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Communal Technologies and Sharing in Urban Cohousing

Abstract: This article examines how communal technologies affect collaborative practices, like sharing resources and space, in urban cohousing. It explores how digital and physical infrastructures facilitate cooperation and support community life. Drawing on qualitative research in three community-oriented residential buildings in Helsinki, Finland, it demonstrates that communal living is sustained by the interplay of shared spaces, community practices, and digital platforms, each creating opportunities for collaboration. Using the institutional pillar framework, the study highlights how formal structures and informal norms together shape collaborative lifestyles. Findings reveal that residents' participation was motivated more by economic benefits and social connections than environmental concerns, indicating the central role of community dynamics in mainstreaming collaborative consumption. While digital platforms facilitate communication, coordination, and access to resources, they cannot substitute face-to-face interaction. Trust, reciprocity, and shared identity emerged primarily through embodied encounters, suggesting that digital tools should be seen as support for community rather than substitutes.

Keywords: collaborative consumption, sharing economy, urban sustainability, cohousing, communal technologies, domestic life

Introduction

This exploratory study focuses on the role of the housing community in mainstreaming collaborative consumption in modern urban living. Specifically, it examines how communal technologies enable and support collaborative practices, such as sharing resources, within the context of communal living. Drawing on human-centered service design, the study explores how digital technologies and platforms facilitate everyday cooperation among residents. Following Vink and Koskela-Huotari's (2021) proposition of using social structures as service design material, this research investigates how collaboration unfolds across digital and physical infrastructures. Empirical insights are drawn from a qualitative study conducted in three community-oriented residential buildings in Helsinki, Finland.

Findings illustrate how residents rely on a range of digital platforms to meet their diverse needs, ranging from information sharing, event coordination, exchanging goods and care, to space management, highlighting the situated nature of communal technology use. Therefore, the study contributes to sociological perspectives and debates on smart domestic technologies, shared labor, and social dynamics by reflecting on sharing and other collaborative practices in cohousing.

Background

Sharing

The sharing economy is predicted to significantly impact our societies through consumption patterns, making it a relevant concern for both practitioners and policymakers (Hamari et al. 2016; EU Environment 2013). While the sharing economy offers potential pathways toward more sustainable consumption and lifestyle, it has not yet entered the mainstream, as ownership-based consumer culture remains dominant. Despite existing services for renting cars and clothes, as well as various platforms for using, for example, city bikes or electric scooters, ownership remains deeply engraved in the experiences of ease, and our vision of success and achievements in life. As the consequences of uncontrolled overconsumption become increasingly evident, the need for change is inevitable. To navigate the transition toward more sustainable consumption and development of digital technologies supporting it, it is essential to understand the diverse factors that shape how individuals and communities orient themselves within the process.

Sharing has long been described as an alternative to private ownership and a form of distributing and exchanging goods (Belk 2007). Sharing is based on the idea that access to goods and services goes beyond ownership, and it not only conserves resources but can also help foster community through social interactions (Belk 2007). However, Belk points out that contemporary societies have seen a decline in sharing beyond immediate families, as possessions have become increasingly privatized, and even families share less. His argument can be extended towards a critical reflection on the products and services we design, and how they could be reducing sharing. Design can be viewed as a social language that expresses lifestyle, extending beyond the idea of meeting human needs and rather stimulating human desire (Whiteley 1993: 3; Papanek, 2021 [1995]: 172–179). Also, personal ownership can ensure the power and freedom of the users. When things are shared instead of owned, it is crucial to critically consider who holds the power and control over these shared resources and services and how that influences the experiences and lives of people using them.

The concept of the sharing economy has emerged as an umbrella term for practices ranging from platform-based services (e.g. city bikes) to municipally owned libraries that lend books and equipment. On digital platforms, sharing extends to intangible resources, such as photos, ideas, and user-generated content. John (2012) refers to these intangible resources as “fuzzy objects of sharing,” emphasizing communication and visibility rather than material distribution. Belk (2007) highlights that even abstract elements such as power, knowledge, and responsibility can be shared. Sharing can also be interpreted as exchange, where people mutually offer or lend commodities or intangible things like expertise, skills, or time. These practices are often framed within collaborative consumption, which combines social, environmental, and economic motivations. While collaborative consumption may reflect altruism and sustainability, it can also be driven by pragmatic concerns such as saving money or improving access to resources (Hamari et al. 2016).

Botsman and Rogers (2011) classify collaborative consumption into three systems: *product-service systems*, where goods function as services; *redistribution markets*, which

extend product lifecycles; and *collaborative lifestyles*, which involve sharing not only material goods but also time, knowledge, and spaces. They state that trust, social proof, and belief in the commons are essential for these systems to work (p. 75). In this article, we refer to collaborative consumption as the shared use of material resources as well as a collaborative lifestyle, which involves sharing care, knowledge, and time. Collaborative practices are also linked to broader social dynamics. Manzini (2015) stresses that collaboration is intrinsic to human nature, but, as he refers to Sennett (2012), there is a decline in cooperation in modern societies. Thus, he suggests that the answer to decreasing cooperation lies in the rules of collaboration and valuing individual freedom (p. 97). Reluctance to compromise and a routine to act individually can hinder collaborative practices. At the same time, loneliness, for example, in Finland has increased across age groups (Tilastokeskus 2023), underscoring the importance of community connections and prosocial behaviours, such as volunteering, and helping others, in enhancing well-being through social connections and increased levels of happiness (Helliwell et al. 2025: 115).

In the context of housing, communal living represents a form of collaborative lifestyle, offering opportunities for both material and immaterial sharing, making housing a site of social reproduction.

Communal Living

Shared living is part of our cultural heritage as it is the first form of housing. There are variations to communal living, and Ehrenberg and Keinonen (2021: 83–84) differentiate communal housing (co-housing) as a shared, bottom-up initiative from the residents, and communal living (co-living) as a more top-down approach, where the building or apartment is targeted for shared housing. This study examined three different buildings that are targeted for communal living but are either bottom-up initiatives or a mix of bottom-up and top-down approaches, as the residents have been the implementers and owners of the projects or have at least had the opportunity to influence the design and services of these buildings.

Communal living can offer a welcoming environment for resident participation and sharing facilities, but it also requires effort and commitment. Research shows that shared facilities are important enablers of communal living, but continuous management, negotiation, and community-building are needed for the housing community to thrive (Pirinen 2022). Pirinen highlights residents' control and ability to appropriate the building over time as a support for inclusivity and belonging (p. 165). However, challenges such as negotiating privacy, maintaining social relationships, and adapting to digital systems such as booking platforms or smart locks also shape these experiences (Maalsen 2019; Pirinen et al. 2025). When living spaces are shared, they transform into interactive spaces where collective and individual needs and versatile options are negotiated, which leads to the ownership and sharing being defined differently compared to living alone (Schmid et al. 2024/2019: 10).

Communal living can thus be understood as a service ecosystem, where residents are not only users but also co-creators. The service ecosystem is a self-adjusting network of different actors connected by shared institutional arrangements and mutual value creation through service exchange (Vink et al. 2021: 171; Vargo and Lusch 2016: 10–11). The ser-

vice ecosystem perspective emphasizes the importance of institutional arrangements of rules, norms, meanings, and symbols in guiding value cocreation by defining appropriate behaviour as well as enabling and constraining social action (Vink et al. 2021: 171; Vargo and Lusch 2016). The service ecosystem in cohousing includes various actors in the system, such as: residents, housing association, house managers, physical infrastructure, digital domestic technologies, as well as communal technologies and their providers. The service ecosystem perspective provides a more holistic understanding and offers insights into how different actors can influence value cocreation within the service ecosystems they are part of.

Communal Technologies

Kraemer et. al. (2019) define communal technologies as new internet-connected devices that are used by various members of communal settings with different attitudes, knowledge, and preferences. In this article, the term ‘communal technologies’ refers to digital network technologies used for communication and managing communal living practices, as well as other digital platforms and housing services that are used for administrative purposes, such as booking shared facilities.

When designing new digital housing technologies, it is important to consider communities and local cultures instead of merely focusing on individuals’ experiences of using these systems and interfaces (Manzini 2015: 45). This perspective aligns with the human-centered service design, which views social norms, rules, and beliefs as a central service design material for shaping collaborative practices and leveraging the visible, physical aspects to understand the invisible, social aspects in day-to-day practices (Vink & Koskela-Huotari 2021: 31).

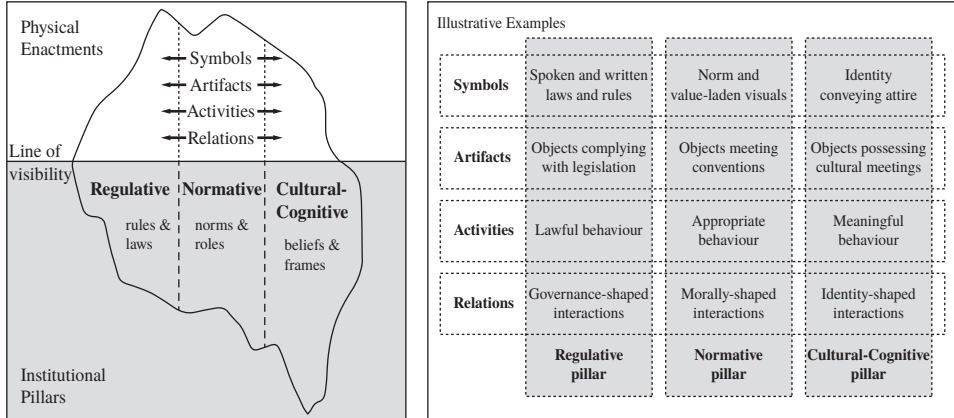
Social Structures as Service Design Material

The framework of social structures as service design material proposed by Vink and Koskela-Huotari (2021) provided a lens for this study, offering a more humanistic understanding of how sharing is embedded in everyday practices in urban cohousing. The conceptual framework is derived from institutional theory to establish three characteristics: regulative, normative, and cultural-cognitive, and in the framework, they form three institutional pillars that are used for viewing social structures (Vink & Koskela-Huotari 2021: 29; Greenwood et al. 2017; Scott 2014). Since most social structures are invisible and taken for granted, these characteristics are represented in the framework as the partially submerged iceberg analogy (see Image 1) (Vink & Koskela-Huotari 2021: 39). By making personal narratives and lived experiences visible, institutional theory serve as a valuable tool for increasing awareness of social structures (Vink & Koskela-Huotari 2021: 35; Ruebottom & Auster 2017). Regulative pillar (rules and laws) define what can or cannot be done, while normative pillar (norms, roles, and expectations) shape people’s expectations and experiences for sharing. Cultural-cognitive pillar (shared beliefs and cognitive frames), on the other hand, influence how people perceive sharing and the system facilitating it. For service design, it means that by acknowledging social structures, it is possible to see

how entrenched rules, norms, and beliefs manifest in tangible, perceivable ways in daily practices (Vink & Koskela-Huotari 2021: 31). The framework is a tool for analyzing themes such as ownership, shared responsibility, common good, and mutual trust that are part of communal living.

Image 1

Framework of social structures as service design materials.
Adapted from Vink & Koskela-Huotari (2021: 32)



Methods

The research was an exploratory study conducted using qualitative research methods, including field visits, interviews, and an ideation workshop, to explore social phenomena in urban cohousing, focusing on situations, settings, processes, systems, and relationships (Muratovski 2016). The research centered on three different buildings in Helsinki, which are based on communal living. These buildings were used as examples to explore everyday experiences of sharing and the role of community in that. Two of the buildings (A and B) were initiated and owned by the residents, who wanted relatively affordable housing in the city and a more communal and social everyday life. The goal in both buildings was that apartments would not be purchased as an investment, but rather that the owners would live in the apartments themselves, and that goal has largely succeeded. The third building (C) is a mix of top-down and bottom-up communal living, and it is owned by a real estate company with stakeholders from different associations. The building aims to provide affordable apartments and a community for elderly designers and artists. The apartments are rental apartments, but residents have had the opportunity to influence the design and use of shared spaces.

- Building A: Completed in 2013: 61 apartments, resident-driven construction project, resident-owned housing company. Most of the residents own their apartments, but there are a few tenants.
- Building B: Completed in 2020: 40 apartments, resident-driven construction project, resident-owned housing company. Most of the residents own their apartments, but there are a few tenants.

- Building C: Completed in 2020: 54 rental apartments and two ateliers, designed for artists aged 55 and older, owned by a real estate company with shareholders from three associations. Promotes intergenerational collaboration and shares spaces with neighboring student and youth housing.

Across the three buildings, shared facilities include common kitchens, shared living rooms, hobby rooms and workspaces, and in some cases, a rentable guest room or more specific resident-driven spaces such as an art gallery. These buildings also exchange practices and experiences with one another, thereby strengthening the culture of communal living.

All the buildings are designed for communal living, and according to the interviews, this is not forced on them, but the practices for community life and sharing spaces come from the residents. Community rules are made together among residents. In buildings A and B, all activities and decision-making are based on communication and negotiation between residents. The only significant difference in house C, which is the building for elderly artists and designers, is that the real estate company has determined that the roof terrace cannot be accessed at night, and each resident has a limited number of reservations for private use of the shared spaces per month.

Data Collection

There were five separate semi-structured interviews (1,5–2 hours each) with different residents across the buildings alongside the field visits. The interviewees guided a tour around the houses, showing their shared spaces and presenting various systems and practicalities of their housing communities. Interviews focused on motivations, communication, community and sharing, and collaborative consumption, with additional insights emerging during the house tours. The interviewees shared their perspectives and knowledge of urban cohousing and the communal technologies based on their personal experiences.

After conducting interviews and field visits, the collected data were analyzed using the affinity diagram technique. In the next phase of the research, a two-hour ideation workshop was organized for the residents to discuss and ideate future developments of cohousing based on the insights identified from the affinity diagramming. An ideation workshop means that, through discussions, brainstorming, and mapping techniques, participants generated ideas regarding challenges and opportunities in cohousing and communal technologies. In the workshop, different stakeholders are invited to participate in exercises aimed at better understanding different perspectives and experiences (Martin & Hannington 2012). The workshop served as a platform that supported dialogue across houses and complemented interview findings. Because of its exploratory nature, the scale of the study is small and thus needs to be taken into consideration. However, similar answers and insights came up already during the five interviews.

Data Analysis

Because of the multiple research methods used, the collected data were analyzed in two stages. After field visits, interviews, transcripts, notes, and photos were organized

Table 1
Research methods

	Interviews and Field Visits	Workshop
Participants	Five residents from three buildings	Five residents from two of the three buildings
Time and Location	Interviews 1,5–2 hours each Tours around the houses \approx 1 hour	2 hours In the shared living room of one of the houses
Collected Data	Recordings Written notes Photos Shared materials from the residents (e.g. House Rules document and a book about one house made by the residents)	Recordings Written notes Two consequence mappings from the brainstorming Photos
Aim	Get to know the houses Learn about the lives and experiences of residents from different perspectives Learn about the technologies used and the various community practices	Ideate about the future developments of urban cohousing Bringing together residents from different houses and Facilitating discussion about positive and negative experiences and different opinions

using an affinity diagram, which allowed clustering and categorization of recurring insights into seven groups that informed the workshop design. In the second and last stage, all the collected data from the interviews, field visits, and the workshop were analyzed using thematic analysis (Braun & Clarke 2006). An iterative process of coding and mapping resulted in creating three central themes: (1) Sharing eases everyday life by distributing responsibilities and resources; (2) interaction and trust are essential for sustaining collaboration; and (3) shared spaces and technologies enable encounters that foster community (See Image 2). Together, these suggest that collaborative consumption in cohousing is shaped by a dynamic interplay of physical spaces, digital platforms, and social norms.

Lastly, to gain a deeper understanding of the underlying dynamics in these houses, the findings were interpreted through the institutional pillar framework (Vink & Koskela-Huotari 2021) to analyze the social structures within communal living and collaborative practices. The framework guided the analysis by helping to recognize which institutional pillar the insights belong to. This framework illustrates how regulative, normative, and cultural-cognitive structures can manifest in everyday communal practices through agreements, activities, symbols, and relations (See Table 2).

Findings

The findings illustrate how sharing is socially and contextually structured, indicating that when designing new domestic digital technologies that support communal living as well as material and immaterial sharing, the context and situated nature of the use of these technologies should be taken into consideration.

Image 2

Thematic map

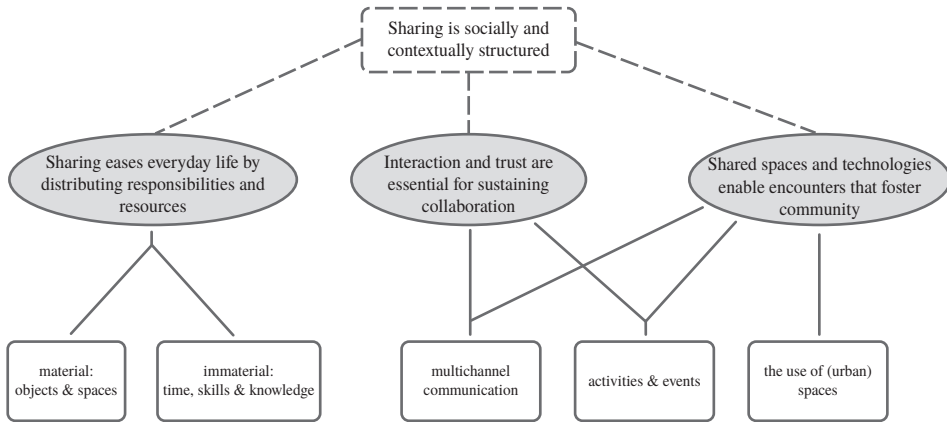


Table Table 2

Social structures in urban cohousing

	Regulative pillar	Normative pillar	Cultural-cognitive pillar
(Symbols) Messages, Notes & Documents	Collectively agreed rules that are documented (e.g., House Rules, guidelines, shared calendars)	Communication is expected to be transparent, respectful, and inclusive	Notes, messages and visual symbols (art, logos, icons) serve as a medium to express shared values by reinforcing emotional connections, a sense of belonging and community's internal culture
(Artifacts) Shared Spaces & Items	Agreed protocols for shared use (e.g., room bookings, guidelines for the use of shared items, instructions for maintaining order in a shared room)	Social responsibility: Objects and spaces are cared for with a sense of responsibility towards the community	Sharing feels natural and expected: a shift from ownership to access is internalized
(Activities) Communal meals, Parties & Shared Activities	Informal rules or systems (sign-ups, turn taking) govern organizing and cleaning for events and activities	Fairness and reciprocity are emphasized; everyone contributes and participates (according to one's abilities)	Shared rituals and activities (e.g., dinners, game nights, annual parties) build trust and reinforce belief that everyone benefits from the participation
(Relations) Community	Being part of the community is not merely symbolic, but also procedural: formal residence and agreements (e.g., leases and cooperatives) define participation	Social norms: Community members are expected to be active and help their neighbours when needed	Mutual trust and collective identity guide interaction; the principle of "we look out for each other" becomes second nature

Shared Spaces and Joint Events for Collaborative Consumption

Interviewees consistently emphasized the importance of shared spaces to fostering community life. Shared spaces were seen as essential not only for logistical coordination but also for fostering interaction and trust through joint activities. As one resident explained:

“There is no way to do that [communal living] without a shared space.” Shared facilities also encouraged residents to design smaller private apartments, knowing that shared kitchens, gardens, guest rooms, and workshops were available for collective use. While affordability and location initially motivated most residents to participate in these cohousing projects, shared spaces ultimately played a crucial role in enabling and mainstreaming collaborative practices and sharing through which community and sense of belonging are built.

Joint activities were identified as vital for building and maintaining the community. Regularly organized common meals, events, festivals, and other informal gatherings create a safe environment for participation, experimentation, mutual support, and offer valuable opportunities for connections. As one resident reflected:

“These parties, especially our annual Oktoberfest, have been great for throwing yourself into the fray. I wouldn’t dare to dance anywhere else as I do at our parties because I know everyone—it is a safe space.”

Beyond social benefits, trust also translated into practical forms of security, such as residents monitoring shared spaces together or helping during illness. At the same time, participants stressed the importance of voluntary participation. While shared activities foster belonging, shared responsibilities support building community spirit.

Community was also linked to a sense of financial security. Shared resources and the ability to borrow or lend items reduce the need for individual purchases, contributing to more sustainable and resource-efficient living. However, participants also highlighted that shared activities require equal participation. Organizing events and maintaining communal life demands time and effort, and a shared understanding must exist where all members contribute according to their abilities.

The dynamics of communal living also involve implicit expectations. While participation is not mandatory, a total lack of engagement can generate friction, especially when communal resources are involved. This highlights the importance of balance: while residents are not required to contribute equally, some level of mutual involvement is necessary to keep the community active and alive.

Digital Platforms and Multichannel Communication

During the interviews, digital platforms were emphasized as complements to face-to-face interaction. Meanwhile, the platforms also have an important role in facilitating coordination and the use of shared spaces, as well as making communication and information transparent and accessible. However, foundations for functional communal living were built in social gatherings and joint activities.

All three communities relied on a range of digital platforms to coordinate communal life. Messaging apps such as Telegram and WhatsApp were central for borrowing items, organizing events, and managing daily tasks through specialized groups. As one resident described,

“At the residents’ meeting, we decided that all communication takes place via Telegram. There are 34 different groups, for example, one for borrowing things, and asking for and giving help. Sewing club, cultural club, and the ones with children have their groups—different cooperatives have their groups, for example, textile cleaner and circular saw.”

This illustrates how residents' responsibilities and interests are reflected in multichannel communication.

Residents generally appreciated the speed, accessibility, and notification provided by messaging apps. These tools were valued for helping residents stay informed and connected, as one of them noted:

"WhatsApp works fine because it has notifications. There are no notifications for our mobile resident application's announcements and messages."

Messaging platforms were also perceived as convenient for practical requests, such as borrowing items or coordinating childcare. Email was used for sharing more formal documents, and one of the houses had its weekly newsletter to inform about any important announcements, such as testing fire alarms, sent via email. Cloud services were seen as important for sharing and archiving documents, especially in terms of transparency and accessibility.

At the same time, participants identified challenges with these digital platforms. The volume of messages can be overwhelming, and the conversational style of group chats was not always suitable for every topic.

"There's sometimes a lot of discussion on WhatsApp, but not everyone has the time to read it. — I don't want to encourage long conversations on there because it's not very good for it, since it goes to the whole gang. But it is certainly fast and works well, for example, when someone has forgotten their keys at home or when I had influenza, I asked if someone could take my dog outside, so many neighbours came forward to help that the dog could have been outside all the time."

explained one participant. Such an example highlights both the strengths and limitations of instant communication.

Digital platforms also shaped the dynamics of participation by offering flexibility and boundaries. Residents could disengage temporarily during conflict without losing access to important information. As one of them noted:

"I have sometimes left the group if there has been a nasty conversation, although, of course, we try to keep the conversation appropriate, but sometimes people can go overboard. I have been away from the group for six months, but I made sure my husband was still in the group, so I knew about important things."

Despite their importance, residents emphasized that digital platforms are complements rather than substitutes for face-to-face interaction. In-person encounters were seen as essential for building trust, reciprocity, and belonging, which were seen as the foundations of communal living. These digital platforms facilitate coordination and transparency, but interpersonal relationships remain the basis of a functioning and resilient community.

Intergenerational Living and Social Sustainability

This study offered an example of how cohousing can provide favorable conditions for intergenerational interaction. However, based on the interviews, it could be stated that the community of different generations must develop organically, not be forced, to truly work out. Older residents valued the sense of safety and support, while younger residents

contributed practical assistance and the variety of possibilities regarding activities that the community creates. As one participant noted:

“— when you are an aging person living alone, living in a communal house like this brings security. We truly support each other here when someone gets sick, others take care of things and do the shopping. And you’ll notice if someone hasn’t been seen in a while, meaning it’s hard to imagine anyone here being able to pass away in their home.”

Another example brought up considered families with children:

“It would have been wonderful if my children could have lived in a house like this, because here the children play together, families with children take them to joint hobbies, and if they are at the same school, they take turns on school rides. It makes everyday life easier.”

Residents shared examples, including student residents guiding exercise groups for elderly residents, and mutual support and care among residents during times of illness. Also, the benefits of people from different ages and backgrounds interacting together were brought up. “Children grow up with different adults, receive different adult role models, and learn to interact with them.”, shared one resident during the interview. However, challenges were acknowledged in one of the buildings where the intergenerational living has been one of the primary goals, but where younger residents’ high turnover limited sustained community building. As one participant shared:

“There are quite a few young people involved, but we try and constantly invite them to our events. Sometimes they come, but not very often. We certainly wish that more young people would participate.”

Successful intergenerational living appeared stronger in the houses where communities developed organically rather than through imposed design to bring young people and elderly people together.

In addition to these smaller housing communities, the spread of community spirit and collaboration also appeared at the neighborhood scale.

“We have been part of Restaurant Day for many years and have organized flea markets that are open to everyone. Tours of the house have also been organized. Residents of the surrounding area come to see the Christmas calendar that we make in the windows, and it is a tradition for the local kindergarten groups to come and see the Independence Day and Christmas Eve windows,” shared one resident. “Family and friends outside the house are always welcome to our parties and common meals, as long as you register in advance so we can be prepared,” noted another participant. Shared spaces, especially kitchens, can also enable activities that are open not only to internal housing communities but also to people and other communities nearby. In addition to cultural engagements, acts of solidarity were also part of the collaborative practices of these housing communities. For instance, the residents organized a charity café and used the proceeds to purchase stoves and blankets for Ukraine.

Social Structures of Collaborative Lifestyle

Applying the institutional pillar framework (Vink & Koskela-Huotari 2021) illustrates how in these housing communities, collaborative lifestyle relies on both formal agreements

(rules, booking systems, governance procedures) and informal norms (reciprocity, shared identity, cultural values) (See [Table 2](#)). Formal infrastructures provide necessary support in the early phases of community-building, but over time, shared beliefs and social norms become central to sustaining engagement. This underscores the importance of designing for both structural support and cultural meaning.

Interpreting the findings through the framework revealed how formal agreements, cultural norms, and shared beliefs reinforce collaborative practices. Regulative structures, such as house rules and booking systems, provided the necessary foundation during the early stages of community-building. Yet over time, informal norms and cultural-cognitive elements, such as reciprocity, principles for safe-spaces, and shared symbols, were critical for maintaining trust and belonging. As one of the residents noted,

“There are also values in the House Rules. We created safe space principles, but the name caused resistance, so we edited it, and now it seems that everyone is happy. Some justified it by saying that these things are self-evident, but they are not, unfortunately. Even if you think that’s how things are done, it doesn’t mean that everyone thinks the same way.”

On top of interaction and joint activities, (paper) notes, messages, and visual symbols, such as logos, icons, and art, play a role in building shared identity and sense of belonging among residents.

Technologies like resident applications, messaging applications, and social media formalized practices, but also risked displacing face-to-face interaction. As one participant noted: “[Telegram] makes it easy to share worries and joys, but it also makes the interaction clinical. I mean, we take care of things on our phones by texting in this group, but still, I haven’t seen a couple of guys in our house. How does this domineering guy look like? It confuses me.”

These insights highlight the need to balance formal structures and digital tools with practices that nurture personal relationships and shared values.

Discussion

This exploratory study illustrates how in these three housing communities, communal living is sustained by the interplay of shared spaces, community practices, and digital platforms, each shaping opportunities for collaboration and trust. Shared facilities provide the physical anchor points for everyday encounters, while joint events embed collaboration into routines. Digital platforms, though essential for coordination, are best understood as complementary infrastructures that support, rather than replace, face-to-face interactions. Communal living is sustained by shared spaces and community practices. By considering cohousing as service ecosystems, we can identify the different actors, networks, and infrastructures that are part of mutual value creation and institutional arrangements in communal living. This approach could help to ensure that technologies support communities rather than substitute for face-to-face interaction.

Residents of this study rely on a range of digital platforms to meet their diverse needs, illustrating the situated nature of technology use. Communal technologies seem to mediate access, participation, and trust in these three housing communities. While environmental

motivations were acknowledged, residents consistently emphasized economic benefits and social ties as their primary reasons for participation in communal living. This extends previous work on collaborative consumption (Hamari et al. 2016; Botsman & Rogers 2011) by suggesting that its successful mainstreaming may benefit from cultivating community conditions rather than focusing solely on sustainability narratives. Across all three communities, digital platforms were central to everyday management and interaction. Messaging applications (e.g., Telegram, WhatsApp) supported borrowing items, event coordination, joint purchases and forming cooperatives, and mutual assistance, while booking systems facilitated the use of shared spaces such as kitchens or guest rooms. Email and cloud-based platforms ensured transparency through the circulation of meeting notes and formal documents. Together, these technologies and platforms form an interconnected system that enables residents to manage collective responsibilities and maintain inclusivity.

Residents valued the speed, flexibility, and accessibility of these platforms. Importantly, they also enabled participation for more introverted or busy individuals, expanding the community's inclusiveness. However, participants noted challenges such as information overload, the unsuitability of messaging applications for conflict resolution, and concerns over data security. Echoing Ehrenberg and Keinonen (2021), these findings suggest that while digital platforms can formalize collaborative practices, their development must critically address issues of agency, power, and privacy to ensure that control remains with residents rather than external service providers.

The interviews highlighted that digital tools cannot substitute for face-to-face interaction. Trust, reciprocity, and shared identity emerged primarily through embodied encounters, emphasizing that digital platforms should be seen as supports for community, not replacements for it.

One key theme developed from the analysis was the perception of sharing as a means to ease daily life. Residents described how communal living distributed responsibilities and provided practical help from babysitting and grocery shopping during illness to borrowing clothing or tools. Shared knowledge, such as advice on repairs or digital applications, was also valued, reflecting the circulation of tacit skills within the community. These examples illustrate how both material and immaterial sharing contribute to reducing individual burdens and even enhancing the quality of life. However, the benefits of sharing were conditional on mutual trust and reciprocity. Unequal distribution of responsibilities or lack of engagement sometimes caused friction, reinforcing the idea that collaboration requires both social commitment and supportive infrastructure. This aligns with Pirinen's (2022) observations that continuous management, negotiation, and relationship-building are essential for thriving housing communities.

Shared spaces were repeatedly described as crucial for building trust and community maintenance. Kitchen, hobby rooms, and workshops enabled joint activities such as communal meals, cultural events, or skills-sharing, which in turn deepened social ties. Residents highlighted that such spaces also encouraged experimentation and learning, providing a safe environment for trying new activities. Importantly, the workshop participants emphasized the need for neighbourhood-scale meeting spaces beyond individual houses, suggesting that communal infrastructures could extend their impact by fostering broader social connections. These findings resonate with Schmid et al. (2024/2019), who argue

that communal living requires balancing exchange, communication, privacy, and intimacy. Shared spaces help mediate these dynamics, transforming physical environments into social infrastructures that reinforce identity, belonging, and commitment.

Successful communal arrangements depend on balancing formal agreements with informal practices. Regulative structures such as house rules, booking systems, and governance procedures provided clarity and accountability. Yet participants stressed that without internalized norms of altruism and reciprocity, these mechanisms could not sustain a community on their own. Notes, symbols, and everyday rituals reinforce shared values and trust, highlighting the importance of cultural-cognitive and normative pillars in long-term cohesion.

Digital technologies play an important role in formalizing practices, but residents cautioned against over-reliance. As one participant noted, online communication sometimes “makes interaction clinical,” underscoring the continued need for personal encounters. These insights contribute to broader debates on communal technologies, providing an example of how digital and physical infrastructures together can create the condition for collaborative consumption while leaving space for emergent, value-driven practices.

Conclusion

This exploratory study examined how communal technologies and shared spaces may enable collaborative consumption within urban cohousing. Based on qualitative research from three housing communities in Helsinki, it illustrates that shared spaces, digital platforms, and regular social practices together can create conditions for collaboration, reciprocity, and trust. While affordability and location initially motivated residents to live in these buildings, shared facilities and community activities gradually embedded new forms of sharing into everyday routines, ranging from dividing responsibilities to sharing skills and spaces and exchanging resources. Digital platforms not only facilitate interaction and coordination but can also shape what is visible, knowable, and actionable within the community. Overall, in these housing communities, collaborative consumption was found to emerge through shared spaces, norms, and everyday practices, rather than from ideals of sustainability.

These findings contribute to the discourse on the sharing economy and collaborative consumption (Belk, 2007; Botsman & Rogers 2011; Hamari et al. 2016) by providing another example of how participation is driven less by environmental concerns than by economic benefits, convenience, and social ties. By applying the institutional pillar framework (Vink & Koskela-Huotari 2021) the analysis illustrated that sustainable collaboration depends on the interplay of formal structures (rules, agreements, and technologies) and informal norms (reciprocity, shared identity, and values). Designing for both structural support and cultural meaning should therefore be considered to foster resilient communities.

The study highlights the potential of cohousing and communal living to address contemporary social challenges such as loneliness and overconsumption. Being part of a community, resource sharing, and participatory governance provide avenues for enhancing individual well-being while supporting collective sustainability. Digital platforms can

strengthen collaboration and inclusivity, but they must be critically designed to preserve resident agency in relation to power and privacy and to avoid displacing embodied interaction. This research suggests that cohousing can be both a social innovation and a service ecosystem, where residents act not only as users but also as co-creators of shared practices and infrastructures. By situating collaborative consumption within lived communities, the study provides an example of how cooperation and sharing can be mainstreamed in everyday life. Future research should further investigate how digital and physical infrastructures can be designed to support inclusive, democratic, and sustainable ways of living together.

Limitations

This was an exploratory study that investigated three communal housing projects to better understand the role of digital housing and network technologies in urban communal living, and how these technologies can support material and immaterial sharing among residents. Because the study was small in scale and focused solely on buildings in the inner-city area of Helsinki, Finland, the findings should be regarded as illustrative. Nevertheless, they highlight the situated nature of digital communal technologies and provide a basis for future research. In analyzing the interviews and observations, the researcher's potential biases must also be critically considered.

It is also important to acknowledge that the sites examined were the interviewees' own homes and large, long-term projects in which they had been personally involved. Consequently, these places may hold significant meaning for them, which can influence their responses and potentially temper critical reflection. Furthermore, when considering aspirations toward more affordable living, it must be noted that these buildings (excluding the elderly artist's house) do not, in practice, constitute a low-cost housing option. Participation in such projects requires significant financial capital as well as a willingness to take on risk.

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