

# Planning for sufficiency shared housing: Toward an agenda for future research and practice

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## Abstract

In this critical commentary we propose a research agenda that supports the scaled development of “sufficiency shared housing,” or housing options built for the sharing of functional space in a way that lowers total resource consumption. While research from multiple contexts shows that shared housing options are generally popular, they remain niche market options, at best. Drawing from the specific cases of co-housing and co-living in North America and Europe, we argue that shared housing options will remain inaccessible, exploitative, and/or vulnerable to rebound effects without more structured guidance from the public sector in the form of planning, design guidelines, and revised building standards. We thus conclude by outlining a research agenda that supports proactive and positive guidance from the public sector by 1) testing and dispelling myths about shared housing being morally aberrant or unpopular, 2) offering specific design guidance, 3) testing and validating shared housing as a low-impact “sufficiency” option, and 4) scanning the emerging policy landscape.

## Keywords

co-housing, co-living, shared housing, sufficiency

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## 摘要

在这篇批判性评述中，我们提出了一项研究议程，旨在支持“适足性共享住房”的规模化发展，即以降低总资源消耗的方式建造功能空间共享的住房选择。尽管多元语境下的研究表明，共享住房选择总体上颇受欢迎，但其充其量仍只是小众市场选择。借鉴北美和欧洲的共居社区与共享公寓的具体案例，我们认为，若没有公共部门在规划、设计指南和建筑标准修订方面提供更系统的指导，共享住房选择将仍会面临可及性不足、剥削性、易陷入回弹效应等问题。因此，本文在结论部分提出了一项研究议程，旨在通过以下方式支持公共部门提供积极、正向的引导，具体包括：1) 检验并破除关于共享住房违背道德或不受欢迎的错误认知；2) 提供具体的设计指导；3) 检验并证实共享住房是低影响的适足性选择；以及4) 审视新兴的政策环境。

## 关键词

共居社区、共享公寓、共享住房、适足性

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## The dilemma: Smaller households, larger footprints

Between 2009 and 2021, the number of ‘single-adult’ households in Europe grew from 60.2 million to 76.7 million (27.4% growth), outpacing growth in all other household types by far (Eurostat, 2022a). Adults living alone now constitute approximately 36% of total households in the European Union (Eurostat, 2022b). For decades, the average number of persons per household in Europe has declined steadily from over 3.0 in most countries in 1960 (Hall, 1988) to an average of 2.3 across the EU in recent years. The decline of household size is apparent almost everywhere in the world (Cohen, 2021b; Esteve et al., 2024).

Efforts to lower carbon emissions (IPCC, 2023) and achieve the goals of the Circular Economy (e.g. European Commission, 2020) must reconcile the declining average number of persons per household and the consequent *increase* in the average environmental footprint of buildings (Clune et al., 2012; Ellsworth-Krebs, 2020; Huang et al., 2024; Lorek and Spangenberg, 2019; Viggers et al., 2017; Wilson and Boehland, 2008; Underwood and Zahran, 2015). In short, there is strong evidence to suggest that even

as the average number of persons per household declines, (1) populations worldwide are occupying more floorspace *per person*, (2) this is a rather resource-inefficient way of living, and (3) focusing on housing strategies that accommodate smaller, low-impact private dwelling units without yet limiting (or even increasing) residents’ access to functional space could help reverse troubling climate and energy trends. In some cases, solo living may be a choice: living alone offers a level of independence that is attractive to some, and in some circumstances it is associated with relatively *more* social interaction outside the confines of the home (Klinenberg, 2013). In other cases, solo living may result from unplanned life-course circumstances like the death of a partner, separation, and individuals arriving to a new labor market. Whether individuals choose to live alone or not, housing models that facilitate shared access to some spaces and facilities may allow for solo living that can be flexibly social.

In the critical commentary that follows, we propose a research agenda to support the scaled development and re-development of housing options built for the sharing of functional space in a way that lowers total resource consumption. We refer to this henceforth as “sufficiency shared housing.” By

sufficiency, we mean an emphasis on the absolute reduction in demand for resource and material consumption and the simultaneous elevation of housing standards for those with insufficient housing (Bocken and Short, 2016; Cohen, 2021a; Spengler, 2016). By shared housing, we mean housing that is designed so that residents can share access to spaces and functions that are typically accessed in a private way, to the exclusion of other households. This includes holistic housing models like co-housing and co-living that cluster private dwellings around multiple shared spaces and facilities and can include a la carte approaches that integrate shared-access spaces (e.g. shared offices, meeting rooms, gardens, cooking and dining spaces, recreational spaces, and guest apartments) into multifamily housing or entire neighborhoods.

It is also important to distinguish shared housing from what Grundström et al. (2024) label *sharing* housing, or the unplanned consequence of two or more households cohabitating in dwellings designed for one household due to lack of accessible options. We also note that while shared housing can overlap with or complement new forms of “shrinking homes” (e.g. tiny homes, micro-apartments, co-living) highlighted by Hubbard (2025) and Harris and Nowicki (2020), shared housing and shrinking homes are best understood separately. Not all “shrunk” homes facilitate sharing, and not all shared housing is composed of shrunk homes, although we believe that there is an exciting potential to combine the two phenomena. Similarly, shared housing can overlap with certain types of “collaborative housing” highlighted by Czischke et al. (2020), however not all shared housing (e.g. co-living) is necessarily collaborative, and not all collaborative housing models (e.g. community self-build) require that residents share access to spaces. Finally, we distinguish shared housing in this commentary from temporary institutional housing, for

example student housing, in which the sharing of everyday spaces is already quite commonplace.

We begin by arguing that despite survey results suggesting a rather broad interest in living in shared housing, it will likely remain rare and inaccessible without municipal plans and development standards that mitigate perceived risks to developers. Shared housing violates norms that encourage functionally isolated dwelling units, which have century-old roots in housing reforms of the industrial revolution (Foglesong, 1986: 3). These norms were exacerbated by post-Second World War suburban development in the USA (Checkoway, 1980; Hayden, 2002), and are evident in contemporary Western cities (Cohen, 2021a; Jarvis, 2013). Consequently, in modern urban contexts, developing shared housing involves either extraordinary resources and/or the bending of existing rules of the game in ways that undermine shared housing’s ability to fulfil visions of sufficiency. To illustrate this, we discuss two specific shared-housing cases: co-housing and co-living.

Next, we propose how research in urban studies can support a transition toward sufficiency shared housing, suggesting four research streams that (1) diminish the perception that shared housing is inherently risky or unpopular, (2) reveal ways to design shared housing that mitigate potential risks and achieve sufficiency goals, (3) verify that shared housing meets sufficiency goals, and (4) scan and evaluate the emerging policy landscape. Together, this research can offer planners and public policy makers explanations and justifications to proactively plan and regulate sufficiency shared housing.

### **Shared housing: A popular idea that is hard to execute**

In the past decade, consumer preference research from multiple countries has

suggested that shared housing is undersupplied by housing markets. In the USA, for example, several large-sample studies illustrate that the individuals *most interested* in living in co-housing do not match the wealthier, whiter, disproportionately female, highly educated profile of actual co-housing residents (Boyer and Leland, 2018; Sanguinetti and Hibbert, 2018). Similarly, a recent survey of 1000 young, one-person households in Seoul (South Korea) finds that 60% of respondents are interested in living in shared housing characterized by “private rooms for each tenant and shared community spaces for all housemates,” despite such housing representing less than 1% of Seoul residences (Kim et al., 2020: 2). Studies from Finland (Ruokamo et al., 2024) and Slovenia (Hawlina et al., 2021) suggest that while general interest in shared housing is rather low, sharing access to specific spaces like children’s play rooms, exercise rooms, or socializing spaces appears popular to the majority—sometimes large majorities—of individuals surveyed. Non-academic surveys also suggest that co-housing and co-living are attractive housing options to more than a marginal proportion of local populations (Department of Planning and Zoning, 2021; Rocks and Stamm, 2025). Finally, interviews with founders of co-housing initiatives in the USA offer anecdotal evidence that many individuals (in some cases “thousands”) express interest in co-housing startups but, for reasons described below, do not ultimately move in (Boyer, 2017).

What explains this apparent under-supply? A systematic challenge to the scaled development of shared housing in cities of Europe and North America is a lack of public-sector standards, strategies, or visions that offer positive and proactive guidance for shared housing. As described above, housing standards developed over the past century have prioritized the functional and

economic isolation of households. In the USA context, governments at every scale have codified this with minimum parking requirements, minimum floor area requirements, occupancy limitations, favorable income tax policies for single-family homes, and infrastructure investments that prioritize the development of low-density detached dwellings (Checkoway, 1980; Harris, 2009; Meck et al., 2000).

Consequently, developing shared housing involves either developing new rules or bending existing rules, which costs time and resources. This manifests somewhat differently in the cases of co-housing and co-living, which we describe below.

### *Co-housing: Sufficient but not scalable*

Co-housing has existed as a resident-led neighborhood design model since at least the 1970s. Co-housing designers McCamant and Durrett (2011) define cohousing with six features: (1) resident participation in design and development, (2) design for social contact, (3) common spaces, (4) resident management, (5) non-hierarchical decision making, and (6) no shared income—a feature deployed specifically to distinguish co-housing rhetorically from contemporary income-sharing communes and visions of “hippie communes” of the mid-20th century (Boyer, 2017). The exact number of co-housing initiatives is hard to pinpoint, but they probably do not total more than 2000 worldwide. A recent scan of the online directory of The Cohousing Association of the United States (<https://co-housing.org>) reveals 340 co-housing initiatives, of which 205 are “established,” 22 are “building,” and 113 are “forming,” meaning they are in the rather unstructured process of recruiting, financing, and envisioning a neighborhood. A 2022 report from the USA-based AARP (formerly the American Association of Retired Persons) counted over 400 inhabited

cohousing projects in Denmark, 300 in the USA, and 50 each in the UK, Australia, and Canada (Firestone and Glassman, 2022).

In the past two decades, a small number of studies have illustrated how co-housing operates at a lower ecological footprint than traditional neighborhoods or even “sustainability certified” neighborhoods because of resource efficiencies gained through sharing (Daly, 2017; Hendrickson and Wittman, 2010; Moos et al., 2006). When designed and developed with affordability as a priority, co-housing has also succeeded in offering housing opportunities to low- and moderate-income families (Chatterton, 2013; Ruij, 2015). It is important to note, however, that housing affordability in co-housing is typically enabled by a partnership either with local authorities or with a traditional housing association that can subsidize development costs and/or rents.

At the same time, multiple studies have documented the multidimensional hurdles that increase the time and monetary costs of erecting co-housing. With rare exceptions, co-housing is designed and developed by its future inhabitants with hired consultants. The collective and self-managed process of developing co-housing typically requires years of social networking, land acquisition, group internal and external negotiation, and cash that not all aspiring cohousing inhabitants can access (Boyer, 2014, 2017; Hacke et al., 2019). Additionally, the typical vision of co-housing—in which neighbors cooperatively own and access outdoor spaces and some indoor spaces—involves the redistribution (or elimination) of physical infrastructure like sidewalks, stormwater systems, driveways, and residential streets that are often mandated by subdivision regulations. As a consequence, it is common for cohousing initiatives to enter into detailed negotiations with local authorities to seek exceptions to existing rules, which can take years and cost money (Boyer 2014, 2017).

### *Co-living: Scalable but not sufficient*

Co-living, on the other hand, is a shared housing model in which inhabitants play little to no role in the development process. In the past decade, tens of thousands of new co-living units have been built in cities in Europe and North America (JLL, 2019; Kunthara, 2020; Wellman, 2022). Casier (2024) identifies several characteristics of co-living, including (1) small residential units and shared spaces, (2) individualized rental agreements that are often shorter term and more flexible than conventional rental agreements, (3) access to a range of amenities for a single fee, (4) higher prices than the general rental market, and (5) focused on young professionals looking for a “community” experience.

If applied broadly, co-living could help reverse the growth of floor space per person and declines in resource efficiency discussed in the introduction. Indeed, research on the environmental impacts of co-living appears encouraging. A simulation comparing traditional apartments and co-living shows that co-living offers 10%–20% potential embodied CO<sub>2</sub>-e savings, and even greater savings when the impact is normalized per person (rather than per floor area), and even *greater* savings if co-living is installed as part of a building renovation (Malmqvist and Brismark, 2023).

Finally, the economic advantages of smaller living units occupied by one or more people have been proposed as a strategy for addressing the housing affordability challenges in cities. For example, Stern and Yager (2018) offer a case for the revival of single-room-occupancy housing as a response to housing affordability in New York City. Other authors have proposed co-living as a specific solution in unaffordable housing markets with high obstacles to home ownership (Corfe, 2019).

Unfortunately, there are both theoretical and empirical reasons to remain skeptical

that co-living can contribute to a vision of sufficiency shared housing. Firstly, co-living presents risks for rebound effects and substitution effects. Rebound effects occur when the cost savings from higher resource efficiency are re-spent in a way that contributes additional environmental impacts (e.g. you drive your fuel-efficient vehicle more because it costs relatively less to drive; Amatuni et al., 2020; Font Vivanco et al., 2021). Substitution effects occur when a shared-access service replaces an otherwise low- or zero-environmental-impact activity (e.g. when shared access to e-scooters or automobiles replaces public transit and walking; Hollingsworth et al., 2019). In some cases, co-living has been advertised with an emphasis on luxurious shared amenities like restaurants, swimming pools, or spas, which may well increase an individual's environmental footprint or at least cancel out the opportunities for lower resource consumption generated by sharing access to more mundane facilities like laundry machines, kitchen appliances, office furniture, or tools that contemporary urban households typically own to the exclusion of other homes.

It is also questionable whether co-living can be produced affordably or for a broad constituency. In Amsterdam, co-living does not appear to have enhanced housing affordability or stability: rents and fees have risen, and co-living developers exploit short-term rental contracts, offering accommodation resembling long-stay hotels rather than permanent housing (Ronald et al., 2024). A 2022 *New York Times* article highlighted both the fast growth and the existential challenges that New York City co-living operators have encountered, including multiple projects that have sold their properties to hospitality companies, risked legally becoming single-room-occupancy hotels, or shut their operations completely. Other companies have struggled with tenant complaints

(often about other tenants) and have experimented with both shorter and longer rental contracts to balance competing demands for short-term housing on the one hand and permanent housing on the other (Hughes, 2022).

At the root of these risk factors is perhaps the greatest contrast between co-housing and co-living, which is co-living's emergence as a product for external investment. White and Madden (2024: 1370) argue that while co-living offers a strong departure from important elements of modern housing ideologies (e.g. private exclusive ownership), it "ultimately serves to reinforce the power of a rising subset of financial firms and other rentier urban elites." Housing in urban markets around the world has become increasingly financialized in the past three decades, leading to a shift in priorities toward global investors' profits rather than the wellbeing of inhabitants (Blackwell et al., 2023; Fields, 2017; Rolnik, 2013). In practice, this has led to higher rents and shorter rental contracts, which results in an offering that is appealing to young new arrivals to a city and less so to residents seeking permanent housing (Ronald et al., 2024).

There are further risks that the financial imperatives of co-living could exacerbate housing inequalities. A study by Grundström et al. (2024) highlights a disparity in how shared housing (co-living, co-housing, and residential hotels) is marketed and experienced across socio-economic lines. They found that in marginalized areas, shared housing was framed around a "receiving less for more" narrative (reduced private space for more shared spaces), whereas in wealthier districts co-living was promoted as a sustainable, convenient lifestyle choice to ease urban living. As Grundström et al. (2024) argue, such uneven approaches risk reinforcing housing inequality.

To summarize, both co-housing and co-living offer a response to the social and environmental dilemmas associated with global declines in household size and a theoretical pathway toward sufficiency housing. Shared-housing models allow inhabitants to live in smaller dwelling units with supplementary access to a range of other amenities and spaces. At the same time, both co-housing and co-living models present major scaling challenges that will need to be overcome if shared housing is to be classified as fulfilling visions of sufficiency. As one reviewer notes, “the slow and effectively customized nature of co-housing” renders scaled production—and thus affordable access—very challenging, while the conditions that have facilitated co-living exacerbate housing inequalities and threaten rebound effects.

### **How can research in urban studies support a transition to sufficiency shared housing?**

We observe above that co-housing is challenged by (while co-living exploits) ambivalence from the public sector. Below we describe four research streams that can support the development of public-sector plans and legal standards that proactively guide the development of shared housing. These include (1) reducing the perceived unpopularity and risk of shared housing to developers, (2) offering specific guidance on the design of shared housing, (3) verifying that shared housing meets sufficiency goals, and (4) scanning the policy landscape for sufficiency shared housing.

#### ***Reducing perceived unpopularity and risks of shared housing***

Policy makers and housing developers are unlikely to plan for shared housing if it is perceived as a niche lifestyle choice. Without a deeper and broader understanding of

consumer preferences for shared housing, one could hastily argue that its relative absence in the housing market is a signal that few people *really* desire it, and that it is thus too risky for public or private investment.

Research cited above, however, offers evidence that shared housing is more interesting as a living option than the market would suggest. Future research can focus on understanding potential market segments for shared housing through additional large-sample preference surveys in specific housing markets, choice experiments that simulate revealed preferences for shared housing, and focus groups aimed at understanding the circumstances that attract and repel potential residents. This research could probe individuals’ responses to some of the specific trade-offs that new zoning categories for shared housing might introduce, for example fewer parking spots, smaller bedrooms, shared kitchens and appliances, closer proximity to and more daily contact with neighbors, as well as procedural changes like collective decision making about shared spaces.

Several studies suggest that prior experience in shared-living situations is associated with an interest in shared housing in the future (e.g. Kim et al., 2020; Woo et al., 2019), however it is unclear *how deep* or *long* prior experience needs to be in order to encourage interest. Research can probe this experimentally, observing how low-stakes exposure to shared housing through, for example, site visits or virtual tours can increase interest or willingness to pay.

Finally, systematic investigation of existing shared-housing contexts can help reduce perceived risks by both dispelling myths about the inhabitants of shared housing (e.g. that they are strange or morally inferior) and about the impacts of shared housing (e.g. that they result in congestion or overcrowding), and preempting the actual social and economic challenges of life in shared housing through a better understanding of

conflict-resolution skills and daily social practices that encourage successful house sharing.

### ***Offering specific design and programming guidance***

How can the physical design and programming of shared housing encourage lower per-person consumption while increasing households' access to functional space and mitigating social conflicts? Inversely, what design decisions increase conflict and discourage sharing?

Design researchers can take advantage of existing co-housing, co-living, and similar shared-access housing to discover smart practices in the design of shared spaces and facilities. How can private dwelling units be "shrunk" without jeopardizing inhabitants' access to fresh air, light, and personal space? Similarly, how can privacy and intimacy be achieved in spaces that are very near or even accessible to multiple neighbors? What physical and social systems encourage frequent yet uncongested use of shared facilities? What spaces are perpetually under-used? What types of household products and appliances can endure intensive use by multiple households or entire neighborhoods? What design features can encourage neighbors to share spaces and facilities that conventional (non-sharing) neighbors would never contemplate sharing? How can spaces be designed and programmed for staggered use so that, for example, spaces that are typically only used in the daytime can serve other functions in the evening?

Beyond the building floorplan, how can interior design, lighting design, and noise design contribute to more harmonious and accessible-to-all shared-housing experiences? How can the design of shared housing accommodate diverse and dynamic household constellations and allow residents of any age to thrive in place?

Further theoretical exploration is needed to integrate shared-access living into urban development models. Many of the challenges and opportunities addressed above overlap with the challenges of opportunities of high-density, mixed-used neighborhood development. One potential avenue is the adaptation of the anchor-based model of urban regeneration, which emphasizes mixed-use, walkable neighborhoods centered around institutions such as universities, hospitals, and cultural hubs (Birch, 2009). Similar approaches have been applied in transit-oriented development and mixed-income housing (Cowell and Heike, 2013; Silverman et al., 2015). In Australia, emerging discussions around repurposing public school spaces for community use (Cilliers et al., 2024) suggest new possibilities for integrating shared-access living with civic infrastructure.

### ***Verifying that shared housing meets sufficiency goals***

How can we be sure that shared housing delivers the results that contribute to sustainability goals and the goals of sufficiency? Despite a small number of encouraging studies cited above, the relative environmental impacts of shared-housing models have not been deeply investigated. If the aspiration of sufficient shared housing is an absolute *per person* decrease in resource consumption and environmental footprint, this must be verified and benchmarked for purposes of integrity and accountability but also for purposes of replication. The impacts of shared housing should be measured in a rigorous, transparent, and consistent way across multiple parameters and cases. The research should use a recognized life-cycle assessment methodology and consider factors like local context and regulations. The implementation of shared-housing models can have crucial economic and deeper social impacts in

addition to environmental impacts. Therefore, research that holistically covers all sustainability aspects should also evaluate the latter using life-cycle analyses (e.g. life-cycle costing or social life-cycle assessment).

The validity of shared housing as a sufficiency strategy can also be tested by comparing shared housing with the social and environmental impacts of “sharing” housing, for example when two or more households share out of necessity using facilities designed for only one household.

In parallel, research on the resident composition, financing, and marketing strategies for shared housing can evaluate whether shared housing remains accessible and affordable to all segments of local populations, addressing issues of housing *insufficiency*.

### **Scanning the policy landscape**

Finally, urban studies research can support planners and policy makers by scanning, comparing, and evaluating the small but growing number of plans, policies, and regulations that support the development of shared housing already. For example, the City of Amsterdam published a plan in 2019 envisioning that 10% of the city’s housing stock will be residential cooperatives in 20 years (Van Poelgeest et al., 2019). The plan identifies legal complexities, policy fragmentation, limited access to property, and demographic mismatches as obstacles to residential cooperatives at the time of writing, and aspires to address this shortage from multiple directions. Nearby, the City of Rotterdam has published detailed design guidelines for shared housing in a report entitled “Making Space for Collective Living” (Thomas et al., 2022); the City of St. Paul, Minnesota published a memorandum on the impact that the definition of “family” in its zoning code has had on housing options, and how eliminating the term can mitigate discriminatory practices and expand

shared-housing options (Comprehensive and Neighborhood Planning Committee, 2020); and the City of Alexandria, Virginia has eliminated single-family zoning completely while creating new zoning categories for co-living and co-housing (Baskin and Barthel, 2023).

Understanding the broad policy landscape can inform deeper case-study research on the impact of policies at multiple scales and ultimately bolster systematic changes through model legislation at the state or national level.

### **Conclusion**

This critical commentary urges us to rethink the opportunities associated with shared-access living while acknowledging contemporary challenges. In both the cases of co-housing and of co-living, the major impediment to broad implementation and sufficiency is public-sector ambivalence. As we enter the mid-21st century, public authorities in most places are neither clearly supportive nor clearly prohibitive of shared-access living models like co-housing or co-living. A positive, sustainable future for shared housing is possible, but only if public authorities address sharing’s opportunities and challenges directly.

While living alone is a choice for some individuals, the global decline of household size is the consequence of complex demographic, social, and economic factors beyond the direct control of any individual or authority. This decline challenges efforts in countries around the world to reverse an environmental crisis, as solo-living and smaller households in modern contexts involve a rather inefficient allocation of resources. Scaling-up shared-housing solutions like co-housing and co-living could help reconcile this solution by facilitating the development of smaller private-dwelling units without necessarily reducing individuals’ access to functional space. This critical

commentary recommends how research in urban studies can help planners and policy makers address this dilemma through the development of plans and regulations that guide the development of shared housing proactively.

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