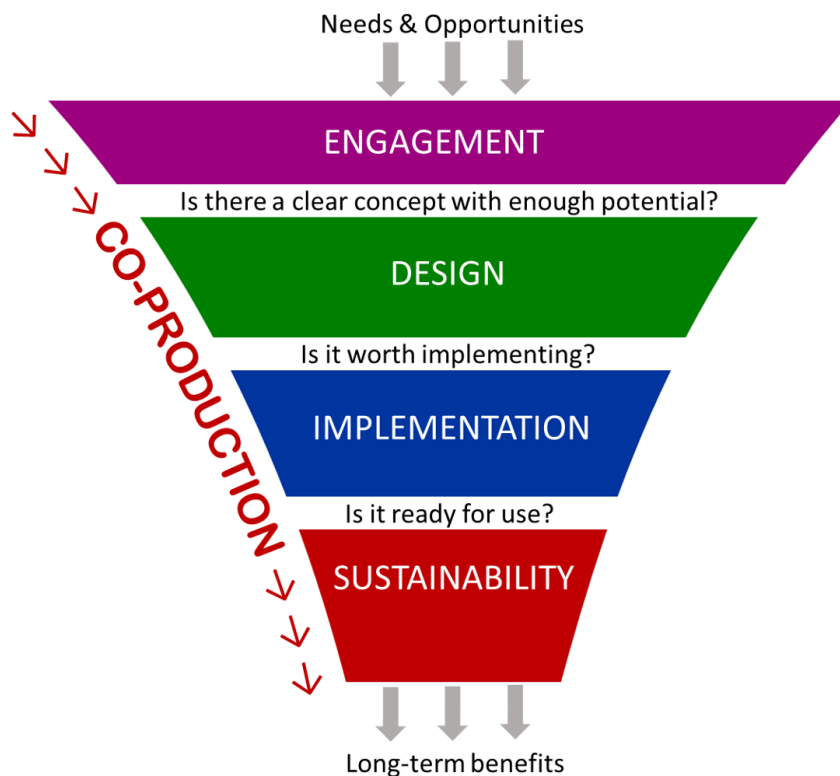


Figure 2

#### 3.1 Phases of the co-production process

The INTERLINK project aims to support the co-production of public services. In order to achieve this goal, it is necessary to focus on the different phases of a co-production process. Since it is possible that different stakeholders will be involved within each sub-phase, it is essential to determine what decisions should be taken during each phase and by whom in order to identify typical bottlenecks and challenges (hereafter referred to as governance issues). As stated above, there are two main phases in the process: co-design and co-delivery. These main phases can be broken up into four sub-phases: engagement, design, implementation and



sustainability. Note that even though the phases and sub-phases of a co-production process are often presented as individual phases, taking place in a fixed order, a co-production process cannot be seen as a linear process following a series of discrete steps with identifiable beginnings and endings in practice. On the contrary, co-production processes can often be characterised as iterative in nature, since many elements from the different sub-phases take place simultaneously or multiple times, creating feedback loops.

### 3.2 Co-design phase

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This paragraph focuses on the first phase of the co-production process, the design phase, which includes the co-engagement and co-design sub-phases. Whilst being a sloppy term, co-design can be defined as a method to address complex societal problems and drive public sector innovation collaboratively (Dudau et al., 2019; Voorberg et al., 2015). During a co-design process, users are allowed to take part in a design team since they are the experts of their experience (Sanders & Stappen, 2008). This collaborative approach shows a shift away from individual experts towards various team members with different interests and backgrounds (Steen, 2013). The argument underlying the shift towards co-design is that those affected by a design, the users, should have a say in this process (Ehn, 2008). In addition, co-design can be considered as the first step of a co-production process and is sometimes referred to as co-creation (Voorberg et al., 2014). Public service design has not always been collaborative in nature, even though it has always been central to policy making (Dudau et al., 2019). Traditionally, policymaking was more evidence-based and top-down, but co-design is slowly becoming the norm.

The co-design rationale is considered to be value-based and democratic, as involving the public in the design of public services can lead to innovative and supported solutions (Trischler et al., 2019). Besides, co-designing public services is in line with societal core values, such as transparency and inclusion. Several authors suggest that value is always determined by the beneficiaries, as value is unique and phenomenologically determined. Vargo (2008) states that public value relies on the expression of collective preferences, which are politically mediated, emphasising the multi-actor nature of co-creating value. Furthermore, stakeholder perceptions, as well as citizen perceptions on what is considered valuable, should be taken into account in order to deliver 'high order' benefits or outcomes (O'Flynn, 2007).

Previous research suggests that the involvement of users in public service design can be rather challenging, as these projects often deal with less engaging or sensitive topics (Engström & Elg 2015). Yet, the effectiveness of a co-design process depends on which users are involved and the manner in which their involvement is facilitated (Dietrich et al., 2017; Trischler et al., 2019). Even though users may be reluctant to participate or not consider themselves as suitable co-producers, it is important that the service design is open for all relevant users, in order to actively engage them as equal contributors.

### *3.2.1 Co-engagement sub-phase*

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#### *Identifying and engaging stakeholders*

When a co-design endeavour is initiated and the government-citizen relationship is defined (see 2.2.1), the project will start its first sub-phase: the engagement phase. During the engagement phase, suitable participants are identified, screened, and engaged systematically, in relation to the underlying problem that needs to be addressed (Trischler et al., 2019). It is important that participants learn that their contributions and participation in general is valued by the respective public body, in order to ensure commitment and ongoing support within the project.

Engaging stakeholders is one of the key objectives of the co-business model, presented in D2.4. Our recommended solutions regarding the engagement of participants can be found there.

#### *Formulating a shared problem definition*

After the relevant stakeholders are identified and engaged, the participants try to gain an initial impression of the underlying problem that needs to be addressed (Trischler et al., 2019). Participants can be asked to reflect on the underlying topic through a number of activities (e.g. thought-provoking questions or playful exercises). These reflection activities help to build trust between the relevant stakeholders and also prepare them for the co-design sessions. In addition, these activities let participants reflect on the topic from different perspectives. Based on this initial impression, stakeholders can focus on the problem collectively and start defining a preliminary shared problem definition. The participants can already make use of sophisticated approaches and techniques (e.g. collaborative service mapping activities or design games) that can help create awareness of a broad range of solutions in order to retain an open mindset. This phase can conclude with a presentation of the shared problem definition and possible solutions, to all participants and facilitators.

The engagement phase is considered to be highly iterative, as the enhanced understanding or framing of the underlying issue can possibly lead to the engagement of additional stakeholders (Trischler et al., 2019). Besides, unforeseen challenges can lead to adjustments.

#### *Co-evaluating the first sub-phase*

With regard to the co-evaluation of the engagement phase, it is important that relevant stakeholders are identified and engaged since the effectiveness of a co-design process depends on which users are involved (Dietrich et al., 2017). In addition to stakeholder identification and engagement, it is crucial to gain commitment and ensure support from relevant stakeholders as well as creating an open problem space (with possible alternative solution spaces) within the engagement sub-phase (Trischler et al., 2019). The open problem space is seemingly important, as user experiences, preferences, and needs can contribute to the suggestion of possible solutions for future use of the service. Ideally, reflection activities are organised prior to the co-design sub-phase, allowing participants to prepare themselves. Finally, an important criterion

is finding common ground surrounding the shared problem definition and possible solutions, and therefore which ideas to develop further.

### *3.2.2 Co-design sub-phase*

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#### *Problem and solution exploration*

Based on the shared problem definition defined during the engagement sub-phase, the next sub-phase focuses on specifying the design approach and aims to conceptualise viable solutions with relevant stakeholders (Trischler et al., 2019). During the co-design sub-phase, user experiences on current service solutions are collected based on the shared problem definition which was formulated during the first sub-phase. By providing insights into their daily lives, participants indicate what solutions work or do not work. These experiences (in addition to user preferences and needs) make it possible to generate incremental ideas, often focused on modifying existing service solutions. The aim of this sub-phase is to provide user-driven design ideas that will be accepted by the stakeholders responsible for implementing the final concept.

#### *Service design and specification*

Whilst the ‘shared problem definition’ step and the ‘problem and solution exploration’ step focus on generating user-driven ideas, the ‘service design and specification’ step is more focused on analysing (and possibly sharing) the generated insights and ideas (Trischler et al., 2019). In order to design and specify a public service, an open dialogue between the relevant stakeholders is facilitated/organised. During this open dialogue, various important topics are discussed, such as the feasibility and practicality of the generated ideas. Consequently, possible way forwards are determined. Similar to the co-engagement sub-phase, the co-design phase can be seen as an iterative process, since the participants need to reflect on the problem definition and the different solution spaces in relation to the design task (in order to fully grasp the complexity of the underlying problem).

#### *Co-evaluating the second sub-phase*

Before the user-generated solutions can be implemented, it needs to be determined whether or not these solutions are viable and sustainable (and thus feasible). While innovations can appear to be potentially effective in the co-design phase, these ideas might not gain support or approval from those responsible for the implementation (Trischler et al., 2019). It is, therefore, essential to take different perspectives into account during the design sub-phase. If a certain group of stakeholders is not actively engaged within the design sub-phase, it can lead to the rejection of co-designed ideas. Furthermore, it is important that developed service solutions do not solely focus on specific user needs. This narrow focus is often prevented by the involvement of different stakeholders with different preferences, needs, and experiences. Thus, it seems to be necessary that key stakeholders are involved throughout the whole co-design phase, in order to gain support for the actual implementation. Finally, criteria determining the level of success

can be formulated based on the problem and solution exploration. These criteria will contribute to determining to what extent the user-generated solution is able to solve the problem in question.

To conclude the first part, the transformation of user preferences and needs into new service ideas, also referred to as ideation, is central within the co-design phase (Patrício & Fisk, 2013). This phase of the co-production process is typically chaotic and ambiguous in nature, as it requires shared problem defining and solution framing in an iterative manner (Dorst & Cross, 2001). Within the co-design phase, close collaboration between service users and providers is particularly important. Recent evidence even suggests that co-designing public services with users leads to more innovative ideas, addressing users' needs in a better way (Steen, 2013).

### 3.3 Co-delivery

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This paragraph focuses on the second phase of the co-production process, the co-delivery phase, which includes the co-implementation and co-evaluation sub-phases. Similar to the blurry notion of co-design, co-delivery is also hard to capture but can overall be seen as a joint effort by public authorities and stakeholders to provide and improve public services (Loeffler & Bovaird, 2020).

During the implementation sub-phase, the public service is first piloted, evaluated and if necessary re-designed. It is hereby important to note that we can only speak of “co-”implementation if users are actively involved. However, their involvement may differ regarding the degree throughout this sub-phase. Overall, their experiences are seen as vital input and feedback to identify if, with what characteristics and under what circumstances a service will be both accepted and satisfactory. Equally to the co-design phase, this collaborative approach shows a shift in the orientation of public administrations. Next to questions of more objective norms, e.g. the legality or efficiency of the service, the users' individual experiences and perspectives are being put more to the centre of co-delivery (Ehn, 2008).

The second sub-phase of co-delivery and at the same time the final sub-phase of the whole co-production process is the sustainability phase. Here, the service is continued as a routine process and is periodically evaluated. It is important to state that evaluation can be a rather political process meaning the necessity of balancing out different stakeholder perspectives (e.g. public servants, IT providers, citizens) based on their specific values, interests and selective perceptions. A second reason why evaluations in the sustainability phase might be difficult is that responsibilities for the service delivery and thus also for failures are difficult to determine in public services. Not only because of interdependent actor constellations including multiple stakeholders, but also because the end-user of public services is a co-producer (Beckmann et al., 2007). Thus, the acts of producing and consuming coincide. Who then is responsible (for

which parts of) in the delivery of public services? This is considered to be a difficult quest (Gosfield, 1997).

### *3.3.1 Co-implementation sub-phase*

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#### *Service implementation*

With the service implementation, the service enters the piloting stage. Although the inclusion of multiple stakeholder perspectives and iterative reflection cycles during the co-design phase may have provided the foundation for successful co-delivery, this means to reflect on a number of further considerations and decisions.

One important prerequisite is a specification of the demands regarding the technical environment and infrastructure. This includes, for example, the execution environment. Here, the piloting phase could be used to test alternatives (e.g. fully online public service vs. onsite in the municipal administration). It also means to ensure the implementation of data protection protocols and, related to this, to clarify the ownership of the data as well as responsibilities among the involved stakeholders. Both considerations are furthermore linked, for example, when deciding on the creation or use of existing databases as well when determining the extent of the integration of specific services.

A second important prerequisite is to ensure that the regulatory and organisational environment is in place in order to launch the service. Here, it is particularly important to match the decisions in the co-delivery phase with the resources in an organisation. This might mean alterations, e.g. to the extent of a planned service. Not only financial resources should be taken into account, but also time, transactional costs and needed staff. Linked to the latter one are considerations of expertise needed to implement the service and a related selection of staff with a particular professional background/experiences as well as a potential need of qualifying employees. The implementation of a service might also mean the need to change the regulatory framework to ensure the legal compliance of the service implementation.

#### *Service delivery*

Whereas service implementation is concerned with the overall framework and implementing environment, considerations in the realm of service delivery focus more on the concrete actor involvement and questions of interaction. It is thus important to clarify which actors participate in which way in the co-delivery of the service. Competencies and tasks need to be clarified in order to ensure neither gaps or overlap of activities in the co-delivery process. Linked to this is the consideration of coordination which can be assigned as the responsibility of a single or group of actors or be dispersed among the actors involved. It is important to note that coordination should be regarded as a continuous process that encompasses to ensure that all actors keep each other informed, that potential further decisions are agreed on and that the concrete activities are aligned. A similar important consideration is a clarification of



accountability relations among the actors involved. Who can hold who accountable and in which way (e.g. are sanctions integrated in cases of deviance or failure)?

#### *Co-evaluating the third sub-phase*

Before the service can be implemented full-scale, it needs to be determined whether or not the pilot was successful and is ready to enter the next and final stage of sustainability. It is important to take both the actual experiences throughout the pilot phase and further reflections on a potential implementation on a bigger scale (e.g. for a longer time, including a larger number of users) into consideration. Similar to the evaluation phase during co-designing the service, it is important to take a broad range of perceptions and experiences of the actors involved into account. Particular attention should be paid to vulnerable groups that might be deviant from the “standard” user. At the core of the evaluation of this phase should be reflection on the actual product-, process- and value-based quality of the service. At the end of this sub-phase, decisions on potential changes in regard to the delivery process or the design of the service need to be implemented. In extreme cases, this might mean returning to the co-design or co-delivery sub-phase.

### **3.3.2 Co-sustainability sub-phase**

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#### *Service handover/maintenance*

The most crucial question during the sub-phase of service handover/maintenance is how to continuously ensure clarity about ownership and responsibilities. At best, competencies, division of tasks and accountability relations have been sufficiently tested during the piloting phase with necessary changes during the evaluation of that sub-phase. However, (unintended) consequences of certain design and implementation choices might not have become visible in the short-termed piloting phase. Thus, decisions during the service handover should also include a discussion of potential scenarios in the future (e.g. a stakeholder not being able to fulfil their assigned responsibilities, a cut of resources, further development of digital services and a potential subsequent integration of services). A particular focus in the considerations on service handover should be put on the question of practical maintenance. The commitment to ensure maintenance of a co-produced service should be ensured in order for a co-production initiative to become viable and sustainable.

The issue of co-sustainability is very important and raises further questions. A valid business model should generate enough revenue to make the service sustainable or event profitable, which could be a good business for the service maintainer. But what about the others who contributed to the service during earlier phases? What do they gain? The co-business model described in D2.4 could be a potential solution which benefits everybody.



### Co-evaluating the fourth sub-phase

Evaluation in this final sub-phase can take two forms which can also be combined: an ongoing evaluation in the form of monitoring or a periodic evaluation at set moments in time. Here, it is important to agree on specific key criteria determining the level of success, which might be based on the evaluation during co-implementation. Again, it is important to design the evaluation based on the multiple views of stakeholders involved. It is thus best to arrive at a multi-dimensional evaluation of the quality of the service which does not only include input, process and output related criteria but is also sensitive to the value orientations of service delivery in a public context. In the course of the continuous evaluation, adaptations to the design or implementing setting can be made. In extreme cases, the termination of a service might also be an option (e.g. if it becomes reluctant due to the integration into another service at some moment in time).

## 3.4 Governance issues

During co-production processes several issues might emerge that need to be taken into account or answered during a particular sub-phase. In order to understand how a co-production process is structured and to identify its critical issues, we introduced and discussed a concrete example (see appendix 5.2: Food banks case). Based on this example, we identified and generalized several issues that a team might face during the co-production process. The most important governance issues for each sub-phase are presented in Table 2.

*Table 2*

Subphase	Governance issues
Co-engagement	Identifying and engaging stakeholders <ul style="list-style-type: none"> <li>- Which stakeholders should be involved in the project?</li> <li>- Who would use / provide / be affected by the new service?</li> <li>- When to involve stakeholders?</li> <li>- How to engage stakeholders in the process?</li> <li>- How to define a formal agreement of collaboration?</li> </ul>
	Formulating a shared problem definition <ul style="list-style-type: none"> <li>- What is the problem that must be solved?</li> <li>- What could the solution (and thus the service) look like?</li> <li>- Which solutions cannot be considered?</li> </ul>
	Co-evaluating the first sub-phase <ul style="list-style-type: none"> <li>- Is there a clear and accepted problem definition that can be developed further?</li> <li>- Are the possible solutions clear and accepted?</li> <li>- Is the engagement of stakeholders effective?</li> </ul>





	<ul style="list-style-type: none"> <li>- What support do they need?</li> <li>- Who should be on the team during the next sub-phase?</li> </ul>
Co-design	<p>Problem and solution exploration</p> <ul style="list-style-type: none"> <li>- What kind of expertise is needed to create the service?</li> <li>- What insights and data can we collect about the service context and users?</li> <li>- What are the social/economic requirements to make the service work?</li> <li>- What are the technical requirements to make the service work?</li> </ul>
	<p>Service design and specification</p> <ul style="list-style-type: none"> <li>- How should the new service (solution) work in detail?</li> <li>- How to co-design with users? / How to work together in the design?</li> <li>- How to define the interaction between users and the service?</li> <li>- Will the preliminary idea be viable and sustainable once deployed?</li> <li>- How much funding is needed?</li> <li>- Where does the money come from?</li> </ul>
	<p>Co-evaluating the second sub-phase</p> <ul style="list-style-type: none"> <li>- By what criteria should a solution be considered successful?</li> <li>- By what criteria should a solution be considered a failure?</li> <li>- Which are measurable objectives to reach?</li> <li>- Do stakeholders support the final design?</li> <li>- Is the engagement of stakeholders effective?</li> <li>- Is the initial work plan to be revised/adjusted?</li> <li>- Who should be on the team during the next sub-phase?</li> <li>- Do funders support the final design?</li> </ul>
Co-implementation	<p>Service implementation</p> <ul style="list-style-type: none"> <li>- Is the technical environment/infrastructure in place for implementing the design?</li> <li>- Is the organisational/regulatory environment in place in order to launch the service (get it up and running)?</li> </ul> <p>Service delivery</p> <ul style="list-style-type: none"> <li>- Which actors participate in the co-delivery of the service?</li> <li>- How can the different actors co-delivering the service be coordinated?</li> <li>- How are all actors kept informed and aligned in relation to the service co-delivered?</li> </ul> <p>Co-evaluating the third sub-phase</p> <ul style="list-style-type: none"> <li>- Is the service working as planned? If not, what changes are necessary?</li> <li>- Does the design need to be adapted?</li> <li>- Who should be on the team during the next sub-phase?</li> </ul>
Co-sustainability	<p>Service handover/maintenance</p> <ul style="list-style-type: none"> <li>- Are ownership and responsibilities clearly arranged?</li> <li>- Who takes care of practical maintenance?</li> </ul>



	<ul style="list-style-type: none"> <li>- How will the service be kept running?</li> </ul> <p>Co-evaluating the fourth sub-phase</p> <ul style="list-style-type: none"> <li>- Have the criteria for success been met?</li> <li>- Is the service still working?</li> <li>- Should the service be terminated?</li> </ul>
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As mentioned earlier, the co-production process is not as linear as presented in these tables. In relation to the governance issues, this means that certain issues might be related to (or have consequences within) different phases, possibly requiring other decisions to be reconsidered as well.

Some governance issues relate to questions on funding (e.g. how much money is needed or where does it come from?) or sustaining public value in the long-term (how will the service be kept running?). These issues are addressed in D2.4 ‘‘Co-business model specification and analysis’’. Co-business is defined as ‘‘the general objective to strengthen the benefits emerging from co-production, maximise the likelihood of receiving them and extend them with new forms of benefits made possible by the support from the co-production ecosystem’’. The main objective of the co-business model is to engage participants in co-production processes and ensure long-term sustainability of co-produced services. In short, D2.4 focuses on several governance issues showed in Table 2 and creates novel solutions in order to overcome these challenges.

Even though this report includes the identification of relevant variables and conditions, it does not take into account the comparative analysis of successful and unsuccessful cases of co-production yet. Due to the corona pandemic, it was not possible to conduct the research needed for the comparative analysis. This activity will thus be performed in the following months and described in the next deliverable (D2.2).

## 4 Conclusion

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This report has presented the preliminary governance model developed during the first year of the project. In the first part, we have defined the main concepts and how they relate to each others. This was the outcome of many discussions across disciplinary boundaries. The INTERLINK project joins different kinds of expertise, which is an asset, but which also makes it hard to arrive at a shared conceptual foundation. The result of such an interdisciplinary effort is similar to the foundation of a high-rise building: it requires a great investment, it must be designed to carry a heavy load, and in the end it looks deceptively simple.

Having defined the main concept, the next step is to define guidelines for each of the steps in the model: which are the key issues to consider and what do we already know from past experience? Such rules can draw on literature in the field, for instance, Nobel Prize winner



Elinor Ostrom's design principles for common pool resources. We will use a literature review, already in progress at the time of writing, to specify these design principles for digital platform-based services. They will constitute a final, crucial part of the governance model.

This next step will be to validate those principles through research into successful and unsuccessful cases of co-production in the context of digitally co-produced public services. The cases will help to identify key variables in the governance model that lead to success or failure, which can then be used to correct and refine the model where necessary. The selection of cases will reflect different governance environments (e.g. administrative cultures, regulations, populations). For instance, similar initiatives to co-deliver mobility might develop differently in regulation-dense as opposed to regulation-light environments.

The final result will be a validated, **advanced governance model** that will serve as a solid basis for the INTERLINK platform (described in D2.2 Advanced governance model due at M32).

## 5 Literature

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## 6 Appendix

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The appendix includes the work-in-progress paper on citizen engagement in digital co-production processes and the hypothetical food banks case which provides an example of governance issues.

### 6.1 Literature Review

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*Engaging citizens in digital co-production processes: A scoping literature review*  
This Work-in-Progress paper reports the preliminary results of a literature review on the influential factors and methods of citizen engagement within co-production processes, which attempts to summarize and combine existing research on the topic of digital and non-digital co-production and identify both findings and gaps. Whereas the studies that focus on digital co-production mostly focus on the method of engagement, the studies on traditional co-production focus more on the influential factors. It seems as if the literature indicates a change. Besides, this study shows that there is little evidence on the impact of governments' increasing use of digital technologies in public service provision processes on citizen engagement. Finally, this paper concludes with a set of questions.

Key words: co-production, co-creation, citizen engagement, digital co-production, digitalization, digital technologies, end-users, participation.

#### 1. Introduction

Digital technologies are increasingly being adopted by governments all over the world. This digitalisation of the public sector is widely expected to affect co-production processes (Lember, 2018). However, how it affects co-production is open to different interpretations (Lember et al., 2019). According to Linders (2012), digital technologies are expected to make citizen co-production more relevant and viable. Governments' ability to effectively coordinate citizen actions was limited in the past. Whereas today, digital technologies offer new advantages for fostering collective action, enhancing the immediacy and simplicity of involving citizens (Lember et al., 2019; Chadwick, 2003). These advantages involve creating novel methods to participate, as well as digitalizing existing methods (Almeida et al., 2018). Consequently, citizens' potential to contribute to public service provision has never been easier in numerous ways: mobile apps provide 24/7 opportunities to co-produce and public employees can effortlessly interact with citizens nowadays via social media (Lember, 2018; Brandsen et al., 2018; Meijer, 2016). Hence, digital developments are influencing the possibilities of citizen engagement. This is expected to lead to higher-level citizen engagement and participation (Meijer, 2012; Lember, 2018).



In addition to the possibilities of citizen engagement, one of the elements of the co-production process on which the use of digital technologies could have a major impact is citizens' willingness to engage (Lember et al., 2019). Since emerging digital technologies are becoming more central to co-production processes, the very nature of citizen engagement could be influenced by technological change (Lember, 2018). Furthermore, digital technologies are not neutral to social acts. These technologies may change the meaning of how citizens co-produce with public employees (Meijer, 2012; Jasanoff, 2016). To give an illustration, game-thinking or game mechanisms are to an increased extent being applied in non-game contexts, in order to motivate citizens to provide input and participate (Mergel, 2016; Lember, 2018). Moreover, preliminary evidence shows that only a small group anonymous citizens co-produce via digital means (Kornberger et al., 2017). This contradicts the image that the use of digital technologies increases the level of participation.

While a major body of literature already exists on the engagement of citizens in the co-design and co-delivery of public services, there seems to be a revival of interest (Brandsen et al., 2018). Many authors have already contributed to open up the (until recently) black box about the motives for citizens to get involved in co-production processes (Alford, 2009; Lember et al., 2019; Brandsen et al., 2018). Even though the research focus has shifted from agenda-setting to fact-finding, and the quality of the collected data has improved, there is still little evidence on the impact of digital technologies on the engagement of citizens in co-production processes (Lember, 2018). Besides, finding out which factors determine the future of co-production in a digitalised world is a major undertaking for future research. One of the problems in this effort is that empirical evidence is scattered across different academic areas, with a wide variety in terminology and scope. Yet, determining what is already known is a crucial step in taking the state of the art forward.

The uncertainties associated with the digitalization of public services and co-production processes lead to the following questions: what do we currently know about the methods and motives underlying citizen engagement in co-production processes? And, does the literature indicate a change, due to the increasing amount of governments' usage of digital technologies in co-production processes (Clifton et al., 2020)? Therefore, it is important to map the state of the art on citizen engagement, which leads to the following sub questions: "how do actors get engaged (and remain engaged) in co-production processes?" and "why do actors get engaged (and remain engaged) in co-production processes?".

There seems to be no universally accepted model of co-production (Almeida et al., 2018). This indicates that the area of co-production is yet defining its boundaries. Anyhow, citizens are no longer passive consumers of services or products, as their role has changed to a more active one influencing public and private organizations (Almeida et al., 2018). While the term 'co-production' is often used to describe all forms of cooperation between producers and consumers, this study focuses on the collaboration between citizens and public organizations in





public service delivery. Hence, the concept of co-production refers to the generally voluntary (that is not regulated nor mandated) and active involvement of citizens alongside public employees in the co-initiator, co-design, co-implementation and/or co-delivery of public services in this study (Loeffler & Bovaird, 2020; Brandsen & Honingh, 2018; Voorberg et al., 2015). When the collaborative practice of co-production is formally approved, the co-produced outcome becomes a strategy or a policy.

The concept of engagement refers to the decision of citizens to participate or get involved in a co-production process in this study, not the level of participation. There are many terms to describe the engagement of citizens within various stages of a co-production process (Brandsen & Honingh, 2018; Voorberg et al., 2015). Related terms like public participation, co-creation, and joint effort are often used interchangeably and in a fluid way. The concept of co-production, however, is more specific than the broad concepts of joint effort or public participation. Besides, co-creation is a more slippery term and frequently used in terms of designing a service. Therefore, and in order to enhance the clarity of this study, only the term ‘co-production’ is used.

This study reviews the literature on the engagement of citizens within co-production processes via a systematized method (Grant & Boot, 2009). In order to review the literature, two theoretical frameworks developed by Meijer (2015) and De Vries et al. (2015) are adapted and combined. Furthermore, the search strategy consists of a topic search (title, abstract and keywords) in one database, Web of Science, including keywords about co-produced public services and the engagement of citizens. On 9 April 2021, a total of 67,867 studies were generated. After applying the preliminary eligibility criteria, the abstracts of 3,185 articles were analysed to determine whether to include or exclude the studies. In total, 86 studies met the eligibility criteria and were therefore included. In addition, we asked experts in the field of co-production to check the list of eligible studies and indicate possible gaps, which led to the identification of 10 further studies. Subsequently, 96 studies were examined by reading the full text in order to determine the relevance for this paper. Finally, 32 studies that proved to be relevant were coded inductively by one researcher.

For reporting the systematized review, we apply the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA), which can help authors improve the quality of the reviewing process (Moher et al., 2009). First, we drafted a research question based on a preliminary review of state-of-the-art co-production literature. Second, suitable studies that deal with actor-engagement in co-production processes were identified, using a systematic search strategy. Third, we analysed the studies to determine their quality, based on the eligibility criteria. Finally, the studies that met the eligibility criteria with were included.



## 2. Theoretical framework for analysis

This study adapts and combines two theoretical frameworks into one framework for analysis, as an organizing device for reviewing the literature. Meijer (2015) his framework is based on a distinction between the government and the citizen domain. The author emphasizes the differences between the specific characteristics of government organizations in contrast to the specific characteristics of citizens. Personnel capacity, attitudes of public officials and leadership styles are exemplary characteristics of a government organization, whereas personal profile, intrinsic motivations and awareness are examples of citizen characteristics. These differences result in the distinction between the two domains. The second framework originates from De Vries et al. (2015) their literature review. De Vries, Bekkers and Tummers divide their findings into four categories, whereas each category refers to a level: the environmental level (1), the organizational level (2), the individual level (3), and the innovation level (4). The first three categories are relevant for this study, and the fourth category is changed to the technological level. While Meijer (2015) refers to technical capacity as a characteristic of the government organization, this study places technical capacity, and all other technological aspects, into a separate category. This distinction is made in order to give insight into the influential factors that are related to the increasing use of digital technologies, which is the central focus of this study. Moreover, by placing technological factors into a separate category, it is possible to determine if and when digital technologies may facilitate deeper and greater co-production or act as a barrier to co-production processes (Clifton et al., 2020).

Consequently, the framework used in this study to analyse the literature in a systematized manner consists of four categories that refer to four types of influential factors: environmental/external factors (1), government organization factors (2), technological factors (3), and individual/citizen-related factors (4). With regard to citizens, influential factors are related to motivations to engage, demographic factors, trust and psychological factors (De Vries et al., 2015; Fledderus & Honingh, 2016; Alonso et al., 2019; Purwanto et al., 2018). Second, technological factors relate to influential factors that are linked with digital technologies (as mentioned above), such as access to technology and technological skills (Leao & Izadpahani, 2016; Clifton et al., 2020). Third, influential factors relating to government organizations have been associated with organizational culture, marketing tools, capabilities and resources (Loureiro et al., 2020; Purwanto et al., 2020). Finally, influential factors regarding the environmental level can be related to political factors, social or community factors (e.g. social capital, solidarity), and economic factors (Loureiro et al., 2020; Voorberg et al., 2014). It is possible that other/additional factors will be identified during the analysis of the literature. If these factors are relevant for the engagement of citizens, they will also be included in an inductive manner. This applies to all the categories.

### **3. Research method/methodology**

In line with the literature review from Voorberg et al. (2015), this review makes a distinction between study eligibility criteria and report eligibility criteria, starting with the former.

#### **3.1 Study eligibility criteria**

*Type of service* – First of all, records should deal with a co-produced public service. This study's search string includes several terms to describe active citizen involvement in public service provision processes (e.g. co-creation, co-delivery, participation, shared decision making). Since these concepts seem to be related and are often used interchangeably, adding articles on (political and service specific) participation and co-production in a broad sense can teach us valuable lessons about the engagement of citizens. Therefore, the search string contains the concept of participation and concepts related to co-production. Moreover, the search string includes several policy fields (e.g. health care, childcare, welfare) in which co-production is a common practice. These policy fields are included in order to combine literature and to identify a wide variety of factors that might influence citizen engagement, originating from several fields. However, the literature on volunteerism, customer engagement and public service motivation is not deliberately included in the search string. While the literature on these topics provides an understanding on citizens' willingness and motivations to co-produce, adding these terms would have yielded too many records.

The co-production of services may focus on individual acts, collective acts, and a mix of both individual and collective acts (Pestoff, 2012). Individual acts of co-production can be done in public or at home and are sometimes a necessary or even mandatory part of the service, expected by all citizens that make use of it. Filing an individual tax return is an illustration of an individual act of co-production (Alford, 2002). Collective acts of co-production often concern enduring social services produced by a small group, such as the co-production of childcare services and elder care. Citizens that use enduring social services, are often locked into them. Summarizing, informal or spontaneous co-producing acts are considered, as well as institutionalized and formally organized co-production activities. We focus on citizen engagement in services for which active involvement stems from motivation to contribute resources (e.g. volunteers) as well as services for which active involvement is inherent (e.g. education).

Meanwhile, a distinction is made between traditional co-production processes and digital co-production processes or processes that rely on the use of digital technologies (Kvasnicova et al., 2016). The main focus of this study is to find out whether the literature indicates a change, with regard to citizen engagement, due to governments' increasing use of digital technologies in co-production processes. Therefore, it is important to take into account the differences between digital and traditional co-production processes, when mapping the state of the art.



*Type of participants* – Second, records should contain the words citizen or any related terms in their title, abstract and/or keywords. The view of citizens as participants can be analysed from a public administration perspective and an IT perspective, in which the term ‘citizen’ is often linked to the ‘end-user’ concept (Gil-García & Pardo, 2005). Therefore, the term ‘end-user’ is also included in the search string. Even though the centre of attention of this study is the engagement of citizens, the inclusion of studies that focus on the engagement of other types of end-users (e.g. parents, patients, volunteers, customers) or stakeholders can be a valuable addition. Consequently, the search string includes end-users in a broad sense.

However, the citizen/end-user perspective is not the only perspective that is relevant in this study. The engagement of end-users can also be viewed from a government organization perspective, since the responsibility to actively inform and engage citizens also lies with public organizations (Voorberg et al., 2015). That is why a distinction will be made between the citizen/end-user perspective and the government organization perspective.

*Research design* – Third, the scoping literature review includes all kinds of research designs (e.g. survey, case study, literature review, concept analysis, case study analysis etc.), contradictory to most systematic literature reviews. This leads to the inclusion of empirical research as well as non-empirical research, whereby conceptual studies can be just as relevant. Adding theoretical research can lead to valuable lessons, based on earlier (not self-conducted) empirical research. Considering the limitations of this study and its preliminary and explorative character, it seems important to include non-empirical research as well. Besides, the main focus of this review is to gather information that could indicate a change in the engagement of citizens due to the digitalization of co-production processes (or the increasing reliance on digital technologies), by which the review can be the starting point for more extensive research on this topic. Therefore, it is not necessary to focus only on empirical studies that provide some kind of evidence.

*Type of studies* – Finally, records should deal with factors that influence co-producer’s decision to engage. These influential factors are broadly defined as mechanisms to enhance engagement. Related terms like ‘motivator’, ‘stimulator’, ‘promotor’, ‘driver’ are included in the search string. In addition to the influential factors, records that deal with the methods of engagement are included as well. Adding the methods of engagement provides insight into the question of how citizens get engaged, instead of the question why citizens get engaged.

### **3.2 Report eligibility criteria**

All records should meet the following report eligibility criteria:

- *Year of publication:*  
2000-2021
- *Language:*



English

- *Countries/regions:*

Germany, England, France, Italy, Spain, Netherlands, Poland, Sweden, Switzerland, Belgium, Denmark, Scotland, Austria, Finland, Czech Republic, Portugal, Norway, Greece, Romania, Ireland, Ukraine, Hungary, Wales, Slovakia, Serbia, Croatia, Slovenia, North Ireland, Lithuania, Estonia, Latvia, Luxembourg, Iceland, Bosnia and Herzegovina, Georgia, Moldova, Malta, Macedonia, Montenegro, Albania, San Marino, Andorra (all countries/regions which are part of the European territory)

- *Document types:*

Article, proceedings paper, review, early access, book chapter, data paper

- *Categories:*

- *Management:* public administration, social sciences interdisciplinary, environmental sciences, social issues, political science, sociology, multidisciplinary sciences, psychology multidisciplinary, psychology

### 3.3 Search strategy and study selection

This study uses two strategies to identify eligible studies. First, an electronic search was carried out in the electronic database ‘Web of Science’. The search strategy consists of a topic search (title, abstract and keywords), including words with an interest in the engagement of end-users within co-produced public services. The search string is divided into four categories and set up as follows: Title, abstract and keywords = (citizen\* OR particip\* OR user OR communit\* OR volunteer\* OR “public-private” OR “public-civic” OR “coproducer\*” OR customer\* OR “co-producer\*” OR client\* OR “citizens-users”) AND Title, abstract and keywords = (“public service\*” OR “social service\*” OR “service deliver\*” OR “child care” OR “health care” OR healthcare OR ehealth “OR e-health” OR welfare OR “social innovation\*” OR “self-govern\*”) AND Title, abstract and keywords = (“co-creat\*” OR cocreat\* OR “co-produc\*” OR coproduc\* OR “co-deliv\*” OR codeliv\* OR involv\* OR participat\* OR “self-organi#ation” OR “co-plan\*” OR grassroot\* OR “collaborative govern\*” OR “shared decision-making” OR “joined-up govern\*”) AND Title, abstract and keywords = (motivat\* OR motive\* OR motivated OR driver\* OR choice OR strategy OR facilitat\* OR stimulator\* OR increas\* OR promot\* OR inhibit\* OR mechanism OR capacity OR condition\* OR reason\* OR engag\* OR willing\* OR empower\* OR abilit\* OR opportunit\* OR organi\* OR influen\* OR enhanc\* OR enabl\*). On 9 April 2021, the final search was run in the database, which yielded 67,876 articles. After the report eligibility criteria were applied, a total of 3,185 studies remained. We screened the title, abstract and keywords of these articles, from which a total of 86 studies seemed relevant.

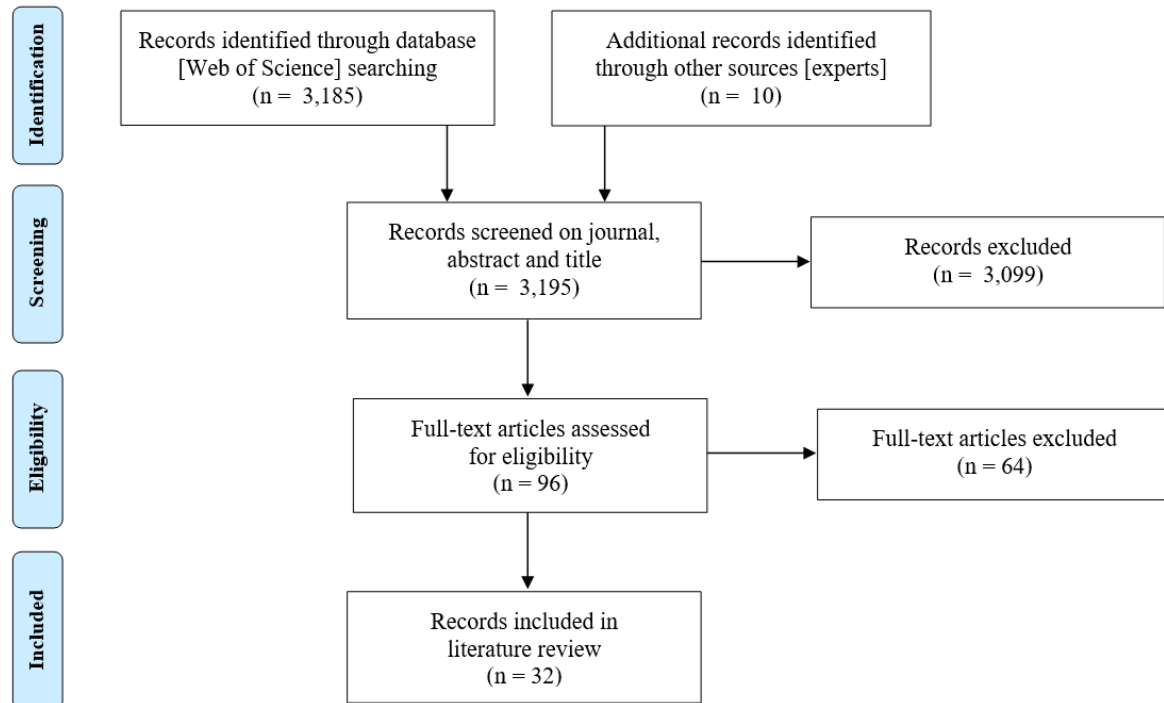
The difference between the number of studies yielded by Web of Science (3.185) and the number of studies eligible for a full-text analyses (86) can be explained by the search string that turned out to be flawed. The aim of the search string was to find studies on end-user engagement in traditional and digital co-production and participation processes, focused on methods of



engagement and/or the underlying motives. In order to ensure that the search string would generate relevant studies, terms related to the focal point were added. After analyzing the studies that were excluded based on their abstracts, it becomes apparent that several terms are responsible for generating the majority of unsuitable studies in Web of Science. For instance, terms included in the search string like health care and welfare are mentioned in the abstracts of many irrelevant studies. Often, these terms are combined with terms related to the concept of participation (participate or participants) and broad terms like conditions or involvement. These unfortunate combinations led to the inclusion of many irrelevant studies, not focusing on user engagement or co-production at all.

In addition, the exclusion of 64 articles after the full-text analyses can be explained by the usage of the eligibility criteria. While the reasons for exclusion vary, most reasons are linked to the study eligibility criteria. A lot of studies focus on the outcomes of a co-production process or the effect of engagement (Tuurnas, 2016; Forbat et al., 2009), rather than the influential factors or methods of engagement (type of study). Besides, many studies focus on value co-creation and the meaning of co-production as a structural transformation (Strokosch & Osborne, 2020; Meijer, 2016), which is not the research focus of this review. In addition, some of the reasons for exclusion are related to the report eligibility criteria (e.g. excluded based on the country/region). Ultimately, 24 studies met both the report and study eligibility criteria and were therefore included.

Secondly, known experts in the field of co-production and citizen motivations were contacted. The experts identified 10 further studies, that were not yet included in the list of eligible publications. Remarkably, some of these studies (e.g. Voorberg et al., 2014) are not included in the Web of Science database and thus impossible to select without other search strategies. It seems as if the use of one database automatically leads to the exclusion of relevant studies. After screening the title, abstract and keywords and subsequently reading the full text, 8 of these 10 articles were included. This led to the inclusion of 32 articles in total. In short, the analysis of 96 publications ultimately led to the inclusion of 32 studies. The selection process, which is based on the PRISMA method, is presented in Figure 3.



*Figure 3*

Additional potential limitations caused using only one database and the terms applied in our search string must be acknowledged. It is possible that relevant studies are missed if these articles are stored within different databases or if the authors used different terminology. However, while potentially worthwhile, the use of two databases and adding terms (like ‘joint effort’, ‘public innovation’ and ‘public service provision’) would have been too time consuming. Therefore, we initially decided to limit ourselves to Web of Science and a restricted number of search terms. In relation to the latter, the search string required the presence of a combination of four types of terms (related to citizens/end-users AND public services AND co-production/participation AND influential factors) in the title, abstract or keywords. This also prevented relevant studies from being generated by Web of Science (e.g. Leao & Izadpahani, 2016). To give an illustration, a study that (only) contains terms on the type of service, the end-users and the motivators in its title, abstract or keywords could be relevant but will not be yielded by the database due to the particular search string.

To compensate the limitations, we will further contact experts in the field of digital co-production or participation and citizen engagement (e.g. during the EGPA Conference in Brussel). Furthermore, we will enhance the use of the snowball sampling technique, in order to identify more relevant studies. Finally, we will make use of a second database to select articles: the International Bibliography of the Social Sciences (IBSS).



#### 4. Findings

*Type of service* - This paper presents the types of services described within the included studies in Table 3. Four types of services are distinguished, which differ in their label (co-production or participation) and the reliance on digital technologies (traditional or digital). As mentioned in the previous chapter, the concepts of co-production and participation are related. Therefore, the studies on traditional co-production and traditional participation are grouped together, as well as the studies on digital co-production and digital participation. Meanwhile, the difference between traditional processes and digital processes is emphasized. Even though specific policy fields were added in which the digital co-production is a common practice (e-health, social innovation), the search only generated 9 studies on digital co-production and 1 study which focuses on both traditional and digital co-production. This shows that while governments' use of digital technologies in co-production processes is increasing and the body of literature is expanding due to a revival of interest, most studies (69%) solely focus on traditional co-production. Hence, there is little evidence on the impact of digital technologies on the engagement of citizens in co-production processes.

*Table 3*

Type	Frequency	Total
Digital co-production	4	12.5%
Digital participation	5	16%
Traditional co-production	18	56%
Traditional participation	4	12.5%
Digital & traditional co-production	1	3%
Digital co-production + participation	9	28%
Traditional co-production + participation	22	69%
Digital & traditional co-production	1	3%

Total n = 32 (100%)

*Perspective* - The focus of this study is citizen engagement in the public service delivery process. Accordingly, several terms in relation to end-user involvement were added to the search string (as stated earlier). The search string did not include terms related to government employees (e.g. public official, professional, public service agent). Yet, the search yielded 9 studies (28%) in which the authors apply the government/organization perspective (see Table 4). For comparison, this review includes 11 studies (34%) in which the end-user perspective is applied. In addition, both the end-user and the government/organization perspective are applied





in a total of 12 studies (38%). This confirms that the issue of citizen engagement in co-production processes is no independent issue that can be approached from multiple perspectives.

*Table 4*

Domain	Frequency	Total
End-user	11	34%
Government/organization	9	28%
End-user & government/organization	12	38%

Total n = 32 (100%)

*Research design* - As Table 5 shows, the engagement of end-users within co-production processes was predominantly examined in an empirical manner. In the sample, almost 70% of the analysed studies are empirical studies. Most of these studies adopted a case study approach (14 = %). Next to the case studies, several surveys and a few experiments are found. The analysis also shows that quantitative methods are used less than qualitative methods (e.g. interviews), which gives the impression that the qualitative approach is prevailing when examining co-production processes. Moreover, the studies (more than 30%) that examined user engagement in a non-empirical manner adopted varying research approaches. These research approaches consisted mainly of (systematic) literature reviews, case study analyses and concept analyses. Lastly, one evaluation was included.

*Table 5*

Design	Frequency	Total
Case study (empirical)	14	43,75%
Case study analysis (non-empirical)	3	9,38%
Concept analysis (non-empirical)	3	9,38%
Evaluation (non-empirical)	1	3,13%
Experiment (empirical)	3	9,38%
Literature review (non-empirical)	3	9,38%
Survey (empirical)	5	15,63%

Total n = 32 (100%)

*Method of engaging* – Before we analyse the engagement methods that emerged from the literature, the issue of initiation regarding the co-production process is discussed. Even though



only four studies mention the possibility, end-users have the potential to engage spontaneously (that is: without being asked or invited). In this case, citizens act as initiators of a co-production process (Voorberg et al., 2014). For instance, it happens regularly that citizens take the initiative to collaborate with the municipality and the local police in neighbourhood watches to co-deliver safety and a liveable neighbourhood (Van Eijk et al., 2017). Research shows that the change of citizens initiating to become co-producers is higher when a family or neighbourhood member draws their attention to the possibility. Additionally, citizens are likely to become co-producers when they witness or recognize a problem, and consequently realize they can be a part of the solution.

More frequently, government organizations act as the initiators of a co-production process. Remarkably, many studies (42% ) mention that end-users were asked or invited without any further explanation. Researchers often do not shine much light on or go into detail about the process of engagement, which seems to indicate that the current view is that end-users should be invited to co-produce. This also indicates that for many researchers the method of engagement is not the central focus (and still a black box). Yet, three broad methods of engagement can be identified within the literature, based on a total of 14 studies (see Table 6).

Firstly, 5 studies show that the engagement of certain end-users is regulated via legislation and policies within organizations. To give an illustration, patients can co-produce their health plan by taking part in focus groups, shared decision making, or even by representing themselves in official bodies (Castro et al., 2016). In addition, it was mentioned in one study that people receiving benefits were obliged by the municipality to apply for a work corporation (Fledderus & Honingh, 2016).

Secondly, government organizations make use of traditional methods to engage users. Several methods emerge from the literature, described in 5 studies. A traditional method can be a local newspaper or newsletter, which provides “information and invitations concerning participatory activities to its readers” (Blakely & Evans, 2009). Leaflets distributed in specific areas to invite residents to participate and addressed letters are also traditional methods. Distributing questionnaires is a traditional way of seeking feedback and user involvement as well (Pemberton & Mason, 2009).

Third, government organizations use methods to engage users that rely on digital technologies. In the first place, Web 2.0 technologies make it possible for government organizations to provide citizens with sufficient information (e.g. via a website) that will help them to decide whether or not they want to co-produce. Moreover, social media is used by government organization to broadcast one-way communication and to facilitate conversations with end-users (Hedestig et al., 2018). Whereas the former tactic has no interest in creating a dialogue, the latter invites citizens to respond and become co-producers. Government organizations can also facilitate communication among stakeholders and citizens, to gain insight about local



topics and current issues that are being discussed online. Furthermore, it is possible nowadays to engage citizens via games (De Lange et al., 2019). An example is the Playful Arts Festival organized in the Netherlands, where players must strategically collaborate and forge coalitions to beat the system. The aim of the game is to make urban public spaces more artful and playful. According to the results, games are an excellent method to involve citizens and to gain their knowledge on data needed assets (Kaupinnen et al., 2016). It seems that game design stimulates creative thinking and inspires players to express their latent thoughts. Lastly, digital technologies make it possible for public officials to apply crowdsourcing and citizen sourcing techniques. With regard to sourcing, mobile phone features are mentioned as a ‘‘unique and unprecedented tool for engaging participants’’ (Leao & Izadpahani, 2016). Citizen- and crowdsourcing can be applied via online surveys, mobile applications, and sensors (Haltofova, 2018; Hedestig et al., 2018). This offers government organizations the possibility to collect a huge amount of information within a relatively small time.

Meantime, the practices of citizen- and crowdsourcing do change end-users’ level of involvement from active into passive. To give an illustration, citizens can sense their local environment by downloading a mobile phone application and monitor noises, whereby the application sends the data to the project server automatically during the process. Hence, citizens’ input does not require their active involvement anymore. Besides, other Web 2.0 technologies can also transform citizen involvement into passive participation, since the main outlet of these technologies seems to be consultation.

*Table 6*

Method	Frequency	Total
Digital method	5	36%
Digital & traditional method	3	21%
Legislative or policy-related method	4	29%
Legislative or policy-related & traditional method	1	7%
Traditional method	1	7%

Total n = 14 (100%)

In summary, the literature shows that government organization mostly invite or ask end-users to engage in a co-production process. These organizations can make use of various manners when inviting end-users, but it is also possible that citizens act as initiators. The number of studies that mention anything on the engagement method is relatively high (17 studies), in relation to the information that is provided and therefore the lessons that are learned on how citizens get engaged in co-production processes. Within 14 of these 17 studies, one or multiple methods of engagement are identified.



It is interesting that 57% of the methods that are mentioned are digital methods or digital and traditional methods combined, since only 10 (31%) of the included articles focused on digital co-production or digital and traditional co-production. This means that 8 out of 10 studies (80%) on digital co-production (or digital and traditional co-production) described the method of engaging end-users, in contrast to 7 out of 22 studies (32%) on traditional co-production. The increasing attention to the engagement method might be related to the use of digital technologies in co-production services, which might indicate a significant change in engaging citizens. Besides, traditional methods are gradually being replaced by digital methods (Breit & Salomon, 2015). These digital methods are constructed in a manner that they encourage or require self-service.

*Influential factors* – It is no surprise that all the included articles contain at least one influential factor, and often several factors, given the focus on drivers and motivators in the search string. We first present the environmental factors, followed by organizational factors. Subsequently the technological factors are discussed. Finally, the individual factors are presented. A distinction is made between factors that are identified within studies on traditional co-production, as opposed to digital co-production, in order to take the possible differences into account.

#### *Environmental/external factors*

The environmental or external factors are identified within 15 studies, from which 14 focus on traditional co-production and 2 on digital co-production (one study focuses on both traditional and digital co-production). As presented in Table 7, a total of 6 environmental factors are identified.

Location – The first influential factor relating to the environment is a rather pragmatic factor. For instance, the location of a co-production site should be easy to reach (Pemberton & Mason, 2009). Furthermore, one study shows that citizens choose not to participate due to the location of a certain project (Stoutgaard, 2020). The project focused on helping and trying to benefit women with social problems, and it was public knowledge that this project was located in a building from the municipality. In this case, women felt that by participating their personal situation would become notorious due to the location. If other people would be present in the building, the women could be recognized and labelled.

Political factors – Within the co-production literature, the role of political attitude towards or political attention for initiatives where citizens are actively engaged is often mentioned. Political motivations can potentially enhance or hinder citizen involvement, as this practice depends on the political prioritizing of interests and resources (e.g. time and money). To give an illustration, increased political attention for co-production processes can create opportunities to implement this type of practices in official policies (Voorberg et al., 2014). Hence, politically motivated governments prioritize and promote co-production processes (Clifton et al., 2020).



Regulation – Well-defined and clear regulation promoting co-production processes can facilitate citizen involvement in public service delivery (Pestoff, 2012). All over the world, governments set the rules of the game with regard to public service provision. Therefore, governments’ understanding and support for co-production developments can make a significant difference. Meanwhile, a complex regulatory framework can prevent co-production.

Reputation – One study shows that a positive reputation, with regard to a co-production project, attracts new participants and helps expanding the initiative (Voorberg et al., 2014). Therefore, if a co-production project gains a good reputation (e.g. a reliable service or valuable platform), it will help the project to evolve and proceed.

Social capital – The environmental/external factor that is mentioned most (52%) within the literature is ‘social capital’. This concept refers to “the extent in which trustworthy relations between actors helped form a fertile breeding ground for co-production”, according to Voorberg et al. (2014). The main idea is that collective action can be initiated more easily if citizens are tightly connected within a social network or an imagined community. At the neighbourhood level, higher co-production activities are linked to the degree of neighbourhood associations activity (Thijssen & Van Dooren, 2016). The literature even suggests that social networks, in which social contact is generated between people with similar interests, is perhaps the most powerful influential factor for co-production (Loeffler & Bovaird, 2016). Social capital provides citizens with the opportunity to acts as co-designers and co-implementers. In addition, the concept of solidarity is highly related to the concept of social capital, as solidary motivations refer to the desire for belonging and group affiliation (Alford, 2002). Solidary rewards can foster engagement and compliance, since the desire to belong, to be a member of a group and to socialize are directly connected to citizens’ willingness to participate (Vanleene et al., 2017). Besides, working together and associating with others feels rewarding to many citizens, not only because it gives them a chance to develop a sense of identification, but also because the simple fun it provides.

Trust – Finally, citizens with low levels of trust in public or political institutions are often less convinced by the benefits of co-producing than citizens with higher trust levels (Fledderus & Honingh, 2016). Consequently, a general lack of trust in the government or politics tends to reduce citizen engagement in co-production processes (Clifton et al., 2020). This influential factor relates to the concept of external efficacy (individual/citizen-related factor).

*Table 7*

Factor	Frequency	Total
Location	2	9%
Political factors (attitude/attention/motivations)	4	17%



Regulation	2	9%
Reputation	1	4%
Social capital	12	52%
Trust (government/politics)	2	9%

Total n = 23 (100%)

*Organizational factors*

In a total of 16 studies, 14 influential factors that relate to the organizational level are identified (see Table 8). Whereas 10 of the 14 organizational factors are discussed in two or more studies, 4 factors are only discussed in one study. It is interesting that all the organizational factors are identified within studies on traditional co-production, as it was expected that studies on digital co-production might identify organizational factors as well. The factors are presented in alphabetical order.

Administrative culture – An organizations’ administrative culture is a predictor of co-production according to four studies. The administrative culture is defined as the level of risk-aversion, whereby a more risk-averse culture can hinder co-production processes (Alonso et al., 2019; Loeffler & Bovaird, 2016). Many public managers and professionals still see co-production as a highly risky practice, since the behaviour of passive users is easier to predict and understood in contrast to active users and citizens. Besides, citizens are not trusted as relevant resources in this case (Voorberg et al., 2014). Moreover, many public organizations are characterized by a bureaucratic culture which makes organizations conversative and less inviting towards the involvement of citizens in public service delivery.

Attitude – The literature indicates that the attitude of a government organizations’ management is an important influential factor. If top managers perceive co-production as losing control over a service, in combination with an inherent reluctance to lose control, they will limit co-production efforts and available resources within their organizations (Loeffler & Bovaird, 2016). In addition to the attitude of top managers, the attitude of public officials seems to be an important influential factor as well. However, conflicting results emerge from the literature. Whereas one study shows that the attitude of public official does not predict co-production (Alonso et al., 2019), other studies provide evidence for the opposite (Van Eijk et al., 2017; Castro et al., 2016). Voorberg et al. (2014) provide a more nuanced view, by mentioning that the attitude of public officials is only influential in case of a strong dependent relationship between initiators and government. This indicates that the attitudes of public officials are influential when initiatives cannot be developed independently from governmental interference. Moreover, this influential factor is identified most in the literature (in 7 out of 16 studies).

Compatibility – Organizations need to be adapted to actively involve citizens in co-production processes. This idea refers to the concept of compatibility (Alonso et al., 2019; Voorberg et al., 2014). Co-production entails formal structures, procedures, routines, and systems (e.g. communication structures) that need to be institutionalized to provide end-users with systematic opportunities to co-produce (Castro et al., 2016).

Ease of involvement – This influential factor relates to two other organizational factors, namely: professional support and information. It is not always easy for citizens to participate (Vanleene et al., 2017). Therefore, government organizations (as service providers) should ease or facilitate citizens' involvement. Possible manners to ease or facilitate involvement consist of providing citizens with the information available about the co-production process and creating room to participate (Pestoff, 2012; Van Eijk et al., 2017).

Gender balance – One study shows that women's willingness to co-produce increases when females are more represented in the service providing organization (Ricucci et al., 2016). Hence, the gender balance in a government organization influences citizen engagement and should be equally distributed in order for women to participate more. On the part of men, they seem to be less responsive to the gender balance.

Government initiative – Whether or not government co-production initiatives increases citizen engagement depends on the specific task that can be co-produced and citizens' need for it. Empirical research shows that when governments provide parents with information and materials, they will help their child(ren) with homework to an increased extent (Andersen et al., 2020; Jakobsen, 2013). Meanwhile, parents did not read more often with their child because of the government initiative. Taken together, the results indicate that government initiatives can increase citizen engagement.

Incentives – The literature indicates that it is important for government organizations that clear incentives are present to involve citizens within the public service delivery process (Voorberg et al., 2014). For instance, it should be clear if the incorporation of citizens improves public services and leads to financial rewards. Whenever there are limited incentives, it is difficult for public officials to legitimize the involvement of citizens. In short, knowledge on the added value of co-producing with citizens influences co-production processes.

Information – Related to the ease of involvement, the available information or actively being informed is an organizational factor. It might seem obvious, but the advice or information that is exchanged is not always understandable, individually adapted or meaningful (Castro et al., 2016). The responsibility to inform citizens or end-users generally lies with the government organization (Alford, 2002).

Material rewards – Government organizations are aware of the fact that citizens do not solely co-produce for material rewards (Vanleene et al., 2017). The motivations of citizens behind co-



production are often more comprehensive than purely material ones (Alford, 2002). However, when citizens perform frequent, short and relatively simple tasks, material rewards will motivate since there are no other benefits linked to co-producing this type of tasks.

Personalization – In health care organizations, the level of personalization and user-centricity of the care approach relates to the degree of active (patient) involvement and thus the level of participation (Graffigna, 2017).

Quality of the service – The quality of the public services that local governments provide may vary. Alonso et al. (2019). show that the delivery of high-quality services is a key factor in shaping co-producing behaviour. Respectful and responsive treatment of users is likely to enhance the quality of a service, and therefore the motivation to co-produce (Alford, 2002).

Recruitment – Active citizen recruitment (being asked) enhances the likelihood of citizen engagement (Simmons & Birchall, 2005). The effectiveness of active recruitment depends on the connectedness of citizens to the recruitment agents, whereby a higher level of connectedness increases the effectiveness of recruitment. Anyhow, active recruitment in combination with a low level of connectedness influences citizen engagement more than passive recruitment.

Sanctions – The literature provides information on two types of sanctions: material sanctions and non-material sanctions (Alford, 2002). An illustration of a material sanction is reducing citizens’ benefits when they do not want to cooperate. A non-material sanction can be using citizens’ moral values to influence them. However, Alford (2009) shows that the effect of sanctions can be ineffective and even counterproductive. A situation in which the presence of sanctions can have a positive effect, is when collective value is being produced (Alford, 2002; Vanleene, 2017). If sanctions can be enforced against non-compliers, it is possible to provide a guarantee that it is a fair process to which citizens will be contributing. Thus, the presence of sanctions can reassure and convince co-producers to get engaged.

Support – Finally, several studies show that public employees can support and encourage citizens to co-produce (Van Eijk & Gascó, 2018; Loeffler & Bovaird, 2016). To give an illustration, government organizations can offer training programs and provide necessary resources, also in terms of money (Stoutgaard, 2020). Public sector support can also assist citizen initiatives, sometimes it is even necessary in order to get the initiative launched.

*Table 8*

Factor	Frequency	Total
Administrative culture	4	10,81%
Attitude (management/public officials)	7	18,92%
Compatibility organization	4	10,81%





Ease of involvement	3	8,11%
Gender balance	1	2,7%
Government initiative	2	5,41%
Incentives	2	5,41%
Information	1	2,7%
Materials rewards	1	2,7%
Personalization	1	2,7%
Quality service	3	8,11%
Recruitment	2	5,41%
Sanctions	2	5,41%
Support	4	10,81%

Total n = 37 (100%)

*Technological factors*

Even though 10 studies focus on digital co-production, only 3 of these studies contain technological factors. The studies on digital co-production and citizen engagement seem to be primarily focused on the method of engagement. In addition, two technological factors (without further explanation) are identified within a study focussing on traditional co-production. This results in a total of 4 technological factors in 4 studies (see Table 9).

Access – The decision of citizens whether to engage or not depends on the access to specific devices required, in case of digital co-production (Leao & Izadpahani, 2016). To give an illustration, the intention to participate is influenced by the access to suitable devices in mobile sensing programs. The sensing program described in Leao & Izadpahani (2016) their research developed an application for one particular mobile operating system (IOS) and a few selected devices, which limited the participation possibilities. Regardless of citizens’ motivations to engage, only those with suitable devices could actually do so. In addition to a lack of digital technologies, inadequate technology can also hinder participation. Whereas the former study understands access as material access to mobile devices, it can also be understood in terms of citizens’ ability to access a specific digital service (Breit & Salomon, 2015). Regarding the latter, the concept of access relates to the technological factor ‘skills’. Furthermore, personal pages on web pages often require authentication before they can be accessed. Breit & Salomon (2015) mention in their study that several users were not able to get access, because of the new authentication methods (even though the users had experience with Information and



Communication Technologies (ICT) usage). Some of the users that were unable to get access did not understand the login process, while others simply forgot or misplaced their password.

Attitude – Clifton et al. (2020) show that a negative attitude towards digital technologies is likely to reduce citizen engagement in ICT-enabled co-production processes. For instance, citizens feeling that digital technologies may disrupt existing social dynamics are not likely to get engaged. Whereas citizens with a positive attitude are more likely to get engaged, because they might feel that digital technologies can increase new manners of collaboration. Besides, a negative attitude is often closely related to a lack of technical skills, which is discussed below.

Skills – ‘Skills’ seems to be an important influential factor, as all the articles that contain technological factors mention it. This influential factor relates to the ability of end-users and public employees to properly use digital technologies, which is connected to their technological knowledge (Breit & Salomon, 2015; Leao & Izadpahani, 2016). Technological or digital skills can be explained as the ability to manage computer software and hardware, or in general terms: “the ability to use technology for specific purposes” (Breit & Salomon, 2015). Research shows that the possession of digital skills enhances citizens’ willingness to engage in digital co-production processes. On the other hand, a lack of technological skills can reduce citizen engagement (Clifton et al., 2020). Citizens with the lowest levels of digital skills often do not make use of digital services, let alone co-produce them, leaving them disadvantaged.

Systems – Lastly, service user information systems can be used to tailor co-production offers to specific interests and needs (Clifton et al., 2019). However, tailoring service offers is still unusual in the public sector and the service user information systems are often underdeveloped. Service user information systems thus allow government organizations the practice of targeted marketing, in order to attract citizens. Applying and refining these systems can enhance user engagement.

*Table 9*

Factor	Frequency	Total
Access	3	33,33%
Attitude	1	11,11%
Skills	4	44,44%
Systems	1	11,11%

Total n = 9 (100%)

Current literature focuses on ICT-related barriers and drivers for engagement, while there is little research conducted about the ideal setting to enable digital co-production processes. Meantime, due to the incorporation of digital technologies into governments’ daily activities, it



can be assumed that digital co-production will become the standard approach (Leao & Izadpahani, 2016). Thus, while there is not much evidence available yet on technological factors influencing citizen engagement, it is to be expected that this will change in the near future.

#### *Individual/citizen-related factors*

It is interesting that while 25 studies discuss engagement from the end-user perspective and 21 studies from the government organization perspective, the number of individual factors encountered is significantly higher. A total of 24 studies contain individual/citizen-related factors, whereas 4 of these studies focus on digital co-production, 20 focus on traditional co-production. Within these studies, 16 influential factors are identified, as presented in Table 10.

Altruism – Personal incentives per se are not important to citizens with a high level of altruism (Van Eijk et al., 2017). Altruists often do not have a concern on the basis of which they decide to participate, with regard to the co-produced service. These people are driven by altruistic values, stemming from identification with collective purposes or fellow feelings with other people (Van Eijk & Gascó, 2018). Altruistic values are stimulated by feelings of trust and social norms.

Awareness – In order for citizens to get engaged, they need to be aware of the existing opportunities to participate (Pemberton & Mason, 2009). Often, citizens who are not interested in co-production do not bother to seek information and thus are not aware of the opportunities (Breit & Salomon, 2015). Hence, a lack of awareness prevents active citizen engagement.

Community – One study suggests that citizens taking responsibility for their community is a primary mechanism in citizens’ willingness to participate (Van Eijk & Gascó, 2018). In this case, the aim of engaging to a co-production process is to enhance the quality of life in a certain community. A (health care) organization can also be understood as a community, in which client council members try to contribute to the functioning of organization (Van Eijk & Steen, 2014).

External efficacy – Citizens have certain beliefs about the responsiveness of institutions or governmental authorities, in relation to their demands (Van Eijk & Gascó, 2018). The concept ‘external efficacy’ refers to these perceptions and influences citizens’ decision to get engaged. To give an illustration, users who believe that they receive sufficient opportunities to change an organization and have a voice within this organization are more likely to join a client council, and thus to co-produce, than users with a contradictory view (Van Eijk & Steen, 2015).

Interest – According to Pestoff (2006), citizens’ willingness to co-produce may originate from their perceptions on co-production, whereby co-production can be seen as a worthwhile, enjoyable or interesting activity. For instance, clients often choose to co-produce because they would like to know what is going on within their organization and by co-producing they get the opportunity to receive information directly from their managers (Van Eijk & Steen, 2016).

Internal/self-efficacy – The literature refers to self-efficacy (also called internal efficacy) as people their perceived perception on- or their beliefs in one’s competencies, in relation to effectively understanding and affecting (by means of participation) co-production processes (Van Eijk & Gascó, 2018). Citizens with a high sense of self-efficacy are more likely to be motivated to engage. While most studies (e.g. Thomsen, 2017) indicate that feelings of personal competencies are relevant drivers, one study “does not confirm the importance attached to the concept of internal efficacy” (Van Eijk & Steen, 2014).

Medium - The literature on digital co-production does not contain significantly different individual factors than the literature on traditional co-production. Only the individual factor ‘preferred medium’ indicates a change, regarding citizen engagement. Thijssen & Van Dooren (2016) state that the preferred reporting medium is different for younger and older users. Their results show a negative correlation between e-mail reporting and age, confirming the digital divide. In addition, Clifton et al. (2020) state that males are more likely to get engaged in ICT-enabled co-production processes.

Normative appeals – Normative appeals or purposes are related to people their citizen-duty and belief in democracy (Alford, 2002; Vanleene et al., 2017). When the motivations of citizens are normative, citizens’ decision to get engaged is based on their belief system which claims it is right, or at least the norm, to do so. These citizens feel as if it is logical to contribute to public service delivery. For instance, people who receive benefits from the municipality often believe they should do to something in return (Fledderus & Honingh, 2016)

Ownership – If citizens have a feeling of ownership about a specific cause, city or neighbourhood, they are more likely to get engaged in co-production processes (Voorberg et al., 2014). While the feeling of ownership often originates from geographical orientations, it is also possible that citizens have a moral orientation. Anyhow, citizens can feel a sense of ownership towards a public service and a lack of ownership can hinder the decision to engage (Stoutgaard, 2020).

Resources – According to Loeffler & Bovaird (2016), discretionary time is the most important resource in many co-production projects. The availability of time influences whether participants get engaged or not (Simmons & Birchall, 2005), whereby a lack of time hinders the possibilities for citizen engagement. Due to the fact that time is a finite resource which cannot be stored or acquired, people’s choices among activities and behaviour is influenced by the amount of time they have (Leao & Izadpahani, 2016). In short, time is a necessary resource without citizens cannot co-produce.

Rewards – The literature makes a distinction between extrinsic or intrinsic rewards, and material or immaterial rewards (Van Eijk & Gascó, 2018). First, intrinsic rewards are the outcomes of inwardly driven motivators. These rewards are related to immaterial rewards and are also called internal benefits. Examples of intrinsic rewards are achieving one’s ethical

values or finding one's spiritual values (Alford, 2009; Loeffler & Bovaird, 2016). Additional intrinsic rewards can be increased procedural fairness or the good feeling derived from taking part in a co-production process (Alford, 2002; Simmons & Birchall, 2005). Pestoff (2012) states that intrinsic rewards are powerful motivators, due to the fact that citizens are seldom solely motivated by self-interest. Second, extrinsic rewards often refer to self-centred motivations, which can be linked to the calculated costs of participating. In most cases, citizens will get engaged when the rewards outweigh the costs (Van Eijk et al., 2017). Extrinsic rewards that are mentioned in the literature are the enjoyment of showing excellence in activities, the usage of capabilities otherwise not exercised in daily life, the acquirement of social esteem and status within a peer group and the satisfaction of expressing uniqueness (Loeffler & Bovaird, 2016). In addition, aspects such as feeling acknowledged and developing oneself are mentioned (Van Eijk & Steen, 2016). Third, material rewards (external pressure) are important from an economic perspective, whereby money is the most common material reward (Van Eijk & Steen, 2014; Alford, 2009).

Saliency – Citizens' perceived importance of a service depends on whether the service affects them, their loved ones and their lives, and if their lives can be changed indirectly or directly (Pestoff, 2012). This perceived importance of citizens is called the saliency of a service. Saliency helps to explain why citizens choose to co-produce. "When citizens feel that the service is important, they will be more likely to get involved and be motivation in the co-production of services" (Vanleene et al., 2017). People who are unsatisfied will find it more important and relevant to participate, which results in a significant increased intention to participate (Simmons & Birchall, 2005). Similarly, if citizens feel no necessity or attachment to a project, it is difficult to engage them (Vanleene et al., 2017). Moreover, when citizens are motivated due to feelings of dissatisfaction about the current situation, co-production is used to answer government failure (Van Dooren & Thijssen, 2015). This is called demand driven co-production.

Self-interest – Research shows that while it is possible that citizens get engaged to pursue self-centred aspects, most citizens often disagree with or are neutral towards egoistic-based statements (Van Eijk & Steen, 2014). In the past, it was commonly assumed that the decision to co-produce was based on the acquired benefits. However, Alford (2002) showed that citizens do not co-produce to increase the quality of the service they enjoy and thus are not utility maximisers.

Skills – This individual/citizen-related factor consists of two dimensions. One the one hand, the presence of the right skills (e.g. social skills and communication skills) is a precondition for citizens to get engaged. Skills are indicated by previous experience, training and educational qualifications (Simmons & Birchall, 2005). To give an illustration, users which had received higher education are more able to articulate their needs and often possess administrative skills (Van Eijk & Steen, 2016). Therefore, education and training seem crucial for user engagement,



as users need to possess the right knowledge and skills (Castro et al., 2016). On the other hand, citizens are more likely to engage in co-production processes where they can learn something and thus enhance their skills. Co-production processes can hone dialogue and communication skills (Loeffler & Bovaird, 2016), which is an important motivator to get engaged.

Socio-demographic factors – Socio-demographic factors include: age, sex, education, migration background, ethnicity, religious affiliation, marital status, household, employment and income (Van Eijk & Steen, 2014). Within the literature, there seems to be no agreement on the effect of socio-demographic factors. While some studies (Van Eijk & Gasco, 2018) show the impact of certain socio-demographic factors on the decision of citizens to participate (e.g. education and income), other studies (Graffinga, 2017) find no correlation between motivation and citizen characteristics (e.g. age, gender, education, and income).

Trust – Lastly, the individual/citizen-related factor trust has four aspects which affect citizen engagement. Fledderus & Honingh (2016) show that the presence of trust in the work corporation, trust in the municipality and trust in fellow citizens or generalized trust (if cooperation with a group of participants is required) may be important preconditions for citizens to get engaged. In addition, citizens need to trust the co-production initiative in order to actively engage, in contrast to a risk-averse attitude (Voorberg et al., 2015).

*Table 10*

Factor	Frequency	Total
Altruism	1	1,01%
Awareness	3	3,03%
Community	9	9,09%
External efficacy	4	4,04%
Interest	4	4,04%
Internal/self-efficacy	10	10,1%
Medium	1	1,01%
Normative appeals	4	4,04%
Ownership	3	3,03%
Resources (time)	10	10,1%
Rewards (intrinsic/extrinsic/material/immaterial)	10	10,1%
Salience	11	11,11%
Self-interest	5	5,05%



Skills	10	10,1%
Socio-demographic factors	10	10,1%
Trust	4	4,04%

Total n = 99 (100%)

The findings show that citizens’ decision on whether to get engaged in a co-production process or not can be driven by all kinds of values and motivations. The individual/citizen-related influential factors are presented separately, only considering one factor at a time. This also applies to the environmental/external factors, organizational factors and technological factors. Nevertheless, several influential factors are related to each other or can be combined, which can provide a more nuanced or mixed picture of citizen engagement. Simmons and Birchall (2005) emphasize the connectedness of the influential factors and give two illustrations. First, they state that simply training people’s skills is insufficient, unless a government organization provides the appropriate opportunities to use those skills. Second, the authors mention that appealing to people their community incentives is not sufficient if there is no active recruitment. In short, “different factors working at different levels have a role to play in whether or not public service users participate” (Simmons & Birchall, 2005). Hence, active citizen engagement in co-production processes requires a combination of factors to be in place and is triggered by different rationales. However, it is possible to predict, plan and then act upon these factors.

## 5. Conclusion

This paper has reported the preliminary results of a literature review on the influential factors and methods of citizen engagement within co-production processes, which attempts to summarize and combine existing research on the topic of digital and non-digital co-production and identify both findings and gaps. The following questions have been formulated: what do we currently know about the methods and motives underlying citizen engagement in co-production processes? And, does the literature indicate a change, due to the increasing amount of governments’ usage of digital technologies in co-production processes (Clifton et al., 2020)? This leads to the following sub questions: “how do actors get engaged (and remain engaged) in co-production processes?” and “why do actors get engaged (and remain engaged) in co-production processes?”. The framework used in this study to analyse the literature consists of four types of influential factors: environmental/external factors, government organization factors, technological factors, and individual/citizen-related factors.

The results on methods of citizen engagement within co-production processes are divided into type of services, perspectives, research design, methods of engagement and influential factors. The findings on type of service shows that while governments’ use of digital technologies in co-production processes is increasing and the body of literature is expanding, most studies



mainly focus on traditional co-production. When it comes to perspective, the literature shows that most authors applied the end-user perspective. Furthermore, the results on research design show that case study is the most adopted approach. Finally, the results on engagement shows that digital methods or digital and traditional methods combined are the most mentioned.

The results show that when it comes to environmental/external factors there are a multitude of factors that influence the decision of citizens to join in on co-production. Social capital and political motivations are the two environmental/external factors that are mentioned the most within the literature. The other factors are the location of co-production, well-defined and clear regulation and trust in the government or politics that are mentioned to have influence on the decision of citizens to join.

The literature on organizational factors shows that attitude, administrative culture, compatibility and support are the most recurring factors in the literature. The attitude of a top manager or public official could determine the co-production efforts and available resources within their organization, but there are conflicting results on this in the literature. Next, the results on compatibility and administrative culture show that organizations need to be adapted to actively involve citizens in co-production processes and that an organization's administrative culture is a predictor of co-production because the administrative culture is defined as the level of risk-aversion whereby a more risk-averse culture can hinder co-production processes. Support is also a recurring factor because public employees can encourage citizens to co-produce. There are other factors that have been mentioned in the literature. These being the easiness for citizens to join in, the gender balance, the incentives of government to involve citizens, the responsibility to inform citizens, citizen's motivation to join, the level of personalization and user-centricity, the delivery of high-quality services, active recruitment of citizen engagement and the presence of sanctions.

The most recurring technological factors are skills and access, with skills referring to the possession of digital skills enhancing citizens' willingness to engage in digital co-production and access referring to the decision of citizens to engage depending on the accessibility to specific devices. The other mentioned factors are attitude towards digital technologies and service user information systems being used to tailor co-production offers.

The results on Individual/citizen-related factors show that salience, internal/self-efficacy, resources, rewards, skills, socio-demographic factors and community are the most recurring factors. Salience refers to citizens' perceived importance of a service, which depends on whether the service affects them, their loved ones and their lives, and if their lives can be changed indirectly or directly. Citizens with a high sense of self-efficacy are more likely to be motivated to engage. The availability of time influences whether participants get engaged or not. Intrinsic rewards are powerful motivators, due to the fact that citizens are seldom solely motivated by self-interest. Second, extrinsic rewards often refer to self-centred motivations,





which can be linked to the calculated costs of participating. In most cases, citizens will get engaged when the rewards outweigh the costs. Even though socio-demographic factors are one of the most recurring factors in the literature, there seems to be no agreement on the effect of socio-demographic factors on citizen participation. Citizens taking responsibility for their community is a primary mechanism in citizens' willingness to participate. The other mentioned factors are altruism, awareness, external efficacy, interest, medium, normative appeals, ownership, self-interest and trust.

It can be concluded that the studies that focus on digital co-production mostly focus on the method of engagement, whereas the studies on traditional co-production focus more on the influential factors. This seems to indicate a change. The findings also show that there is little evidence on the impact of governments' increasing use of digital technologies in public service provision processes on citizen engagement.

One of the questions that can be drawn from the findings is whether or not digital co-production is really co-production? An example would be that citizens could co-produce via an app. The question is then, could this be considered co-production? Another aspect to consider is that due to digital co-production, public officials might keep citizens at a distance because digitalisation makes it easier for them to gather information. Therefore, direct interaction with citizens wouldn't really be necessary. Again, is this still considered co-production?

Furthermore, it is good to keep in mind that this literature review is meant to showcase an overview of the existing literature and to suggest follow-up research. The literature that was used doesn't encompass all the existing literature on the topic. Not to mention that the literature that is used, on occasion, shows to be contradictory. For example, even though socio-demographic factors are one of the most recurring factors in the literature, there seems to be no agreement on the effect of socio-demographic factors on citizen participation

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## 6.2 Food banks case

This case is a hypothetical case, based on Baglioni et al. (2017), used to illustrate and explain possible governance issues (see Table 11).

In high-income countries, food poverty (affecting a large section of the global population) and everyday edible food waste are serious problems. People should have access to safe, nutritious and sufficient food to meet dietary needs and food preferences, for a healthy and active life. In reality, the number of undernourished people has slowly been increasing for a decade now, also in high-income countries. The link between social exclusion and food access remained unacknowledged for a long time. Therefore, food systems should be reconsidered and combined with social protection mechanisms and safety nets for the most vulnerable.

In Germany, food banks are traditionally organized by civil society (grassroots). Food banks are frontline organizations that distribute food hampers to those in need (they can be seen as a distribution center). Most of the time they are locally based and heavily relying on volunteers. While these food banks (services) have functioned sufficiently for several years, problems have now been identified and abuse has occurred. This calls for a reconsideration of the organization of the service. Therefore, an open exploration will take place. Due to recent misconducts by users, there is a need to organize food banks in closer relation to local governments. That is why the current organizers asked the local government to get involved and develop a new approach. At this stage, the organizers and local governors consider a co-productive approach (that will strengthen the link between municipalities and food banks) and the use of digital technologies to distribute and control the provided service (in order to keep up with recent developments and rapid technological change).

*Table 11*

Phase	Objective	Questions	Governance issues
Engage-ment	Identify	<ul style="list-style-type: none"> <li>• Which stakeholders should be involved in the process?</li> <li>• Who would use this service? (personas)</li> </ul>	(1). Possible stakeholders: <ul style="list-style-type: none"> <li>• Public employees (representatives of the local governments/municipalities)</li> <li>• Food bank employees</li> </ul> Front-line employees & logistical employees <ul style="list-style-type: none"> <li>• Volunteers</li> </ul>



			<p>(Most of the time front-line volunteers)</p> <ul style="list-style-type: none"> <li>• Donors/sponsors</li> </ul> <p>Possibly private companies</p> <p>(2). Possible end-users:</p> <ul style="list-style-type: none"> <li>• Beneficiaries/end-users</li> </ul> <p>The users will be asked to volunteer, in order to be entitled to make use of the service</p> <p>The real issue is to select the crucial/relevant stakeholders that will be part of the co-production process. Relevant stakeholders are the people that are (directly or indirectly) affected by the service or people that can influence the service.</p> <p>Stakeholders can be asked to get involved via an official invitation, based on random selection of each stakeholder group. However, the engagement of stakeholders depends on the positioning of the food banks in relation to the local context they are part of (other organizations/volunteer networks for example).</p>
	Focus	<ul style="list-style-type: none"> <li>• What is the problem that must be solved?</li> <li>• What could the service look like?</li> <li>• By what criteria should a solution be</li> </ul>	<p>(1). The starting point of the ‘food banks’ discussion were the problems around food waste and food poverty. Right now, the specific problem in this case is that due to recent misconducts by users, there is a need to re-organize food banks in closer relation to local governments: the current</p>





		<p>considered successful, or a failure?</p> <ul style="list-style-type: none"> <li>• What are user and supplier preferences concerning data? (ownership, minimization, responsibility, sharing, archiving, anonymity)</li> </ul>	<p>organization (civil society) is not sufficient and requires a redefined role for the municipality.</p> <p>(2). The issue is to design a new approach for an existing service which does not function (any longer) as hoped. This requires a restructuring of the service and the provision process. In the engagement phase, it is important that the parties involved accept that the municipality will be given a more dominant role and that the municipality is also able and willing to play this role. At this stage, the organizers and local governors consider a co-productive approach whereby digital technologies will be used to distribute and control the provided service. In order to realize this, the new service could rely on a new app that beneficiaries can download and use. <i>This idea will be discussed within the design phase.</i></p> <p>(3). One of the first challenges is to come up with an effective format to engage stakeholders; this could for example be a roundtable, a survey, an open meeting or a brainstorm session. The main goal is to develop a shared language and problem definition. Developing a shared understanding is crucial to be able to decide on success or failure and about the way the service should look like.</p> <p>(4). In the engagement phase, it is necessary to gauge what degree of anonymity relevant stakeholders want.</p>
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			<p>Since food banks have access to the beneficiaries’ data, which contains sensitive/personal information like family situations and social or legal status, and there is a need to share data with the municipalities (in order to collaborate), it is important to make clear agreements on the supplier and user preferences regarding data and privacy.</p> <p>Privacy and anonymity should be central points of attention within this service, since users are often vulnerable citizens. Issues surrounding data (sharing, storage) should be handled carefully.</p>
Go/No-go	Co-evaluation	<ul style="list-style-type: none"> <li>• Is there a clear and accepted concept that can be developed further?</li> <li>• Will it be viable and sustainable once deployed?</li> </ul>	<p>(1). After numerous discussions, debates and meetings; finally an agreement has been reached. This agreement led to the acceptance of the new division of roles. Apart from the initial struggle, the private initiatives (civil society) accept that the municipality will have a bigger say and will gain more control over them and that the new design of the service has a stronger digital/administrative character. In addition, the municipality accepts its new role. However, in order to accept their new role, the municipality demanded that the presidency should be held by a public employee instead of a civil society actor (power play). Therefore, there was a need to appoint a new board.</p> <p>(2). The requirements from those involved finally match the ideas about the</p>



			restructured service and will turn out to be effective, tailored, and efficient.
	Team formation	<ul style="list-style-type: none"> <li>Who should be on the team(s) in the next phase?</li> <li>What support do they need?</li> </ul>	<p>(1). There is agreement on the co-production team, since the initial conflict is resolved. Public officials from several departments wanted to interfere with the design of the service, which led to unclarity and tensions within the municipality. The civil society actors demanded clarity, before entering the design phase. This led to the exclusion of a few stakeholders from several departments, only one department of the municipality can be involved.</p> <p>Now, the people that need to be involved during the next phase(s), given their specific task, role, and expertise, are part of the team and these people accept their (new) tasks.</p> <p>The public officials that are left out of the co-production process feel dissatisfied and seem less willing to help out when needed.</p>
D Design	Technical design	<ul style="list-style-type: none"> <li>What kind of expertise is needed to create the service?</li> <li>What are the technical requirements to make the service work?</li> </ul>	<p>(1). Functionality specification (use case specification, user interface designing, software architecture design, data model design, API design (if applicable), software development) and data filtering</p> <p>(2). At this stage, one can think about the information systems (food banks and</p>



			<p>municipalities) that will need to be coupled. From a governance perspective this is related to privacy issues and value driven design.</p> <p>Technical expertise is needed to create the new app that will be used by the beneficiaries of the service. The app should provide several features/possibilities. For example: the app should enable people to plan their visits to the food bank (shared calendar) and the app should enable people to list their dietary requirements.</p> <p>In order to guarantee privacy, the food bank could work with numbers instead of names (anonymization). However, employees/volunteers still have to pack the crates so they will come into contact with sensitive data</p>
	<p>Service design</p>	<ul style="list-style-type: none"> <li>• What kind of expertise is needed to create the service?</li> <li>• What are the economic and social requirements to make the service work?</li> </ul>	<p>(1). Together with potential users the customer journey, service architecture and the informed consent procedure have to be constructed and evaluated/tested, considering biases and inclusiveness.</p> <p>Local government will have administrative, logistical and institutional functions, connecting and advising local distribution points, seeking sponsors and donors, managing major donations and leading the lobby and public relations.</p>



			<p>Users are regarded as consumers and clients, rather than mere beneficiaries. Particular care will be devoted to preserving peoples’ dignity (avoiding suggestions or implications of a ‘wasted food’ market). Also, a certain level of stability (quality and product range for example) must be guaranteed. In this way, stability is a precondition.</p> <p>(2). The distribution of food takes place at designated places in a municipality where beneficiaries can pick up their food physically, but they have to register for a timeslot in a digital manner (with the use of an app). This should make it possible to reduce queues and monitor (and possibly sanction) no-shows. This does require planning and coordination, and more responsibility from the beneficiaries.</p>
	<p>Sustain-ability</p>	<ul style="list-style-type: none"> <li>• Where does the money come from?</li> <li>• What are the sources of funding/support necessary to keep this running after the implementation?</li> </ul>	<p>(1&amp;2). From a governance perspective there should be clarity about the funding, financial flows, the interests and incentives for those who can provide that support/funding and for those developing/maintaining them.</p> <p>Originally, the money came from civil society. Now that the municipality will be given a greater role, they are also expected to pay. This leads to a co-financed service. However, financial involvement leads to tensions and dependencies. In this case, the municipality expects that their</p>



			<p>demands are being granted since they are now also paying for the service. Civil society actors did not want to grant all the municipality its demands, which led to the need for an agreement on the level of control that comes along with paying for the service/financial involvement. After a lot of discussion, an agreement has been reached.</p> <p>In addition, there should be clarity about the gifts/donations that are allocated from non-governmental organizations, for example: charities and churches. These gifts/donations come with no strings attached.</p>
Go/No-go	Co-evaluation	<ul style="list-style-type: none"> <li>Do the funders / stakeholders support the final design?</li> </ul>	<p>The co-production team (local governors and organizers) is satisfied to start, after a lot of problems and ambiguities were tackled in the design phase.</p> <p>One issue remains: the app-designers did not manage to anonymize the beneficiaries with the use of numbers.</p>
	Team formation	<ul style="list-style-type: none"> <li>Who should be on the team in the next phase?</li> </ul>	<p>There is agreement on the co-production team. The people that need to be involved during the next phase(s), given their specific task, role, and expertise, are part of the team and these people accept their (new) tasks.</p>



<p>Implement-ation</p>	<p>Technical implemen-tation</p>	<ul style="list-style-type: none"> <li>● Is the environment / infrastructure for implementing the design in place?</li> <li>● Who owns the data?</li> </ul>	<p>(1). The issues related to the governance model and the technical issues need to be developed in interaction and not independently/simultaneously.</p> <p>The app is launched and ready for use. For both users and employees, it should work.</p> <p>(2). There is an ownership of data agreement</p>
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	<p>Service implementation</p>	<ul style="list-style-type: none"> <li>• Is the organisational / regulatory environment for the service in place? <i>In order to launch the service (up and running)</i></li> </ul>	<p>At this stage, relevant management service aspects (privacy as well as logistics) need to be taken into account, as well as a legal check and quality assurances. In order to realize this, several front (distribution of food hampers) &amp; back office (organization and logistic) aspects must be aligned.</p> <p>After overcoming a lot of debates, the civil society actors and the municipality agreed on the eligibility criteria that the municipality will apply to decide whether a person can make use of this service. A lot of meetings were needed to clarify the criteria.</p> <p>The municipality can access beneficiaries' data, in order to decide if they can make use of the service. However, it was difficult for the municipality to get access to their data. There were some privacy issues, beside the problems with the coupling of the information systems from the civil society actors.</p> <p>In addition, the local embedding of food banks has a social function. This cultural dimension influences the functioning of the food bank in a particular context/region and needs to be taken into account. In this case, the food bank and the local church offer the service together during Christmas in order to provide</p>
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			<p>special food hampers. This collaboration relieves the workload of the food bank during Christmas and enhances its reputation. However, people who believe in a different faith feel hesitant to collect the special food hampers. Besides, the prevailing culture of individualism and shame/fear poses a barrier to make use of the service. The beneficiaries value their privacy as crucial and do not want others to know that they use the service.</p>
Go/No-go	Co-evaluation	<ul style="list-style-type: none"> <li>● Is it working as planned?</li> <li>● If not, what changes are necessary?</li> <li>● Does the design need to be adapted?</li> </ul>	<p>(1). In general, the service is working as planned.</p> <p>(2&amp;3). During the test run/phase, some (technical) issues were identified. In order to overcome these issues, some design-</p>



			<p>aspects of the service needed to be adjusted. For instance, privacy measures were not fully working: the registered timeslots were visible for everyone, showing peoples names and dietary preferences to every app-user. This needs to be anonymized – the app-designers will try again to work with numbers instead of names.</p> <p>Also, some users complained about the ease of use/usability. Some people don't own smartphones, for them it is impossible to download the app. Besides, there are people that find it difficult to use the app. These were mainly people with a higher age + the visually impaired. The app was then adjusted (re-designed), in order to be more accessible.</p> <p>There is no solution yet for the beneficiaries without smartphones.</p>
	<p>Team formation</p>	<ul style="list-style-type: none"> <li>• Who will maintain the service from here on?</li> </ul>	<p>There is agreement about the co-production team. The people that need to be involved during the next phase(s), given their specific task, role, and expertise, are part of the team and these people accept their (new) tasks.</p> <ul style="list-style-type: none"> <li>- Task distribution</li> <li>- Contracts /regulation</li> <li>- Data management, archiving</li> </ul>



Sustain-ability	Handover	<ul style="list-style-type: none"> <li>• Are ownership and responsibilities clearly arranged?</li> </ul>	Both parties eventually agreed on ownership and responsibility issues. During the test run, it became clear that not all responsibilities were assigned, which led to uncertainties and indecisiveness. They had to formally reassign these responsibilities.
	Maintenance	<ul style="list-style-type: none"> <li>• Who takes care of practical maintenance?</li> <li>• Who is in charge of the maintenance?</li> <li>• How will we keep this service running?</li> </ul>	(1&2&3). The food bank employees and the public employees will be taking care of practical maintenance. Before the reorganization, the civil society actors were in charge of the maintenance, but now there is co-maintenance. Initially, the food bank employees as well as the public employees did not consider the maintenance as their primary function, they both felt like the other could take care of this. That is why the board decided to make both parties accountable for maintenance, so they can share the responsibilities and have to agree on the coordination tasks.
	Co-evaluation	<ul style="list-style-type: none"> <li>• Is it still working?</li> <li>• Should the service be re-designed or terminated?</li> </ul>	<p>(1). The service is still working, according to the municipality (who are in charge of monitoring the service). The monitoring takes form as an ongoing evaluation. In order to gauge user satisfaction, there are periodic evaluations with stakeholders.</p> <p>(2). The service is up and running for some time now. Yet, there are some issues that need to be taken into account. The food bank employees feel like the public employees are way too powerful,</p>



			<p>claiming too many responsibilities. On one hand, they miss their former autonomy. On the other hand, they recognize that they can't do it without the municipality's help. This calls for a re-negotiation/re-discussion of the roles. Both parties agree that the service can't be terminated, but it needs to change in order to be sustainable. Right now, a lot of food banks employees are considering quitting their jobs.</p>
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