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Technology-Driven Hybrid Lifestyles: A Comparative Study of Generation Z in Lisbon and Oslo

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ABSTRACT

Neoliberalism, globalization, and technological change have intensified the multi-faceted phenomenon of hybridization in contemporary societies. While discourses often address hybridization from spatial, digital, cultural, and governance perspectives, its impact on everyday lives remains underexplored. This study fills that gap by developing a conceptual framework for hybrid lifestyles, defined as the interplay between hybrid living, working, and environmental care. Applying this framework to Generation Z (Gen Z), who face intersecting pressures of housing, work, and environmental responsibility in digital contexts, the study analyzes workshops in Lisbon and Oslo. The framework also informs future scenarios of hybrid lifestyles and their societal and urban implications. Findings show that while participants in both cities value flexibility and sustainability, local conditions shape hybrid lifestyles differently: in Lisbon, hybridization is a coping strategy amid precarity and fragmented policy; in Oslo, it is enabled by welfare and established digital and green infrastructures. The comparison reveals hybridization's transformative potential but also its socio-spatial limitations. The findings highlight the need for context-sensitive urban policies that align digital and ecological transitions with the lived realities of younger generations.

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Introduction

Neoliberalism, globalization, and technological advancements have significantly reshaped individual lifestyles, influencing daily routines and everyday practices (Kellner, 2021; Barr, 2018; Ganti, 2014). These forces have created new forms of living, working, and environmental care, as well as new ways in which these domains intersect (Parvatiyar and Sheth, 2023; Brown and Vergragt, 2016; Colding et al., 2013). Among the technological advances, several studies have focused on digital

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transformations and their impacts on daily work tasks, workplace flexibility, collaboration, and knowledge sharing (Hadi Khorsand et al., 2023; Foth et al; 2026). Digitalization also affects living models and habits, including the management and use of shared services and facilities within housing buildings (Huber, 2022; Lundgren, 2023). Furthermore, digitalization is influencing the environment: on one hand, it contributes to the green shift and climate change adaptation (Foth, 2026); on the other, it can cause resource degradation, land and water contamination, and biodiversity disturbance (e.g., when producing ICT goods) (Truong, 2022).

These shifts call for not only technological innovation, but also substantial transformations in consumption patterns, social behaviors, and urban planning initiatives (Annesi et al., 2021; Kaufman et al., 2021)—thus contributing to the acceleration of hybridization in urban life and everyday practices (Rosen and Gribat, 2025; Fuentes and Sörum; 2019; Kuhn, 2017). The concept of "hybridization" is often used to describe "the complex and divergent ways in which daily activities are being digitally transformed by pervasive and ever-present digital media" (Li et al., 2024: 5).

This study focuses on Generation Z (Gen Z), defined as those born between the 1990s and 2010s, who are considered the first true digital-native generation (Gomes et al., 2023) and are becoming a distinct demographic force (Seemiller and Grace, 2018). Their digital fluency shapes how they engage with the world and adapt to rapid technological change, while balancing sustainable lifestyles amid global challenges (Hagedorn et al., 2019; Warren, 2019; Seyfi et al., 2025). Although their environmental activism is well-documented (Fritz et al., 2023; Hess, 2021), research focuses mostly on their consumption patterns, highlighting values such as sustainability and minimalism (Francis and Hoefel, 2018; Wandhe et al., 2024; Grénman, 2024; Dorsey and Villa, 2020). In particular, Gen Z increasingly adopts shared living models (Gato and Ramalhete, 2024), hybrid work (Tomaz et al., 2023), digital entrepreneurship, and nature-based solutions (Giachino et al., 2022) to navigate urban uncertainty. Yet, some studies suggest their sustainability rhetoric exceeds actual practice, a phenomenon that is often driven by economic necessity (Standing, 2014; Seyfi et al., 2025).

Trends toward hybridization accelerated during the Covid-19 pandemic. These forms increasingly blend digital and physical spaces, formal and informal functions, and synchronous and asynchronous rhythms of life (Volpi and Opromolla, 2017; Willis and Aurigi, 2011). As a result, city life is being reconfigured temporally, socially, and physically (Castells, 2020). The hybridity of everyday life has attracted growing scholarly interest, particularly regarding the rise of hybrid education, healthcare, entertainment, and work. However, further theoretical and empirical investigation into hybrid models is needed (Foth, 2026; Li et al., 2024; Di Marino et al., 2022; Hadi Khorsand et al., 2023; Huber, 2022). A comprehensive approach is still needed to fully understand the behavioral shifts of Gen Z—considering both individual choices and structural pressures—and to recognize their role as change-makers in today's cities. The framework proposed in this study aims to explore how Gen Z's hybrid lifestyles mediate their approaches to living, working, and environmental care.

A comparative study was conducted in Lisbon and Oslo, in the form of four workshops between May and July 2024, collecting data from Gen Z participants, stakeholders, and researchers. Thus, based on the data collected, this research aims to deepen both conceptual and empirical understanding of Gen Z's hybrid lifestyle. It addresses three

research questions: (RQ1) How does Gen Z understand hybrid lifestyles?; (RQ2) What are potential future scenarios for hybrid lifestyles?; and (RQ3) What are the societal and urban impacts of adopting hybrid lifestyles?

The proposed framework, tested with real-world data, examines digitalization-driven opportunities and constraints—such as housing precarity, labor flexibility, and sustainable consumption—and analyzes the urban implications of hybrid lifestyles. Lisbon and Oslo, chosen for their relevance to digitalization and innovation (Oslo Business Region, 2021; Estratégia Regional de Lisboa 2030, 2020), both face rising housing prices that limit Gen Z's access, with young renters earning less than homeowners (Banco de Portugal, 2023; Hochstenbach and Arundel, 2021). Portuguese youth experience job precarity and low wages, while Norway offers greater youth employment and flexibility, though unemployment remains high among those without upper secondary education (Euromarket Information Norway, 2024). This comparison highlights Gen Z's hybrid lifestyles in distinct urban contexts.

The structure of this paper is as follows. In the next section we introduce the conceptual framework for hybrid lifestyles and its relevance to Gen Z's challenges in living, working, and environmental care. Then we provide context and present the Lisbon and Oslo case studies. After that, we detail the qualitative workshop method and data analysis followed by a summary of the results, including participant profiles and societal/urban implications. We then discuss key findings and contributions and conclude with implications and suggestions for future research.

Conceptual Framework: From Hybridization to Hybrid Lifestyles

Hybridization has become a key topic in urban discourse, attracting interdisciplinary interest from the fields of sociology, communication technology, geography, mobility, architecture, and urban planning. Interpretations of the meaning of "hybridization" vary but are complementary. From sociological and communication technology perspectives, hybridization is defined as a multi-layered concept (Kluitenberg, 2006, citing Castells, 1996). It refers to the layered nature of physical spaces intertwined with electronic communication networks, where the degree of connection fluctuates. In this view, the "space of places" where daily life unfolds—such as neighborhoods, local businesses, and transit hubs—is distinct yet connected to the "space of flows"—that is, the digital network of telecommunication flows (Castells, 2020).

From a geographical and mobility perspective, greater attention has been paid to the spatial and digital dimensions of hybridization. In this context, hybridization refers to "an increasing intertwinement of collocated entities (people, artifacts, information, etc.) and mediated entities (when offline activities are mediated to varying degrees by the integration of digital devices and new technologies such as 5G and the Internet of Things) in everyday activities" (Li et al., 2024: 189). This conceptualization reinforces the notion of hybrid space as the merging of "borders between physical and digital spaces, due to the use of mobile technologies as social devices" (De Souza e Silva, 2006: 266). The physical spaces of cities are increasingly shaped by users who integrate digital devices, thereby creating the social environment (Volpi and Opromolla, 2017; De Souza e Silva, 2006). Viewed through the lens of

the CalmMobility Paradigm, hybridization becomes a key mechanism through which the "calmness" of everyday travel is produced or disrupted, via the interaction of physical environments with digitally mediated information, services, and practices (Turoń, 2025).

In the field of architecture, the notion of hybridization has been discussed since the 1980s—for example, discourses on hybrid building forms and typologies, and their multifunctionality aspects (see "Parc de la Villette," Bernard Tschumi Architects, 1982–1998). More recently, in the planning context, hybridization has been linked to spatio-functionality and mixed-use development (Leclercq and Pojani, 2020; Cattan and Faret, 2022), as well as social dynamics, such as informal interactions and the spontaneous appropriation of space (Rosen and Gribat, 2025). In addition, the hybridization of public and private spaces refers to the diversified, adaptive, and temporal use of spaces (Kluitenberg, 2006). Hybrid spaces can be designed to create open areas that also offer economic advantages (Kluitenberg, 2006). For example, the multiple uses and services provided by public libraries, coffee shops, and public transportation options contribute to accelerating this process of hybridization (Di Marino et al., 2022). Some studies have focused on broader combinations or interactions between spatio-functional, social, and digital features. These interactions increasingly occur between residential, social, recreational, and more recently, working functions, and have been discussed within planning and related fields (Di Marino et al., 2022).

Given this context, we assume that the lifestyle of Gen Z can be regarded as "hybrid." That is, hybrid forms of living, working, and environmental care—as inherently influenced by digitalization and spatio-temporality—can be seen to shape the lifestyles of Gen Z individuals (See Figure 1).

The factors shaping the hybrid lifestyle of Gen Z (as reflected in Figure 1) are outlined below.

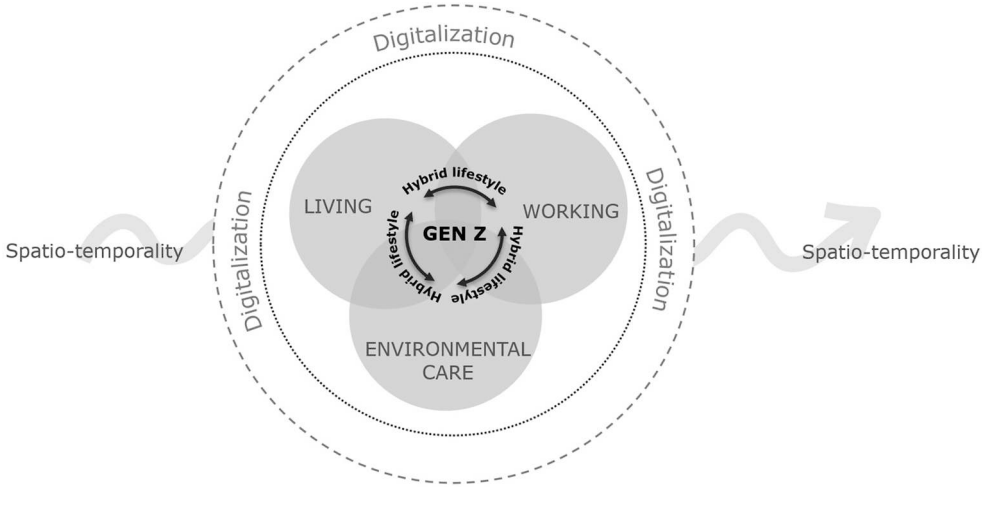


Figure 1: Conceptual framework for the hybrid lifestyle of Gen Z individuals

Hybrid living. Gen Z faces growing challenges in accessing affordable housing, stable employment opportunities, and inclusive urban governance practices across many European cities (Gentili and Hoekstra, 2022; Arundel and Lennartz, 2020). Part of the response is the appearance of self-organized clustered housing (also referred to as "co-housing")—combining private and shared spaces, which offers a more accessible alternative (Tummers, 2015). Once considered a "third way" of housing, co-housing has evolved into a hybrid model, blending residential, communal, and technology-enabled experiences (Alyedressy and Tosheva, 2024). The concept of hybrid living conveniently encompasses Gen Z's fluid lifestyles, which often combine semi-stable homes, travel, and remote work. In the Global North, co-living has expanded as a flexible, multi-local living solution, especially for precarious workers, young professionals, and students (Bergan et al., 2020).

Hybrid working. Gen Z prefers hybrid work for its flexibility, technology-driven styles, autonomy, and links to motivation and job satisfaction (Osorio and Madeiro, 2025). Hybrid arrangements reduce financial barriers by cutting commuting time and costs, which is especially important given Gen Z's high cost of living and commitment to reducing carbon footprints (Osorio and Madeiro, 2025; Smith et al., 2019). Hybrid work gained momentum after the pandemic, shifting practices towards remote interactions (Florida et al., 2021; Petani and Mengis, 2021), and is now commonly done in diverse locations, from coffee shops to shared workspaces (Di Marino et al., 2022). It has become widespread, with flexible arrangements combining remote and in-office days (Grzegorczyk et al., 2021; Griva et al., 2025). However, while labor flexibility offers benefits, it also involves adapting to unstable working conditions, with individual autonomy and entrepreneurial identity often limited by systemic precarity (Osorio and Madeiro, 2025). These dynamics are deeply intertwined with Gen Z's hybrid lifestyles.

Environmental care. Climate change adds a growing sense of urgency to lifestyle choices, especially among Gen Z, who are often seen as both victims of environmental degradation, and potential agents of ecological transition (Silva and Carvalho, 2025; Eide and Kunelius, 2021; Hess, 2021). Several scholars highlight the right to nature and equitable resource access, emphasizing the role of citizen involvement—such as activism—in environmental preservation (Pessina, 2025; Todorović, 2025). Broadly, civil society encompasses both formal and informal citizen groups that can facilitate connections between individuals and state agencies (Todorović, 2025). To this end, Gen Z is notably anxious about global environmental change (Kgomo and Modley, 2022), though few studies address these concerns directly (Gomes et al., 2023). They value nature, practice green consumer behaviors like recycling and eco-friendly purchases (Gomes et al., 2023), and make local food choices for environmental, health, and convenience reasons (Halicka et al., 2025). Shared and smart transport options are also important to them (Vávrová et al., 2025). However, green lifestyle discourses often stress individual responsibility—such as reducing carbon footprints—while overlooking socio-economic barriers that can limit these choices (Seyfi et al., 2025; Seyfi et al., 2024; Parzonko et al., 2021).

Spatio-temporality. Hybridization shapes the spatio-temporal organization of everyday life and activities (Li et al., 2024). In the context of this study, *temporality* refers to uses, functions, activities, and presence which may directly or indirectly affect hybrid cities and spaces (Di Marino et al., 2022). The temporal dimension reflects "more prolonged to temporary uses and functions, since users are increasingly transient, and can spontaneously appropriate urban space" (Di Marino et al., 2022: 10, referring to Willis, 2008). Thus, hybridization can affect the spatio-temporal flexibility of hybrid spaces (Li et al., 2024).

Digitalization. Digitalization has driven the hybridization of cities and lifestyles (Santos, 2021), enabling greater flexibility in activities through new technologies and cloud services (Westergren et al., 2024). Traditional boundaries between home, work, and public spaces have been reconfigured (Maturana et al., 2021). Since the pandemic, remote work, digital platforms, and online learning have become widespread among Gen Z (Kurian and Madhavi, 2024), though not without negative effects on well-being (Polyakova et al., 2024). The full impact of digitalization on everyday life remains only partially understood, especially for Gen Z, who experience these changes intensely (Olçum and Gülova, 2023). Understanding these dynamics requires attention to disparities in access, usage, and digital agency, shaped by age, gender, geography, education, and social class (Markoc, 2025). Existing research on Gen Z lacks a comprehensive framework to systematically examine their hybrid lifestyle and its determinants. Our conceptual framework captures the interconnections among key factors, enabling the identification of Gen Z's hybrid practices and their implications for society and urban environments.

Case Selection

This study compares Gen Z's hybrid lifestyles in Lisbon and Oslo; two cities not yet explored regarding the factors shaping hybrid living. The findings can help rethink strategies to support younger generations. Oslo is experiencing growth in sharing models across housing, workspaces, and mobility (Di Marino et al., 2024), while Portugal is adopting these trends more gradually to fit its socio-cultural and economic context. A common challenge in both cities is the difficulty young people face entering the housing market. Our first case study, Lisbon, is one of 18 municipalities within the Lisbon Metropolitan Area (LMA). It remains the most populous and densely populated municipality, although it is not the largest in terms of land area. Lisbon's resident population currently stands at 545,796 (INE, 2022), but it has been declining for several decades, decreasing by 1.25 percent since 2011. This population decline has benefited other municipalities within the LMA. The second case study focuses on the City of Oslo, the largest municipality within the Oslo Region, which comprises 46 municipalities. Oslo has a population of 714,322 inhabitants (Statistics Norway, 2024). Its population has grown steadily due to high net immigration and a relatively high fertility rate, thus making the effects of an aging population less pronounced than in many other European countries (Statistics Norway, 2024).

In addition, the two cities were chosen as case studies within an interdisciplinary project that focused on the hybrid lifestyles of young generations in Lisbon and Oslo, including challenges in ways of living, working, and promoting environmental care. This project stemmed from a bilateral initiative developed by the authors in 2024, funded by (EEA Grants Portugal).

Portuguese and Norwegian Contexts

In Portugal, Gen Z faces barriers to autonomy such as unaffordable housing, precarious jobs, low wages, and weak policy support, leading to delayed emancipation and increased emigration. Tourism has worsened the housing crisis in the LMA, with short-term rentals rising 23 percent from 2012 to 2019 (TravelBI Open Data, 2023), increasing costs and reducing long-term availability. Policies like Porta 65 Jovem and mortgage guarantees have not prevented rising costs or inequality in housing access (Valério, 2024). As a result, 76 percent of 20- to 29-year-olds live with their parents—far above the EU average—and the average age of leaving home is 28 (OECD, 2024; Eurostat, 2024). High rents force many young people into peripheral shared housing, fueling a "generation of renters" (Hoolachan et al., 2017; Lennartz et al., 2016; Arundel and Lennartz, 2020), unlike their homeowner parents. Precarious work disproportionately affects youth, with unemployment at 21 percent—triple the national average (INE, 2022). The digital economy offers flexibility but also insecurity. In Lisbon, remote and transnational work aligns with youth values but increases competition and volatility, while public policy lags behind. Measures like shared workspaces and digital nomad visas remain fragmented and lack integration with urban planning (Suleman and Barradas, 2024; Carmo et al., 2024). Ecological transition is uneven: free public transport for under-23s supports inclusive mobility, electric vehicles made up 18.2 percent of new sales in 2023, and "soft mobility" and 15-minute city projects are advancing but only partially implemented. Green gentrification and displacement of lower-income residents remain pressing issues.

In Norway, high housing costs pose major challenges. About half of young buyers in their 20s rely on parental financial support, while those who buy property independently often take on high debts, risking financial strain if housing prices fall or income drops (OECD, 2024). National subsidies encourage young Norwegians to leave home early; only 19 percent of those aged 20–29 still live with their parents, with most leaving home around age 18 (OECD, 2024). Norway's labor market offers a structured and supportive environment. Youth unemployment is 12.8 percent (above the national average of 4.5 percent), but targeted policies ease workforce entry for younger people (*Statistics Norway*). Public strategies promote digital inclusion and innovation, backed by start-up funding for a future-oriented economy (OECD, 2024). Oslo leads Europe in sustainable urban strategies aimed at a low-emission society by 2050 (Board of Norwegian Official Reports, 2023). Green initiatives integrate electric mobility, active transport, and low-emission urban living. In 2023, 93 percent of new cars sold were electric. The city excels in terms of micro-mobility, including shared bikes and scooters. Public transport is heavily subsidized, with students under 30 receiving a 50 percent discount (Norwegian Ministry of Transport and Communications, 2023). Walkability and "bikeability" are promoted through the 10-minute city model, thus ensuring easy access to key services (Ministry of Local Government and Modernization, 2019).

Lisbon and Oslo offer contrasting hybrid responses to labor market transformation. Lisbon relies on market-driven, informal experimentation, but fragmented and poorly shared data across institutions, platforms, and local initiatives hinders the maturity, coordination, and evaluation of youth policies. Oslo combines public support with strategic investment in innovation and digital infrastructure. These divergent models underscore the need for context-sensitive approaches to youth employment and the future of work in European cities. Both cities are advancing green agendas but follow different paths regarding inclusivity and integration. Lisbon's efforts remain fragmented, with limited structural inclusion and a risk of deepening spatial inequalities. In contrast, Oslo engages young adults more systematically, supported by strong infrastructure, digital tools, and community-based green practices. These variations reflect broader socio-political differences: Lisbon navigates grassroots innovation amid economic constraints and public policies that insufficiently address Gen Z's key challenges, whereas Oslo actively envisions strategies that are attractive for younger generations. To this end, Oslo should continue to focus on nurturing young talent and creativity, and prioritizing sustainability and wellbeing in order to better engage Gen Z. These young consumers are key drivers in integrating digital tools and green practices within the urban environment (Oslo Business Region, 2021).

Methods

Workshops

The study employed workshops as the primary research setting, including various methods of collecting qualitative data (interviews in pairs, group work, and group discussions). Two workshops were held in Lisbon (May 7 and July 12, 2024) and two workshops took place in the Oslo region: one in Ås (a 20-minute train ride from Oslo) on May 22, 2024, and another in Oslo on May 23, 2024. To ensure diverse participation, the workshops were promoted widely through various communication channels, including social media and the project's official website. Four hybrid venues were carefully selected for their multifunctionality, capacity to support hybrid events, inclusivity, and relevance to urban innovation. These included the Urban Information Centre and the Creative Hub of Mouraria in Lisbon, the Sentralen Center in Oslo, and the BIT Innovation Center in Ås.

A total of 45 people participated in the four workshops—27 in Lisbon and 18 in Oslo (See Table 1). Most participants were members of Gen Z, aged 18 to 35, including university students, early-career researchers, and young managers from public and private organizations. Additionally, some senior researchers and managers took part in both countries. While the perspectives of the senior participants complemented the group

Table 1: Participant overview: Lisbon and Oslo workshops

Participants	University Students	Early-Career Researchers	Young Managers from Public and Private Organizations	Senior Researchers and Managers
Lisbon	12	6	5	4
Oslo	5	5	3	5
TOT	17	11	8	9

work and discussions (in Part 2 and Part 3), the core analysis and profiling of Gen Z's hybrid lifestyle was based exclusively on data from the young respondents (N = 36).

The four workshops had three main objectives: (1) to profile participants' hybrid lifestyles through paired interviews; (2) to develop scenarios for hybrid lifestyles using group work; and (3) to identify implications for society and urban regions through group discussions (See Figure 2).

In Part 1 "profile lifestyles," *Paired interviews,* each involving two participants, were conducted to profile individual hybrid lifestyles, providing a nuanced understanding of participants' daily experiences. The interviews addressed three themes: living, working, and environmental care. The latter includes sustainable practices across home, work, and mobility, analytically distinguishing between behaviors already adopted and those identified as needed to further reduce individual ecological footprints. After each pair took notes on general information (about age, field of occupation, and type of employment) about one another participants discussed in pairs their experiences with co-housing, shared living and workspaces, and neighborhood facilities. They also explored how digitalization affected their living and working lifestyles, daily practices to reduce their environmental footprint, their future intentions, and the use of shared mobility as part of their environmental efforts.

In Part 2 "develop scenarios," *Group work* facilitated the development of scenarios of hybrid living and working, intersecting with environmental issues. In groups of three, the participants discussed future trends/patterns of living and working, in which ways and at what pace these might evolve, as well as associated uncertainties and constraints. Additionally, each group of participants was asked to discuss their future behaviors to reduce their footprint, the evolution of shared mobility and public transport opportunities, including uncertainties and constraints related to environmental care. For this part, the participants were asked to identify main trends, drivers and uncertainties,

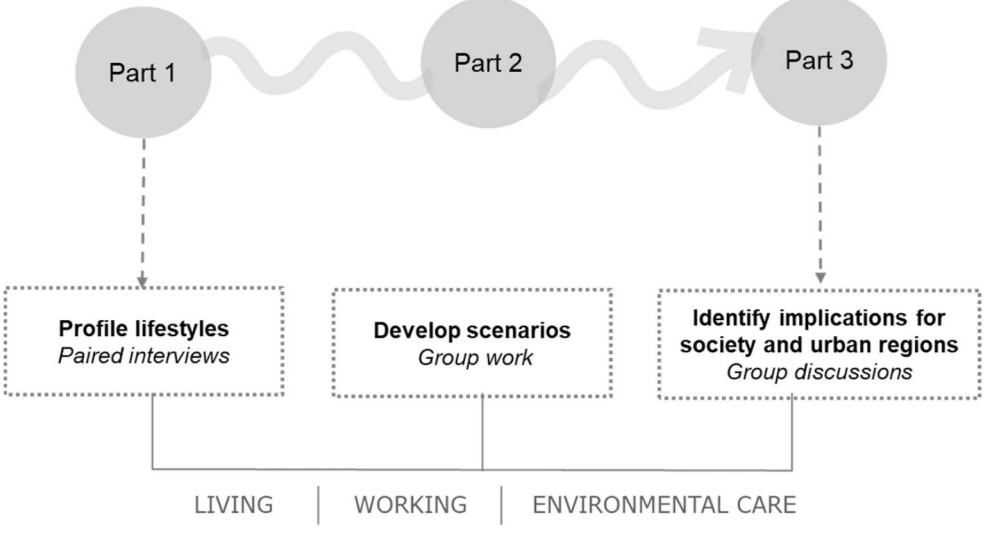


Figure 2: Structure and content of the workshops

which are the basis of the scenario stories. The authors refined the formulation of the scenario stories after analyzing the notes taken within the group work.

In Part 3 "implications for society and urban regions," *Group discussions* were used to facilitate exchange and mutual learning among the participants, and to position themselves within the discussion. The two authors acted as moderators of the group discussion and took notes. The two authors asked all participants to discuss together the implications of hybrid lifestyles for society and urban environments. The participants elaborated on the conflicts, challenges and opportunities that might emerge from the hybridization of daily living and working practices and activities, amid efforts to focus on environmental care.

Data Analysis

Data from Part 1 was examined by combining the general information about age, field of occupation, and type of employment of the participants with the most predominant experiences and habits prevalent in hybrid living (e.g., co-housing) and working practices (e.g., various flexible working arrangements) among the participants in the workshops. Quantitative content analysis (Mayring, 2014) was used to synthesize the forms of environmental care that the participants referred to. The most commonly mentioned themes among participants were analyzed, and their frequencies are illustrated in Figures 3 and 4.

Data from Part 2 were analyzed using a qualitative scenario approach, which involved creating narrative descriptions of scenarios and their potential impacts (Symstad et al., 2017). Each scenario combined trends in living, working, and environmental care, as depicted by each group. After the two authors examined participants' notes, four key drivers were identified as the most frequently cited: Society, Culture, and Technology; Policies and Regulations; Economy; and Transportation. These drivers formed the basis for building the scenarios in the form of text. The scenarios highlight both emerging opportunities and structural limitations (See Figures 5 and 6). This qualitative scenario method was used to generate insights, foster strategic discussions, and explore broad trends and themes among participants. Such an approach is often more accessible and intuitive, making it well-suited for engaging stakeholders and decision-makers without a background in quantitative analysis (Symstad et al., 2017).

Data from Part 3 were analyzed using a thematic analysis approach (Braun and Clarke, 2006; Terry et al., 2017), allowing for a contextual interpretation of participants' discourses. The discussion (one in each workshop) was documented with notes by the authors. The transcribed content was subjected to a thematic analysis guided by the three key topics: conflicts, challenges, and opportunities. From this analysis, key points were extracted (See Table 2) and contextualized in an interpretive comparison.

Results

Understanding Hybrid Lifestyles of Gen Z

In Lisbon, most Gen Z participants were in the 18–24 and 25–34 age groups, while in Oslo, they were primarily in the 25–34 group. Both cities also had participants aged

35–54, with a few aged 55–65 joining only in Oslo. In Lisbon, participants included students and freelancers in arts, culture, and the creative industries. In Oslo, alongside students, several participants worked in the research, education, and cultural sectors.

Regarding hybrid living, results from the paired interviews show that participants in both cities recognize forms of hybrid living such as co-living, but with notable differences. In Oslo, co-living is seen as a formal housing option, mainly for students, both local and from other regions. In contrast, in Lisbon, shared housing is often an informal necessity for young people seeking independence from their families. Some Lisbon participants aged 25–44 currently share rented accommodation with non-family members, while others have recently moved out of similar setups to couple-based housing. The data also indicate that young freelancers in Lisbon are particularly vulnerable to precarious living conditions, especially housing insecurity. The main spatio-temporal aspects of hybrid living identified by the participants include the formality and type of shared housing, the duration and timing of transitions between living arrangements, and the flexibility or instability experienced by young people as they adapt to changing life circumstances.

Regarding hybrid work, participants in both cities reported turning to hybrid workspaces —such as public libraries, shared offices, and cafés (particularly in Oslo)—due to limited home space, lack of comfort, or poor IT connectivity (the latter was discussed mainly in Lisbon). As digitalization expands remote work opportunities, the growing availability of such spaces reflects diverse needs and has prompted flexible, innovative responses that appeal to a wide range of users. Aside from university settings, only a small minority of participants had not used hybrid workspaces. Similar usage patterns emerged across both cities, reflecting comparable occupational profiles and the flexible conditions enabled by digital

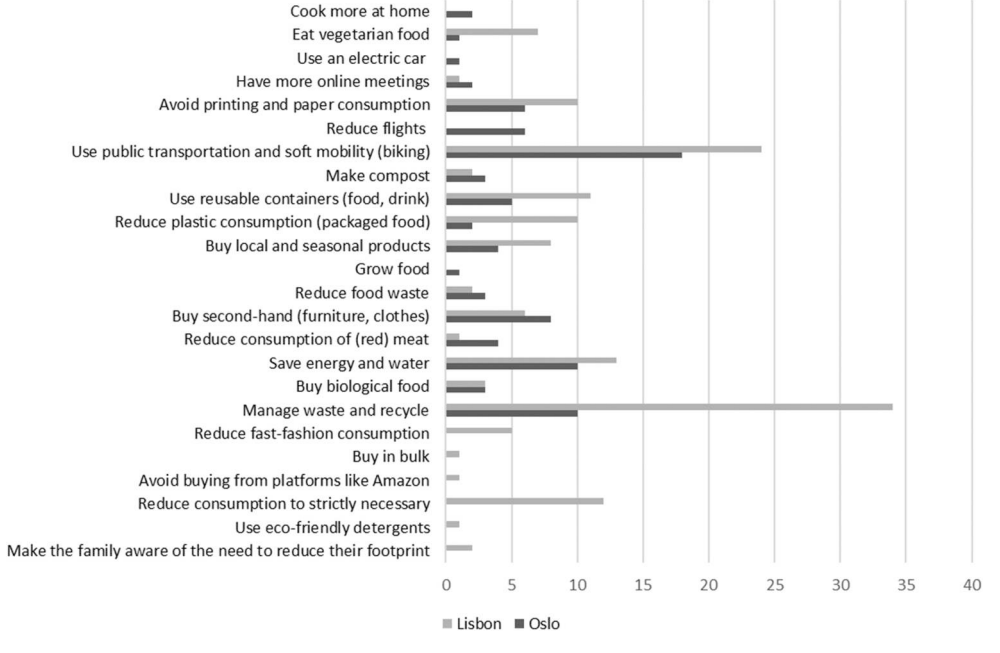


Figure 3: Environmental care habits currently adopted by participants living and working in Lisbon and Oslo

labor opportunities. All participants reported using digital tools in their daily lives—for work, leisure, communication, mobility, consumption, and information access. Participants highlighted flexible workspace choice, time-dependent usage, and adapting routines to spatial and temporal constraints as key spatio-temporal aspects of hybrid work.

Regarding environmental care, participants from both cities reported a range of sustainable practices that are already integrated into their daily routines. Figure 3 presents the most commonly adopted habits at home, in the workplace, and regarding mobility based on the cumulative number of references to each item. Some convergence emerged between Lisbon and Oslo, indicating a shared level of environmental awareness, and consistency in sustainable behavior. Common practices include recycling and waste separation, conserving energy and water, using public transport and soft mobility options, opting for reusable containers to reduce plastic use, buying second-hand furniture and clothing, and minimizing paper consumption and printing.

However, the reinforcement and prioritization of some of these practices appear to be shaped by the differing socio-economic contexts in Lisbon and Oslo—factors that are only indirectly discernible in the available data. For instance, in Lisbon, the emphasis on reducing consumption to the essentials is closely linked to significantly lower income levels, whereas in Oslo, actions such as cooking more frequently at home, driving electric vehicles, reducing air travel, or growing food at home (when space and conditions permit) are more often framed as lifestyle choices rather than economic constraints. The spatio-temporal aspects of environmental care recognized by participants, especially in Oslo, included long-term resource use (e.g., recycling) and alternative spatial settings such as home cooking and shopping locally.

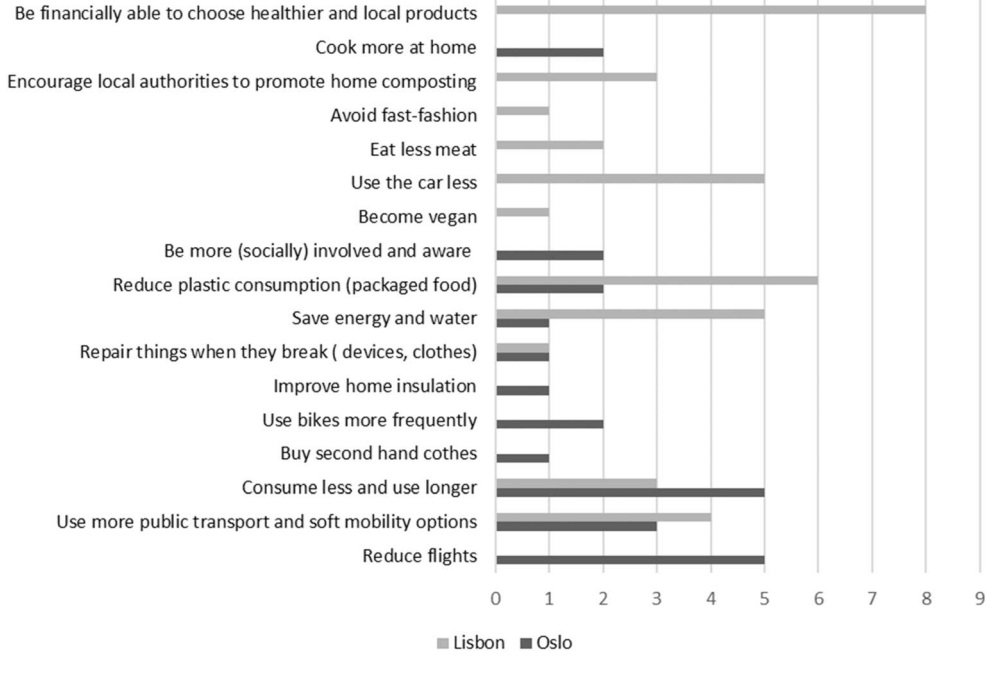


Figure 4: What future behaviors should you adopt to promote a more sustainable lifestyle?

When participants were asked what more they could or should do in future to reinforce a more sustainable lifestyle (See Figure 4), not only did the socio-economic differences between the two cases become clearer, but new issues also emerged regarding the relationship between individual agency and collective action.

Overall, participants across both contexts expressed a strong awareness of their individual responsibility in promoting sustainable practices, which is evident in their suggestions to "consume less and use longer" and about "more use of public transport and soft mobility opportunities" and "repairing things when they break." However, they also conveyed a sense of powerlessness in the face of entrenched market dynamics and corporate interests that promote irrational consumption practices and encourage less sustainable, yet more economically accessible, choices. Unlike Lisbon, the Oslo response "being more (socially) involved and aware" may be indicative of a more deeply rooted culture of civic participation—one that is politically and socially embedded and perceived as capable of influencing broader systemic change.

Developing Scenarios for Possible Hybrid Futures

Lisbon. Figure 5 summarizes three scenarios for Lisbon, reflecting both positive and cautious and somewhat pessimistic outlook on hybrid futures. Scenario 1 imagines a city shaped by collective responsibility and environmental awareness. In response to housing shortages, climate pressures, and social fragmentation, cooperative and co-living models emerge as intentional, community-driven choices. Digital tools support shared services, mobility, and mutual aid. Although this lifestyle demands emotional labor and uneven responsibilities, it offers a hopeful path toward regenerative urban living, rooted in shared action and systemic change.

Scenario 2 highlights a digitally dominated reality where remote work and digital platform blur the boundaries between life and labor. Co-living and multifunctional housing

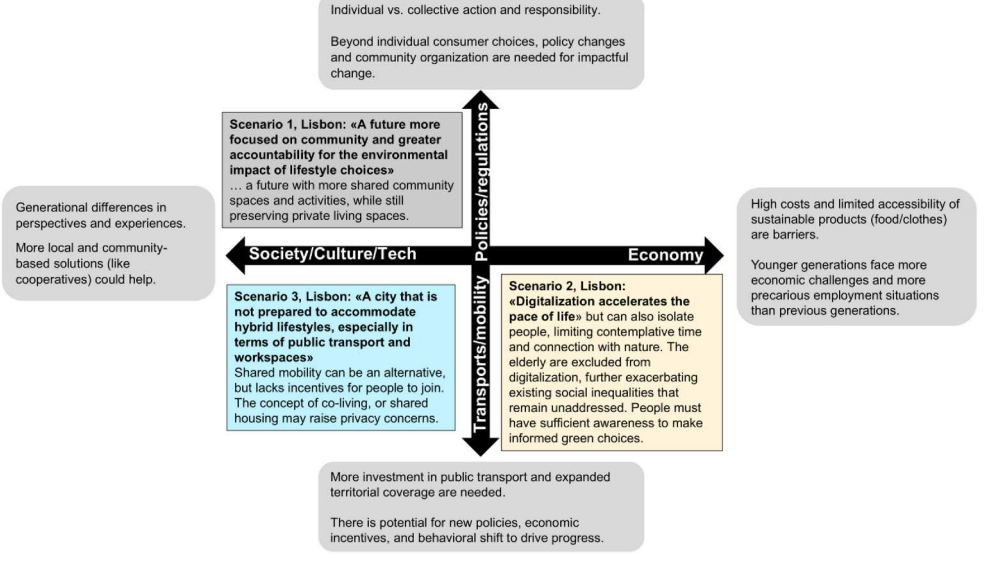


Figure 5. Scenarios for hybrid future of Gen Z developed in the Lisbon workshops

serve as temporary solutions. However, this fluidity brings psychological strain, social alienation, and widening digital divides—especially among the elderly. Environmental concerns lag behind, and participants expressed frustration with the privatization of responsibility, and weak institutional responses. Scenario 3 depicts a city failing to adapt to hybrid living and work. Outdated urban planning, inflexible housing arrangements, and weak digital infrastructure leave Gen Z facing precarious job situations, unstable housing options, and limited mobility possibilities. Unregulated shared spaces lead to conflict and loss of privacy. While some benefit from digital flexibility, many remain stuck in a "grey zone"—commuting long distances or juggling underpaid in-person jobs—relying on fragmented networks in a city anchored to outdated urban systems (e.g., infrastructures, transportation, spaces).

Spanning the three scenarios, generational shifts in values and lived experiences were identified by the participants as challenges, but also as opportunities to reimagine pathways toward sustainability. As younger generations face economic precarity and insecure employment opportunities, there is growing momentum to move beyond individual consumer responsibility toward more collective and systemic approaches. Expanding community-based solutions—such as cooperatives and increasing investment in public transport and territorial inclusion can help to overcome barriers such as the high cost and limited accessibility of sustainable products. Along with community-based solutions, the right policies, incentives, and cultural shifts could drive more equitable and lasting change.

Oslo. The three Oslo scenarios shown in Figure 6 present some similarities to the Lisbon scenarios, but they also stress specific hybrid features. Scenario 1 is open to more intergenerational shared housing and hybrid working, and it addresses more incentives for shared mobility. This scenario also refers to the control of prices and measures for re-using items, reducing consumption, and using refillable products. These

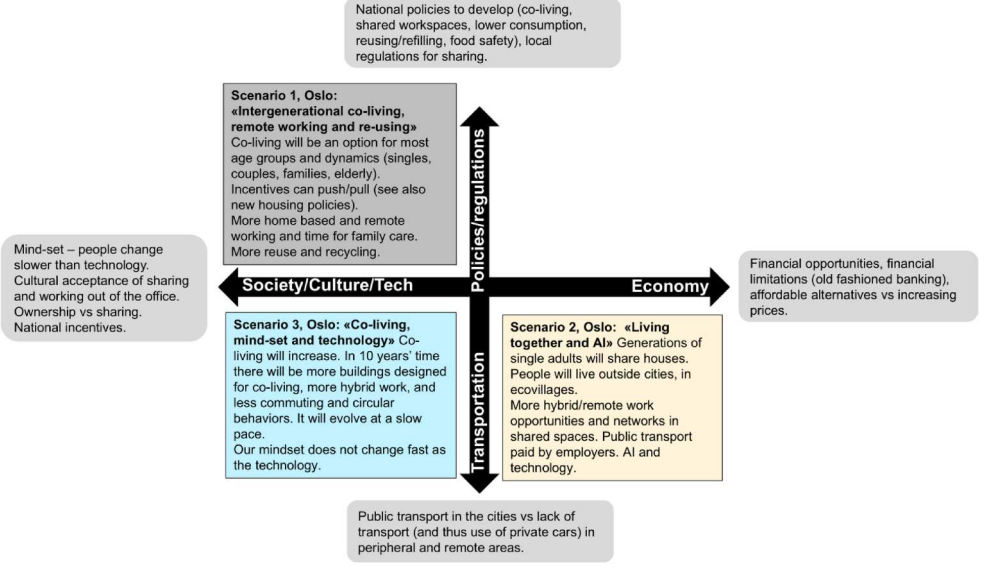


Figure 6: Scenarios for hybrid future of Gen Z developed in the Oslo workshops

suggestions implicitly refer to the circular principles and sustainable consumption practices sought by Gen Z. Scenario 2 highlights the current generation of single adults and the possibility of living outside cities. It turns to eco-villages and intentionally constituted communities, reflecting a shift away from individual ownership towards more sustainable, collective living. If more people left the big cities, perhaps more efficient public transport options would be offered in smaller towns and municipalities. Such shifts would need to be combined with hybrid work and shared housing, thus generating more hybrid activities. Scenario 2 also depicts an active role of employers in supporting public transport for Gen Z, and better use of AI and technology in managing the digital footprint.

Scenario 3 projects the evolution of hybrid living and working in the next 10 years. According to the participants, more co-living structures will be built, and hybrid working trends will increase. Gen Z will be more engaged in circular behaviors (such as less commuting, less use of private cars, change of travel behaviors, and recycling building materials). Thus, the long-term perspective is predominant in Scenario 3, and it considers that changes would happen rather slowly.

Participants in Oslo identified several opportunities across the three scenarios, including advancements in technology, cultural shifts, and new policies (particularly to promote public transport). In addition, shared housing, along with financial incentives for homeownership, are both considered relevant for the hybrid future. However, transitions to these future scenarios are not without friction. Key uncertainties may hinder their development—particularly prevailing mindsets around ownership versus sharing, which shape what is shared, and how. Legal frameworks for shared ownership remain underdeveloped, and housing policy has yet to fully adapt to emerging co-living models. Regulatory barriers and the high costs of new developments further limit the scalability of such arrangements. In remote areas, the lack of public transport remains a structural challenge, and car dependency is still deeply embedded in the mindset of Gen Z residents. Moreover, institutional systems such as banking, taxation, and employment continue to be geared toward traditional full-time roles, thus limiting flexibility across various sectors.

Implications for Society and Urban Environments

Table 2 summarizes the main conflicts, challenges and opportunities of hybrid lifestyles which emerged during the group sessions. Current hybrid lifestyles in Lisbon and Oslo present some similarities, but also differences in terms of hybrid living, working, and environmental care.

The comparative analysis reveals that participants from Lisbon and Oslo share many concerns, alongside context-specific differences. A strong sense of structural mismatch emerged between hybrid living ideals and urban realities. Housing precarity, rising costs, and slow infrastructure adaptation are central challenges for Gen Z. Co-living and shared mobility are seen as promising solutions, yet cultural resistance and privacy concerns persist—especially in Lisbon, where privacy is more highly valued. Homeownership remains associated with economic stability and family aspirations, creating a gap between innovative housing models and societal norms. While co-living is gaining traction in Lisbon, it remains largely seen as accommodation for displaced

Table 2: Conflicts, challenges, and opportunities of hybrid lifestyles in Lisbon and Oslo

Domain	City	Conflicts	Challenges	Opportunities
Hybrid Living	**Lisbon**	• Tension between privacy and shared spaces (e.g., co-living) • Generational gap between housing ideals and reality	• Inadequate housing for hybrid needs • Precarious access to stable housing options • Cultural resistance to shared infrastructure	• Co-living reduces resource use and costs • Community-oriented housing models • Potential for adaptive urban planning and flexible housing typologies
	Oslo	• Conflict between developers' push for shared housing and cultural preference for ownership • Stigma around multigenerational/ family-based living	• Strong attachment to ownership • Very small units reduce comfort • Co-living not broadly accepted • Lack of affordable community spaces	• Co-living as a response to isolation • Multigenerational housing as a solution • Openness to countryside relocation • Potential to normalize alternative living patterns
Hybrid Working	**Lisbon**	• Remote work vs. employer expectations • Work-life balance eroded by constant connectivity	• Unequal digital access and infrastructure • Lack of affordable remote workspaces • Accelerated pace of life and digital burnout	• Flexibility in location and schedules • Digital platforms and hybrid job models • Local shared workspace/ hubs that balance autonomy and community
	Oslo	- Ideological mismatch: sharing workspaces but limited interaction - Employer control vs. hybrid autonomy	- May cause loneliness or overwhelming freedom - High costs of shared workspaces exclude many Gen Z people - Distrust in hybrid setups in some regions - Isolation despite shared digital tools	- Reduced commuting, increased time efficiency - Gen Z embraces digital collaboration - Demand for multigenerational, public hybrid workspaces - Recognition of hybrid work as being permanent
Environmental Care	**Lisbon**	• Individual action burdened by institutional inaction • Ethical tension between values and consumption habits	• High cost and limited access to sustainable goods • Slow policy adaptation • Complexity of environmental choices (e.g., food systems)	• Youth-led behavioral shifts (e.g., vegetarianism) • Grassroots/local cooperatives • Consumer pressure influencing policy and industry behavior
	Oslo	• Frustration with ecological costs falling on individuals • Tension between car dependency and sustainable ideals • Intergenerational tensions about future concerns	• High cost of ecological goods (organic food, refillables) • Limited access to second-hand or repair services • Climate adaptation not yet community-rooted	• Urban gardening as a local adaptation strategy • Demand for transport subsidies and affordable green options • New spatial practices (e.g., local mini-shops) to reduce car use • Community preparedness for climate crisis

university students, limiting its acceptance and the city's capacity to support hybrid lifestyles. The absence of state subsidies for youth independence and consolidated co-living models reinforce this position. In contrast, Oslo benefits from state subsidies that encourage young people to live independently, with greater openness to countryside relocation and multigenerational living. Both cities highlight a growing need for communal spaces to counterbalance shrinking apartment sizes.

Hybrid work is viewed as an irreversible trend in both contexts, offering flexibility and reducing commuting. However, tensions arise between the ideal of shared workspaces and the reality of social disconnection—people often share space without meaningful interaction. Digitalization is a double-edged sword: it enables remote work but accelerates life's pace and may increase isolation. Lisbon faces challenges of unequal digital access and a lack of affordable, quiet workspaces, compounded by fragmented urban mobility. Although Oslo offers free facilities like public libraries, shared workspaces remain unaffordable for many. Participants also noted international differences in workplace trust cultures, with some countries still enforcing strict controls despite remote work.

Regarding environmental care, participants demonstrated climate awareness and willingness to change behaviors but cited cost barriers in both cities. Sustainable options like organic food, refillable, and eco-friendly clothing are often unaffordable, and repair services are limited. Many expressed frustration over the burden of individual responsibility amid industry and policy inaction. They called for stronger collective action and public investment in shared mobility, secondhand consumption, and plant-based diets. Lisbon participants raised concerns about inadequate public transport, poor connectivity with peripheral locations, and challenges using mobility apps. In Oslo, car dependency remains in remote areas with limited public transport. However, Oslo reflects a more advanced discourse on climate adaptation, including urban gardening and local food systems. Intergenerational tensions and youth disempowerment are more pronounced in Oslo, where participants expressed guilt over their limited influence. In Lisbon, participants voiced anger about being burdened with responsibility while institutions remain inert and aligned with global economic interests.

The main asymmetries between Oslo and Lisbon lie in institutional maturity and cultural attitudes: Oslo demonstrates stronger institutional development and cultural attachment to ownership, while Lisbon faces greater challenges in housing stability and digital access but shows more openness to community-oriented and grassroots solutions. Oslo's opportunities focus on normalizing alternative living and work patterns, whereas Lisbon emphasizes flexibility, adaptive planning, and youth-led environmental initiatives.

Discussion

This study contributes both conceptually and empirically to understanding the hybrid lifestyles of Gen Z in the city regions of Lisbon and Oslo. It introduces a novel conceptual framework for hybrid lifestyles, comprising three key dimensions—living, working, and environmental care—all shaped by digitalization and spatio-temporality. This framework enables a more nuanced profiling of Gen Z's hybrid lifestyles, the development of potential future scenarios, and the exploration of implications for both society and the urban

environment. These insights are grounded in data collected during four workshops in 2024—two conducted in Lisbon and two in Oslo.

To the best of our knowledge, such an integrative framework has not yet been developed in the academic literature. While hybrid living, hybrid working, and environmental care are often studied in isolation, few studies have examined the interconnections between these domains (see e.g., Osorio and Madeiro, 2025; Gomes et al., 2023). Even fewer studies have sought to ground this intersection conceptually, or as comprehensively as proposed in this study. Furthermore, mapping Gen Z's hybrid lifestyle trends helps advance our understanding of hybrid cities and societies shaped by accelerating technology—an area of growing interest in urban studies (e.g., Cho et al., 2016; Di Marino et al., 2022).

We present the main findings from this study, as per the three objectives of the study (See Introduction and Figure 2). First, in line with a previous study by Alyedreessy and Tosheva (2024), our findings reveal that the hybrid lifestyles of Gen Z in Lisbon and Oslo are rather *fluid* across multiple places, or in other words, *multilocal* (as explored by Bergan et al., 2020). This study shows that technology is driving new hybrid models that blend living, working, and caring for the environment. In both cities, Gen Z tends to engage in shared housing—though the underlying conditions and motivations may differ locally—and adopt various hybrid work solutions. These include working from alternative locations, with a clear preference for free-access spaces, such as public libraries, over paid shared workspaces. This highlights the spatio-temporal dimension of hybrid lifestyles, as Gen Z navigates a network of spaces used for varying durations and in increasingly flexible ways (as discussed by Li et al., 2024). These dynamics shape the behaviors, experiences, and social practices of Gen Z.

Moreover, participants exhibited a broad range of practices aimed at reducing their environmental footprint at home, at work and in their mobility. These practices included adopting energy-saving, minimizing waste, using shared or public transportation, and embracing flexible work arrangements that reduce the need for commuting (See Figures 3 and 4). These insights reinforce the relevance and value of the proposed conceptual framework (See Figure 1) in capturing and understanding the fluid and dynamic nature of hybrid lifestyles among Gen Z.

Second, the scenarios envisioned by participants highlight the uncertainties that Gen Z continues to face—particularly regarding the high cost of living and transportation, as well as issues of flexibility and precarity (as also noted by Osorio and Madeiro, 2024). Consistent with current research, this study finds that Gen Z views AI and digitalization as key opportunities in shaping future scenarios (See Figures 5 and 6), while they also emphasize the urgent need for new policies addressing transportation, housing, and sustainable practices (Gomes et al., 2023). In both Lisbon and Oslo, there is strong awareness that Gen Z is encountering challenges that are largely unprecedented for previous generations. These findings offer valuable insights for policymakers, urban planners, and stakeholders aiming to develop affordable housing solutions, and accessible spaces and services for flexible working.

Third, the findings reveal that hybrid lifestyles have several implications for both society and the urban environment. Lisbon is characterized by a heavier reliance on individual action and grassroots initiatives due to slower policy adaptation and limited institutional support. Environmental care often takes the form of youth-led behavioral

changes, local cooperatives, and consumer activism, with ethical tensions and high costs acting as key barriers. Oslo, on the other hand, displays frustration with individual ecological responsibility and faces challenges related to car dependency and intergenerational perspectives. While Oslo also experiences high costs and limited access to sustainable options, opportunities focus more on community-level adaptation strategies, such as urban gardening, the creation of local mini-shops, and collective preparedness for climate crises. Expanding on the currently limited research on environmental concerns (Gomes et al., 2023; Seyfi et al., 2024; Seyfi et al., 2025), this study suggests a more comprehensive perspective. Environmental care should be addressed through reduced commuting and the promotion of shared mobility (as discussed by Vávrová et al., 2025), the expansion of hybrid working models and greater use of digital platforms, as well as by encouraging local methods of production and consumption (Halicka et al., 2025). In this context, and in future studies, the CalmMobility paradigm (Turoń, 2025), which has been scrutinized in the literature, can be incorporated into the analytical framework proposed in this study and provide an additional useful lens for examining the experiential consequences of hybrid urban conditions, including comfort, safety, predictability, and inclusiveness. Our study also highlights that multigenerational buildings could support hybrid lifestyles and help mitigate social isolation (as also reviewed by Tummers, 2015), which may arise from increased digitalization and remote working (as illustrated by Polyakova et al., 2024).

Considering the limitations and directions for future research, the conceptual framework proposed in this study could be expanded to include additional dimensions, such as hybrid education, healthcare, and entertainment, as suggested by Li et al. (2024). Furthermore, the empirical analysis could be deepened by incorporating other forms of qualitative data, such as content analysis of policy reports related to Gen Z. Quantitative approaches—including spatial and statistical analyses supported by GIS and AI tools—could also be employed to track patterns and behaviors of Gen Z more systematically. In addition, surveys could help to broaden the sample and strengthen the generalizability of the findings. Future research might also consider replicating this study with younger cohorts, such as Generation Alpha (individuals born between 2010 and 2024), particularly those with multicultural backgrounds. Finally, conducting comparative analyses across more cities would be valuable for capturing the dynamics of hybrid lifestyles and trends among younger generations in diverse socio-cultural and political contexts.

Regarding practical and policy implications, the findings are relevant to a wide range of stakeholders, including academics, policymakers, urban planners, and practitioners. These groups should move beyond a narrow understanding of hybridity related merely to space usage and digitalization (Volpi and Opromolla, 2017; De Souza e Silva, 2006) and instead embrace a broader view that includes real urban transformation (Annesi et al., 2021; Kaufman et al., 2021). Importantly, stakeholders should expand their practical knowledge to include the diverse daily hybrid practices of individuals (as examined by Li et al., 2024; Rosen and Gribat, 2025; Kellner, 2021). Such an approach would strengthen policy and planning agendas in the two cities studied—Lisbon and Oslo—which have already initiated new hybrid and innovation strategies (Oslo Business Region, 2021; Estratégia Regional de Lisboa 2030, 2020). It could also inspire similar research and policy initiatives in other urban contexts.

Conclusion

This study offers a novel approach to exploring the hybrid lifestyles of Gen Z. It introduces and applies a conceptual framework that integrates hybrid living, working, and environmental care, all substantially shaped by digitalization and spatio-temporality. While existing studies tend to examine these dimensions separately (or connect them only weakly), this research highlights the importance of understanding their interconnections. The findings show that Gen Z in both Lisbon and Oslo is adopting—or aspires to adopt—a more comprehensive hybrid lifestyle, including shared housing, hybrid work, reduced commuting, and environmentally conscious practices. The outlined scenarios call for new policies in housing, employment, and transportation, along with employer incentives and a cultural shift toward home sharing over ownership. These changes could foster more sustainable and livable urban environments.

At the same time, the study reveals that Gen Z is grappling with unprecedented challenges—including the socio-spatial impacts of digitalization and the escalating global environmental crisis driven by climate change—challenges that were less prominent, or entirely absent, for previous generations.

Hybrid lifestyles emerge as adaptive responses to the challenges of fragmented and inequitable urban environments. For example, relocating to semi-central or peripheral areas may offer a solution to rising housing costs. However, this shift requires new transportation policies to ensure improved access to public transit, along with expanded access to shared workspaces and socio-cultural hubs for all. At the same time, the study highlights the importance of adopting more sustainable behaviors—in both central and peripheral areas. Overall, this research provides a valuable entry point for understanding the hybrid practices and daily routines of Gen Z, as well as the concerns and difficulties they face. It also offers relevant insights for policymakers and stakeholders involved in designing sustainable policies and incentives that support the needs of younger generations.

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Disclosure Statement

No potential conflict of interest was reported by the author(s).

Ethical Statements

All participants received detailed information regarding the objectives of the workshops and the procedures for data collection and processing for research purposes.

Informed consent was obtained prior to participation for the use of data in a scientific publication.

In Oslo, consent was given orally by participants, since only notes were taken during paired interviews, group work, and group discussions, and no confidential data were collected. This was in line with the requirements of the national agency for data management. In Lisbon, written informed consent was obtained from participants, as the group discussions were recorded. For the other activities (paired interviews and group work), only notes were taken.

This study complies with the guidelines set by the national agency for data management. All informants were anonymized to protect their privacy.

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