Public Values? A Systematic Literature Review into the Outcomes of Public Service Co-Creation

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Co-creation is viewed as a promising way to realize public values. Using the PRISMA-protocol, we analyse evidence of the claim that co-creation enhances public service delivery, relationships between citizens and governments, and the democratic quality of governance. Analysing 84 peer-reviewed articles and book chapters, we confirm that co-creation realizes public values in terms of better services and democratic quality of governance. We do not find this confirmation in terms of better relations between citizens and government. We find that public values are the product of a complex mix of process expectations and outcomes forged by complex, social interactions. The interplay between different public values also impacts outcomes of co-creation. We find some preliminary evidence that co-creation might not lead to the same outcomes across different policy domains. Facilitation from civil service professionals seems to be of uttermost importance given the complex and demanding nature of co-creation to attain positive outcomes, especially when working with vulnerable groups. More quantitative work and qualitative multiple case studies linking circumstances and public values are necessary to provide more general insights across different contexts; we generate a conceptual framework that can be used to this end.

Keywords: co-creation; co-production; outcomes; public values; public services

# INTRODUCTION AND RESEARCH QUESTIONS

The changing face of democracy pushes the public sector to innovate for the better in terms of efficiency, effectivity and user experience (Arundel, Bloch, and Ferguson 2019). Citizens increasingly become active contributors in ‘magic concepts’ such as social innovation, and the co-production and co-creation of public services (Voorberg, Bekkers, and Tummers 2015). Following Torfing, Sørensen, and Røiseland (2019, 55), we understand co-creation as ‘a process through which two or more public and private actors solve a shared problem, challenge or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of […] services’. In line with other authors, we believe this conceptualisation allows for a ‘[…] holistic and inclusive picture […]’, including but not limited to co-production (Rodriguez Müller et al. 2021, 3)[[1]](#footnote-1). Our broad understanding of co-creation in public services includes the production and delivery of public services, across different types of interactions and exchanges, thus also covering the concept of co-production (Nabatchi, Sancino, and Sicilia 2017; Brandsen and Honingh 2015). However, we focus on public services in particular in this article, and disregard “[...] visions, plans, policies, strategies, [and] regulatory frameworks” included in the broad definition put forward by Torfing, Sørensen, and Røiseland (2019, 802). For “private actors”, we will only look at citizens as they can take up different roles, as individual service users, volunteers or in organisations such as NGOs (Pestoff 2009).

One of the normative assumptions underpinning the use of co-creation is that the inclusion of end-users of public services, the citizens themselves, leads to ‘better services’ (Dudau, Glennon, and Verschuere 2019). This scope can be broadened considering our definition. Not only end-user inclusion may lead to ‘better services’, but also other private actors’ contribution can be valuable in this regard. ‘Better services’ can then be conceptualized as services that are increasingly valuable to the public The underlying assumption is that co-creation enhances public values (Bryson et al. 2017; Jaspers and Steen 2019). What are public values? Public values have been defined by Bozeman (2007) as normative values on rights and benefits of citizens, their obligations towards society, the state and one another and a mutual agreement in which governance and policymaking is rooted. Some examples offered by Jørgensen and Bozeman (2007) are accountability, citizens’ self-development, effectiveness and efficiency, innovation, and the protection of minorities. Following this conceptualisation, we understand co-creation as a ‘[…] mechanism by which public values are promoted and maintained […]’ (Nabatchi 2017, 60). Over the last decade, the outcomes of co-creation have increasingly been conceptualised in terms of specific public values (Sudhipongpracha and Wongpredee 2016; Nabatchi 2012; Jaspers and Steen 2019; Jaspers and Tuurnas 2021; Warwick-Booth et al. 2022). The literature also indicates that in spite of public values co-realization, instances of values co-destruction emerge (Williams, Kang, and Johnson 2016; Dudau, Glennon, and Verschuere 2019; Steen, Brandsen, and Verschuere 2018; Loeffler 2021a). We follow Nabatchi (2017) in understanding this latter as a public values failure, as identified by Bozeman (2007).

Scholars, however, seem far from reaching a consensus with regards to the question of what public values are enhanced by co-creation. Studies, for example, have found that co-creation possibly fosters trust (Bentzen 2022), enhances equity in service delivery (Xu and Tang 2020) and leads to improved service access (Farr 2016). However, Kang and Van Ryzin (2019)find that with regard to trust enhancement, co-creation does not have a significant effect. Instances of co-destruction rather than co-realization are also reported in terms of equity in service delivery (Flemig and Osborne 2019). Additionally, systematic research into the outcomes of co-creation in public service provision is said to be scarce (Brandsen, Steen, and Verschuere 2018; Jaspers and Steen 2019; Meijer 2016). Nevertheless, academic endeavours focusing on this topic seem to have increased over the last few years, necessitating a re-evaluation of this claim (McMullin 2023; Lindenmeier et al. 2021; Burgers, Arundel, and Casali 2022; eg. Bentzen 2022).

We set out to re-evaluate this claim in answering the subsequent research questions by means of a systematic literature review following the PRISMA-protocol:

1. *Which public values are enhanced/obstructed through public service co-creation, as claimed in the scientific literature?*
2. *Which context factors surrounding the co-creation of public services are connected to the enhancement/obstruction of public values?*

Our objective is twofold. First, to build on the theoretical contributions to map which public values may be enhanced/obstructed through public service co-creation and to unveil what public values are affected through public service co-creation as found in the existing empirical literature. Second, to distil a set of context factors related to the co-realisation/co-destruction of public values through public service co-creation. We understand co-realisation of public values to occur when public values are enhanced through co-creation; public values co-destruction occurs when co-creation leads to public value failure. As academic interest into the outcomes of co-creation seems to have increased in recent years, we believe this paper is timely. Additionally, we believe that systematic insights into the results of these endeavours is lacking, and the field can benefit from a thorough understanding of were the theoretical and empirical contributions have brought us. We address this gap by carrying out a systematic literature review. In the subsequent section, we share our research strategy. Hereafter, we will share the results of our systematic review based on the two guiding questions, before offering a few concluding remarks for practice and identify opportunities for future research.

# RESEARCH STRATEGY

In this systematic review, we use the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) protocol. The PRISMA protocol is a checklist of 27 items developed to enhance the transparency and replicability of systematic reviews (Liberati et al. 2009; Page et al. 2021). The protocol demands the authors to provide specific key elements, such as rationale, and methods of analysis, to carry out a systematic literature review. It also requires specifying study and report eligibility criteria and the search strategy and record selection. These items can be found below. The checklist is listed in Appendix I.

# Study and report eligibility

*Study eligibility*

* Type of studies – Items included in the review should address (at least partially) the outcomes of co-creation in public services. Following the definition of co-creation adopted in this article, we include items that deal with the outcomes of a constructive exchange of knowledge, resources, competences and ideas between public and private actors in public services (Torfing, Sørensen, and Røiseland 2019).
* Topic is co-creation – Items included in the review should at least mention co-creation, or a related term (e.g., co-production, co-commissioning, co-design, co-destruction…) in their title and/or abstract (see Table 1 for the denominators in our search query below). We believe this will allow us to make more nuanced claims regarding the outcomes of co-creation in terms of public values. Additionally, assuming that the literature indeed is scarce on this topic (Brandsen, Steen, and Verschuere 2018; Jaspers and Steen 2019; Meijer 2016), this broad approach allows us to not only assess this claim but also to cover an important number of scientific contributions on the outcomes of citizen involvement across all phases of public service provision.
* Study design – Items included in the review can be both theoretical and empirical in nature. This will allow us to compare findings between different study designs and identify opportunities for future research in both areas. For empirical items, we include all kinds of study designs (surveys, experiments, (multiple) case studies…). This expands earlier works (cf. Voorberg, Bekkers, and Tummers 2015) which only focus on empirical endeavours. However, we endorse the statement that empirical works allow us to gain an evidence-based understanding of the added value of co-creation (Pawson 2006), and will only focus on empirical works in our sample when answering research question 2. We use theoretical articles to anticipate expectations surrounding co-creation outcomes and rely on empirical works to confirm, deny or highlight gaps in empirical research.

*Report eligibility*

* Language – Items included in the review are accessible in English, increasing the replicability of this review (Amorim Lopes and Alves 2020; Voorberg, Bekkers, and Tummers 2015).
* Publication status – Items included can be peer-reviewed journal articles, books and book chapters. In the final sample, only relevant book chapters will be included.
* Year of publication – no year restriction has been put in place to fully capture the body of academic research investigating the outcomes of co-creation, as well as to track its evolution over time.

# Search strategy and record selection

We developed a search query based on 33 articles that were selected through discussion amongst the three authors and in which the second and third author executed the role of topic experts. These articles were found by simple searches in Web of Science (such as “co-creation AND outcomes”) and by snowballing. These informed us about the wide variety of terms to denote citizen participation in public services. Hence our choice for a broad definition of co-creation, under which the different denominators can be categorized. These 33 articles allowed us to build our query on the basis of four categories that cover our particular focus. Moreover, our research seeks to systematically analyse research that deals with co-creation in public services and focuses on its outcomes in terms of public values. Table 1 (below) displays the four categories (co-creation, outcomes, public services and user involvement) and their denominators used in our search query. Our search query can be found in Appendix III. Using this query, we searched two electronic databases (Web of Science and Scopus). We narrowed our search to the ‘Social Sciences Citation Index’ and the ‘Emerging Sources Citations Index’ in Web of Science, and to the subject are ‘Social Sciences’ in Scopus. The last search was run on 28 September 2023. In total, 1864 items were identified. After deletion of duplicate items, 1309 items were retained for screening.

[Table 1. here]

These items were screened on title and abstract first, using ASReview. ASReview is an open-source machine learning tool that automatically ranks items based on relevance using active learning techniques (van de Schoot et al. 2021). It is developed to speed up the screening process as well as to combat screening-fatigue (van de Schoot et al. 2021). As screening was done by the first author, the entire sample was screened. 100 items that were ranked as irrelevant, were checked by the second and third author. No conflicts in assessing the non-inclusion of these items were found.

After screening all 1309 items, 144 items were retained for full text screening. Whenever a book chapter *and* the book it was published in were found in the list of 144 items, the entire book was screened to ensure the inclusion of all relevant items. Wherever this was the case, the book chapter was deleted from our list (as it was part of the book that was also included) to avoid duplicate counts. 135 items were retrieved for full text screening (records not retrieved for download n = 6; book chapters deleted if book in record list n = 3). After full text-screening, we excluded another 63 items. Reasons for exclusion were:

* Minor focus on effects (less than one paragraph) (n = 46) (eg. Jaspers and Tuurnas 2021)
* Focus on private rather than public services (n = 3) (eg. Torvinen and Ulkuniemi 2016)
* Focus on knowledge co-production/-creation rather than on co-creation of public services (n = 14) (eg. Corburn 2007)

[Figure 1. here]

We obtained a list of 72 items, composed of journal articles (n = 66), book chapters (n = 3) and books (n = 3). However, we decided to only include relevant chapters from the three books included in our list (following our study eligibility criteria). Of the three books, 19 book chapters were included. These were added to our final list as the three books in their entirety were deleted. In this manner, 88 items constituted the final sample included in this review (journal articles n = 66; book chapters n = 22). Our flow chart can be found in Figure 1 above. In the reference list, items included in the systematic review are marked with an asterisk (\*).

# Record characteristics

Before we turn to our research questions, we briefly reflect upon the characteristics of the items included in our final sample.

***Study designs***

Of the 88 items, 60 used an empirical design, while the remaining 28 were theoretical works. We understand the latter as works that do not make use of an empirical methodology. For empirical works, most studied the outcomes of co-creation by means of a qualitative (multiple) case study (n = 46) while only a few items used a quantitative approach (n = 3). Four of the studies included in the review used a mixed method approach (n = 4). Furthermore, experiments are common (n = 7) and diversified (field experiment n = 3; survey experiment n = 2; vignette experiment n = 2). For theoretical works, our final sample included four literature reviews (scoping review n = 1; systematic review n = 2; traditional review n =1). The other 24 items advanced or analysed a theory on public value co-creation/co-destruction.

***Journals***

47 different journals were identified in our final sample, covering a wide diversity within the field public administration. Considering the 66 journal articles included in our final review, most articles were published in *Public Management Review* (n = 8), *International Journal of Public Sector Management* (n = 4), *Public Administration Review* (n = 3) and *Voluntas* (n = 3).

***Publication year***

Results from our review show that academic interest into the effects of co-creation has grown mostly during the last decade, and very importantly over the last few years. Over half of our sample was published in the last 5 years (43 items included in the review were published between 2018 and 2022). This trend is true for both theoretical and empirical works, although the number of empirical works keeps increasing, while theoretical outputs seem to stagnate. Recent publications (eg.McMullin 2023) are exemplar of a new focus on the outcomes of citizen participation in terms of public values throughout the public service cycle. Other researchers also investigate the link between co-created public services and the co-realization of public values (Jaspers and Steen 2021, 2019; Capolupo, Piscopo, and Annarumma 2020). Figure 2 (below) displays the number of publications for both empirical and theoretical works included in our review over time (not including 2023, as the search only spans nine months for this publication year).

[Figure 2. here]

***Policy domain***

The outcomes of co-creation are studied in a wide variety of policy domains. In our sample, social services (n = 20) and health (n = 17) are mentioned most often, closely followed by education (n = 8) and public space (n = 7). However, co-creation outcomes are also frequently studied in childcare, public transport, and sanitation. This primary focus on healthcare and social services is in line with findings by Voorberg, Bekkers, and Tummers (2015)who hold that this can be attributed to the more direct relation between citizens and public officials in these domains and resonates well with a recent publication in this journal (see Straussman 2020). Moreover, Straussman (2020) argues that co-creation in public services as education, crime prevention and healthcare are vastly different; the proximity and urgency of one policy domain (in this case healthcare), might make co-creation necessary, if not easier, to organise.

When distinguishing between theoretical and empirical works, it becomes apparent that theoretical works rarely posit their argument within one policy domain. Rare works that do so are two literature reviews: Amorim Lopes and Alves (2020) focusing on social services, and Mees, Crabbe, and Driessen (2017) focusing on water management. In most other works, policy domains are not specified as the theorising relates to (causal) mechanisms that impact certain public values (eg. Fledderus 2018b) or the conceptualisation of the outcomes of co-creation (eg. Verschuere, Brandsen, and Pestoff 2012) regardless of policy domain. Some theoretical works cover multiple policy domains, such as Loeffler (2021b) who focuses on health, social services and public safety. Empirical works mostly focus on one specific policy domain. Only one empirical item does not mention a specific policy domain (Scupola and Mergel 2022).

# RESULTS OF THE SYSTEMATIC REVIEW

In order to answer the research questions, all items in the review were coded using NVivo, ensuring an extensive and “trustworthy” coding process (cf. Amorim Lopes and Alves 2020, 563). We deployed an open coding, ensuring we covered all public value outcomes mentioned in the included literature. Upon coding, we found that one of the included articles offered a framework to categorise public value tensions in co-creation that could fit the purpose of this paper (Jaspers and Steen 2019). Although this framework emerged as a byproduct of their research, it offered a broad conceptualisation of public values impacted through co-creation related to better public services, better relations, and better democratic quality. The framework advances the notion of public values co-realization departing from the understanding of public values as posited by Bozeman (2007). We were able to assign all identified public values to one of these categories. We believe this validates and expands this framework and allows us to further categorise the public value outcomes of co-creation in terms of services, relationships and democratic quality of governing. One code (‘quality of life and well-being’), was not attributed to any of these categories. We argue it does not constitute a separate category. Rather, we build on the reasoning of Loeffler (2021d) who holds that public services should enhance public quality of life outcomes. The use of this general term covers the improvement across different public values, such as effectiveness and efficiency, but also self-development and learning. Therefore, we believe that outcomes referred to as improving or harming quality of life and well-being, are constituted by the aggregate of multiple public values, causing this improve or decrease in quality of life.

In line with Flemig and Osborne (2019) who rely on the Gioia methodology (Gioia, Corley, and Hamilton 2013), we were sensitive to capture aspects related to the implementation of the co-creation initiatives studied, as well as their context and their outcomes. The outcomes of co-creation were assigned to specific public values in our coding. If a public value was mentioned multiple times in an item, it was only coded once. Again, this rule was set to avoid duplicate counts and yield confusing results in terms of absolute frequency of mentions. Of the final sample, 8 items were double coded by another researcher who is familiar with the topic to ensure intercoder reliability. Upon discussion of the items coded by both the first author and the external coder, no conflicts were found. Our code book can be found in Appendix II.

[Table 2. here]

Our coding validated and further expanded the three categories as found by Jaspers and Steen (2019). However, we re-labelled the three categories ‘*service*’, *‘relationship’*, and ‘*democratic quality*’ to allow for non-effects and negative outcomes of co-creation. The expanded framework can be found in Table 2 (above). Our coding was combined into an Excel-file to analyse the relevant data for each item (cf. Amorim Lopes and Alves 2020). To answer our research questions below, we build on the theoretical works to highlight some assumptions surrounding the public values outcomes of co-creation. These are then compared to the outcomes that are found through empirical research. For the second research question, on the context factors surrounding public values enhancement/obstruction through co-creation, we only focus on empirical papers. We believe this provides grounds for a thorough evaluation of current research into the outcomes of co-creation in terms of public values, highlights potential gaps between theoretical and empirical research and enables us to shed light on some context factors that potentially influence these outcomes and provide direction for future research.

***Which public values are enhanced/obstructed through public service co-creation, as claimed in the scientific literature?***

First, we offer some general insights into the public values mentions between theoretical and empirical work. Second, we will focus on the three categories of public values (service, relationship, democratic quality) in answering this research question. Analysing the 28 theoretical works included in our sample, we found 103 mentions of 26 different public values. Most mentions were found in the service category (n = 42), followed by the democratic quality category (n = 39). Least mentions were found in the relationship category (n = 26). Four mentions for the code ‘quality of life and well-being’ were also found (n = 4) in theoretical works. Turning to empirical works (n = 60), we find a similar pattern. Again, the relationship category holds the least number of mentions (n = 39). However, the democratic quality category holds the most mentions for empirical works (n = 58), with the service category holding a few less (n = 53). Eight mentions were found for ‘quality of life and well-being’ (n = 8). In total, we found 158 mentions of 27 public values in empirical works. Across all 88 items included in the review, we found that co-creation outcomes translate to 29 specific public values, that can be grouped into three categories (see Table 2. above). In total, 249 mentions of specific public values were coded within these categories. Some values were not studied theoretically (consideration of needs and consideration of capacities, as well as integration) but found in empirical works included in the review. Other values (certainty, and responsibility) were only studied theoretically and not empirically. In total, 12 mentions for our general code ‘quality of life and well-being’ (see above) were registered (McHunu and Theron 2018; Meriluoto 2018).

Apart from being sensitive to mentions, we also considered the direction of the outcomes (positive, negative or no effect), in order to answer this research question. However, given that most research deploys qualitative methods, these works do not allow us to assess the size of the effect. This is not only a limitation of this study, but also discloses the need for more objective measurements of co-creation outcomes in terms of public values. What does it mean when we say effectiveness is enhanced through co-creation? To what extent? Future research needs to address this methodological gap. In Table 3. (below), an overview of the number of mentions is found for each category per research type, as well as the percentage these mentions constitute of the total number of mentions.

[Table 3. here]

Turning to the direction of the outcomes in general, the relationship category yielded most mentions of negatively impacted public values (n = 16), both for theoretical (n = 8) and empirical (n = 8) items. However, for both research types, this category holds the least number of mentions, constituting about 7% of the total mentions for theoretical works, and about 15% of the total mentions for empirical works. For the other two categories, the percentages of negative mentions are lower (see Table 3.). Relative to the total number of mentions in these categories, negative mentions only constitute a smaller portion of the total number of mentions. That is, 7,65% for theoretical works, and 5,74% for empirical works, revealing that in most cases, co-creation enhances public values. However, this also indicates that theoretical works seem to have been more cautious in attributing positive public value outcomes of co-creation or have also focused on (possible) negative outcomes of co-creation in terms of public values, possibly mitigated in empirical works by selection bias.

Based on these general considerations, our first conclusion is that most research, both theoretical and empirical work, focuses mostly on public values as outcomes of co-creation at the service level and the democratic quality of governance. Most of the mentions are positive, with a very limited share of negative mentions for empirical works in these categories. The public values within the relationship category are studied less and reveal more negative mentions, also in empirical works and when comparing to the relative number of

mentions for each research type. Below, we discuss our findings for each of the three categories. Here, we also further elaborate on differences and similarities between theoretical and empirical works and positive and negative mentions to answer our first guiding research question. This also provides grounds for future research opportunities and enables us to show which theoretical assumptions still hold, and which ones should be abandoned. Where appropriate, we also discuss non-effect findings.

[Table 4. here]

***Does co-creation lead to better services?***

First, we gather some assumptions as found in theoretical works. Most mentioned public values are those of efficiency, effectiveness and quality. One of the first works on co-creation (Brudney 1984) introduces the idea that it can lead to enhanced effectiveness and efficiency. The theoretical assumption is that the inclusion of citizens in the service delivery process, not only allows for an increase in available resources and insights (Mees, Crabbe, and Driessen 2017), but also allows – in some cases – to lower costs of the service provision for governments (Loeffler and Bovaird 2018). In the long run, the creation of services that match citizens’ needs and the reduction of service failures adds to these values (Brix, Krogstrup, and Mortensen 2020). Yet, an important precondition is the presence of trust and a willingness to engage in the co-creation of services (Loeffler and Bovaird 2018). However, the co-creation of services might be very demanding, even for trusting and engaged citizens, as it shifts the role of professionals from providers of services to managers of service provision collaborations (Steen, Brandsen, and Verschuere 2018). For citizens, the threshold to actively contribute in services, might be (too) high; yet, the use of ICT-based technologies might lower this threshold (Nieuwenhuizen and Meijer 2020). This digitalisation is also said to improve the quality of services and thus enhance satisfaction (Edelmann 2022). The theoretical argument can be constructed as follows: by digitalising the co-creation of services, the threshold to participate is lowered which enables more citizens to contribute, leading to better services as more needs can be captured. It is precisely the inputs of citizens (both material and immaterial) that allows this increase in public values Negative outcomes are found for service certainty, as the work is shared and carried out by often untrained (or only to a lesser extent trained) users, the continuity of the public service provision (certainty) can be challenged (Fledderus, Brandsen, and Honingh 2015). This argument is in line with Loeffler (2021b) who holds that more hands make the same work lighter, but also messier, ultimately also possibly compromising the sustainability of co-creation processes (Loeffler 2021a).

Second, we compare these theoretical assumptions to empirical research. First, the focus on effectiveness, efficiency and quality is similar. These values also hold the most mentions in the empirical works included in our sample. Again, the former two are found in the earliest empirical work in our sample (Anderson and Clary 1987) and are in line with the ruling New Public Management paradigms of the times according to which public management should be organised on the same principles as private management: efficiency, effectivity and quality (Osborne and Strokosch 2022). The theoretical assumption that the inclusion of citizens in service co-creation generates new insights into citizens’ needs has been confirmed to ultimately enhance satisfaction in mobility services, social and healthcare and environmental services (Bovaird 2007; Cerdan Chiscano 2021; Lindenmeier et al. 2021; Rabin et al. 2023; Li et al. 2023). Another reason for this is that combined community efforts allow enhanced information sharing, expansion of the service and adequate provision, even in complex situations (Yeo and Lee 2020). Yet, the focus on ‘whole community’ co-creation (also labelled collective co-production, cf. Nabatchi, Sancino, and Sicilia (2017)), might indicate that different varieties of co-creation produce different results in this regard. More empirical research is necessary to confirm this.

However, what is certain is that the assumption that there needs to be an established trust relation between government and co-creating citizens, as well as a certain willingness to engage in co-creation, for these outcomes to be achieved as citizens act as experts by experience (Liu, Wu, and McEntire 2021; Meriluoto 2018; Murray Svidronova, Mikušová Meričková, and Nemec 2019). This might not always be straightforward given the challenging task for professionals to adapt to the management of participative service provision; yet the benefits seem to be important. This shift might entail improved service access, for example within hard-to-reach groups when actively involved in the process (Allen, Walnycki, and von Bertrab 2017; Lwembe et al. 2017; Farr 2016). Empirical work furthermore shows that when capitalizing on a community’s assets, (innovative) ideas and inspiration through co-creation lead to an enhanced quality of the services offered (Ellery and Ellery 2019). These new insights allow the services to be catered to the needs of citizens, as discussed, but also allow for the creation of innovative services or new forms of service delivery (Cornet and Barpanda 2020; Lindsay et al. 2021; Ezeudu et al. 2021; Scupola and Mergel 2022; Bentzen 2022; Burgers, Arundel, and Casali 2022), ultimately enhancing service diversity and innovation. When co-created services fulfil the needs of citizens, which become apparent through co-creation, they also tend to generate sustainable outcomes (Bell et al. 2021; Goodhew et al. 2023). For co-creation to ensure sustainable outcomes, the process in itself needs to be sustainable, meaning that there is a need for institutionalised co-creation processes (Jaspers and Steen 2020).

Table 4. (above) provides an overview of the public values and the number of mentions across all items in our review according to research type within the service category. Our second conclusion is that in practice, co-creation for the enhancement of public values at the service level mostly entails co-creation to enhance efficiency, effectivity and quality. Co-creation also enhances service diversity, innovation and access. While theoretical work presumes negative outcomes in terms of service diversity and innovation as well as certainty of service provision, we find only very limited empirical evidence for negative outcomes of co-creation for public values in the service category.

***Does co-creation lead to better relationships?***

First, we focus on the assumptions found in theoretical works surrounding the public values outcomes of co-creation. Although the total number of mentions is limited for these works, they provide us with some interesting insights. We find that co-creation enables citizens’ self-development in terms of learning about service design and implementation, but also in terms of social skills in contacts with professionals and other citizens. The learning potential of co-creation is encapsulated in the active contributions of citizens (Edelmann 2022). This learning might enhance the political efficacy of citizens (Loeffler 2021a). Apart from learning, most theoretical contributions offer a negative image of relationship outcomes. Co-creation negatively impacts the work and working conditions of professionals. As mentioned, their work shifts from providing services to managing service provision when services are co-created. The work of professionals shifts more towards the managerial side, when citizen inputs increase (Loeffler 2021a). Additionally, for example in health and social care, professionals need to overcome systemic ways of thinking to transcend the idea that they only need to take into account the issues of citizens, and also focus on their capacities. (Loeffler 2021a).

Co-creation might also negatively impact power relations between citizens and government officials, but also amongst citizens. Unequal power relations do not only form barriers to effective co-creation, they can also be reinforced as certain citizens might have a louder voice than others in these processes (Steen, Brandsen, and Verschuere 2018). For trust, theoretical work offers different assumptions (Fledderus 2018b; Fledderus, Brandsen, and Honingh 2014). Mostly, citizens do not attribute failures of co-creation projects to themselves (Fledderus 2015b). This might explain why trust is not necessarily enhanced. An additional explanation might lie in the complex social and often emotional exchanges that steer co-creation (Thomsen, Baekgaard, and Jensen 2020). However, whenever these exchanges run smoothly, a trust relationship can be formed and trust can be enhanced through co-creation (Robert, Donetto, and Williams 2020; Sancino 2016).

Turning to the empirical works in our sample, we find that positive mentions for trust are frequently coupled with the acknowledgement that co-creation is a time-consuming and resource-extensive process and therefore necessitates adequate facilitation by professional service workers and local officials and an active commitment towards building trust networks amongst all stakeholders involved (Baines et al. 2022; Levasseur 2018; Fledderus 2015b, 2015a, 2018a; Sudhipongpracha 2018). When this is ensured, co-creation provides an excellent learning opportunity for citizens in terms of government functioning and service delivery feasibility (Lindenmeier et al. 2021; Fors, Jansson, and Nielsen 2018; Fors et al. 2018; Avery, Sjögren Forss, and Rämgård 2022; Sudhipongpracha and Wongpredee 2016). Co-creation does however fundamentally alter the role of these local officials, which moves from organising or delivering public services to managing participative services. This should not necessarily be understood as negative; yet, it requires more from local officials in terms of communication, information control and implementation (Tuurnas, Stenvall, and Rannisto 2016; Bovaird and Loeffler 2012; Buntaine, Hunnicutt, and Komakech 2021). This also involves ensuring non-participants can be accounted for, as failure to do so might enhance existing power asymmetries between (groups of) citizens (Warwick-Booth et al. 2022).

Table 4. (above) provides an overview of the specific public values and the number of mentions across all items in our review related to the relationship category. Our third conclusion is that public value enhancement in terms of the relationship between citizens and (local) government boils down to learning opportunities for citizens to better understand public service delivery processes and enhances the understanding of the needs and capacities of citizens. However, this is only true if professionals truly shift the way they work to become managers of participative service delivery rather than public service delivery providers. This positive effect is not found for trust, which, given the complex nature of co-creation, is also often impacted negatively (or not impacted at all), contradicting expectations found in theoretical work that is more positive in this regard.

***Does co-creation lead to a better democratic quality?***

Theoretical works show overarchingly positive outcomes of co-creation on the democratic quality of governing. Most noticeably, co-creation is assumed to empower citizens. Co-creation projects provide a stage through which citizens can voice their needs and express their desires, but also actively contribute to achieving these (Jo and Nabatchi 2018). This is also the case for vulnerable citizens, who can be empowered through co-creation providing adequate facilitation by professionals (Verschuere et al. 2018). Allowing resourceful citizens alongside vulnerable citizens to fully participate in co-creation reveals its inclusive character (Verschuere et al. 2018; Robert, Donetto, and Williams 2020). Ultimately, inclusion and empowerment enable capacity building. This capacity building allows the generation of social capital (Mees, Crabbe, and Driessen 2017; Loeffler and Bovaird 2018). When inclusion of different groups is ensured, through for example adequate facilitation, co-creation can also enhance social cohesion (Loeffler 2021b; Soares da Silva, Horlings, and Figueiredo 2018). In this respect, it is important to note that the learning potential that can be achieved through co-creation is important for outcomes such as social capital and social cohesion. Both social and instrumental learning allow for co-creation to spur this capacity building. Theoretical contributions offer a mixed picture of accountability. Whenever responsibility is “dumped” upon citizens – leading to a form of self-organisation rather than co-creation – accountability seems to be impacted negatively (Loeffler 2021a, 269). Ensuring there is adequate supervision of and accountability for the quality of public services remains an important challenge for co-creation, it seems, but can be ensured through a clear formulation of tasks and roles (Steen, Brandsen, and Verschuere 2018). This also seems to be important for equity in service delivery and outcomes (Verschuere et al. 2018). However, when tasks and roles within co-creation are clear, accountability can be positively impacted (McKenna 2020).

Turning to the empirical works, only accountability surfaces to be impacted negatively more often than positively. Empirical works seem to confirm the concern raised in theoretical contributions. Moreover, empirical works highlight that not only do tasks and roles need to be clear (Bovaird 2007), they also have to be attributed bearing in mind the appropriate levels of risk and responsibility citizens need to carry (Levasseur 2018). Again, support surfaces as detrimental factor to ensure the responsibilities attributed to citizens can be carried by them and the citizen efforts enhance social cohesion instead of deepening inequalities (Levasseur 2018; Loeffler and Bovaird 2020a). Yet, in most cases it seems that social cohesion is positively enhanced (Fors, Jansson, and Nielsen 2018; Kumar 2019; Tu 2018; von Heimburg, Langås, and Røiseland 2023). Closely related is integration, which has not been theorised on. However, integration seems to be impacted positively through co-creation with vulnerable citizens and seems to be closely related to social cohesion (Strokosch and Osborne 2016; Vanleene and Verschuere 2018).

Equity in service delivery and outcomes also seems to be impacted positively. Ensuring adequate consideration of needs and capacities, allows services to be accessed and enjoyed by more citizens, ultimately positively impacting equity (Allen, Walnycki, and von Bertrab 2017; Cerdan Chiscano 2021; Jakobsen and Andersen 2013; Cornips et al. 2023; Tsai 2011). However, this equity is only ensured when citizens of all walks of life are included (Flemig and Osborne 2019; Jakobsen and Andersen 2013). Whether or not this inclusion is achieved, co-creation empowers citizens. The theoretical argument that co-creation allows citizens to exercise voice, control and thus influence services is confirmed empirically across different contexts, ranging from geographical locations to policy domains (Allen, Walnycki, and von Bertrab 2017; Avery, Sjögren Forss, and Rämgård 2022; Farr 2018; Flemig and Osborne 2019; Hjortskov, Andersen, and Jakobsen 2018; McMillan, Spronk, and Caswell 2014; Ntumba 2018). In some cases, this empowerment translates to ownership of public service cycles, meaning citizens possess the ability to provide services sustainably themselves (Tu 2018; Pestoff 2020). This ownership is not always achieved when dealing with vulnerable citizens. Again, the role for public service professionals to facilitate co-creation is detrimental to achieve this (Vanleene, Voets, and Verschuere 2017; Verschuere et al. 2018; Brandsen 2020) and ensure transparency (Ostling 2017).

Table 4. (above) provides an overview of the specific public values and the number of mentions across all items in our review according to research type within the democratic quality category. Our fourth conclusion is that public values being enhanced in terms of the democratic quality of governing means an increase in empowerment, inclusion and social cohesion. In light of the inadequate sharing of responsibility shows that accountability might be impacted negatively.

***Which context factors surrounding the co-creation of public services are connected to the enhancement/obstruction of public values?***

Turning to our second research question, we only focus on empirical works in order to answer this research question. Our coding allows us to highlight different context factors that might be important for the co-realisation/-destruction of public values, providing us with a conceptual framework to be tested in future empirical research. This framework can be found in Figure 3 (below) and can be used for further reference in exploring the linkages between context factors and co-creation outcomes. Given the highly diverging governance contexts, policy domains, project characteristics and individual characteristics covered in our sample, no strong claims can be made regarding these factors on the basis of this review. Yet, four general insights can be offered, generating point for practitioners and allowing us to formulate avenues for further research.

[Figure 3. here]

First, public enhancement (or obstruction) of values seems to stem from a complex mix of process expectations and outcomes forged by social interactions. Co-creation is a time-consuming and resource-demanding processes. As we discuss above, co-creation severely impacts the role of public service professionals, who become managers of the public service provision process rather than public service providers. For citizens, co-creation alike requires a thorough engagement. Instead of being passive recipients of the services, as end-users they now also function as co-creators, meaning that they bring resources and help design, develop, deliver, manage… public services. Given that many co-creation projects are prolonged in time, they offer exquisite opportunities to craft relationships and instil a sense of reciprocity (Bentzen 2022; Thomsen, Baekgaard, and Jensen 2020). However, given the complex nature of social interactions underlying co-creation, adequate management of expectations and ambitions is necessary. As co-creation demands an enhanced engagement, the goals of and limits to participation should be clearly defined. Especially when citizens are willing to engage in these practices, which cannot always be taken for granted, they should be informed about the implications of their engagement and the possible outcomes thereof. Here, a connection to the concepts of internal and external political efficacy, broadly covered in field of political science (eg. Pollock 1983), is in place. When demanding enhanced engagement on behalf of citizens, it is important that they feel they hold the necessary competences to access and contribute (cf. internal political efficacy), but also that their engagement is impactful (cf. external political efficacy). Governments engaging in co-creation should thus be appreciative of the engagement from citizens, and ensure it does not go in vain. Fledderus (2015b, 652) argues that “[…] poor outcomes will be blamed on government because co-producers might feel left alone by government when the service fails”. It is thus important that engaged citizens are not left on their own. However, recent work reveals how the role of professionals is often limited to providing peer-support and pre-determined services, lacking a true partnership between professionals and public service users (Aakerblom and Ness 2021).

Second, the interplay between different public values impacts outcomes of co-creation. Enhancement or obstruction of public values seems to be related to the extent different public values reinforce or obstruct each other. For example, co-creation generates learning opportunities as citizens learn about government functioning, while government gains insights into needs and capacities of citizens. This empowers citizens as co-creation seems to enable citizens to make better judgments, feel more empowered and possibly more satisfied with the service provision in general (Lindenmeier et al. 2021; Sudhipongpracha and Wongpredee 2016). Another example is the interrelatedness between integration, participation and empowerment. Both in the case of asylum seekers (Strokosch and Osborne 2016) and the reintegration of offenders into the community (Loeffler and Bovaird 2020a), positive outcomes were found. However, these outcomes seem to be highly contingent with the value of trust which remains an important challenge given the “marginalised” nature of the co-creators involved (Strokosch and Osborne 2016, 688). It becomes apparent again how different values (across and within the three categories) can enhance each other. However, as co-creation provides more hands to do the same work, the work not only gets lighter but may also become messier (Loeffler 2021c). This also explains why certain public values, such as accountability, can be enhanced negatively, while others, such as trust, can be enhanced positively within one co-creation project (Levasseur 2018). It is thus about the interrelatedness between different public values, and sometimes also amounts to a balancing out public values as outcomes of co-creation.

Third, certain policy domains seem to be more favourable to co-creation and subsequent positive public value enhancement than others. This is especially true for healthcare and social services. Our most important finding in this regard is that despite the larger number of negative mentions within the relationship category, public value mentions in this category for healthcare and social services are overarchingly positive. Earlier work mentions the close proximity between service users and public service providers as a reason for positive outcomes (Voorberg, Bekkers, and Tummers 2015; Straussman 2020). Concluding that this proximity is necessary for the realisation of public values through co-creation might be a bridge too far, given the limited insights to this date. However, this finding induces the need for more research that explores the link between specificities of co-creation across different policy domains (such as proximity between the service user and the goal of the co-creation) and public value enhancement. Moreover, research into other policy domains such as childcare, public space, public safety and education show mixed results. Although our literature analysis shows some positive results in these domains (eg. Bovaird 2007; Goodhew et al. 2023), research indicates that trust (Kang and Van Ryzin 2019), social cohesion (Loeffler and Bovaird 2020b) and power relations (Williams, Kang, and Johnson 2016) are not necessarily positively impacted. Especially relationship values seem to be shaped through complex emotional responses (Thomsen, Baekgaard, and Jensen 2020). The creation of trust networks and continuous facilitation throughout the co-creation process is decisive for positive outcomes within the relationship category (Bentzen 2022; Liu, Wu, and McEntire 2021). We want to highlight that proximity is only one specificity of the policy domain; complexity, salience… are others that might be of importance for the co-realization of public values. It has to be noted that across all policy domains, efficiency and effectiveness, as well as quality are mostly positively impacted (eg. Duquette-Rury 2014; Liu, Wu, and McEntire 2021; Ellery and Ellery 2019; Farr 2016; Hofstad et al. 2022). One explanation for this is that co-creation can provide valuable insights into the needs and capacities of service users (Jaspers and Steen 2019; Liu, Wu, and McEntire 2021; Yeo and Lee 2020; Tu 2018), as is explained above. More research is necessary to understand the relationship between outcomes of co-creation in terms of public values across the three categories and specificities of policy domains.

Lastly, facilitation from civil service professionals seems to be of uttermost importance given the complex and demanding nature of co-creation to attain positive outcomes, especially when working with vulnerable groups. This facilitation is necessary in order to foster trust, ensure proper communication and ensure a proper division of tasks and roles, the latter being necessary to at least not harm accountability (Avery, Sjögren Forss, and Rämgård 2022; Tuurnas, Stenvall, and Rannisto 2016). The research reviewed shows that, when working with vulnerable groups (cf. Brandsen 2020), such as migrants and/or asylum seekers or within deprived neighbourhoods, co-creation can enhance integration (Strokosch and Osborne 2016; Vanleene and Verschuere 2018; Loeffler and Bovaird 2020a); yet, the role of professionals for attaining positive outcomes is detrimental. This is also found when engaging people with disabilities in a co-creation project to address mobility challenges (Bell et al. 2021). When dealing with sensitive issues, the co-creation process should be designed carefully as to enable participants fully, meaning that they feel safe and heard, while also ensuring existing power imbalances are not confirmed nor new imbalances are conceived (Warwick-Booth et al. 2022). While the role of professionals seems detrimental especially in terms of democratic quality such as inclusion and empowerment (Allen, Walnycki, and von Bertrab 2017; Flemig and Osborne 2019; Verschuere et al. 2018), this holds true as well for public values in other categories, and when working with non-vulnerable groups. Bentzen (2022) shows that communication by professionals, predefined tasks and goals and continuous facilitation can enhance accountability, ownership, participation, access, quality and trust (in line with Tuurnas, Stenvall, and Rannisto 2016). A blurring of responsibilities obstructs this (Bovaird 2007; Levasseur 2018; Williams, Kang, and Johnson 2016), however professionals can counteract this by reminding the participants of their roles, tasks and the limits of the participation project (Tuurnas, Stenvall, and Rannisto 2016).

# CONCLUSION

This systematic literature review has analysed 88 items that substantially deal with the outcomes of co-creation. Relying on the PRISMA-protocol, we ensure validity and reproducibility of our review. Expanding the three categories of public values as found by Jaspers and Steen (2019), we found 29 specific public values as outcomes of co-creation. These can be categorised as public values relating to the service, the relationship (between citizens and government, and citizens amongst themselves), and the democratic quality of governance. Mentions of public values in terms of quality of life and well-being more general were also found. We believe this refers to a varying combination of different public values pertaining to one (or multiple) of the three categories.

In answering our first research question (1. Which public values are enhanced/obstructed through public service co-creation, as claimed in the scientific literature?), four conclusions are drawn. First, both theoretical and empirical work focuses mostly on public values at the service level and the democratic quality of governance as outcomes of co-creation. Most of the mentions are positive, with a very limited share of negative mentions for empirical works in these categories. The public values within the service category are studied considerably less and reveal more negative mentions, also from empirical works. Second, at the service level, enhancement of public values through co-creation empirically means an enhancement of efficiency, effectivity and quality, but also of service diversity and innovation. Third, at the relationship level, enhancement of public values boils down to increased learning and understanding of the needs and capacities of citizens. However, this is only true if professionals truly shift the manner in which they work to become managers of participative service delivery rather than public service delivery providers. This positive effect is not found for trust. Fourth, in terms of the democratic quality of governing the public values of empowerment, inclusion and social cohesion are enhanced through co-creation. The same cannot be said for accountability, as more people are carrying out tasks, possibly entailing a blurring of responsibility and thus negatively impacting accountability.

In seeking an answer for our second research question (2. Which context factors surrounding the co-creation of public services are connected to the enhancement/obstruction of public values?), we cannot generate broad claims on the basis of this review given the diverging characteristics of the types of co-creation, governance settings, policy domains, project and individual characteristics represented in the empirical works of our sample. We do, however, offer four broader insights related to the circumstances that add to the realization or destruction of public values. First, public values are the product of a complex mix of process expectations and outcomes forged by complex, social interactions. Ultimately, emotional responses are not to be neglected. Second, the interplay between different public values impacts other public values. Third, we find some preliminary evidence that co-creation might not lead to the same outcomes across different policy domains, given their vast differences in relation to proximity. But salience and complexity might also add to explanations with regards to differences in outcomes. Fourth, facilitation from civil service professionals seems to be of uttermost importance given the complex and demanding nature of co-creation to attain positive outcomes, especially when working with vulnerable groups.

However, this review also has some limitations. As with any review, we have to be critical of our result in light of publication bias (Brown, Mehta, and Allison 2017). One of these is that researchers might tend to study cases that achieve positive rather than negative outcomes, explaining the large portion of positive mentions in our sample, which has been found true for political science publications (Gerber and Malhotra 2008). These cases might also be easier to access than problematic cases. Additionally, despite the rather extensive search query, the specificity of the combination of four terms (one for each category in our search query) might have influenced our results. Again, as with any review, feasibility remains an important factor and by choosing a combination of four search terms and including as many denominators as possible, our search was both broad and focused with regards to our research questions, although we might have missed a specific denominator. Another limitation is the measurement of public values as outcomes of co-creation: most works included in our sample research outcomes qualitatively, making it difficult to assess effect size. Nevertheless, this work offers an indication of whether public values are impacted positively or negatively, or not at all. Future research might address this issue and generate measurements for public values as outcomes of co-creation that can be used quantitatively as to offer insights into the size of the outcome. Lastly, by focusing on co-creation and not taking into account the different stages throughout the public service cycle, this review does not link types of co-creation with specific public values as outcomes. Given the limited items included in this review, no general claims can be made in this regard. However, we believe this remains a topic for further investigation.

Turning to avenues for further research, we stress that research linking conditions for enhancement of public values and co-creation outcomes remains scarce. At best, the many (single) case studies in our sample reveal how certain conditions and contextual variables allow for the realization of public values through co-creation in very specific contexts. More quantitative work and qualitative (multiple) case studies specifically linking conditions and outcomes are necessary to provide more general insights across different contexts. To this end, the conceptual framework we developed in this paper can be used. This also allows to further (dis)approve theoretical assumptions on specific effects. In addition, future research should focus on the interrelatedness between specific public values. These efforts possibly offer insights of how co-creation can entail a balancing act between different public values, but also how sometimes specific goals of co-creation might entail certain outcomes on the aggregate level of the categories. That is, the balancing of different public values, might mean making a choice between prioritising service, relationship or democratic quality outcomes over others. Lastly, research on the role of public service professionals and (local) government officials is necessary to further expand our knowledge on their shifting roles and the skills necessary to manage co-creation for public value realization.

We believe the claim that the outcomes of co-creation are only scarcely studied, remains valid; yet, has to be nuanced. The topic has received increasingly more attention over the last few years; however, many more areas for future research have been identified. Directing these efforts along the avenues stipulated above, will provide us with insights that can further the use of co-creation in public services to enhance public values.

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# Appendix

# *Appendix I. PRISMA checklist*

| **Section and Topic**  |  **Item #** | **Checklist item**  | **Location where item is reported**  |
| --- | --- | --- | --- |
| **TITLE**  |  |
| Title  | 1 | Identify the report as a systematic review. | p. 1 |
| **ABSTRACT**  |  |
| Abstract  | 2 | See the PRISMA 2020 for Abstracts checklist. | p. 2 |
| **INTRODUCTION**  |  |
| Rationale  | 3 | Describe the rationale for the review in the context of existing knowledge. | p.2-3 |
| Objectives  | 4 | Provide an explicit statement of the objective(s) or question(s) the review addresses. | p.3-4 |
| **METHODS**  |  |
| Eligibility criteria  | 5 | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. | p.5-6 |
| Information sources  | 6 | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted. | p.7 |
| Search strategy | 7 | Present the full search strategies for all databases, registers and websites, including any filters and limits used. | p.36 |
| Selection process | 8 | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process. | p.è-8 |
| Data collection process  | 9 | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. | p.12 |
| Data items  | 10a | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g., for all measures, time points, analyses), and if not, the methods used to decide which results to collect. | p.12-22 |
| 10b | List and define all other variables for which data were sought (e.g., participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | p.9 |
| Study risk of bias assessment | 11 | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process. | p.7; p.12 |
| Effect measures  | 12 | Specify for each outcome the effect measure(s) (e.g., risk ratio, mean difference) used in the synthesis or presentation of results. | p.12-22 |
| Synthesis methods | 13a | Describe the processes used to decide which studies were eligible for each synthesis (e.g., tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)). | n.a. |
| 13b | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions. | n.a. |
| 13c | Describe any methods used to tabulate or visually display results of individual studies and syntheses. | p.12-13 |
| 13d | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used. | n.a. |
| 13e | Describe any methods used to explore possible causes of heterogeneity among study results (e.g., subgroup analysis, meta-regression). | n.a. |
| 13f | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | n.a. |
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | p.12-13 |
| Certainty assessment | 15 | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | p.12-13 |
| **RESULTS**  |  |
| Study selection  | 16a | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. | p.7-9 |
| 16b | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded. | p.8 |
| Study characteristics  | 17 | Cite each included study and present its characteristics. | p.12-22 |
| Risk of bias in studies  | 18 | Present assessments of risk of bias for each included study. | p.24 |
| Results of individual studies  | 19 | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimates and its precision (e.g., confidence/credible interval), ideally using structured tables or plots. | p.12-22 |
| Results of syntheses | 20a | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | p.12-22 |
| 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g., confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | p.12-22 |
| 20c | Present results of all investigations of possible causes of heterogeneity among study results. | p.12-22 |
| 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | n.a. |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | n.a. |
| Certainty of evidence  | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | p.12-22 |
| **DISCUSSION**  |  |
| Discussion  | 23a | Provide a general interpretation of the results in the context of other evidence. | p.12-22 |
| 23b | Discuss any limitations of the evidence included in the review. | p.24 |
| 23c | Discuss any limitations of the review processes used. | p.24 |
| 23d | Discuss implications of the results for practice, policy, and future research. | p.12-24 |
| **OTHER INFORMATION** |  |
| Registration and protocol | 24a | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | n.a. |
| 24b | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | p.5 |
| 24c | Describe and explain any amendments to information provided at registration or in the protocol. | n.a. |
| Support | 25 | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | p.1 |
| Competing interests | 26 | Declare any competing interests of review authors. | p.1 |
| Availability of data, code and other materials | 27 | Report which of the following are publicly available and where they can be found template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | p.12-22 |

*From:*  Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372: n71. doi: 10.1136/bmj. n71

***Appendix II. Code book***

|  |
| --- |
| **Public Values** |
| Access | The means/opportunity to benefit from public service provision |
| Certainty | The quality of being reliable |
| Effectiveness | The degree to which something is successful in producing a desired result; success |
| Efficiency | The ability to achieve an end goal with minimal waste of energy, effort or resources |
| Mobilization of community resources | The availability of resources from community members |
| Quality | The degree of excellence of something |
| Satisfaction | The pleasure derived from the fulfilment of expectations |
| Service diversity & innovation | The variety of services and changes in established ways of service delivery |
| Sustainability | The ability to be maintained at a certain rate or level |
| Civic education & learning | The provision of information and learning experiences to empower citizens to participate in and learn from democratic processes |
| Consideration of capacities | Taking into account the resources citizens bring to the participative arena |
| Consideration of needs | Taking into account the requirements for the well-being of citizens |
| Impacting working conditions of public service professionals | Marking an effect or change on the working conditions (tasks, roles) of public service professionals |
| Individual freedom | The freedom one has to express themselves |
| Power relations | Relationships in which one person has social-formative power over another |
| Reciprocity | Exchanges with others for mutual benefit |
| Responsibility | The state of being accountable for something |
| Trust | Belief in the reliability, truth and ability of a person |
| Accountability | The requirement to justify actions or decisions |
| Empowerment | Authority or power given to someone to do something |
| Equity in service delivery & outcomes | The quality of accessing services and outcomes thereof in a fair and impartial manner |
| Inclusion | The provision of equal access to opportunities and resources for all community members, especially those who might otherwise be excluded or marginalized |
| Integration | The quality of entering into equal participation in or membership of a social group or institution |
| Legitimacy | Conformity with laws and rules |
| Ownership | The state of possessing something |
| Participation | The action of taking part in something |
| Social capital | The networks of relationship among people who live and work in a particular society and enable that society to function effectively |
| Social cohesion | The extent of connectedness and solidarity among (groups of- people in society |
| Transparency | The quality of being open, communicative and accountable. |
| **Project characteristics** |
| Actors involved | Who participates in the project? (groups of) Citizens, civil servants, politicians, NGO’s… |
| Vulnerable groups | Groups of people belonging or perceived to belong to groups that are in a disadvantaged position or marginalised |
| Initiator | Who initiated the project? Citizens or (local) government? |
| Tasks | Who takes on what task within the co-creation project? |
| Expectations & ambitions | What are the expectations and ambitions of the co-creation project? |
| Role of professionals | Are there professionals involved and what is their role? |
| **Policy domain** |
| Agriculture |
| Childcare |
| Courts & Judiciary System |
| Education |
| Employment |
| Energy |
| Environment |
| Health |
| Public safety |
| Public space |
| Public transport |
| Social services |
| Waste management |
| Water |
| **Governance context** |
| Size of municipality | What size of municipality is analysed here? (if mentioned) |
| Experience with co-creation | Does the municipality have prior experience with participation (in general) and co-creation (in particular)? (if mentioned) |
| Support for participation | Does the ruling coalition and do the civil servants support participation (in general) and co-creation (in particular)? (if mentioned) |

# *Appendix III. Search query*

|  |  |
| --- | --- |
| **Information source** | **Search query** |
| **Scopus** | ( TITLE ( "co-produc\*" OR "coproduc\*" OR "co-creat\*" OR "co-destruct\*" OR "co-commission\*" OR "co-design\*" OR "co-deliver\*" OR "co-evaluat\*" OR "co-monitor\*" OR "co-asses\*" OR "co-plan\*" OR "co-prioritis\*" OR "co-manag\*" ) AND TITLE ( "effect\*" OR "outcome\*" OR "impact\*" OR "cost\*" OR "benefit\*" OR "implication\*" OR "empowerment" OR "efficien\*" OR "inefficien\*" OR "effectiv\*" OR "ineffectiv\*" OR "legitima\*" OR "illegitima\*" OR "democratic" OR "undemocratic" OR "inclusi\*" OR "exclusi\*" OR "satifact\*" OR "dissatisfact\*" OR "accountab\*" OR "unaccountab\*" OR "public value\*" OR "trust\*" OR "distrust\*" OR "performan\*" OR "fair\*" OR "unfair\*" OR "equit\*" OR "inequit\*" OR "responsib\*" OR "quality" OR "social capital" ) AND TITLE ( "public" ) AND TITLE ( "citizen\*" OR "participant\*" OR "user\*" OR "client\*" OR “beneficiar\*” ) ) OR ( ABS ( "co-produc\*" OR "coproduc\*" OR "co-creat\*" OR "co-destruct\*" OR "co-commission\*" OR "co-design\*" OR "co-deliver\*" OR "co-evaluat\*" OR "co-monitor\*" OR "co-asses\*" OR "co-plan\*" OR "co-prioritis\*" OR "co-manag\*" ) AND ABS ( "effect\*" OR "outcome\*" OR "impact\*" OR "cost\*" OR "benefit\*" OR "implication\*" OR "empowerment" OR "efficien\*" OR "inefficien\*" OR "effectiv\*" OR "ineffectiv\*" OR "legitima\*" OR "illegitima\*" OR "democratic" OR "undemocratic" OR "inclusi\*" OR "exclusi\*" OR "satifact\*" OR "dissatisfact\*" OR "accountab\*" OR "unaccountab\*" OR "public value\*" OR "trust\*" OR "distrust\*" OR "performan\*" OR "fair\*" OR "unfair\*" OR "equit\*" OR "inequit\*" OR "responsib\*" OR "quality" OR "social capital" ) AND ABS ( "public" ) AND ABS ( "citizen\*" OR "participant\*" OR "user\*" OR "client\*" OR “beneficiar\*” ) ) AND ( LIMIT-TO ( SUBJAREA,"SOCI" ) ) AND ( LIMIT-TO ( LANGUAGE,"English" ) ) |
| **Web of Science** | ‘(TI=("co-produc\*" OR "coproduc\*" OR "co-creat\*" OR "co-destruct\*" OR "co-commission\*" OR "co-design\*" OR "co-deliver\*" OR "co-evaluat\*" OR "co-monitor\*" OR "co-asses\*" OR "co-plan\*" OR "co-prioritis\*" OR "co-manag\*") AND TI=("effect\*" OR "outcome\*" OR "impact\*" OR "cost\*" OR "benefit\*" OR "implication\*" OR "empowerment" OR "efficien\*" OR "inefficien\*" OR "effectiv\*" OR "ineffectiv\*" OR "legitima\*" OR "illegitima\*" OR "democratic" OR "undemocratic" OR "inclusi\*" OR "exclusi\*" OR "satifact\*" OR "dissatisfact\*" OR "accountab\*" OR "unaccountab\*" OR "public value\*" OR "trust\*" OR "distrust\*" OR "performan\*" OR "fair\*" OR "unfair\*" OR "equit\*" OR "inequit\*" OR "responsib\*" OR "quality" OR "social capital") AND TI=("public") AND TI=("citizen\*" OR "participant\*" OR "user\*" OR "client\*" OR “beneficiar\*”)) OR (AB=("co-produc\*" OR "coproduc\*" OR "co-creat\*" OR "co-destruct\*" OR "co-commission\*" OR "co-design\*" OR "co-deliver\*" OR "co-evaluat\*" OR "co-monitor\*" OR "co-asses\*" OR "co-plan\*" OR "co-prioritis\*" OR "co-manag\*") AND AB=("effect\*" OR "outcome\*" OR "impact\*" OR "cost\*" OR "benefit\*" OR "implication\*" OR "empowerment" OR "efficien\*" OR "inefficien\*" OR "effectiv\*" OR "ineffectiv\*" OR "legitima\*" OR "illegitima\*" OR "democratic" OR "undemocratic" OR "inclusi\*" OR "exclusi\*" OR "satifact\*" OR "dissatisfact\*" OR "accountab\*" OR "unaccountab\*" OR "public value\*" OR "trust\*" OR "distrust\*" OR "performan\*" OR "fair\*" OR "unfair\*" OR "equit\*" OR "inequit\*" OR "responsib\*" OR "quality" OR "social capital") AND AB=("public") AND AB=("citizen\*" OR "participant\*" OR "user\*" OR "client\*" OR “beneficiar\*”)); limited to Social Science Citation Index + Emerging Sources Citation Index and limited to language = English |

**Table 1. Search terms (source: own compilation).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Co-Creation** | **Outcomes** | **Public Service** | **Citizens** |
| Co-creation | Outcome | Public | Citizen |
| Co-Production/Coproduction | Effect | Participant |
| Co-destruction | Impact | User |
| Co-commission | Cost | Client |
| Co-design | Benefit | Beneficiary |
| Co-deliver | Implication |
| Co-evaluate | Empowerment |
| Co-monitor | (in)efficiency |
| Co-assess | (in)effectivity |
| Co-plan | (il)legitimate |
| Co-prioritise | (un)democratic |
| Co-manage | Inclusion/exclusion |
|  | (dis)satisfaction |
| (un)accountability |
| Public value |
| (dis)trust |
| Performance |
| (un)fairness |
| (in)equity |
| Responsibility |
| Quality |
| Social capital |
| Table 1. Search terms (source: own compilation). |

**Table 2. Public values adapted from *Jaspers & Steen (2019)* (source: own compilation).**

|  |  |  |
| --- | --- | --- |
| **Service** | **Relationship** | **Democratic Quality** |
| Access | *Civic education and learning* | Accountability |
| Certainty | *Consideration of capacities* | *Empowerment* |
| *Effectiveness* | *Consideration of needs* | Equity in service delivery/outcomes |
| *Efficiency* | Impacting working conditions of civil servants | *Inclusion* |
| Mobilization of community resources | Individual freedom | Integration |
| *Quality* | Power relations | Legitimacy |
| *Satisfaction* | *Reciprocity* | Ownership |
| Service diversity & innovation | Responsibility | *Participation* |
| *Sustainability* | *Trust* | *Social* *capital* |
| Social cohesion |
| Transparency |
| Table 2. Public values adapted from *Jaspers & Steen (2019)* (source: own compilation). |

**Table 3. # of mentions and percentage of total mentions per research type (source: own compilation).**

|  |  |  |
| --- | --- | --- |
| **Public Values Categories** | **Theoretical** | **Empirical** |
| **Positive** | **No effect** | **Negative** | **Positive** | **No effect** | **Negative** |
| **Service** | 26 (9,96%) | 9 (3,45%) | 7 (2,68%) | 48 (18,39%) | 4 (15,32%) | 1 (0,38%) |
| **Relationship** | 9 (3,45%) | 1 (0,38%) | 8 (3,06%) | 24 (9,19%) | 7 (2,68%) | 8 (3,06%) |
| **Democratic Quality** | 26 (9,96%) | 8 (3,06%) | 5 (1,91%) | 51 (19,54%) | 1 (0,38%) | 6 (2,30%) |
| **Total** | 61 (23,37%) | 18 (6,89%) | 20 (7,65%) | 123 (47,12%) | 12 (18,38%) | 15 (5,74%) |
| Table 3. # of mentions and percentage of total mentions per research type (source: own compilation). |

**Table 4. Public value mentions per research type with directions (positive, no effect, negative) (source: own compilation).**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Public Value** | **Theoretical** | **Empirical** |
|  | **Positive** | **No effect** | **Negative** | **Positive** | **No effect** | **Negative** |
| **Service** | **Access** | 1 | 0 | 0 | 3 | 0 | 0 |
| **Certainty** | 0 | 0 | 1 | 0 | 0 | 0 |
| **Effectiveness** | 7 | 2 | 1 | 12 | 1 | 1 |
| **Efficiency** | 7 | 3 | 1 | 6 | 1 | 0 |
| **Mobilization of community resources** | 2 | 1 | 0 | 5 | 0 | 0 |
| **Quality** | 5 | 2 | 1 | 8 | 1 | 0 |
| **Satisfaction** | 3 | 0 | 0 | 4 | 0 | 0 |
| **Service diversity & innovation** | 1 | 1 | 2 | 8 | 0 | 0 |
| **Sustainability** | 0 | 0 | 1 | 2 | 1 | 0 |
| **Relationship** | **Civic education and learning** | 4 | 0 | 0 | 7 | 0 | 0 |
| **Consideration of needs** | 0 | 0 | 0 | 6 | 0 | 1 |
| **Consideration of capacities** | 0 | 0 | 0 | 3 | 0 | 0 |
| **Impacting working conditions of civil service professionals** | 1 | 0 | 2 | 1 | 1 | 2 |
| **Individual freedom** | 0 | 0 | 1 | 1 | 1 | 0 |
| **Power relations** | 0 | 0 | 2 | 0 | 0 | 2 |
| **Reciprocity** | 1 | 0 | 0 | 2 | 0 | 0 |
| **Responsibility** | 0 | 0 | 1 | 0 | 0 | 0 |
| **Trust** | 3 | 1 | 2 | 4 | 5 | 3 |
| **Democratic Quality** | **Accountability** | 3 | 3 | 2 | 2 | 0 | 3 |
| **Empowerment** | 5 | 1 | 0 | 11 | 0 | 0 |
| **Equity in service delivery/outcomes** | 1 | 1 | 0 | 4 | 1 | 1 |
| **Inclusion** | 3 | 1 | 0 | 8 | 0 | 0 |
| **Integration** | 0 | 0 | 0 | 3 | 0 | 0 |
| **Legitimacy** | 4 | 0 | 1 | 1 | 0 | 0 |
| **Ownership** | 2 | 0 | 0 | 4 | 0 | 0 |
| **Participation** | 3 | 1 | 0 | 4 | 0 | 0 |
| **Social capital** | 2 | 0 | 0 | 2 | 0 | 0 |
| **Social cohesion** | 2 | 0 | 1 | 8 | 0 | 2 |
| **Transparency** | 1 | 1 | 1 | 4 | 0 | 0 |
| Table 4. Public value mentions per research type with direction (positive, no effect, negative) (source: own compilation). |

**Figure captions (list)**

* Figure 1. PRISMA flow chart (source: own compilation).
* Figure 2. # of empirical and theoretical items included in review per year (source: own compilation).
* Figure 3. Conceptual framework (source: own compilation).

**Figure 1. PRISMA flow chart (source: own compilation).**



**Figure 2. # of items included in review per research type per publication year (source: own compilation).**

**Figure 3. Conceptual framework (source: own compilation).**

1. Despite the broad definition of co-creation adopted in this paper allowing for an inclusive picture (cf. Rodriguez Müller et al., 2021), our focus is on the co-creation of public services. Scholars have increasingly also studied other instances of co-creation and co-production, such as knowledge co-production of the co-creation of policy in living labs. The former is related to citizen science and allows citizens to participate in scientific endeavours that can be geared towards governance, but also spans other domains, while the latter relates to the involvement of citizen in co-designing policies. Here, we focus on the active involvement of citizens in public services. [↑](#footnote-ref-1)