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# Exploring Public Sector's Roles in Collaborative Consumption – A Research Agenda

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**Abstract.** Motivated by the growing significance of sharing economy within our society, we here discuss which role the public sector may have within collaborative consumption (CC). CC refers to a business model grounded on peer-to-peer based sharing of goods and services through community-based online services. While public sector to a large extent has transformed from formalised bureaucratic structures into more hybrid organisations, focusing on the co-creation between public and private stakeholders, public sector's role within the sharing economy is still in need for further investigation. We reflect on the need for studying how public sector could benefit from a more active role within CC for public service provision in the e-government area. Based on current literature on CC, we argue that the public sector can take on three main roles in CC: the customers, the service providers, and the platform providers. We further develop suggestions for a research agenda in this area and raise questions for a further discussion on the role of public sector within CC.

**Keywords:** collaborative consumption, public services, public sector, government, research agenda.

## 1 Introduction

The way public sector provides services changed during the past 30 years, from rigid and bureaucratic structures [1], into decentralised forms of co-ordination, leveraging on the concept of competition rather than control, and favouring markets more than hierarchies for ensuring efficient allocations of scarce public resources [2]. Confronted by progressive reductions of budgets and increased pressure on the efficiency of public expenditures, new hybrid forms of public-private collaborations emerge [3], allowing for co-production of services including both public bodies and citizens [4]. In the current global climate of austerity and in the aftermath of the recent world financial crisis [5–7], the importance of co-operation between the public, private, and the citizens for

service deliveries will most probably increase [8]. Meanwhile, new forms of goods and service consumption emerge [9], based on the principles of sharing individual resources, temporary ownership, and access to digital platforms. These new business models, often referred to by the umbrella concept of sharing economy, leverage on forms of co-operation among different actors – including the customer – through digital platforms [10]. Sharing economy applications evolve on separate trajectories from that of public services [11]. However, they are increasingly creating tensions with services regulated by the public sector, exemplified by the prominent conflict between the Uber company and the public taxi transportation service in cities all around the world, or Airbnb influencing the traditional hotel industry. Thus, in CC the public sector currently takes a role that is mainly limited to regulatory aspects.

In this paper we explore the roles public sector may play within these new business models, beyond their traditional regulatory role [12, 13]. We introduce the concept of collaborative consumption (CC), a specific business model within the sharing economy [14], as a framework for studying the role of the public sector within the sharing economy. While several sharing examples are based on the co-ownership of resources between two or more individuals, CC focuses on triadic relationships between customers, peer service providers, and platform providers [14]. Hence, we argue for CC to be a suitable framework for studying the partnering models where public sector, citizens, and private companies act together in various constellations for creating innovative ways of delivering public services and consuming goods and services.

Our aim is to initiate a discussion within the e-government community on the roles of public sector in the sharing economy, and to present a systematisation of avenues for research within the field. To address this, we follow [15]’s hermeneutic approach for reviewing the literature on CC and public sector. We argue how public sector can assume the three roles in CC – customer, service provider, and platform provider – discuss implications, and identify research gaps, which we summarise in a research agenda.

## 2 Method: Conceptual Framework and Hermeneutic Cycle

Our review is based on a hermeneutic literature review process [15], which is a common approach especially in conceptual papers in the field of Information Systems and e-government (cf. e.g. [16]). In contrast to structured literature reviews, this approach acknowledges literature reviews as subjective and interpretative processes in which the researcher gains a deeper understanding of a subject over time by iteratively identifying relevant literature, thus digging deeper into the body of knowledge. The hermeneutic approach consists of two intertwined circles, the search and acquisition and the analysis and interpretation circle (cf. **Error! Reference source not found.**).

Searching for literature on the concept of CC in the public sector, we found that research in this field is scarce with most articles ascribing a passive, regulative role to governments (see Section 3.2). Thus, we identified the need of deriving a research agenda for CC in the public sector in order to advance this field in a structured way. Therefore, we searched for literature on CC in general and finally decided for [14]’s framework as the basis for our analysis since they provide a clear distinction of the

different actors in CC, consisting of a triadic relationship between a customer, a service provider, and a platform provider. We iteratively searched for relevant literature for discussing these three roles within the public sector. Based on our identified research gaps, we derived a research agenda for thoroughly analysing public sector's role in CC.

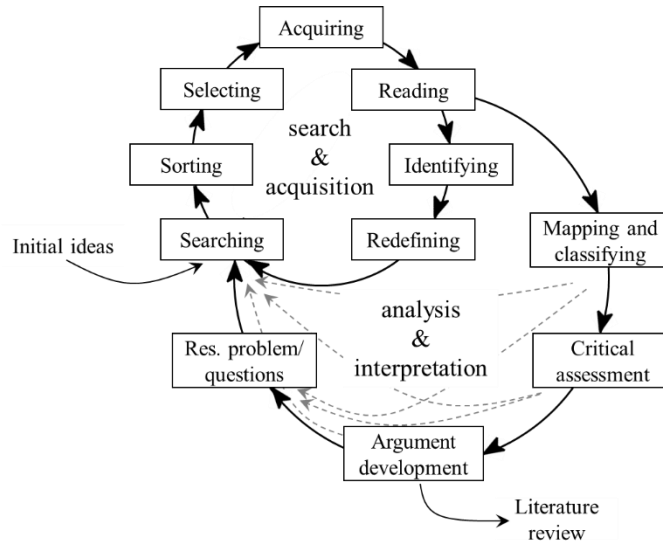


Fig. 1. Hermeneutic framework for literature reviews by [15]

### 3 Related Work

#### 3.1 Public Sector Responsibilities

In order to discuss the role of the public sector in CC, we need to understand the main responsibilities of public sector within the society. Interestingly, this is rarely discussed within the e-government field; the reason why public sector exists is more or less taken for granted. Anderson [17] introduces seven main areas governments have within societies. While a thorough discussion of these is beyond the scope of this paper, we introduce them here to inform the discourse of CC within public sector, by reflecting on how public sector roles within the sharing economy could influence on the main responsibilities public sector has within the societies (in section four below).

The government provides an economic infrastructure, with institutions, rules and arrangements needed within a society [18]. This includes the definition and protection of property rights, enforcements of contracts, tariff systems and currencies. Rules for the economic infrastructure are provided by the political systems, explicated by regulations, and protected by sanctions. The government also provides various goods and services valuable, accessible, and broadly used by everyone, while being difficult to pay for by their individual use. Such goods include the national defense, roads, crisis response management, and other public infrastructures, representing the public goods

within societies. Furthermore, the government is responsible for *the resolution and adjustment of conflicts, to pursue justice, order and stability*, including the protection of weaker groups, the provision of laws and sanctions to avoid exploitation of children, and regulations to secure a minimum wage for workers.

*Competition within the society* needs to be maintained to avoid cartels, price-fixing, and companies restricting access to their products for groups of citizens, by providing rules and regulations to avoid one or few actors to dominate the market, to maintain a healthy competition to secure the best possible quality at the right cost for the benefit of the society and their members. Moreover, the government also acts in the *protection of natural resources* for defending the nature against degradations, to maintain the interests of future generations. Governments are also *responsible for securing all members of the society a minimum access to goods and services of the economy*, for instance by adjusting potentially socially unacceptable consequences of the market economy on members of the society, such as poverty and malnutrition. People may be excluded from access to the market economy due to illness, old age and illiteracy, in which case governments are expected to *intervene to provide a minimum level of assistance*. Finally, since there will always be fluctuations within the economy with booms being followed by regressions, an important role for government is to *stabilize the economy*, through budgets, monetary policy, and control over prices and the state finances [18].

### **3.2 Collaborative Consumption**

CC are “peer-to-peer based activities of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services” [11]. CC underpins a form of coordination among the consumption behaviour of individuals who agree on their consumption actions, or on the acquisition and distribution of resources for a compensation [9]. CC applications are favoured by the diffusion of digital platforms – like social media – and digital eco-systems [19, 20], which facilitate communication and coordination among different actors cooperating for a common goal [21, 22].

CC holds a potential venue to stimulate sustainable consumption practices [23], to promote a cultural shift from ownership to access and sharing of resources [24]. The behaviour of individuals in a CC context is guided by information sharing, collective coordination and decision making, and individual and communal rational behaviour. On the one side, the used digital platforms reduce the transaction costs for creating connections among unacquainted members and for sharing information among them [11, 25, 26]. While on the other side, people act in these settings on the basis of rational reasoning, seeking the maximisation of utility and the minimisation of costs [27].

The exchange of goods and services among members of the community can be based on direct or indirect reciprocity. In the former case, there is often a high level of uncertainty since participants rely on the norm of reciprocity (comparable benefits) instead of explicit agreements (negotiation). In the latter, participants provide valued resources to others without any expectation directly from the same person [28]. In social exchange terminology, this is called ‘generalised exchange’ where people give benefits in response to needs or to demonstrate a general concern for the other person [29]. These

settings are prone to free riding and opportunistic behaviour, and may determine failures where CC instead of being a way of sustainably coordinating resources usage, leads to the tragedy of the overexploitation of the commons [30].

Three main characteristics delineate CC from traditional forms of exchange [14]: the number and type of actors, the nature of the exchange, and the directness of the exchange (cf. Table 1). First, CC represents a *triadic connection*, including a) a platform provider enabling the exchange, b) customers who request access to the assets, and c) a peer service provider who grants such access, resulting in two different providers serving the customer. Second, in CC, there is no transfer of ownership, rather, the peer service provider grants *temporary property rights* to customers. Third, CC is mediated through *market mechanisms*, unlike related phenomena such as sharing, which relies more on social mechanisms. Consequently, CC include actors who have economic motives (among others) for participating in the triadic connections with others.

**Table 1.** Main characteristics of CC (adopted and extracted from [14]).

	Collaborative Consumption
Number and type of actors	Triadic, between a platform provider, a peer service provider and a customer
Nature of exchange	No ownership transfer, shorter periods of agreed consumption time of underutilized assets from the peer service provider, sequential use
Directness of exchange	Mediated through market mechanisms

### 3.3 Existing Studies of CC in the Public Sector

Academic literature on collaborative consumption mostly refers to the public sector taking a regulative role in private sector initiatives [31, 32]. Articles that discuss the application or implications of CC in public sector organisations are few.

From an empirical perspective, CC is mainly discussed in the context of smart cities with the aim of providing better transportation and housing infrastructures. Experts call for municipality-driven alternatives to private-sector business models such as Uber and Airbnb [33]. In 2012, for example, the Seoul Metropolitan Government started the Sharing City Initiative for facilitating access to services such as transportation and public libraries. Evaluations in this context show that CC does not necessarily have to be a purely private sector related business model but can be driven by governments as well, thus pursuing societal and economic goals [34]. Such initiatives can create more transparency and accountability when governments provide open data about their activities.

The literature discusses various challenges for the public sector when engaging in CC. Governments need to adjust the legal framework, removing potential obstacles to CC activities [34, 35] and need to cooperate with external stakeholder including private companies, NGOs, citizens, and other public sector organisations [34]. Relying on third parties requires governments to give up their monopoly of the provision of services and makes them more dependent on the behaviour of actors that are out of their control. Thus, adopting CC in the public sector requires a cultural shift for governments as they

need to deal with the idea of decreasing ownership [33], which might lead to a changing role of the public sector as perceived by the public [35]. Furthermore, especially in the context of smart cities, governments would need to access raw data from various sources as citizen platforms, Internet of Things, sensors and open city level data, which they are currently lacking [33] and would have to provide initial funding for promoting CC projects [34].

In addition to the rather passive regulative part in CC, the discourse on the more active roles that governments can play is limited within the current body of knowledge. While [35], for instance, review several e-government models according to their suitability for CC purposes, they narrow their perspective on governments serving as the platform provider in CC. However, “[g]overnment and regulators do more than set policy. They can also be active participants in the collaborative economy by supporting, encouraging or promoting collaborative economic activities that enable more efficient provision of public services. [...] How can governments at all levels get the most benefit from the collaborative economy?” [36]. We believe that in order for public sector to benefit the most from CC, it is worthwhile to discuss if and how they can take on the three roles as discussed above: customer, service provider, and platform provider. However, such a perspective is currently under-researched by the literature.

## **4 Public Sector’s Roles in CC**

### **4.1 Public Sector as a Customer**

By taking the customer role, public sector organisations can use goods and services that are provided by other parties, e.g. by other public sector organisations, citizens, or companies. This might be a cost-efficient alternative to owning resources that are a) needed only occasionally or b) very urgently and that cannot be provided by public sector organisations themselves. An example for public sector organisations acting as customers is the online platform MuniRent (<https://www.munirent.co/>) where organisations can use idle equipment such as heavy machinery provided by other parties. In doing so, public sector organisations do not need to own specialised equipment which they seldom use. For a monthly fee, MuniRent offers public sector organisations to list, reserve, and loan their surplus equipment. Another example of public sector acting as customers in CC is renting resources in urgent cases from public and private sector organisations. In emergency situations such as floods, hurricanes, or wars, the public sector needs housing for many people which they may not provide themselves. Thus, they can use online platforms to rent idle housing spaces from citizens and organisations (such as flats or sport halls). During the hurricane Sandy, governments cooperated with private actors like Airbnb, to find housing for the homeless people [37].

Acting as a customer in such a CC environment inevitably means involving other stakeholders such as citizens and organisations in the process of public service delivery by using the goods and services they provide. The customer role may change the self-understanding and role of governments in relation to the public. Furthermore, this raises the question if CC could lead to the long-desired idea of co-creation and participation.

Both research and practice have long since discussed the theoretical potentials of including citizens in public sector service delivery and creation. However, up to now, success stories about participation are rather few [38]. From an economic point of view, being the customer in CC hypothetically promises costs savings since governments do not need to own all resources they use. However, it could also be prone to negative externalities against the intended governmental aims of stabilising economy and giving equal access right if for instance we think of the tensions that cases in the private sector like Foodora are creating in the labour market in some countries. Anyhow, this comes with a change in governments' business models, which currently rely on long-term contracts with certain providers and call for tenders. It is unclear how the quality of public services changes through CC [36]. A key challenge is to ensure the quality of the consumed goods and services if their creation is out of control for governments. Governments need to rely on the availability of critical resources (e.g. in crisis situations). As such the public sector role as a customer might lead to a conflict with certain government responsibilities such as *the resolution and adjustment of conflicts, to pursue justice, order and stability*.

#### **4.2 Public Sector as Peer Service Provider**

Public sector organisations can share idle resources with other public-sector organisations, citizens and companies via online community platforms. Public sector organisations possess equipment which is seldom in use, such as dump trucks, excavators and guardrail cleaners, and can thus be offered to others while another example refers to online libraries which lends books to citizens. Local governments provide the resources (books), which in most cases are managed via an electronic catalogue. Citizens can borrow these resources either offline or online and typically pay a monthly or yearly fee. Governments can even serve as the platform provider if they are the ones running the electronic library catalogue. A further case of the public sector acting as the peer service provider is the sharing of publicly owned cars via car sharing apps. The city of Offenbach, for example, shares government-owned vehicles on weekends with citizens when they are not needed otherwise [33].

The service provider role may influence citizens' trust in governments if the public sector participates more actively in people's life by sharing goods and services with them. In the best case, this might lead to more transparency on government actions, thus creating more credibility. Sharing goods and services can help governments to ensure their *responsible for securing all members of the society a minimum access to goods and services of the economy*, which can, for example, be achieved by sharing resources especially with people in need. As governments would act as a new competitor in the market by sharing goods and services, this will have an effect on their responsibility of *stabilizing the economy*. For the public sector as such, the service provider role may, on the one hand, lead to financial income, while, on the other, also enhancing and creating new tasks concerning for instance questions of liability. At the same time, considering inequality in the access to digital technologies, this could also reduce the societal and economic cohesion within a country, and create potential competitive tensions with the private sector.



### 4.3 Public Sector as Platform Provider

Public sector organisations can offer online platforms where other stakeholders such as citizens, non-government organisations, and companies can share (public service related) resources [35]. This can include all kinds of goods and services, like the sharing of resources in crisis situations, ride sharing in order to reduce transport, or offering fellow citizens support in coping with government services. However, this could theoretically go as far as governments outsourcing government services to service providers. Moreover, the public sector could also offer an online-based community for internal resource sharing where to allocate personnel and equipment when needed.

It needs to be identified if it is economically sensible for the public sector to act as the platform provider since this could increase the workload for governments. From a consumer point of view, public sector serving as intermediaries between the customer and the service provider might increase the trust in the goods and services shared via the CC platform, and could avoid the tensions that private managed platforms are creating on the market. This aspect touches upon governments' responsibility of *providing an economic infrastructure* for its citizens. Again, this changing role of the public sector in society would possibly influence the trust in government.

## 5 Research Agenda

We argued that CC can challenge the current organisation of the public sector and deserves more attention from the research community. Based on discussing the different roles that governments can take in CC, we would like to draw the attention now to several arising questions that should be addressed by research in the near future.

### 5.1 Tasks and Services in the Public Sector that are Suitable for CC

The public sector fulfils an abundance of different tasks and, as explained above, has to cover various areas of responsibilities. It seems obvious that not all of them are suitable to be delivered or consumed via CC. Future research should therefore identify assess the feasibility of CC projects within different parts of the public sector:

- How does CC relate to the different areas of responsibilities within public sector?
- What kind of public sector responsibilities could benefit from including CC business models, and what responsibilities should better not be exposed to such logics?
- Which public sector services are suitable for being offered or consumed via CC?

### 5.2 Implications of CC in the Public Sector

Taking part in CC activities challenges public sector's traditional way of working. Public sector could, for example, become more strongly dependent on the provision of goods and services by other parties. While potentially reducing their own effort, CC activities create new tasks for the public sector, which need to be managed. This raises a number of issues to be clarified:

- What are societal and legal implications of CC in the public sector?
- Which economic and societal negative externalities are raised by a CC strategy for the public sector?
- Which new competences are needed to manage this change in the public sector?
- How does the business model of the public sector (has to) change?

### **5.3 CC-Driven Change in Relationship between the Public Sector and the Public**

When engaging in CC activities, the role of the public sector within society changes since citizens and private sector organisations become more strongly involved in the provision of services. This could lead to the desired paradigm shift that was proclaimed in the e-participation context. At the same time new forms of self-organization might reduce the need for traditional political and democratic institutions through which public services and public services policies are traditionally organized. In order to predict the changing relationship, future research should analyse:

- How does the (self-) understanding of public sector change by taking on roles in CC?
- How does the public sector – citizens relationship, and the perceived trust, change?
- Could CC be a way for increasing the level of participation or engagement in the public discourse by the citizens?
- How does CC initiatives affect economic viability and social vitality, as well as political validity and viability?

### **5.4 Theories for Analysing CC in the Public Sector**

As already argued, CC in general and especially in the public sector is undertheorized. It becomes obvious that transferring this business model to the public sector touches upon various disciplines such as public administration, politics, law, economics, organisation management, e-government, and information systems, to name a few. In order to provide a comprehensive theoretical picture, we need to answer:

- Which disciplines, apart from e-government, should be considered when conducting research on CC in the public sector?
- Which theories do we need to incorporate in future research?

### **5.5 Methodological Considerations**

Given the emphasis on understanding the phenomena investigated within their real-life context through a rich description of particular instances [39], it is appropriate to adopt an explorative case study approach [40]. Exploratory case studies typically address how and why questions [39] concerning the dynamics present within a particular contextual setting [41], with the objective of developing initial understandings, which is clearly needed within a new research area of interests.

However, since real-life examples of CC in the public sector are few, which makes it difficult to run case studies or quantitative studies, we believe simulation to be a viable method for investigating the research issue. Simulation studies are considered particularly useful for building a place in which it is easy to explore new concepts, ideas, boundaries and limitations [42]. For this reason, we plan to investigate our proposal of studying public service provision in a CC scenario through simulation studies, which are methods for using computer software to model the operation of real world processes, systems, or events. For their nature, simulations work as virtual experiments [43]. Based on insights from both empirical studies and simulation experiments we will perform in the next steps of the research project, we believe that there will be the need to strengthen the theoretical underpinning of CC in the public sector. Thus, we also argue for the need of further conceptual studies in this area.

## **6 Conclusive Remarks**

In this paper we have argued that in addition to acting as a regulative body in CC, governments can take the three different roles of customer, service provider and platform provider. We discussed the implications that might go along with the new roles for the public sector and subsequently derived a research agenda to serve as a roadmap for future research on CC in the e-government field. Thus, we contribute to the current body of knowledge by providing a systemised overview of research gaps that need to be addressed. As for the practice we are initiating a discussion on CC in the public sector that moves beyond the yet prevailing notion of governments being an outsider in the triadic relationship that constitutes CC. We argue that it is worthwhile for the public sector to take new and thus more active roles in CC. Finally, regarding the relationships between the public sector and citizens, since CC is built on community-based activities, it is interesting to explore the issues concerning economic viability (sustainability) and social vitality (reciprocal relations for satisfying social needs), as well as political validity and viability (power mobilization and distribution in making decisions).

Our research is naturally limited in various ways. Being among the first ones to systematically address the possible roles of the public sector in CC we struggled with identifying relevant theoretical literature. In addition, actual applications of CC in the public sector are scarce, thus limiting the empirical evidence. We do not claim completeness for our research agenda and suggest integrating further literature from disciplines related to CC or the public sector such as public administration or political sciences. What is more, we have left out the role of governments as regulatory entities in the CC process, which might also raise points for future research. Nevertheless, we believe that our work provides a helpful point of departure for discussing CC in the public sector.

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