

Sharing for Health, Inclusion, and Sustainability: The Co-Production of Outdoor Equipment Lending in Norway

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Abstract

This study analyses the promotion of public health, social inclusion, and environmental sustainability in two Norwegian cities through the co-production of outdoor equipment-lending outlets. Building on seminal insights from Elinor Ostrom, we investigate how the co-production of equipment-lending initiatives can bridge the divide between government, civil society, and the market. Engaging citizens in outdoor activities to promote public health, social inclusion and sustainability is a political focus area in Norway, but the activities often demand access to expensive equipment. Since the 1990s, many Norwegian municipalities have organised lending outlets for outdoor equipment, often relying on volunteer work. The emergence of BUA, a nationwide NGO aimed at engaging children and youth in outdoor activities, added the goal of environmental sustainability as a foundation for equipment-lending outlets. Additionally, it became a catalyst for the articulation of a diverse array of partnerships for the co-production of equipment lending as a public service. This study draws on fieldwork and in-depth interviews with users, staff, volunteers, and institutional partners at two lending outlets, in Kolbotn and Tromsø, in south-eastern and northern Norway. We focus on the co-production of BUA as a public service and discuss how the interplay of various actors leads to the achievement of societal and environmental goals, and subsequently how equipment-lending initiatives can facilitate collaborative consumption practices with the potential to reduce consumption.

Keywords

collaborative consumption; co-production; environmental sustainability; outdoor equipment; public health; social inclusion

1. Introduction

Addressing the challenges of sustainability in urban communities requires changes in the organisation of service provision and private overconsumption (Ostrom, 2010; Zvolška et al., 2019). Since the seminal work of Elinor Ostrom (1972), the research tradition revolving around the concept of co-production has contributed to the knowledge of how citizens contribute to the implementation of public services across many different fields (Brudney & England, 1983; Nabatchi et al., 2017; Ostrom, 1972). Today, the sustainability of private consumption is one of the most pressing issues, and this article argues that the concept of co-production has gained relevance as citizens are increasingly involved in producing sustainable services through collaborative efforts. One such initiative is the Norwegian NGO BUA, an organisation that facilitates the initiation and co-production of equipment-lending outlets in diverse contexts. Norway is among the top five countries for domestic consumption and is the top consumer of sports and leisure equipment (Aall et al., 2011; Andersen & Skumsvoll, 2019; OECD, 2022), and equipment-lending initiatives, such as BUA, are important to reduce the environmental impact of consumption as they engage citizens in sharing, reusing, and repairing (Guillen-Royo, 2023; Julsrud, 2023; Westskog et al., 2020).

Originating in the 1990s, sports and outdoor equipment-lending outlets were initiated by municipalities across the country, but the services achieved little recognition and were seldom used. In the 2010s, the Directorate of Health made equipment lending a priority, with funding granted by municipalities through the Norwegian Directorate for Children, Youth and Family Affairs (Bufdir). The BUA network was established in 2014 to build visibility through a shared brand and to provide a common internet site and administrative and digital lending system. BUA is an acronym that stands for children and youth in activity (Barn-Unge-Aktivitet), and its chief societal mission is to secure participation in outdoor sports and leisure activities for children and youth. Nature-based recreation is an important part of Norwegian culture, and BUA seeks to strengthen public health, social inclusion, and environmental sustainability through its services (Erdvik & Bjørnarå, 2022; Erdvik et al., 2023; Gurholt & Haukeland, 2019). By sharing and reusing materials, BUA outlets may provide environmental sustainability to the societal goal of including more people in activities such as skiing, hiking, camping, and a wide variety of sports. Currently, the BUA network connects approximately 197 outlets across Norway's 356 municipalities (BUA, 2023; Erdvik et al., 2023).

This article investigates how BUA outlets are catalysts for diverse articulations of the co-production of lending services between public service officials, civil society actors, and volunteers. The literature on collaborative consumption often discusses the tensions between market—and civil society-driven initiatives (Fraanje & Spaargaren, 2019), but the extent to which collaborative consumption initiatives fulfil the societal and environmental goals they are set to meet remains understudied (Schor & Vallas, 2021). By focusing on co-production, we address this research gap, and provide novel insights on the potential for collaborative consumption initiatives to bridge the divide between government, civil society, and the market. This study is based on fieldwork conducted at two BUA outlets in Kolbotn and Tromsø, two cities in south-eastern and northern Norway. We base our analysis on a comparative case study design and trace the articulations of co-production strategies as they unfold across contexts. By highlighting the process of co-production at two BUA outlets, the article seeks to foster conceptual clarity while investigating a somewhat under-researched empirical area. NGOs and voluntary organisations are important actors in Norwegian outdoor life (Westskog et al., 2021), but the co-production of outdoor equipment-lending outlets is currently under-researched.

This article also engages with the contextual, cultural, and organisational factors of collaborative consumption, as has been called upon in previous studies (see Retamal, 2019; Whalen, 2018).

Building on the work of Ostrom (1972, 1996), we explored how equipment lending is co-produced to promote public health, social inclusion, and environmental sustainability. Our exploratory research question is formulated as follows: *What are the relations between co-production practices and the societal and environmental goals of BUA equipment-lending outlets in Norway?* The study is conducted as part of the Scandinavian research project UPSCALE, its main research interest being the contribution of public libraries to upscaling sustainable sharing among citizens (Jochumsen et al., 2023). BUA has sought to model itself after public libraries (Vannebo & Tjønndal, 2022, p. 109), and some of the outlets are partially run by public libraries or based in or adjacent to library buildings (Erdvik et al., 2023). Hence, we explore the role of public libraries as co-producers of equipment-lending initiatives through the case of BUA Kolbotn. With co-production as our main research interest, we focus on inter-organisational collaborations in relation to the input of citizen volunteers and BUA's users. Additional enquiry is made into the elements shaping equipment lending as a practice of collaborative consumption, as we investigate the micro-levels of interactions in relation to the goals achieved through equipment lending services.

First, we present Ostrom's theory of co-production of public services and connect it with our research objective on sustainable consumption. To investigate the possible societal outcomes of the consumption practices at the two BUA outlets, we then connect insights from the collaborative consumption literature with co-production theory. Our theoretical explorations are followed by the comparative analysis of the co-production of the BUA equipment-lending outlets in Kolbotn and Tromsø. The discussion highlights the comparative differences in co-production and establishes how equipment lending is a basis for public health, social inclusion, and environmental sustainability. To conclude we answer the research question, discuss the practical implications of our findings, and suggest future research. The research contribution provides an in-depth perspective on how the co-production of BUA's outlets positions them in the collaborative space between the government, civil society, and the market. It demonstrates that while equipment lending provides social inclusion in outdoor activities and thus benefits public health, environmental sustainability through reduced consumption is less evident.

2. Theoretical Perspectives: Co-Production and Sustainable Consumption

Heeding the call for clear definitions of co-production (Brandsen & Honingh, 2018; Petrescu, 2019), we delineate the concept and its distinction from co-creation and co-management. Ostrom and colleagues developed co-production in the 1970s at the University of Indiana's Workshop in Political Theory and Policy Analysis. While grappling with theories of governance recommending massive centralisations, Ostrom et al. (1973) did not find a single instance in which a large, centralised metropolitan police department provided better, more equitable services than smaller departments in comparable jurisdictions. Co-production recognises that public services are frequently produced in partnerships rather than by a single bureaucratic apparatus (Ostrom, 1972, 1996; Ostrom et al., 1973). Drawing on public administration discourse at the time, Brudney and England (1983) delimited co-production to citizen participation in the provision of public services through active and voluntary cooperation. Coordinated and collective efforts can potentially make co-production valuable to the community as a whole (Brudney & England, 1983, pp. 61–63). The co-production research subsequently focused on how citizens, volunteers, and clients co-produce with

government organisations to better the quality of public services and reduce costs (Bovaird, 2007; Brudney, 1993; Thomas, 1987).

Following Brandsen and Honingh (2018, p. 14), we define co-production as citizen input in the design and implementation of a service, whereas co-creation concerns the strategic planning and initiation of services. Co-management is inter-organisational collaboration in the ongoing management of public services (Brandsen & Honingh, 2018). To solve social and political challenges, local governments can co-create public services with civil society organisations and citizens (Torfing et al., 2019). BUA co-creates services with municipalities and civil society organisations, suiting equipment lending to various needs across contexts. BUA outlets are typically co-managed by the actors who co-created the lending outlet before or after the BUA organisation became a partner. Co-production is the implementation of the services by volunteers in cooperation with regular service producers, including the essential input of the users who contribute to the ongoing development of the services.

Turning to the issue of sustainable consumption and climate crisis response, Ostrom (1990) most notably researched the governance of common pool resources. Building on the earlier work on co-production, Ostrom (2010) proposed that various actors can organise service production for sustainable outcomes on multiple scales by “enabling citizens to form smaller-scale collective consumption units,” utilising local knowledge and participation (Ostrom, 2010, p. 552). To highlight additional sustainability outcomes, we draw on the public management literature and the concept of value co-creation: “Value is not an objective phenomenon but is rather constructed by the customer in the context of their own experiences, expectations and needs” (Osborne et al., 2021, p. 633). BUA outlets entail co-production as an all-encompassing process—in the production of services, in the joint sphere with the users, and in the customer sphere of value co-created in use (see Grönroos & Voima, 2013; Petrescu, 2019, p. 1736).

2.1. Collaborative Consumption and Co-Production

The concept of collaborative consumption indicates practices within the sharing economy that are generally defined by the utilisation of non-owned goods or services, often facilitated by online platforms (Belk, 2014; Botsman & Rogers, 2010; Frenken & Schor, 2017). Collaborative consumption may entail environmental benefits when materials are shared and reused to reduce private consumption (Schor & Vallas, 2021). This potential to reduce the ecological impact of consumption through sharing is supported by research in Norway demonstrating how environmental motives engage people in sharing practices (Julsrud, 2023). Additionally, research points to the fact that providing spaces for citizens to experiment with sustainable consumption practices, such as sharing, exchanging, or borrowing, may upscale and consolidate practices (Sahakian & Wilhite, 2014). Contrary to current trends in service digitalisation, studies have found that positive emotions generated in face-to-face interactions when sharing materials may strengthen and maintain collaborative consumption practices (Guillen-Royo, 2023).

Analysing collaborative consumption as practice implies a focus on infrastructural, normative, and knowledge elements while accounting for the people and organisations involved (Røpke, 2009; Shove, 2003). An example is Fraanje and Spaargaren (2019), who studied collaborative consumption platforms in the Netherlands, drawing on practice-theoretical approaches. They found that in the platform-based sharing of DIY tools and household items among neighbours, a payment alternative undermined the success of a

free exchange system. When social interactions between lenders and borrowers were progressively replaced by market interactions between owners and renters, the trust and sense of “neighbourliness” vanished. In such instances, market involvement can undermine the trajectory of collaborative consumption in civil society. An insight to be drawn from this research is that organisations or companies are systems of provision that embed collaborative consumption practices in various contexts (Fraanje & Spaargaren, 2019).

The economic, cultural, and social resources supporting practice engagement are important when analysing the involvement of organisations in the co-production of lending services (see Kennedy et al., 2013). Here, we connect this insight to research on volunteer contributions in co-production as they provide the social resources supporting many sharing practices. Volunteers constitute a “category of lay actors who share common characteristics or interests,” working directly with the regular service producer (Nabatchi et al., 2017, p. 770) without necessarily receiving services or benefitting directly from the organisation (Eijk & Gascó, 2018). As such, volunteers engage in co-production because of intrinsic rewards, humanitarian and altruistic values, sociality, or personal enhancement, while users or clients benefit directly from the services (Alford, 2002). Additionally, citizens who volunteer want to take responsibility for their community and identify with public purposes (Eijk & Gascó, 2018). As our analysis will show, the cultural, normative, and value-based resources provided by citizens and NGOs influence collaborative consumption practices and have a possible impact on the outcomes of equipment lending.

3. Methods: Comparative Case Study Methodology

This study draws on fieldwork conducted at the BUA outlets in Kolbotn and in Tromsø, the latter named TURBO, during 2021 and 2022. The case selection was due to both BUA outlets being partners in the research project UPSCALE. Furthermore, the cases represent typical constellations of co-producing actors involved in BUA outlets (see Erdvik et al., 2023), in which TUBRO has stronger municipal backing, while BUA in Kolbotn is co-produced with and placed inside a public library. We carried out semi-structured interviews with the organisational stakeholders, volunteers, users, and institutional partners of the two outlets. At the organisational level, interview participants include municipal staff members, Red Cross workers and volunteers at TURBO, and librarians, the BUA employee, and The Future in our Hands staff at BUA Kolbotn (eight interviews in Tromsø and seven in Kolbotn). Key interview participants had worked at the outlets since the initiation of the services as both employed staff and volunteers, while others had joined the organisations more recently. Users of various backgrounds were interviewed (16 in Tromsø and five in Kolbotn). The users included in the study represented different age groups, genders, income groups, and geographical backgrounds. There were high school and university students, parents, grandparents, long-term residents, and people new to the cities, people well experienced in outdoor activities, as well as people trying out such activities for the first time. The qualitative data is complemented by statistics from BUA on equipment lending.

The interviews with both co-producing actors and users enquired about the experiences of involvement in the BUA outlets, practices of collaborative consumption, and perceived socio-environmental outcomes. The interviews with staff and volunteers centred on how the services are organised, the inter-organisational collaborations, target groups and actual borrowers, what items are shared, and challenges faced by those involved in the service provision. We discussed their strategies for contributing to public health and social inclusion, how the services contribute to environmental sustainability, and whether equipment lending

results in reduced consumption. The interviews with users centred on their use of the lending outlets in relation to everyday practices, their reasons for taking part in the sharing services, and what the alternative to borrowing equipment would be. In addition to the interviews, we conducted participatory observations at the lending outlets during opening hours for three days at both locations. Observing the interaction among staff, volunteers, and users offered insight into the encounters taking place at the BUA outlets, and the exchange of knowledge and emotional energy mobilised in the interplay of the involved actors (see Fraanje & Spaargaren, 2019).

The method of analysis is inspired by a processual approach to comparison in case study research, as we trace the elements of practice that shape engagement in equipment lending at BUA outlets. A processual approach to comparison implies a comparative optic emphasising how processes unfold, tracing sets of relations and how they play out in distinct locations (Bartlett & Vavrus, 2017). This perspective permits a dynamic study of the co-production of lending outlets, while we also explore the data material along the comparative axis of actor constellations and outcomes.

3.1. BUA Kolbotn and TURBO: Two Cases of BUA Equipment Lending Outlets

BUA Kolbotn is located in Nordre Follo, a municipality with 58,000 inhabitants, just outside the Norwegian capital of Oslo. Kolbotn sits by a lake, surrounded by forests, adjacent to downhill and cross-country skiing areas. The municipal building named Kolben culture house, where BUA Kolbotn is located, has a café and Movie Theatre on the first floor and a public library, BUA, and other municipal services on the second floor. The BUA outlet in Kolbotn is a partnership between the Norwegian NGO The Future in our Hands (Framtiden i våre hender; FIVH), Nordre Follo public library, and the local volunteer's association, the latter two being part of the municipal public services. It was launched in 2016 as an additional service provided by the public library, with equipment kept on the library premises and the library card used to facilitate borrowing. Initially, the available equipment was intended for summer activities with canoes, bicycles, tents and sleeping bags as the most popular items. In 2017, BUA Kolbotn moved from its provisional location to one of the library's storage rooms, situated on the same floor but with an independent entrance. This room was big enough to accommodate additional equipment such as ice skates, boots, helmets, skis, and poles necessary for the practice of winter sports. In 2022, BUA Kolbotn gained access to the BUA digital lending system and featured 23rd of the BUA outlets in the country with 629 individual users borrowing 2,911 pieces of equipment (BUA, 2023).

TURBO is located in Tromsø, a city in the northernmost region of Norway which has grown from a small town to an urban city with a young and heterogeneous population of 71,000 inhabitants. The NGO Tromsø Red Cross initiated equipment lending under the name TURBO in 2013 and partnered with Tromsø municipality three years later. This meant moving from modest accommodations of one small room to the City Hall, where TURBO has been located ever since, on the ground floor between the Movie Theatre and the public library. The move increased visibility and extended TURBO's space to 76 square metres. At the time, an organisational partnership with the public library was considered, but since TURBO was already a well-functioning organisation, the perception was that a continued organisational partnership between the municipality and Red Cross would provide sufficient services. In 2019, TURBO partnered with BUA and gained access to the digital lending system, competency, and brand. Since TURBO was already an established service in Tromsø, the lending outlet did not switch names to BUA, even as the digital platform

and user interface represent the BUA system. Tromsø is a winter sports destination surrounded by impressive mountain landscapes, and the long arctic winters contribute to TURBO's largest lending category being "skis and skates," although camping gear and bicycles are also popular items. In 2022, TURBO's 3,030 users borrowed 21,548 pieces of equipment, making it the BUA outlet with the highest number of loans and users nationally (BUA, 2023).

4. Analysis

This section presents the analysis of our case studies from BUA Kolbotn and TURBO. We first introduce the relations between organisations, the characteristics of their input to the BUA equipment lending and how the lending outlets are co-created, co-managed, and co-produced through various collaborations. Then, we highlight co-production practices as interactions among service producers, volunteers and users and equipment lending as a practice of collaborative consumption. We emphasise how co-producing actors provide the resources for co-production and embed the practice in material conditions and infrastructures. The analysis results in a discussion of the comparative differences in co-production and the outcomes of equipment lending.

4.1. BUA Kolbotn: Co-production With Public Libraries

By being located within the premises of the local public library, BUA Kolbotn represents developments that are far reaching in the library field. In 2014, legislation mandated public libraries to function as social meeting places and arenas for public conversation and debate, leading to considerable diversification in library programmes and events (Audunson & Evjen, 2017), influenced by international trends of non-traditional collections such as libraries of things and tool lending libraries (see Ameli, 2017). BUA Kolbotn became part of Nordre Follo public library in 2016, and it follows that diverse services are perceived as commonplace in public libraries and adopted by librarians and many users. The library's central location in the city is also described as an asset in interviews with librarians and volunteers, and in Nordre Follo, 81 percent of residents know about local sharing services, while nine percent have used them (Julsrud, 2021).

The interview participants explained that the public library and municipal council are partners in the co-production of services through the work of librarians and provision of the premises, while the local volunteer association recruits citizen volunteers that are subsequently organised by FIVH. The general characteristics of the partnership are specified in a collaboration agreement that defines FIVH as an equipment owner responsible for managing funds. Economic resources were initially supplied only annually and were dependent on FIVH, applying to Bufdir. Therefore, the goodwill of librarians was key to the outlet when FIVH members and volunteers were not available, especially during daytime shifts. In 2022, FIVH was successful in applying for funds that, contrary to previous calls, could pay salaries and had a three-year horizon. The grant, and additional funds from Nordre Follo municipality, enabled the creation of an 80 percent position for an employee to maintain, repair, and lend equipment at the three BUA outlets. Still, the distribution of the BUA employee's time across three geographical locations necessitates continuous co-production with librarians and volunteers.

BUA Kolbotn exemplifies how equipment outlets are situated in public libraries and co-managed and co-produced with the involvement of both public service producers and civil society. The librarians provide an

essential contribution to the lending initiative, but according to the interview participants, their involvement is controversial. Public libraries are sometimes conceptualised as close cousins to the sharing economy, but the librarian's professional tradition is positioned within cultural and educational fields, with developments towards public libraries as social institutions (Hansson, 2010; Noh et al., 2019). The latter, particularly the public library's mission to promote social inclusion, is often drawn on by librarians to justify their active involvement in the daily running of BUA Kolbotn and their smooth collaboration with local volunteers.

4.2. The Practice of Co-Production at BUA Kolbotn

By being co-created through a partnership with the municipal library, BUA Kolbotn has been shaped by the infrastructure, competencies, and values of the library institution. The importance of sharing infrastructures with the library is presented by interview participants as giving visibility to the BUA outlet and by being partially run by the library, it benefits from the library's long opening hours and the availability of library staff. BUA's main societal mission also resonates with libraries' active involvement in the promotion of health and inclusion in the local population. In this regard, the librarians we interviewed emphasised how children have been able to attend summer camps by borrowing backpacks, sleeping bags, or hiking boots from the outlet and how migrant women have been able to try skiing for the first time, thanks to the equipment lent through BUA. Sharing a location also has an added benefit for the public library, as users of BUA Kolbotn often become library users and vice versa.

It was clear from the beginning that librarians had skills and knowledge in lending, registering, cataloguing, and helping citizens to navigate bureaucracy that were useful to co-producing the service. Since the initiation of the lending service, librarians have filled the role of regular service producers, handling many of the interactions with users, especially during daytime shifts when there has been little availability of volunteers. During the evenings, volunteers contribute enthusiastic and knowledgeable support to the librarians, and, as one FIVH employee explained, their participation provides citizens with a sense of ownership of the lending services:

The citizens have more of an ownership through this type of collaboration. We could spend more municipal funding on BUA, this could be good for BUA, but it would not benefit the outlet to displace the volunteers with municipal funds. I think that would have been a great loss.

Contributing to public health, social inclusion, and environmental sustainability are the three interdependent goals cited by librarians, volunteers, and users as defining equipment lending. The BUA employee also contributes a valuable circular component through the repair and maintenance of equipment, with workshop activities taking place in the basement or at a separate location. A special emphasis on environmental sustainability at BUA Kolbotn is linked to the FIVH co-managing the services with the public library since their values revolve around environmental conservation and climate change mitigation. Furthermore, the FIVH strategically uses the traction of outdoor activities to motivate volunteers and users to engage in sustainable consumption practices. As a FIVH member puts it:

BUA shows you how you can have all the joys and all the experiences without buying new things. I think it indirectly contributes to people accepting that environmental and climate measures don't necessitate a duller life. And that must be valued highly. Everybody loves BUA, all political parties, everybody...

The values of FIVH permeate the practices at BUA Kolbotn; however, the BUA employee acknowledges that approximately 80 percent of the equipment is bought new. Moreover, according to a FIVH volunteer, local sports shops do not recognise BUA as a competitor because sales are not affected by the equipment lending. The BUA employee envisages health and inclusion as core to the outlet's future trajectory, with the expansion of loans and territorial coverage as the main priorities. With limited donated equipment, the result may be a normative rather than a direct contribution to environmental sustainability. Still, the practices at BUA Kolbotn present an organisational trajectory conducive to the engagement of civil society in processes that reduce material consumption through sharing (see Fraanje & Spaargaren, 2019).

4.3. TURBO: Co-Production With Municipal Employees

TURBO has a physical infrastructure similar to BUA Kolbotn, with the main difference following from not being co-created on the initiative of a public library and therefore being placed adjacent to, and not within, the local public library's premises. By being co-produced without the influence of the public library, TURBO is reliant on Red Cross volunteers and strong support from the municipality, funding three employees to work part-time with the services. While the outlet's services are predicated on the presence of involved staff members, the opening hours are just three afternoons a week compared to the generous opening hours at BUA Kolbotn. Still, TURBO's success in gaining outreach in the local community is supported by it being the most used BUA outlet in the country, and in Tromsø, 62 percent of inhabitants are aware of the local lending services, while 13 percent have used them (Julsrud, 2021).

The resources, skills, and knowledge elements that are constitutive of the co-production at TURBO are dependent on the partnership between the municipality and the Red Cross. In place of librarians, Tromsø municipality has three employees working part-time as BUA staff members, together with two involved Red Cross employees and volunteers. The characteristic of the partnerships is stated in a collaboration agreement that specifies that funding from the local municipality and Bufdir is allocated for employees, rent and acquisition of equipment. The Red Cross provides funding for one part-time employee working directly with service provision, while another Red Cross employee has responsibility for recruitment of up to 13 volunteers who contribute 1,560 work hours annually. In an interview, the Red Cross recruiter explained that they place many internationals at TURBO, as it is one of the local community activities in which Norwegian is not a necessary skill. A certain adaptability to the group is required, together with a personality suited to implementing services in accordance with Red Cross humanitarian principles.

TURBO is an example of how co-creating actors initiate public services and later co-manage and co-produce with the input of volunteers and users when service provision is established. Conflicts sometimes arise between what some term the Red Cross culture and the municipal goals of increased effectiveness. In an interview, a municipal employee explained that he "thinks that the Red Cross has more focus on the role as helper. You can call it the relational part of the job." The difference in objectives was echoed in the interview with the Red Cross employee, who said, "We have a different tone when we talk to people, for example, if they have difficulties with drugs." While values and norms may diverge in some respects, the organisational goals converge at what BUA stands for, as stated proudly by the municipal employee:

We prioritize children and youth in families with lasting low income to combat what we call exclusion. Second to this, TURBO is an incredible environmental resource through acquiring used equipment and of course we see the health benefits in our activities.

4.4. The Practice of Co-Production at TURBO

TURBO also benefits from a central location in the City Hall that contributes to its outreach, but a core part of what differentiates TURBO from BUA Kolbotn is that it constitutes a social meeting place separate from the adjacent public library. This, together with the special input from the diverse and international group of volunteers, heightens the interactive and relational quality of the practice of co-production at TURBO. Both the volunteers and many of the users share a positionality outside that of mainstream Norwegian cultural experience, and knowledge of how to access outdoor activities is discussed in accordance with the appropriate level of skills. Furthermore, several volunteers explained how TURBO meant inclusion in a community and society more broadly, while the users described feelings of trust and affinity experienced in the interactions.

In an interview, the Red Cross recruiter explained that the volunteers participate in BUA to become part of “a network, a place to be, a new friendship. If we identify our main foundation, I think it’s for people to meet other people.” The volunteers described how they often utilise competencies attained through work-life, whether this is administrative, customer service or other transferable skills. On the other hand, TURBO has two municipal employees contributing competencies in repair, reuse, and maintenance. These skills are transferred to volunteers to extend the equipment’s lifecycle as a core circular element of collaborative consumption (Schor & Vallas, 2021). The workshop is placed within TURBO’s public locales, and duties are distributed amongst volunteers who are motivated, while every participant handles the user interactions. This imparts a normative element to the collaborative consumption practice at TURBO, in which the values of reuse and repair are spread amongst volunteers and users, as explained by a municipal employee:

Our contribution may be small in the larger context, but to raise awareness that you don’t need to spend so much money on equipment to get outdoors, that you can get nice, used, fully usable equipment without buying....It’s not really something I just believe, but it’s the feedback from the man who came to give us his tent and said, “I use that tent two nights a year. I’ll come back and borrow it when I go on a trip.”

While approximately 60 percent of TURBO’s equipment is bought new, as much as 40 percent comes from donations. “We no longer need to advertise,” the Red Cross employee explained, since they frequently receive equipment that they repair and collect for spare parts. Interactions with users heighten the synergy of co-production as an all-encompassing process, making TURBO part of the outdoor culture and connecting it to environmental values embedded in the local community. Services are meant to be universal, and many users appreciate TURBO being a sustainable and socially acceptable alternative to unsustainable consumption. The capacity to reduce consumption is strengthened by permitting children and youth to borrow equipment for a season at a time. This provides economic sustainability to families by reducing spending on equipment that children shortly outgrow. Furthermore, this effort consolidates environmental sustainability with the goal of increased participation in outdoor activities, as lending to children often mobilises parents.

5. Discussion: Comparing the Co-Production of Two Equipment Lending Outlets

The co-production practices and the social and environmental goals achieved at BUA Kolbotn and TURBO are explored along three main comparative dimensions. These are: (1) the elements of practice that are shaped by the co-creation and co-management of the lending services by various actors, including resource inputs, and the infrastructural, normative, and knowledge elements; (2) the co-production of the service with the practices of employees and volunteers in interaction with users who engage in collaborative consumption; and (3) the outcomes of BUA's equipment lending achieved under the different co-production architectures. The comparative optic emphasises how the process of co-production unfolds by tracing sets of relations among actors in two distinct locations (see Bartlett & Vavrus, 2017).

(1): The analysis has shown that the organisations involved in co-creating BUA's services are often responsible for co-managing BUA outlets and continue to provide economic, cultural, or social resources. BUA Kolbotn has been deeply influenced by co-creation with the public library, which shaped the services both by determining the material infrastructure and providing the services with the values and norms of the library institution and the professional competencies of the librarians. The co-management with FIVH and the co-production of services with its employees and volunteers connect the practice of equipment lending to the values of environmental sustainability. While TURBO's economic resources are provided by comparatively similar channels (e.g., Bufdir and municipal funds), the social and cultural resources are rooted in the Red Cross's humanitarian principles rather than the public library as a social institution or FIVH's goals of environmental conservation and climate change mitigation. The combination of the municipal goals of effectiveness and Red Cross humanitarian ideals with an international group of volunteers may be the grounds for success. The stronger link between TURBO and local volunteers is a result of the Red Cross's key role in co-managing and co-producing the service. TURBO also benefits from stable input from municipal employees contributing knowledge in maintenance and repair, while the BUA employee in Kolbotn is split between outlets.

(2): Comparing the practice of co-production and how this relates to collaborative consumption is a micro-level study of social interactions across localities. We build on the notion that face-to-face interactions may strengthen and maintain collaborative consumption practices (Guillen-Royo, 2023; Sahakian & Wilhite, 2014), and suggest that the character of interactions is contingent upon both the physical space in urban communities and the actors upholding the practices through labour, norms, and values. The close connection to the public library at BUA Kolbotn connects the services to the librarian's professional aim as members of a social institution, while the environmental values of FIVH permeate the interactions with the users, resulting in service that the users experience as both equitable and environmentally sustainable. Compared to TURBO, however, the space for user interactions and socialising among volunteers is limited, and in contrast to BUA Kolbotn, the volunteers at TURBO are engaged in the repair and maintenance of equipment. By having the workshop in the same locale as the lending service, the circular aspect of BUA's equipment lending is also more pronounced at TURBO. At both BUA outlets, volunteerism serves a twofold purpose, as participants are integrated into society through co-production while contributing a collective effort with potential benefits to the community as a whole (Brudney & England, 1983).

(3): Concerning public health, social inclusion, and environmental sustainability, our analysis provides convincing evidence that the BUA outlets achieve the goal of contributing to the inclusion of children, youth,

and many adults in outdoor sports and leisure activities. Engaging people in outdoor activities is a base for public health (Gurholt & Haukeland, 2019), and it follows that BUA might contribute considerably to this societal goal as well. Concerning environmental sustainability, the limited amount of donated equipment at BUA Kolbotn and the goal of increased loans and territorial coverage might imply the purchase of additional outdoor equipment, thus generating adverse environmental impacts. At TURBO, the outcome of environmental sustainability is a potentiality resulting from the co-production of services with municipal employees who contribute the skills and knowledge to extend the lifecycles of the equipment through maintenance, reuse, and repair. TURBO is a vibrant meeting place, and the practice contains knowledge transfer and a normative and social element that supports environmental sustainability. The lending service has also been operational longer than BUA Kolbotn, which might explain the stronger support from the local community in the donation of equipment. Still, a significant amount of equipment is bought from commercial actors.

The limited capacity to reduce material consumption through equipment lending is supported by a representative survey in Nordre Follo, Tromsø, and three other municipalities. Among those who had previously loaned equipment, 62 percent reported that borrowing from others or buying second-hand would be among the alternatives to borrowing from outlets (Julsrud, 2021, p. 14). While direct environmental benefits are contestable, the normative element of the collaborative consumption practices makes the re-use and repair of equipment a part of outdoor activities. This entails co-production as an all-encompassing process, and for BUA's equipment lending, the value co-created in use is participation in outdoor recreation and the added benefit of doing good for the environment, as experienced by many of the users we interviewed.

6. Concluding Remarks

This article has presented an analysis of the co-production of equipment lending at two Norwegian locations. Against the backdrop of the overconsumption of sports and leisure equipment, the article provides insights into the research question: *What are the relations between co-production practices and the societal and environmental goals of BUA equipment-lending outlets in Norway?* Equipment lending provides social inclusion for children, youth, and many adults to participate in outdoor activities and might provide a substantial benefit to public health. While the evidence for environmental sustainability through reduced consumption is inconclusive, the practice of collaborative consumption supported by BUA outlets might impact people's attitudes towards utilising shared and used equipment. The role of public libraries has also been explored, and the case of BUA Kolbotn exemplifies how libraries can contribute greatly to the co-production of equipment-lending initiatives. The practical implications of the study imply that regular service producers with skills in repair and maintenance and support from local communities in the donation of equipment are crucial to the goal of positive environmental impact from equipment lending.

Drawing on co-production theory and practice-theoretical approaches, the article has provided novel insights into the co-production of outdoor equipment-lending outlets and the contextual, cultural, and organisational factors of collaborative consumption. By delineating the differences between co-creation, co-management, and co-production, both theoretically and in our analysis, the article attempts to sharpen the conceptual understandings of co-production. The comparative approach contributes valuable insights by showing how the co-creating actors provide the resources, infrastructures, and material conditions of the

BUA outlets. The actors co-managing the outlets subsequently provide continual support and the norms and values that orient the practices related to the service. Co-production directs attention to the input of citizens and volunteers in the implementation of public services, as collaborations between public, private, and ideal organisations uphold many of the social practices that shape society. This is what Ostrom and her colleagues discovered in the 1970s, and our analysis relied on the potency of this conceptual framework in providing an in-depth perspective on collaborative consumption as an important and emerging social phenomenon.

BUA outlets are positioned in a collaborative space between the government, civil society, and the market. They represent what Ostrom (2010) terms smaller-scale collective consumption units, relying on local knowledge and participation in the provision of sustainable consumption as a public service. As a relatively new part of welfare architecture, popular support and citizen involvement in the co-production of lending services might be necessary to upscale and consolidate such practices. Our research contribution is limited to critically examining the claims regarding the various societal impacts of the actors engaged in the co-production of equipment lending at two BUA outlets and the benefits experienced by the users. Future studies are needed to ascertain the actual environmental impact of BUA's lending services. In the context of Norway's high consumption of sports and leisure equipment, it is urgent to understand how the co-production of outdoor equipment-lending outlets can facilitate collaborative consumption practices that support environmental sustainability.

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Conflict of Interests

The authors declare no conflict of interests.

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