Urban sharing in Seoul

Mont, Oksana; Plepys, Andrius; Voytenko Palgan, Yuliya; Ju, Sungyoun; Vinka, Ulrika

2023

URBAN SHARING in Seoul

City report no 5 by URBAN SHARING TEAM

“Urban Sharing in Seoul” explores the landscape of the sharing economy in the city context and is a result of a Mobile Research Lab conducted by five researchers from Lund University in 2022.

The focus is on three sectors: space sharing, mobility sharing, and sharing of household goods. For each sector, drivers and barriers to the sharing economy are explored, associated sustainability impacts and impacts on incumbent sectors are discussed, and the institutional context is analysed. Furthermore, the role of the Seoul Metropolitan Government in engaging with the sharing economy and specific governance mechanisms employed are described.

We find that Seoul’s sharing economy, manifested by the Sharing City Seoul programme, is a successful undertaking by the Seoul Metropolitan Government that has contributed to implementing more than 140 sharing projects and raised Seoulites’ awareness about sharing. The city already embraced the concept in 2012 and has developed a long-term plan for its implementation. However, the SCS is just one part of Seoul’s sharing economy, the bulk of which is driven by large companies and conglomerates, just like in many global cities.

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www.urbansharing.org
tweeter: #urbansharing
Principal investigator:
oksana.mont@iiiee.lu.se

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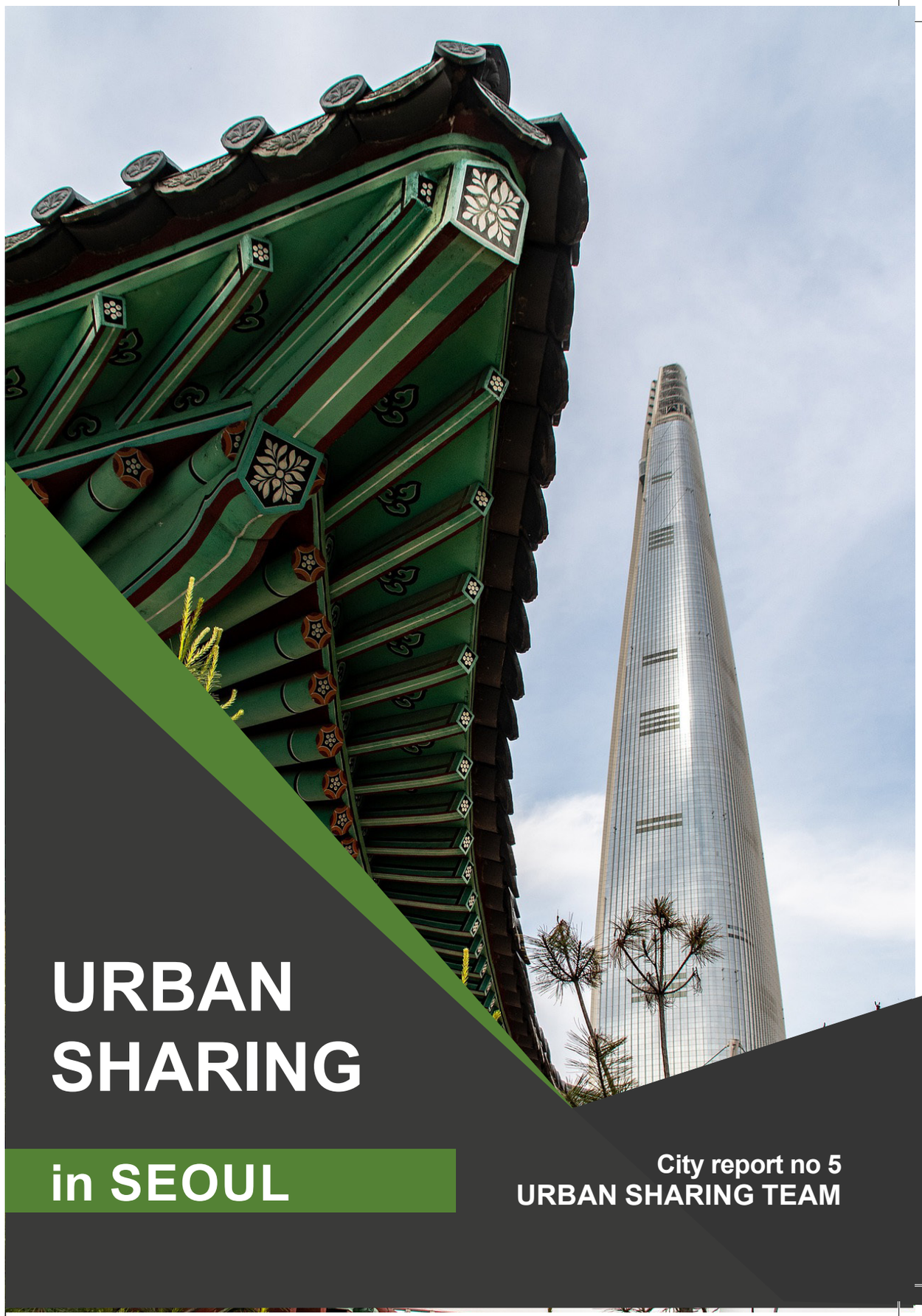

URBAN SHARING in SEOUL

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Table of contents

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1 INTRODUCTION

This city report is the result of a Mobile Research Lab (Mont 2018) conducted in Seoul, South Korea, on 17-22 October, 2022, within the frame of the five-year research programme "Urban Sharing" (http://www.urbansharing.org/), funded by the European Research Council (2018-2023).

The Mobile Research Lab (MRL) involves a combination of methods, including case studies, interviews, observations, expert panels and in-situ fieldwork. This work is based on materials collected during the preparatory phase and the site visit and involved 14 interviews. The interviewees represented several departments of the Seoul Metropolitan Government, sharing organisations involved in the mobility, space, and household goods sharing sectors, third-party organisations, sharing organisation users and researchers. Further useful materials were collected during three workshops organised during the mobile research lab: one for researchers and students from Yonsei University (17 Oct 2022), one for researchers working on urban sharing arranged in collaboration with the Centre for Asian Urban Societies at Seoul National University (18 Oct 2022) and the World Sharing Economy Forum (WSEF 2022) organised by the Sharing Economy Association of Korea (19 Oct 2022).

The report presents insights from five researchers from the International Institute of Industrial Environmental Economics at Lund University in Sweden. Oksana Mont, Andrius Plepys and Yuliya Voytenko Palgan collectively wrote the report. Ulrika Vinka and Sungyoun Ju participated in the MRL as research assistants and administrative officers. Sungyoun Ju also assisted translating texts and interviews.

The urban sharing organisations (USOs) chosen as cases were identified by scouting online databases and homepages of sharing organisations, analysing the academic and grey literature, and interviewing experts and practitioners. Purposeful and snowball sampling was used to select case USOs representing three sectors of the sharing economy: 1) space sharing (including accommodation, parking and shared spaces for working and leisure activities); 2) mobility sharing, including car sharing (peer-to-peer and business-to-

consumer), bike sharing and scooter sharing; and 3) household goods sharing, including sharing of clothes, toys, books and DIY tools.

The three chosen sharing sectors have a significant potential to reduce the environmental impacts of consumption. These sectors have followed different institutionalisation pathways and are subject to different types of engagement from city governments and other actors. They also generally vary significantly in terms of their prominence in the city and their reputation among the public and other actors. Household goods sharing may still result in negative environmental, social and economic impacts, but optimising the design of organisational models (e.g., peer-to-peer, business-to-consumer, for-profit, reciprocal or free) and cooperation between relevant actors with an eye towards sustainability can potentially reduce them.

According to our strict definition, sharing business models support the temporary use of idle assets (Curtis and Lehner 2019): i.e., they entail peers sharing resources they already possess and not the purchase of assets specifically for rental or sharing. Ownership stays with the resource owner and is not transferred to a new owner in a series of subsequent uses, as in the case of second-hand markets. Resource sharing occurs between resource owners and resource users in a peer-to-peer (P2P) business model.

We are investigating urban sharing organisations (USOs) where users may have different motivations for sharing their idle resources, whether monetary, non-monetary or achieving reciprocity. As a reference point for P2P sharing organisations, we also analyse B2C cases where a company owns the resources and not peers.

Section 2 of the report describes the urban context of Seoul, which shapes the sharing economy in this city. Section 3 presents a short overview of the sharing economy in Seoul, including levels of awareness and public acceptance. Sections 4–6 describe our findings and observations from the three sharing economy sectors we analysed – space, mobility, and household goods – focusing on drivers and barriers for USOs and the sharing economy in general, as well as associated sustainability impacts, impacts on incumbent sectors and the institutional and regulatory context of each sector. Section 7 analyses governance mechanisms that the city council employs for engaging with the sharing economy, and Section 8 offers concluding remarks.

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2 CITY CONTEXT

2.1 Governance structure

2.1.1 CITY GOVERNANCE STRUCTURE

Seoul is the capital and largest metropolis in South Korea. Officially referred to as the Seoul Special City, it is the only South Korean city that belongs to the first-level administrative division in South Korea. It is part of the Seoul Capital Area (SCA), comprising the metropolitan area of Seoul, Incheon and Gyeonggi Province.

The city's executive branch is the Seoul Metropolitan Government (SMG), headed by a mayor who serves a four-year term. The Seoul Metropolitan Council is its legislative body, headed by a chairman and two vice chairmen and comprising more than 100 members elected by their respective districts for four years. The council is organised into standing committees, special committees, and a secretariat.

Seoul is divided into 25 local districts (*Gu*) with autonomous authority equivalent to other Korean cities. The population of each district ranges from 140,000 to 630,000, and their areas range from 10 to 47 km^2. Each district elects a mayor for four years and has its own legislative council. The districts are further divided into neighbourhoods (*dongs*), administrative areas directly responsible for providing services and engaging with citizens. There are 423 *dongs* in Seoul, which are further divided into 13,787 *tongs*, comprising 102,796 *bans*. This complex structure has many implications for local innovation initiatives and the implementation of citywide policies.

2.1.2 CITY REGULATORY POLICIES FOR SHARING

Seoul is the world's first sharing city and the "*single biggest catalyst of the global sharing cities movement*" (Shareable 2017). The idea to make Seoul a sharing city was initiated by Mayor Won-soon Park, a former lawyer and left-wing politician with a 30-year career as a human rights activist who firmly believed in the values of public welfare (Bernardi 2015) and the merits of the

sharing economy as a means for improving social innovation, community development and social cohesion.

> ***"Sharing City Seoul was Mayor Park's signature programme. It was his idea; he was inspired in part by… Shareable and the city of San Francisco. The Sharing Economy Working Group was formed; it was the first one of its kind in the world. And Seoul and San Francisco are sister cities, so they were in communication" (Int#SE6).***

Photo 1 Research team visiting Seoul Metropolitan Government (Photo by Ulrika Vinka)

To implement this idea, Mayor Park tasked the SMG with facilitating a series of activities supported by the newly created Seoul Innovation Bureau (Johnson 2014), which allowed the city to pioneer an entire system of sharing companies

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and projects with social value for Seoulites (McLaren and Agyeman 2015, Bernardi and Diamantini 2018). The SMG officially embraced the sharing economy by designating Seoul a Sharing City and, on 31 December 2012, enacted the "Seoul Metropolitan Government Ordinance on the Promotion of Sharing" (SMG 2012). The ordinance stipulated the principles for sharing public resources, assigned organisations and enterprises for sharing resources and specified administrative and financial support.

A Sharing Promotion Committee was founded to select the sharing companies for the SMG to endorse, and to collaborate with citizens and experts to promote city policies (Int#SE12). The committee has worked in close partnership with private companies and NGOs to make sharing an integral part of Seoul's economy (Johnson 2014). In 2014, Seoul's districts joined the Sharing City Seoul initiative and started allocating funding to support urban sharing organisations (Int#SE7).

Starting in 2008, in the aftermath of the global financial crisis, several sharing economy enterprises and start-ups began to emerge, including Co-up (2010), Kiple (2011) and BnB Hero (early 2012). The development of sharing enterprises was hindered by several legal barriers, however, so the SMG started to examine and address the legal and policy conditions needed to support the sharing economy. The SMG initially focused on developing public initiatives and supportive infrastructure, with ultimate aim of involving both public and private actors in sharing the ownership, leadership, development and provision of sharing solutions in the city.

> ***"The reason is that if ownership of the shared environment is all transferred to the private sector, citizens' benefits may decrease due to an increase in service prices. In fact, shared services directly managed by the Seoul Metropolitan Government (publicly owned spaces, parking lots, bicycles, etc.) are still being maintained, and creative services that can adapt to the lifestyles of citizens are being developed by the private sector." (Int#SE12).***

In September 2012, Mayor Park officially announced the “Sharing City Seoul” policy, which became one of his flagship policies, with three sustainability objectives (SMG 2012):

1. Economic – support economic development and efficiency by:
    - utilising idle and underused resources,
    - creating jobs and enhancing economic value.
2. Environmental – reduce environmental impacts by:
    - controlling excess consumption,
    - reducing waste.
3. Social – strengthen social cohesion by:
    - recovering the disappearing sense of community,
    - increasing interpersonal exchange, and
    - developing a trust-based, reciprocal economy (society).

The Sharing City Seoul initiative has passed through three stages with different focuses:

Stage I (2012-2015) focused on establishing the Sharing City Seoul and introducing the sharing idea to citizens (Int#SE14a,b), but not emphasising the economic aspects of it (Int#SE12). The SMG issued an open invitation to all relevant companies and projects and established car and bike sharing systems to join Sharing City Seoul (Int#SE12).

Stage II (2016-2019) followed the rapid growth of global commercial sharing platforms such as Airbnb and Uber and coincided with the emergence of various private sharing economy start-ups in Korea (Int#SE12). Accordingly, the SMG focused on loosening regulatory barriers and promoting the development of commercial sharing services as a complement to public sharing offerings (Int#SE12). By Stage II, Seoul residents were already aware of urban sharing organisations and were using them: e.g., the Nanum Car sharing and Ttareungyi (Seoul Bike) bike sharing services (Int#SE14a,b).

Stage III (2020-2022) was intended to take a more bottom-up, community focus (Int#SE7) to transition towards a citizen-led sharing economy (SMG 2018), “making people embrace this policy” (Int#SE12), as well as to encourage people to share the resources that they have (SIB 2021).

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> ***"From Stage III, we recognised the failure of the sharing economy phenomenon. The original meaning of sharing was twisted with the negative impacts of the sharing economy. In Stage III, we started thinking about what is negative and what is positive with it. We got inspired by Elinor Ostrom's work." (Int#SE12)***

The SMG largely follows the Sharing Promotion Ordinance when regulating the sharing economy. This law defines sharing as activities that create "*social, economic and environmental values by jointly using resources, such as space, goods, information, talent, and experience*" (Moon 2017, 230). The SMG reviewed existing regulations and tax laws in the tourism and mobility sectors and identified the changes that were needed to support (or not impede) sharing of privately owned spaces (including accommodation, other spaces, and parking) and cars (Moon 2017). It also "enacted new rules for promoting the sharing economy" (Moon 2017, 240). These changes are discussed in Sections 4.5 and 5.5, respectively.

SMG also supports the sharing economy at the district level through the Autonomous District Incentive System, which encourages the participation of 25 district offices in the Sharing City Seoul initiative. Districts are evaluated on their effectiveness in promoting specific projects and may receive extra funding based on these scores. The district incentive system seeks to encourage districts to voluntarily participate in the Sharing City Seoul initiative (Int#SE7).

2.2 Geography and demographics

2.2.1 TOPOGRAPHY AND URBAN SPRAWL

Seoul is located in the northwest of South Korea, 60 km inland from the Yellow Sea, with a 15 km radius and a total area of 605.25 km^2.

The city is notorious for its high population density – about 17,000 people per square kilometre (WPR 2022) – twice that of New York City and eight times higher than Rome. The Han River runs through its mountain-ringed hilly landscape, diving the city into north and south zones.

Figure 1. Map of Seoul City (Seoul Solution 2014)

Seoul is a polycentric city due to its geography and economic development policies. For a long time, the government has been implementing land use policies to reduce the population pressure in the city and encourage settlement in the greater Seoul Metropolitan Area (Cho 2005). As a consequence, the Seoul Metropolitan Area has experienced suburbanisation since the late twentieth century (H. Kim, Lee, and Kim 2018), and many Seoulites have moved out of Seoul in search of larger, more affordable homes (Woo-hyun 2022).

2.2.2 SOCIO-DEMOGRAPHICS

According to the Ministry of the Interior and Safety, as of May 2022, about 9.5 million people (3.86 million households) lived in Seoul city (Woo-hyun 2022). In 2021, there were more women (4.89 million) than men (4.58 million), with the largest age band– 0.833 million – being 25-29 year olds (Yoon 2022). Seoul has a very homogeneous population: most Seoulites are ethnic Koreans, with a relatively small number of Japanese and Chinese (about one-quarter million) (Yoon 2022).

The city is also part of the Seoul Capital Area, with over 26 million people (Statistics Korea 2022b). This is considered the fifth-largest metropolitan area in the world, accounting for almost half of South Korean's total population of 51.71 million.

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2.2.3 TOURISM IN THE CITY

Tourism in South Korea accounts for 4.7% of GDP and employs 1.4 million people, comprising 5.3% of all employment in the country (OECD 2020). The largest groups of tourists come from Japan (27%) and China (14%) (OECD 2020). Seoul is Korea's leading tourist destination, together with the island of Jeju. In 2019, 13.37 million foreign visitors came to Seoul before the COVID-19 pandemic, spending an average ₩5.2 million (ca. US$ 3,900) per tourist (Statista 2022b).

The city hopes to attract 28 million tourists by 2026 (Hae-yeon 2022). The Korea Tourism Organization (KTO) works to promote tourism, aiming at creating a "smart tourism city" with the help of the digitalisation of data and services. Today Seoul offers various smart attractions with links through the pan-Korean app VisitKorea and local mobile applications such as K-live and City of Love. For instance, tourists can share a photo box, star lounge, secret window, and 3D representations of K-pop stars' performances, or play the "Escape' game at Seoullo 7017 Skypark (Pam Lee, Hunter, and Chung 2020).

2.3 Economy

2.3.1 ECONOMIC VIBRANCY

After the Korean War (1950-1953), Seoul experienced very rapid economic growth, the so-called "compressed economic development", which contributed to South Korea becoming one of the largest global economies (Yoon 2022). In 2020, Seoul produced 23% of South Korea's total gross domestic product (GDP), equalling ₩440 trillion. The real gross regional domestic product (GRDP) of wholesale and retail trade was ₩59.7 trillion, making these industries the largest in Seoul. They are followed by ₩57 trillion created in the business sector and ₩56 trillion in the finance and insurance sectors (Statista 2022a).

South Korea's economy is led by several large business conglomerates, called the chaebol groups. They helped build up heavy industries, such as car production and shipbuilding, and created jobs during the rapid industrialisation period. However, they have also been criticised for being "expansionist, nepotistic, and monopolistic" (Center for Global Education 2022). Some claim that the chaebol structure also prevents the advancement of the sharing economy in South Korea (Moon 2017) by stifling the growth of small- and medium-sized enterprises overall and preventing the equitable distribution of wealth in society.

Recently, Seoul has also suffered an economic slowdown, including high unemployment, high housing costs and shortages of public transport and parking. Many of the city's economic and environmental problems are exacerbated by its population density, which contributes to significant problems with air pollution and resource overuse (Johnson 2013). As in many advanced economies driven by consumption, Seoulites prefer to buy and own new things rather than share them. Due to the high cost of living and high consumption rates, 49% of households in Seoul carry significant debt (Statistics Korea, 2022).

2.3.2 JOBS

About 5.31 million people (59.2%) in Seoul are economically active, while the unemployment rate is 4.8% (Yoon 2022). There were around 257,000 unemployed in Seoul in 2021 (Statista 2022d). The service sector is the most important employer, accounting for 90% of the city's total gross regional product (Britannica 2022). The largest employers by sector are wholesale and retail trade (900,000), accommodation and food services (493,000), professional, scientific and technical activities (485,000), business facilities management and business support services (473,000) and human health and social work activities (400,000). Sectors such as construction, information and communication, and education employ another 350–360,000 people each (Statista 2021a).

2.3.3 INCOME

In 2019, South Korea's per-capita GDP was ₩55,394,523 (US$ 38,489) (Statistics Korea 2019). In 2021, the average monthly salary of regular employees in Seoul was ₩3.9 million (Statista 2021b). Although this is much higher than the national average, many Seoulites struggle to afford the cost of living in the city. Estimated monthly expenses for a single person in Seoul are ₩3,200,761, and for a family of four the figure is ₩5,551,795. In recent years many of Seoul's households have accumulated increasing debts (Yoon 2022).

In 2021, of the 1.8 million apartments in Seoul, 60% cost more than ₩900 million (Yoon 2022).[1] Food is the most significant item in the average monthly household consumption budget, accounting for 15%, followed by restaurants and hotels (13.9%) and transport and housing (12% each) (Statistics Korea 2022a). On the other hand, the cost of utilities, public transport, and restaurant meals in Seoul is considered reasonable.

[1] Equivalent to more than 7 million SEK or €650,000.

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European Research Council Grant Agreement No. 771872

2.4 Infrastructure

2.4.1 TECHNOLOGY READINESS

Seoul is home to the headquarters of fifteen Global Fortune 500 companies, including world-famous information, communication and technology (ICT) corporations such as Samsung and LG Electronics. South Korea is known for having the best ICT infrastructure in the world. On previous UN surveys and the International Telecommunication Union (ITU) ICT Development Index, it has often ranked first in e-government performance and ICT capacity (Moon 2017).

Seoul has the highest smartphone ownership rate in the world (92.7% in 2021, Statista 2022c) and is a global leader in internet connectivity, with the world's highest fibre-optic broadband penetration and an average internet speed of over 26 Mbit/s (Statista, 2021b). Many public Wi-Fi areas are available across the city free of charge. Seoul's high level of ICT readiness has been a crucial factor in facilitating the establishment of its sharing economy.

2.4.2 MOBILITY INFRASTRUCTURE

Seoul has a sound road system, with east-west and north-south highways and a ring road around the city. However, population growth has outpaced the development of new mobility infrastructure. In addition, the city's topography and high built density leave little space for further development (Britannica 2022). This increasingly has meant crowded streets and traffic jams at peak hours, usually between 7-9 AM and 6-7 PM.

An extensive and well-functioning subway system – which is the primary public transport mode used by Seoul's residents today, has partially alleviated the congestion problem. Subway cars with air conditioning and wireless internet offer a high standard for riders, and the Seoul Metropolitan Area's new integrated payment system improves the seamlessness of the public transport network. Nevertheless, the subway systems experiences crowding during peak hours.

Seoul also has a well-developed bus system, with numerous lines along its main transit routes, each identified by easily distinguishable coloured busses that cross the city at different speeds depending on whether they are general, rapid or local lines (J. Kang 2022). Nevertheless, the bus system lacks sufficient coverage of the "last mile."

About 30% of all trips in Seoul are made by public transportation, with 29% made using private cars, 35% on foot, 1% by bike and 6% using other

transportation modes (including taxi, water transport and special private or public transit systems for schools or corporations; Deloitte Insights 2022). Although a significant number of trips are made via private car, these vehicles are only used 4% of the time during the day (Int#SE11). The relatively low car utilisation rate offers a niche for shared mobility solutions, such as peer-to-peer carpooling, co-ridership and car sharing.

The city is also working systematically to increase the amount of designated bike routes, although this has proven to be challenging due to the shortage of space. In addition, some feel that the new bike routes may not be attractive to users, since they are too narrow and unsafe for inexperienced riders (Int#SE13).

Currently, Seoul is focusing on further reducing road congestion and the limited throughput capacity of busy roads (Int#SE13). The city has analysed extensive data collected from over 300 tollgates and 5,760 cameras in its push to more optimise traffic management. 'Big data' are currently used to manage road congestion. This will be helpful for the incorporation of self-driving vehicles (Deloitte Insights 2022) and to ensure greater efficiency of shared mobility solutions.

Seoul has two major ride hailing platforms: Kakao Taxi, and T-map Taxi. However, these organisations were somewhat hampered by regulatory restrictions as the result of opposition from incumbent taxi businesses in the past (Int#SE13). Multinational ride hailing services such as Uber have been banned in South Korea following fierce opposition from the taxi industry (McSpadden 2015). Meanwhile, bike sharing schemes have grown substantially in the past years, along with carsharing solutions offered by private enterprises.

2.4.3 ACCOMMODATION

In the past 20 years, the level of housing stock has drastically improved, mainly due to the construction of high-rise apartment buildings. By 2015, such public and private high-rise apartments constituted about 59% share of all housing in Seoul, with the percentage of detached single-family housing units on the decline. The shares of townhouses and residential units inside non-residential buildings have remained stable since 1996 (SMG 2016a).

Seoul is one of the most expensive cities in the world, with high property and rental prices driving this high the cost of living. Housing prices have drastically increased in recent years – 58% since 2017 alone (Han-na 2021). The South

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European Research Council Grant Agreement No. 771872

Korean government plans to build half a million new apartments over the next five years (Aljazeera 2022).

More than 40% of Seoulites own their housing, with 32% living in deposit-based rental apartments called *jeonse* and more than 26% housed in monthly rental units called *wolse* (SMG 2016a). As interest rates remained low, more and more landlords have shifted to the *wolse* system, which weakens housing security for residents. SMG has responded with various policies to provide more public rental units to low- and middle-income residents.

Since 2006, there has been a rapid increase in Seoul's young adult population, including students and job-seekers, with residents in their 30s and 40s often leaving the city as they look for more affordable housing in satellite cities. This trend is reflected in the distribution of occupants of public rental housing, where people in their 20s and 30s constitute 12.7%; people 40-50 years old comprising 39.4%, and people older than 60 years old constituting 47.9% of tenants (SMG 2016a).

2.5 Innovation and sustainability

Seoul has an explicit innovation strategy (OECD 2022) which links innovation to two specific policy areas: environment and climate change, and social welfare and social services. The city government has a dedicated Social Innovation Division, with a director and more than 100 staff members working in 20 teams on innovation-related issues. Furthermore, the city also operates dedicated committees made up of civil experts and citizens that aim to find solutions to the social challenges Seoul is facing (OECD 2019). The city develops different skills and offers support in five different innovation staff roles: project managers, data scientists, engineers, communication officers and community engagement personnel. When discussing innovation with city representatives, the most terms they most often used were resident engagement and experimentation (OECD 2022).

Seoul is known for its e-government, with a focus on data-driven analytics and public data management. Seoulites often become engaged in various issues of city governance with the help of innovative solutions using digital technologies. Seoul is also praised for its innovative approach to financing partnerships (OECD 2022). The city's collaboration with and financial support for sharing economy organisations is one example of its innovative approach to engaging with stakeholders (Jung and Mont 2019).

One specific example of innovative ways of working with stakeholders is the recently built Seoul Innovation Park, where residents, neighbourhood representatives, social entrepreneurs, experts and youth can meet, network, share ideas and build collaborative partnerships on diverse issues. More than 200 actors have been working in different parts of the Seoul Innovation Park, such as the Youth Hub, Social Economy Support Centre and Local Community Support Centre (OECD 2019).

2.6 Socio-cultural conditions

The socio-cultural conditions in Seoul could be described using Hofstede's Cultural Theory model (Hofstede Insights 2022). Although the model does not provide city-specific scores for Seoul, its country-specific scoring system could be assumed to be at least indicative of Seoul.

According to Hofstede's Cultural Theory model, South Korea is a vaguely hierarchical society, with a score of 60 on the power dimension (Hofstede Insights 2022). This means that people and organisations accept that power is not distributed equally. Thus, slight social hierarchies are assumed to be normal and require no further justification. Similarly, societal and organisational centralisation is welcomed. An ideal boss is expected to tell subordinates what to do and to assume full responsibility for their actions. Many of these cultural traits stem from the Confucian tradition and underpin the country's post-war 'Economic Miracle'. These traits include "centralized authoritarian bureaucracy, emphasis on worldly success, high valuation of learning, and a universal principle in recruiting government officials" (Center for Global Education 2022).

South Korea is a typical collectivistic society, with a score of 18 on the individualism-collectivism scale (Hofstede Insights 2022). In such societies, people belong to groups, and their identity is defined through the lens of the group (families, extended relationships, or organisations). Individuals are expected to demonstrate a long-term commitment to the group, with the group protecting them in exchange. Loyalty is a very important feature in a collectivist culture and is stronger than many other societal norms and rules. This is reflected in the way people are brought up to take responsibility for fellow members of their group. Business relations at work are defined in moral terms and are understood through the metaphor of the family. Managers see their role as managing groups of individuals and not individuals per se.

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

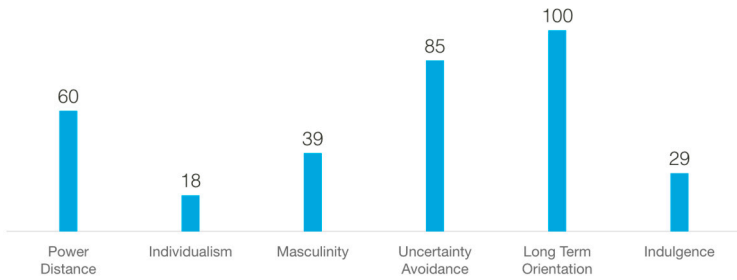

Figure 2 South Korean cultural traits as measured according to Hofstede's Cultural Theory model (Hofstede Insights 2022)

On the masculinity-femininity scale, South Korea scores a 39, which means it is slightly more important for people to like what they are doing (female feature: quality of life is a sign of success) than to be the best at what they do (masculine feature: driven by competition, success, and achievement). In working life, this translates into a focus on "working to live" and not "living to work". Still, some research indicates that 39.7% of Korean employees are workaholics (Kang, 2020). Although the boss should be a slightly autocratic figure, their focus is on reaching consensus and resolving conflict through negotiation and compromise. An effective boss should support employees and involve them in decision-making. Employees value equality and quality in their working lives. At work, incentives such as flexibility and free time are valued.

In uncertainty avoidance – i.e., how a society deals with the unknown future – South Korea scores an 85 and is one of the most uncertainty-avoiding countries in the world. Strict codes of conduct and belief are established and maintained to deal with uncertainties. Unorthodox behaviour and ideas are not encouraged. Punctuality and hard work are norms, and security is an important motivator for individuals. South Koreans might resist innovation if it increases uncertainty.

Long-term orientation is a dimension that describes how societies maintain a connection to the past, build bridges into the future, and balance and prioritise between these perspectives. South Korea scores 100 on this dimension and is one of the most long-term oriented and pragmatic society globally. In their private lives, South Koreans are guided by their own virtues and good examples. South Korean corporations prefer long-term indicators over short-term profits and benefits. This approach secures the durability of companies. The prevailing idea is that companies exist to benefit stakeholders and society at large over the long run more than to make money for shareholders every quarter.

Indulgence vs. restraint is the dimension that describes the degree to which people control their desires and is strongly determined by upbringing. South Korea scores a 29 on this dimension, demonstrating a strong tendency towards restraint. On the one hand, this culture of restraint resonates with the idea of sharing, as people should not indulge themselves by buying everything they want and should instead find other ways to get access to what they need. However, one consequence of this restraint tendency is that people feel that having too much leisure time should not be encouraged.

Photo: Pixabay, cskkkk

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3 URBAN SHARING IN SEOUL

3.1 The landscape of urban sharing in the city

Since the announcement of Seoul as a Sharing City in 2012, by 2015, the city has established itself as a leader in the global sharing cities movement and a unique example of the use of the sharing economy to address various city challenges, such as welfare, environment and jobs.

The main premise of the Sharing City is that under the existing economic system, with limited resources required from the public sector, city residents need to use resources that have already been produced and are currently underutilised (CC Korea 2015). For example, traffic congestion and environmental pollution could be reduced by people sharing or renting cars only when needed rather than owning cars that are used for only an hour a day. And growing tourist numbers could be accommodated not by building more hotels but by sharing existing provide homes and spare rooms. Rising household expenses (see section 2.3.3) could be reduced by borrowing, swapping and renting household items such as do-it-yourself tools, books, clothing and garden equipment. In addition to solving these challenges, sharing could also help recover the aspirations for community that have been diluted over decades of industrialisation and urbanisation.

To implement the Sharing City Seoul vision, the Seoul Metropolitan Government established its Social Innovation Division and put it in charge of the project. Specific departments were assigned to lead various aspects of the sharing economy: for example, the Transportation Policy Division is responsible for managing relations with Nanum Car, while the Bicycle Policy Division manages relations with the Seoul Bike organisation. The SMG's Social Cooperation Division was in charge of nominating Seoul-based sharing economy companies, promoting the sharing economy and providing grants to projects selected through a public competition (Jung and Mont 2019). The Seoul Social Investment Fund and the Seoul Innovation Park serve as incubators for sharing economy start-ups, providing funding, consultation services, recruiting services and office space.

Another example is an NGO known as CODE,[2] which has promoted sharing since 2005. CODE has worked closely with the SMG on communicating about sharing services and networking with different actors. In 2013, CODE launched Share Hub, an online platform that provides information about sharing companies and projects and connects users with sharing services (Share Hub, 2022).

Recently, following changes in the mayor's office, the SMG's Social Innovation Division team ceased operations, although some divisions, such as Transportation, continue to run sharing projects. In addition, much of the financial support for sharing projects in the city's various districts has been withdrawn, and currently each district is responsible for allocating funds and grants to sharing projects for citizens.

Despite recent changes in the general direction of priorities at the national, citywide, and district levels, Seoul's sharing landscape is vibrant and diverse. It combines many city and local government-driven projects that deliver public goods with business-to-consumer sharing companies and start-ups. In addition, there are other types of activities run as social projects. This creates competition between private and public actors in different sharing sectors.

Currently, sharing organisations and projects in Seoul range include both tangible goods such as space, mobility, and household goods, and intangibles such as knowledge and experience sharing. Among these, space and mobility sharing are the most popular.

Space sharing provides public access to shared homes, parking, and public facilities such as conference halls and community service centres that can be booked online and offer underused space for various purposes. Home sharing has been developed to address the issue of solitary seniors, who can increase their incomes through rent while providing younger residents with an affordable housing option. Shared parking helps address the shortage of parking spaces in the city by utilising private parking lots and resident-prioritised parking spaces (Int#SE2).

Mobility sharing includes car sharing, bike sharing and scooter sharing systems. One of the largest is the city-facilitated car sharing programme, Nanum Car, which works through cooperation with private companies. Since its inception in 2013, it has been financially supported by the SMG, and by 2020 it had 3.3 million members. In addition to traditional car sharing, the programme encourages the provision of mobility services to socially

[2] CODE is former Creative Commons Korea (CC Korea).

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

disadvantaged populations, including free rides for the disabled and low-income families (The Hankyoreh 2012). Several other private car sharing services are now also present, with Socar currently being the largest of them. These private ventures are rapidly scaling up and no longer need direct financial support from the SMG (Int#SE11a,b,c; Int#SE13). The Seoul Bike scheme offers an attractive option for sustainable first/last-mile commutes, with 2.3 million members in 2020 (Int#SE2) and a presence in all 25 of Seoul's districts.

Sharing of household goods comprises tool libraries and projects for sharing children's toys and clothes. In 2020, there were 393 libraries for sharing various household devices and tools, with a monthly average of 1,900 users (Int#SE2). Toys and clothes are often shared through community sharing systems, where residents can donate and share children's clothing and toys. The Green Toy Library, for instance, not only rents toys but also offers a place for children to play. Sharing of school uniforms is also very popular.

In addition, many **socially driven projects** involve sharing data, photos, videos, music, talent, experience, knowledge and education. These are often run by non-profit organisations, with financial support from the SMG. Social cohesion and community building are some of the multiple value propositions that the SMG looks for when selecting organisations to support through grants. When applying for grants at a district or city level, organisations must specify their social impact: improving social cohesion, bringing communities together, etc. Many public sharing projects and business activities have coverage throughout all 25 districts. Between 2013 and 2021, 443 projects received ₩3.7 billion in support across the city (Int#SE2).

However, despite its many successful activities, the Sharing City Seoul project has faced significant challenges. One of these has been the city's new mayor and governing party (Dong-Hee 2022), who have held opposing views on many urban governance issues to the previous mayor and his party. The current administration has shifted from focusing on social benefits and public welfare towards strengthening markets and favouring corporate interests. Another factor is competition among sharing services that deliver public goods and get financial and other types of support from the SMG and other types of for-profit sharing companies.

One criticism is that the SMG-supported sharing initiatives have made it harder for other private players to operate in a reduced available "sharing space" or to create new sharing initiatives (Jung and Mont 2019). The criteria used to endorse and fund sharing organisations has been a topic of discussion, along with the question of whether the SMG should assist companies that serve

public interests or that are financially viable in the long run: i.e., whether social interests should prevail over economic ones or vice versa (CODE 2016).

Legal barriers have been mentioned as a factor preventing many sharing companies from establishing themselves in Seoul. Korean law follows the "positive regulation" principle: i.e., only those businesses that fall within the legislative boundary are allowed to operate. The "negative principle", under which all businesses can operate unless specifically prohibited, would be less restrictive to new types of businesses, such as sharing enterprises.

Incumbent businesses such as taxi fleets have voiced strong opposition, accusing sharing companies of cannibalising their existing markets. There are also conflicts of interest between global sharing giants and local start-ups. The SMG has imposed strict limitations on both Airbnb and Uber, and while Airbnb is still present in Seoul, Uber was banned in 2019 and returned to Seoul in January 2022 with a modified business model. One focus of these critiques has been that the SMG's approach has infringed free market competition (Moon 2017, WEF 2017).

3.2 Public perception of urban sharing

As presented above, the existing sharing organisations are mostly for-profit start-ups or local social projects run by NGOs and civil society organisations. Although global sharing actors such as Uber and Airbnb are relatively well-known, local players in Seoul's sharing market struggle to get wider recognition among potential users. The SMG has been aware of limited interest from residents in the early stages of the Sharing City Seoul (SCS) programme and has been actively working on addressing this issue. To improve understanding of the sharing economy in different parts of the city, the SMG, in collaboration with the 25 district governments, has developed and run educational programmes such as the "Sharing Economy Start-up School" in elementary, middle and high schools (SCA 2022).

The SMG organises regular surveys to track public awareness, usage/experience and satisfaction with SMG-backed sharing services. A 2016-2017 survey showed a growing awareness of sharing, especially in the shared mobility sector. In 2017, the average level of general awareness of SCS was 58.2%, while SMG-backed bike- and car sharing schemes had about 90% awareness (SIB 2021). On the other hand, despite high recognition rates, actual usage rates are often much lower (Jung and Mont 2019).

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Grant Agreement No. 771872

Having experience with sharing services is an important factor for acceptance of sharing, in addition to awareness and recognition. According to a 2017 survey, once people experience sharing services, their satisfaction rate is typically high. This study found that Seoulites associated the sharing economy with such words as “practical”, “together”, “rational”, “inexpensive”, “helpful, “affordable”, “wise”, and “promising” (see figure below) but not less so with “environmental sustainability” (Embrain 2017).

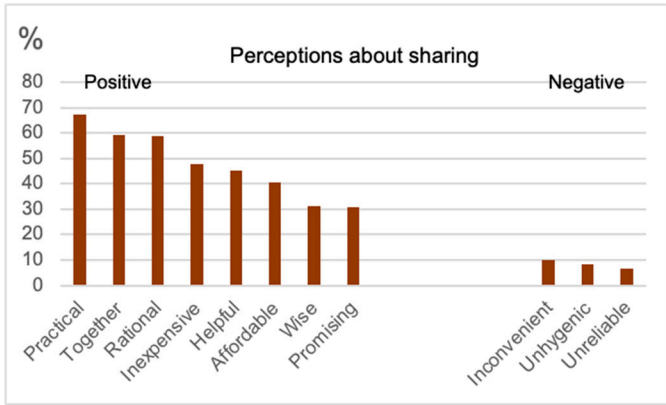

Figure 3 The image of sharing economy in South Korea in terms of various satisfaction criteria (Embrain 2017)

Another awareness assessment, conducted in December 2020, showed that 78.2% of Seoulites were aware of the SCS project and almost 78% had some experience with sharing services offered in Seoul (SIB 2021).

The example of bike sharing offers a strong confirmation of the acceptance and interest in using certain sharing services. When the new city government administration planned to withdraw financial support for the Seoul Bike system, protests by Seoulites resulted in restoration of funding (Int#SE12).

At the same time, a growing critique has emerged that the sharing economy – which was intended to utilise and provide access to idle resources – has instead refocused on competition-driven business models in which providers invest in new resources in order to maximise their profits (SIB 2021).

Some have said that the sharing economy does not engage Seoulites as resource owners/providers and they have instead “so far remained in the beneficiary position of using shared services” (Int#SE2). Despite Seoulites’

growing awareness of the sharing economy=, it is still perceived as lacking synergies at the city level.

> ***"Although the SMG is gradually spreading its sharing policies to citizens' daily life, citizens still often perceive it as fragmented." (Int#SE2)***

There is also a large generational difference in terms of awareness and experience with the sharing economy.

> ***"Older people have less experience with the sharing economy because of IT proficiency, while young people get advertisements from sharing companies on their phones, but they do not always think sharing is cool." (Int#SE13)***

To address some of the challenges that Sharing City Seoul faces, the Third Sharing City Seoul Master Plan highlighted the limitations of the sharing economy, which in its current form prioritises revenues over the ideals of sharing, an approach that "resulted in overlooking of social effects that contributed to the environment, community, etc., contrary to the original intention". The new set of goals this master plan outlined was to achieve a "Citizens' Sharing City" rather than a "Sharing Market City", with the main means being "communing", constructing reciprocal relations between people, co-production and "co-operativism", common management of individually owned resources and resident participation in problem solving.

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4 SPACE SHARING IN SEOUL

In this section, we review existing business models among space sharing organisations, discuss the drivers and barriers that space sharing faces and highlight regulatory and institutional issues relevant to space sharing.

4.1 Business models and examples

A rich landscape of space sharing organisations offers shared accommodations, workspaces, parking and public spaces and facilities in Seoul. Major international platforms such as Airbnb, Couchsurfing, BnB Hero, Homestay.com, and Homestayin operate in the city and are generally more popular among the younger generation. However, they mainly target foreign tourists, in part due to legal restrictions (see section 4.5).

The South Korean home sharing platform WeHome (former Kozaza) focuses on matching owners of traditional *hanok*-style Korean homes to tourists interested in a truly Korean living experience (Moon 2017). The Woozoo platform helps residents remodel old houses into shared homes and offers opportunities for tenants to reduce their housing costs by sharing common spaces with other tenants. In January 2023, Woozoo offered 190 houses in Seoul, with 800 residents and some 40,000 potential users interested in moving to Woozoo homes (Woozoo 2023). Both platforms received support from the SMG.

Another SMG-led project, called “Same Roof Generation Sympathy,” was organised by the city’s Housing Policy Division as a way to help elderly residents rent out spare rooms to college students. This was envisioned as a win-win solution in which older people could receive extra income and students could find affordable accommodations, often near university campuses. The project has also helped to address the challenge of loneliness among the elderly (Int#SE2).

The SMG has also been active in providing Seoulites with access to shared public facilities such as community service centres, auditoriums, and conference rooms in public buildings (Int#SE2). In 2012, together with the district governments, the SMG introduced the Public Facility Sharing Programme, which offered online booking for over 1,000 municipal spaces, including sports facilities, meeting and lecture rooms, parks, and other spaces (Moon 2017). In 2014, around 100,000 citizens used this programme (Moon 2017).

> ***"Since the launch of the Sharing City, 779 public buildings have been opened to the public during idle hours for events, meetings and more. These buildings have been utilized over 22,000 times by Seoul citizens." (Johnson 2014)***

Private organisations also provide access to meeting spaces. For example, the company NSpace runs SpaceCloud, a P2P platform for sharing unutilised spaces for meetings and events, and the biggest platform of its kind in South Korea (Int#SE10). SpaceCloud offers 24 types of spaces, ranging from meeting rooms to studios and dance floors. The platform is popular with younger people, particularly those working through social networks such as TikTok and YouTube; by October 2022, almost 1 million people had used its app (Int#SE10). SpaceCloud boasts 50,000 listings, with an estimated market of ₩3,300 billion (US$ 2.5 billion) (Int#SE10). After four years of operation, the major IT company Never System invested ₩2.65 billion (US$ 2 million) in NSpace. Currently, Never has started developing its own space sharing model.

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Photo 2 Research team visiting SpaceCloud (Own photo)

Seoul also has several co-working space providers, including FASTFIVE, WeWork, SparkPlus, JustCo, DreamPlus, FlagOne and WorkFlex; their offerings are particularly popular among small businesses and freelancers looking to save on long-term leasing or purchase of office space. Many co-working spaces faced difficulties during the COVID-19 pandemic and were forced to search for alternative revenue streams. At the same time, the pandemic created a new market opportunity in the form of traditional companies establishing satellite offices to reduce commute times and avoid crowding in their regular offices during the distancing measures.

> ***"The demand has diversified from the traditional segment of freelancers, start-ups, and Korean headquarters of foreign companies to domestic conglomerates with a need to break up into separate units." (Savills 2020).***

For shared parking, SMG, together with district governments, implemented the Public Parking Lot Sharing Programme. It encourages parking lot owners to

share them with Seoul residents when they have idle capacity (Moon 2017). This is a very popular solution, as it is often challenging to find parking in Seoul (Moon 2017). Using a mobile phone app, users can check the type, availability, cost, location, and availability of handicapped spaces, and then get route navigation to the parking lot they choose. According to the SMG, private individuals are also interested in sharing parking spaces with start-up car sharing companies. Many districts are interested in this solution (Int#SE12).

4.2 Drivers and barriers to space sharing

Financial and administrative support from the SMG has been an important driving factor for some home sharing platforms (e.g., WeHome and Woozoo): the Same Roof Generation Sympathy Programme, Public Facility Sharing Programme and Public Parking Lot Sharing Programme have been fully enabled by the SMG, in collaboration with district governments, and otherwise would not have been possible to establish.

Another driving factor for space sharing is the city's density: 60% of Seoul residents live in apartment buildings (Johnson 2014). Theses space limitations, accompanied by the “tech-enabled citizenry and world-class infrastructure” (Johnson 2014), create fruitful preconditions for people to seek out shared spaces for living, working and leisure activities (Int#SE4).

Regarding barriers to space sharing, like in other cities, Seoul’s sharing economy struggles with outdated regulations that often limit opportunities for space sharing (Johnson 2014). However, some of these restrictive regulations are being addressed in the Sharing City Seoul initiative.

4.3 Sustainability impacts of space sharing

4.3.1 SOCIAL

The Sharing City Seoul programmes are driven by the ideal of a social purpose, in which urban sharing organisations must demonstrate their contribution to the city’s social capital. The city is now looking for ways to assess how and to what extent sharing organisations actually improve the social welfare of Seoulites and the city’s cultural heritage.

For instance, the home sharing platform WeHome helps preserve traditional Korean *hanok* houses and popularise them among tourists. The Same Roof Generation Sympathy cross-generational programme addresses the issue of

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loneliness among the elderly population. And some of the key values that the CEO of NSpace seeks to promote through SpaceCloud relate to the empowerment of tenants and giving them the chance to earn extra income by renting out unused spaces in the premises they themselves lease from developers.

> ***"We aim to challenge society to make a change in the Korean market. The Korean real estate market is very strong from owner to tenant. We would like to challenge the owner that our product is very good and that the tenant also has some power to own and be able to share the place with others… In this platform, we try to let them have more power, earn money, and have the potential to negotiate with the owners." (Int#SE10)***

4.3.2 ECONOMIC

Long-term home sharing offered through platforms such as Woozoo, Coliving and Same Roof Generation Sympathy provide more affordable housing to tenants. In addition to the above-mentioned social benefits, these programmes also offer economic benefits to older people who rent out their accommodation as part of the "Same Roof Generation Sympathy" programme.

> ***"If elderly people have a house and a room they want to share with young people, the City of Seoul funds remodelling the room, e.g., painting. That is a way to solve elderly people living by themselves and feeling lonely." (Int#SE7)***

During the COVID-19 pandemic, the WeHome platform found a win-win solution for those who needed to self-quarantine in Seoul, thereby supporting accommodation hosts with some income during a time of travel restrictions.

> ***"Most people stopped traveling; we found an opportunity – a self-quarantine accommodation. When a family comes to Korea, they need to stay in a hotel, according to the government. If they use our house, the whole family can stay together. We solved this problem with home sharing. While solving this problem, we make money for hosts who are in trouble because there are no travellers there. We are very proud to contribute socially and support the hosts." (Int#SE5)***

FASTFIVE and SparkPlus are platforms known for offering competitive prices and extra services to their users. For example, FASTFIVE has a free day-care centre for members' children, and SparkPlus has established a partnership with Drama & Company to support its tenants with talent acquisition and recruiting (Savills 2020, 3).

The Public Parking Lot Sharing Programme is yet another win-win solution, offering extra income to parking lot owners while expanding the stock of available parking lots in the city in response to the challenge of parking shortage in Seoul. This solution is also economically beneficial for the city:

> ***"Drivers are sharing parking spaces, saving the city ₩300 billion (US$ 261 million) in new parking lots. People with long-term parking contracts rent them out when they are not in use." (Basu 2016)***

4.3.3 ENVIRONMENTAL

The main aspiration of the founder of the *WeHome* home sharing platform was to save resources by avoiding building new hotels and instead capitalising on the existing building stock for tourism (Int#SE5).

The more optimal use of idle parking lots in the city through the Public Parking Lot Sharing Programme reduces the need to build new parking lots, saving resources, energy and land.

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European Research Council Grant Agreement No. 771872

So far, there is a lack of available studies that assess the environmental significance of sharing in Seoul. The potential positive environmental effects are likely to include reduced land use and lower resource consumption in shared dwellings, as occupants share heating, water, and electricity more efficiently than in large-scale hotels. Other sustainability benefits include positive social effects on preserving cultural heritage, promoting Korean hospitality customs and improving living conditions for users and hosts. The SMG recognises the need to conduct social and environmental assessments of the performance of sharing organisations in Seoul.

> ***"The SMG has encouraged sharing economy companies and organizations to create sharing ecosystem services, but there is no standard for measuring shared values for social and environmental contributions other than economic values." (Int#SE2)***

4.4 Impacts of space sharing on incumbent systems

Our research has not revealed significant impacts on incumbent systems, e.g., hotels, from home sharing platforms. Seoul seems to lack a level operational playing field for home sharing platforms. For instance, WeHome is required to comply with certain limitations on its operations (see section 4.5), but Airbnb seems to operate freely for the most part and dominates the Korean market, which is perceived as unfair.

> ***"When I talk about regulation, I always bring Uber case. Uber is stopped, why can Airbnb not be stopped? One is a cultural department, the other is another department which regulates the platforms." (Int#SE5)***

On the other hand, we came across examples of positive impacts. For instance, in the market of shared meeting spaces, NSpace inspired a mainstream IT company, Never, to create own platform for space sharing. The

CEO of NSpace found such development as a healthy competition inspiring NSpace to grow.

> ***"We are in a very good relationship with them. Competition is competition, and support is support. The leaders of Never really challenge us. We learn from them. They are really good… It is a healthy competition." (Int#SE10)***

4.5 Regulatory context and institutional systems for space sharing

South Korea's regulatory frameworks and taxation rules have evolved to cater to traditional businesses, such as the hotel industry and similar entities. As such, these frameworks are not always well suited for regulating the business of sharing accommodation and other private goods.

The SMG reviewed regulations and taxation rules relevant for the tourism sector and determined that in order to support accommodation sharing, it would be important to ease registration requirements for private home rentals below a certain size (230 m^2). This would require changes to Article 6 of the Enforcement Decree of the Tourism Promotion Act (Moon 2017).

When it comes to sharing other spaces, the SMG found a need to revise Article 50 of the Restriction of Special Local Taxation Act to exempt religious facilities from taxes when they share their own spaces with the public (Moon 2017). A similar suggestion has been made for parking lot sharing, by exempting streetside parking from taxes when shared with the public. This would require amending Article 10 of the Parking Lot Act and the SMG Ordinance on the Installation and Management of Parking Lots (Moon 2017).

National law prohibits sharing private accommodation with domestic customers in cities (Int#SE5). Short-term accommodation rentals to foreign visitors in cities are, however, allowed (Int#SE9), and there are no restrictions in rural areas (Int#SE12).

WeHome's platform (previously Kozaza) received a special permit from the national government that exempts it from this rule, making WeHome formally

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the only home sharing platform in Seoul offering services to both domestic and foreign customers (Int#SE5). However, WeHome may only provide the service inside of Seoul, and hosts may only rent out their property for 180 days per year. According to the company's founder, the platform was able to obtain this special exemption due to government interest in real data "to push some competitors – for example, the motel organisations" – and to inform its regulations (Int#SE5).

However, the restrictions on domestic customers seem difficult to enforce. In reality, many hosts share their spare accommodation with both domestic and foreign travellers on other platforms. For instance, according to Int#SE9, Airbnb does not check the origin of guests nor does it have effective mechanisms to do so. According to some interviewees, most shared accommodation users are, in fact, Korean nationals. Airbnb seems to be operating without following any regulations or paying taxes, partially due to the challenges the SMG faces in regulating such a large, global platform (Int#SE5).

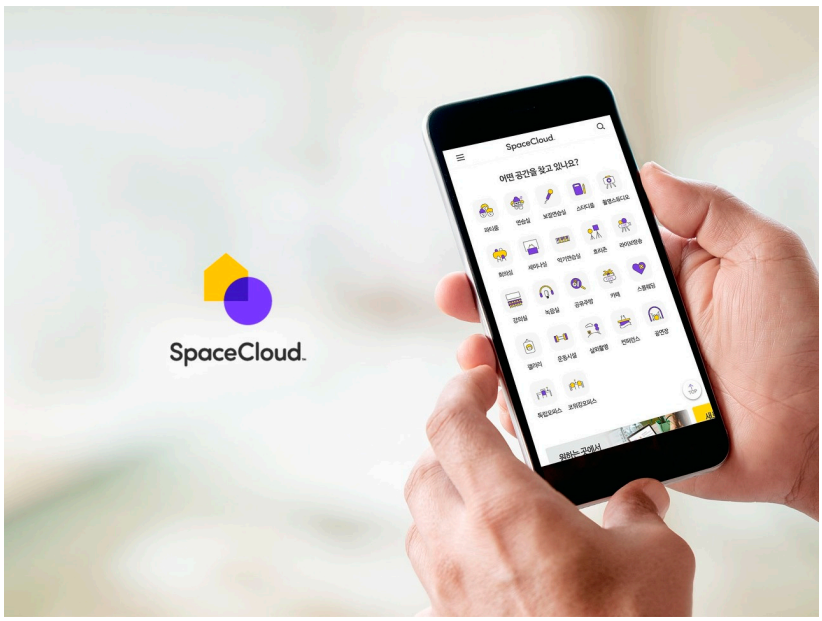

Photo: Space Cloud

Photo: Ulrika Vinka

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5 MOBILITY SHARING IN SEOUL

Seoul's rapid economic development, industrialisation, urbanisation, and growing affluence has resulted in increased car dependency and overall demand for mobility. In the past 40 years, car ownership in Seoul has grown several-fold, accentuating problems with pollution, noise and road congestion.

The city has successfully developed subway and bus systems that are highly effective and efficient on main routes, but coverage remains insufficient for first- and last-mile journeys. This issue has been partially addressed by private car ownership and taxi services, with car sharing, walking, bike and scooter sharing gradually filling in the gaps in public transport.

5.1 Business models and examples

5.1.1 CAR SHARING

In today's South Korea, younger people are typically less interested in owning a car, partly because acquiring a driver's license and owning a car represent a substantial cost. Moreover, younger people are increasingly postponing forming a family and having children, which also delays the need for car ownership. The younger generations rely on public transport or inexpensive taxi services. In addition, those with a driver's license and in need of a vehicle only occasionally (e.g., leisure) can turn to various B2C car sharing platforms. Indeed, bookings are higher on weekends than on business days (#SE11a,b). Car sharing users are often in their late 20s to early 40s, with twice as many males using such solutions as females (#SE11b).

The success of car sharing schemes in Seoul – similar to many other large metropolitan cities – depends on the ability to invest heavily and scale up rapidly, ensure seamless transactions, and offer good access to parking. This is challenging in Seoul due to the low availability of dedicated parking lots and high parking costs (#SE11a-c).

All of Seoul's car sharing schemes use B2C or B2B models, as peer-to-peer sharing is prohibited. The market share of B2C car sharing is about 160:1 relative to B2B. Car sharing in Seoul has grown significantly since 2017, with the size of the fleet increasing by about 160%, the number of app users by about 163%, the number of trips by about 113%, and the duration of use by about 230% (Int#SE11b).

The Nanum Car project

An important support programme for car sharing is Nanum Car**,** which was launched by the SMG Transportation Policy Division in 2012. Nanum Car encourages private car sharing companies to offer sharing services and compete for financial and other support from the city. To do so they must present operating plans, services, and strategies that cater to the public interest and respond to the city's development priorities.

At the very start of Nanum Car, two private companies – Green Point Consortium and Socar – were awarded a partnership agreement, that included allocations of parking spaces in public parking bay, which Socar could rent its vehicles from the city for its vehicles (Int#SE11a). As of 2022, three companies are participating in the Nanum Car project, for fleets that include internal combustion and electric vehicles. Other companies offer high fuel efficiency regular internal combustion vehicles. Between 2013 and 2022, the project successfully scaled up the size of the shared-vehicle fleet from 492 to 9,000 cars (Int#SE1). Already by the end of December 2015, approximately 4,000 residents used the car sharing programme daily, with a total of 1.9 million users between 2013 and 2015, about 85% of whom were between the ages of 20 and 30.

Shared cars are a good option for people who do not own a car. The average rental time of a Nanum Car fleet vehicle is 3 h 23 min, with an average driving distance of 42 km per booking. At the same time, most shared car trips are not for regular daily commutes. About 33% of all trips occur on weekends, and about 32% are made at night when public transport is unavailable (Moon 2017). The Nanum Car programme has proven successful, scoring high satisfaction rates among residents and experiencing rapid growth in terms of fleet size and memberships (a consistent two- to threefold annual increase). The program has also reduced household spending on car ownership among users (Ko 2017). Thanks to Nanum Car, the number of car sharing members has increased from 130,000 in 2013 to 3.3 million in 2020 (Int#SE2).

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> ***"In the private sector, there is a lot of sharing economy. It has nothing to do with the government. The private entity is much bigger. The sharing economy that is driven by the government is a small part. The government facilitates sharing for the public interest, which I think is very unique. Because of traffic and congestion etc. From the policy perspective, there is a reason why the SMG was interested in the sharing economy: to achieve policy goals." (Int#SE7)***

However, as of October 2022, the Seoul Metropolitan Government notified participating companies about its plans to suspend the project (Int#SE13). The effects of this will be interesting to explore in the future.

Example of a private car sharing company: Socar

Socar is one of the largest B2C car sharing companies in South Korea, having been launched in 2011 and today owning and operating 19,000 vehicles that it provides to its 8.3 million members in 4,500 zones nationwide, including the Seoul metropolitan area, Daejeon, Busan, Daegu and Gwangju (Hye-jin 2022). Most users are private individuals, predominately from the younger generations.

Socar offers car sharing, e-bike sharing and parking services. In the carsharing segment, the company accounts for nearly 80% of the market share, generating most of the company's revenues (ca. ₩112 billion in 2022). An additional ₩1.2B comes from parking and ₩3.6B from its micro-mobility business (Philip Lee 2022). The average service life of shared vehicles is about 3 years and ~100.000 km mileage, after which the vehicles are re-sold in second-hand markets at about half of the original value (Int#SE11a).

At its inception, the company successfully gained support from the city government in the form of allocated parking spaces for car sharing in public parking lots that Socar could rent for a fee. Over the past ten years, the company has shown good signs of financial independence and has received several significant rounds of private funding. The main external investor is SK – one of South Korea's leading telecom companies (Int#SE11a).

Socar offers a solution that is attractive to many, as it facilitates contactless transactions when hiring or returning cars and a company credit card to refuel

and clean the car. All cars also have Hi-Pass status, meaning they can use dedicated HOV lanes and exclusive lanes at toll plazas.

Its car sharing scheme is station-based, although it would like to expand into free-floating systems that are more flexible and in high customer demand. Legal regulations are the biggest obstacle to free-floating car sharing in South Korea, as national law requires fleet vehicles to be serviced only at designated centres. Furthermore, car sharing companies must own their parking/service stations or lease them for at least one year (Int#SE11a). Renting private parking lots is possible and is done in practice, but this is rather marginal and does not offer the flexibility that sharing systems desire. However, Socar's cooperation with the SMG since 2013 has meant that it rents about 10% of its parking spaces from the city (Int#SE11a). In addition, according to the SMG, private owners are interested in sharing their parking lots with start-up car sharing companies, an option that districts are very interested in exploring (Int#SE12).

Private car sharing companies such as Socar sometimes address their parking needs through partnerships with other private businesses that own large parking lots, such as traditional car rental agencies, parking providers and shopping malls. Socar is also creating new parking solutions: for instance, by acquiring the company Everyone's Parking Lot, the number one parking platform operator in South Korea since 2021. Socar also consigns vehicles to locations that regular users desire (#SE11b).

Socar is also interested in exploring the feasibility of more-integrated mobility services in collaboration with public transport. There is a clear need and opportunity to promote shared mobility through convenient and practical integration with public transit. Initial talks have been held with the Seoul city government, but little progress has been achieved so far beyond some small-scale local pilot initiatives. In its first pilot initiative, Socar launched a service that allows coordinated reservations of train seats and shared cars (Int#SE11a,b).

Socar is looking to the future with plans to expand and modernise. According to Park Jae-wook, Socar's CEO, after the company went public in 2022, it has plans to direct about 60% of its IPO funds to acquire different start-ups such as self-driving tech companies, 20% to new software, e-bikes and new parking business, and the remaining 20% to research and development (Hye-jin 2022).

Example of a private company: Humax Car Sharing

Humax Car Sharing is another private car sharing company with a long history that has expanded rapidly into diverse business lines. It started in 1989 and

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now offers a broad range of comprehensive mobility solutions and services, including shared vehicles, fleet management, smart parking, electric vehicle charging, and even drone services. Humax Holdings is the subsidiary that operates its car sharing service in Seoul, offering hourly or daily car rentals using the Humax Car Sharing app. Customers can find and reserve available cars in Seoul and then access the car with an app-based digital key. Humax Car Sharing also has the vision of being part of the larger *Mobility as a Service* (MaaS) concept, providing an integrated, seamless and convenient transport experience to users through digital technologies and coordination with the various public transport modes available in the city (Humax Mobility 2023).

Example of a private ride hailing company: KAKAO Taxi

Domestic start-ups such as KAKAO Taxi have partly filled the gap left behind when international ride hailing services such as Uber and Lyft were restricted (Int#SE13). This ride hailing service is operated by Kakao Mobility, a subsidiary of Kakao Corporation.

Kakao Taxi uses a commercial fleet of vehicles and offers services that blur the line between regular taxis and what we think of as ride hailing (based on idle mobility assets) (Inquivix 2022). The service is similar to Uber and other ride hailing platforms, allowing customers to hail rides and pay through the Kakao Taxi app. Kakao Taxi was launched in 2015 and quickly gained popularity in South Korea, particularly in the city of Seoul. Customers hail business-owned vehicles running under taxi services through the app, and it also provides real-time information about the location and availability of vehicles. Kakao Taxi also offers scheduled or pooled rides with other passengers heading in the same direction.

Kakao Taxi has become one of the most popular ride hailing services in South Korea due to its ease of use, reliability and convenience (Int#SE13). It has also faced some challenges and protests from traditional taxi drivers, as well as regulatory challenges, but it has been able to operate and grow in the South Korean market and has also expanded to other Southeast Asian countries.

5.1.2 MICRO-MOBILITY SHARING SOLUTIONS

E-Scooters

E-scooters are an emerging micro-mobility system offered by several private providers in Seoul; it has the potential to play a significant role in last-mile transportation, along with walking and biking (Int#SE13). As of June 2022, there were over 20 such operators, including the more notable ones such as

Swing, Beam, Xing Xing, or Kickgoing. Together they offer over 50,000 e-scooters at nearly 100 subway stations in Seoul (Park and Bellan 2022).

Unlike other cities, Seoul has an efficient system for re-balancing and recharging e-scooters across the city. Most e-scooter companies rely on the services of a handful of large, centralised companies to take care of recharging, reverse logistics and maintenance. E-scooter companies have their redistribution policy and place requests with service companies for how many scooters, where, and when to charge and redistribute (Int#SE13).

However, the typical problems of many cities persist for Seoul's e-scooter fleet, including disorderly parking, neglect and interference with other road traffic and pedestrians (Int#SE13). An important change in 2020-2021 regarding the rules for e-scooters raised the minimum rider age to 16 and required users to wear helmets and hold a moped driver's license. E-scooters were reclassified as equivalent to bikes and restricted to using bike lanes and complying with regulations prohibiting parking in non-designated areas such as near intersections or crosswalks. Violations result in a towing fee of ₩40,000 (~US$ 30), although this is difficult to enforce on end users in practice (Park and Bellan 2022).

These regulations have led to a significant drop in e-scooter ridership. In response, a few of the larger e-scooter operators have suspended operations in South Korea, including Lime, Wind Mobility and Neuron. For instance, Lime also expressed its concern over a "chaotic scooter environment", largely attributed to regulatory laxity that allows a large number of operators with uncontrolled fleet sizes, in turn causing problems with rider compliance, disorderly parking and congestion (Park and Bellan 2022).

Several ideas are currently circulating with respect to improving e-scooter regulations and infrastructure. Suggestions include introducing three-level traffic patterns (car traffic, bikes/scooters/delivery robots, and pedestrians); expanding narrow (1.2 m) and unsafe existing bike lanes to 2–2.5 m (although this would be difficult due to the lack of space in many parts of the city) (Int#SE13), capping e-scooter speeds at 15 km/h, and waiving the helmet requirement (as of today, many riders anyway ignore this requirement and thus break the law).

Bike sharing: Seoul Bike

In 2015, the SMG Bicycle Policy Division started a public shared bike system known as Ttareungyi (Seoul Bike in English). At its inception, it offered 1,500 bikes, which had doubled by 2016 (SMG 2016b) and reached over 43,000

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European Research Council Grant Agreement No. 771872

bikes by 2022, along with 250 rental stations and 3,000 racks. In 2021, there were over 3.25 million users, and the usage rate is growing (Yulin 2021). Usage rates are especially high during the morning and evening commute time. According to the SMG, Seoul Bike reduces the city's CO_2 emissions by 55,500 tons, a number based on a total distance of 240,099 million km travelled by ~62 million users in 2021 (Yulin 2021).

The government facilitates this growth by effectively managing bicycle re-balancing using big data and expanding on-site maintenance. All vehicles have GPS-enabled location logging and usage data, facilitating predictive maintenance. The city also expands infrastructure, such as bike lanes and paths, with nearly 1,000 km in service currently (SMG 2021a). The SMG also has implemented an interesting initiative to improve biking safety, offering a 30% ridership discount for 2 years to users who pass safety training (SMG 2021b).

The system's very low cost (about ₩1,300 (US$ 1) per hour compared to a similar price for 10 minutes through Kakao Bikes) has made it very popular (Int SE#12). Seoul Bike stations are limited to a few popular areas, and usage per rental is capped at 1 hour to prevent "monopolisation". The system relies on subsidies, as user fees only cover about one-half to one-third of the cost of replacement, maintenance and re-balancing (Kim 2017). Without this ongoing subsidisation, the system would not be economically sustainable.

After initial hesitation, the new city administration decided to continue financial support for this sharing system, allocating ₩21.2 billion (~US$ 16 million), which will sustain the programme for some time (Int SE#12).

Therefore, the prospects for micro-mobility solutions in Seoul look bright – especially electric bikes and scooters. And in 2021, the city government announced the goal of reaching 60,000 electric motorcycles and e-mopeds and installing over 200,000 additional electric charging stations by 2025. Aiming to reduce greenhouse gas emissions, the city also plans to replace over 35,000 ICE motorcycles used by delivery services with EV equivalents. A recent study provides a thorough overview of the main micro-mobility start-ups in Seoul and elsewhere in South Korea (Seoulz 2022).

Photo 3 Shared bikes on the streets of Seoul (Own picture).

5.2 Drivers and barriers to mobility sharing

According to several interviews (Int#SE11a,b,c; Int#SE13), the strongest driver for the growth of car sharing is the increasing demand for mobility from those who need a personal vehicle but cannot afford or decide not to own a car. This demand, in turn, is driven by the high costs of car ownership, a shortage of parking, people postponing starting families, smaller household sizes, relatively affordable taxi services and a well-developed public transit system.

People are more likely to forego car ownership in cities with good public transport and cheap taxis. Mobility gaps that public transport and taxis cannot fill – especially the desire for private rides on special occasions such as shopping trips or short-term holidays – can be addressed by car sharing services. Finally, last-mile gaps can be filled by micro-mobility systems such as e-scooters and shared bikes.

The SMG is interested in promoting electrification of the general vehicle fleet. One favourable factor for electrification is the accelerating build-up of the charging infrastructure and interest from car sharing companies (Int#SE11c).

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

Today the government requires at least 5% of parking lots associated with new housing developments to be devoted to electric vehicles. Access to inexpensive electricity and complete independence from electricity imports are further strong motivating factors for electrification of the fleet (Int#SE11a).

One example of a governmental initiative is the KEV (Korean Electric Vehicle) 100 Programme, which offered tax benefits and other infrastructural support to businesses and organisations electrifying their vehicle fleets. The electrification process is still ongoing and is of great interest to car sharing operators. However, currently, there are significant delays in the deliveries of electric vehicles caused by COVID restrictions and the war in Ukraine (Int#SE11a).

Barriers to shared mobility are several. For car sharing companies, these are mainly the lack of EV charging infrastructure and parking spaces for idle shared vehicles. Also, current regulations mean shared cars can be offered only from central locations and not distributed across the city. Establishing a dense network of central rental locations is very costly, and the vehicles' sparse distribution makes pick-ups and returns inconvenient and costly.

It is also rather expensive for sharing companies to build the large vehicle fleets needed to achieve economies of scale and high utilisation rates, as well as to comply with the strict vehicle maintenance standards imposed by government regulations. In addition, traditional taxi and car rental services are resistant to more-flexible car sharing schemes and have been lobbying the government to impose even stricter regulations on car sharing companies (Int#SE11a,b,c; Int#SE13).

For customers, one barrier to car sharing is the limited service area, as sharing services are available at only at a few certain areas, which limits their accessibility and convenience to customers. Also, Seoulites still have limited awareness of such services. The concept of car sharing is gradually becoming known, but many residents have still not tried it and have little opinion about its possible benefits. For this reason, car sharing companies are putting significant priorities on marketing and on broadening their customer base (Int#SE11a).

In 2013, the SMG launched its support initiatives for electric car sharing services, facilitating the building of 212 EV charging stations (Ko 2017). The city is also keen on developing ideas for Mobility as a Service (int#SE13), which could make it easier for carless people to travel about the city and reduce traffic congestion and pollution. The MaaS concept integrates different travel modes, such as public transit, ride sharing, bike sharing, and car sharing, which are accessed via a single app or website that provides real-time

information about transport options and availability and the option to plan, book and pay through the app.

Low public transport fares may also make it difficult for the private sector to profit from MaaS solutions. In all likelihood, the best prospect for MaaS for it to be organised via public-sector integration with private schemes that take on some of the smaller, potentially profitable aspects such as payment services or shared mobility platforms. Such a system would require effective data sharing between all actors involved (Int#SE13) but could generate new profit centres for private actors.

5.3 Sustainability impacts of mobility sharing

5.3.1 SOCIAL

Car sharing can increase access to other mobility services for individuals who do not own a car, including low-income households, seniors, students and persons with disabilities. Better mobility, in turn, improves access to jobs, education, healthcare and other public services. Effective shared mobility schemes can also reduce traffic congestion, air pollution and noise, leading to better health, reduced healthcare costs and improved quality of life.

Survey-based studies exploring such effects have been conducted in the past, and updated studies are underway (Int#SE13). The results of a 2015 survey indicated that most Nanum Car sharing users were satisfied with the service quality of the project, with an average overall satisfaction score of 4.01 points on a five-point scale (Moon 2017). Users were particularly satisfied with convenience (4.26 points) and availability during business hours (4.08 points). Users were less satisfied with fees (3.22 points), the density of rental centres and the number of available cars (3.48 points) and the quality of car maintenance (3.55 points) (Moon 2017). The survey is a good indicator for the SMG to orient the second phase of the Nanum Car project going forwards, with the main priority being to improve the availability of car sharing services (Moon 2017).

5.3.2 ECONOMIC

Car sharing offers good opportunities for private households to save money on personal mobility by reducing car ownership costs. In the same 2015 (Moon 2017), about 50% of respondents indicated that their primary reason for using the car sharing programme was economic, reflecting the significant savings on

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

the initial investment in a personal vehicle and high operating costs for maintenance, insurance, fuel and parking (Moon 2017).

Car sharing reduces traffic congestion and benefits the city economically, as less transport infrastructure needs to be built, and land can be used for other needs (Moon 2017). The positive health effects from reduced air pollution and potentially fewer accidents also bring economic gains. Car sharing also creates new revenue streams and jobs through car sharing companies and supporting industries such as car manufacturers, insurance companies and maintenance services. Furthermore, the car sharing fleet tends to be younger than the privately owned vehicle fleet, positively affecting fuel efficiency and adopting efficient vehicle technologies.

Nevertheless, such qualitative assessments of expected economic benefits must be substantiated with more specific studies and quantitative analyses.

5.3.3 ENVIRONMENTAL

Car sharing schemes, and the Nanum Car project in particular, had a positive effect on suppressing car ownership in Seoul. According to user satisfaction survey results (Moon 2017), 2.4% of respondents sold their vehicles after they started using the car sharing programme. Since each shared car can replace at least 3.5 private vehicles (Moon 2017), this translates into a significant reduction in traffic congestion, fewer emissions and a saving of parking space.

Our interviewees also expressed a strong conviction that car sharing positively reduces private vehicle ownership (Int#SE11a,b, Int#SE13), going so far as to suggest that one shared vehicle could replace up to 8.5 personal vehicles (Int#SE11a,b,c).

However, car sharing still has had a rather marginal impact on private vehicle ownership in Seoul. With 2.94 million private cars registered in the city, shared vehicles only represent a small per cent of the total (Int#SE11b). A significant drawback of the current car sharing framework in Seoul is that most sharing schemes are station-based and cannot serve the high demand for one-way trips, especially among the 20-30 year olds who account for about 80% of car sharing users (Ko 2017). This hampers a more rapid scaling-up of car sharing in the city.

However, the future is rather bright, according to our interviewees (Int#SE11b, Int#SE13). Car sharing is expected to expand geographically, and the number of shared vehicles will grow steadily. There is significant growth potential in autonomous vehicles (AVs) used for car sharing, which could open up the

deployment of new, more flexible and cost-efficient mobility services based on electric vehicles.

Significant environmental savings will be enabled when autonomous electric vehicles become a reality. Autonomous driving can enable more convenience and availability of vehicles and reduce unproductive driving due to vehicle fleet rebalancing. Today's technological development of AVs is no longer the major bottleneck; the main issues now are in the regulatory field, including their legal status, liability definitions and insurance issues.

The ensuing social, environmental and economic benefits depend on the size and structure of mobility sharing systems and Seoul's specific context and regulations. It is important to understand better how shared mobility solutions can be designed to complement existing public transport options rather than replace them with less sustainable options.

5.4 Impacts of mobility sharing on incumbent systems

Seoul's public transport system is heavily subsidised, allowing lower fares. This constrains the pricing of other services, such as taxis, which must keep their prices compared to many other international cities. This makes it difficult for car sharing companies to offer car services at prices that are both attractive to users and profitable to the providers.

Today, taxis, rental car, and car sharing solutions co-exist without overt conflict between them, as each mobility solution occupies its niche market (#SE11a-c). Taxi services are used for short on-demand local trips, while car sharing solutions are used for more sporadic occasions such as leisure trips, moving large objects or accessing locations with little or no poor public transport coverage. Seoul's car sharing schemes complement public transport for such uses (#SE11b). They also played an important role during the COVID-19 pandemic, filling gaps in the existing mobility system and helping people to avoid crowded trains and busses (#SE11b).

Uber's entry into the Seoul taxi market in 2013 disrupted the traditional taxi business model. Many taxi customers migrated to Uber and other similar under-regulated platforms, which offered cheaper rides and better accessibility. In response, taxi companies began to adopt similar app-based systems to compete with Uber but faced significant regulatory and legal challenges. The South Korean government initially banned Uber's service,

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citing safety and regulatory concerns, but later lifted the ban and allowed Uber to operate under a new set of regulations.

Today, Seoul's traditional taxi companies continue to struggle due to the similarity of the service offerings from the domestic Kakao Taxi, and the number of traditional taxi drivers in Seoul has decreased (Int#SE13). However, Uber's impact on Seoul's taxi industry has been limited, since the company left the South Korean market in 2015 due to the challenge of turning a profit under South Korean regulations and market conditions. However, in November 2021, Uber re-entered the market under a new name – UT – in collaboration with T Map from the Korean mobile provider SK Telecom (Inquivix 2022).

5.5 Regulatory context and institutional systems for mobility sharing

The SMG plays an important regulatory role in governing shared mobility in Seoul. It reviewed existing regulations and taxation rules in the mobility sector and has determined that to support mobility sharing, it would be important to ease regulations that ban commercial transportation service via private cars, such as Article 81 of the Passenger Transport Service Act (Moon 2017). The main local regulations for car sharing in Seoul include mandatory reporting by car sharing companies of their parking lots and the vehicles to be used, which must be done in advance of the operation, and a requirement for parking contracts to have a duration of at least one year (Int#SE11a).

The car sharing segment is dominated by B2C systems operated by several large domestic businesses, because South Korean law does not allow the use of private vehicles for car sharing. This has effectively excluded the possibility of peer-to-peer schemes, including ride hailing services based on private vehicles. Currently, the SMG regulates the size of Seoul's B2C shared-car fleet through a cap which, according to officially unconfirmed information, is ~50,000 vehicles (Int#SE13).

Multinational providers such as Uber or Lyft have been effectively banned since 2019, largely due to strong opposition from local taxi operators. Some forms of ride hailing services are allowed in South Korea now if they are linked to existing taxi services (i.e., they must use taxi driver licenses) without disrupting the rights of the existing owners of taxi medallions, whose number is also capped by the city.

Regarding the regulatory context for e-scooters, an important legislative change took place in 2020 and 2021, when the minimum rider age was

increased to 16 years, and requirements for a helmet and a moped driver's license was introduced. E-scooters were reclassified as equivalent to bikes, meaning that riders must use only bike lanes and park in designated parking lots. Violations of these rules entail a towing fee of ₩40,000 (~US$ 30), which has been difficult to enforce on end users responsible for parking e-scooter contrary to regulations (Park and Bellan 2022).

URBAN SHARING
Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

6 SHARING OF HOUSEHOLD GOODS IN SEOUL

Sharing household goods is relatively more prominent in Seoul than in other cities worldwide. Both business-to-consumer companies and social projects in apartment buildings or communities offer schemes for sharing various household goods such as tools, books, clothing and toys.

> ***"The Share Hub has many services through which one can find online what is available in a specific district. People can only rent items in their own district." (Int#14a,b)***

Household goods sharing schemes are supported by local districts and various city administrative departments. The Ministry of Interior Affairs and Safety manages an online database that lists household goods that various districts can share (Int#SE12).

Household goods sharing is seen as an opportunity to reduce the environmental impact associated with household consumption, address overconsumption and improve social capital and social cohesion among Seoulites. This section reviews the business models observed among goods sharing organisations, discusses the drivers and barriers to this sharing economy sector, and highlights the regulatory and institutional systems relevant to household goods sharing.

6.1 Business models and examples

Shared household goods schemes in Seoul include DIY tools, books, toys and clothing, particularly clothes for special occasions. Sharing of school uniforms

has also been very popular. In 2020, Seoul had 393 tool libraries offering different types of household equipment and tools, each serving an average of 1,900 users per month (Int#SE2). The city government expects this number to increase to 530 by 2025 (SIB 2021). Toys and clothes are often shared through community-based sharing systems – *dong* – where residents can both borrow and donate items.

Private companies also organise the sharing of various goods, including clothing. One such company – OpenCloset – offers donated suits to young job seekers and people looking for clothes for formal occasions such as weddings or funerals. South Koreans have previously been sceptical about using items that have been used previously by strangers, but this attitude now seems to be changing, at least among some groups of the population (Int#SE8).

OpenCloset was launched in 2011 with a handful of donated suits. Over time, 80% of the company's inventory came from donated items, and it purchased an additional 20% of its inventory to provide complete outfits for formal occasions, including shoes, belts, bags and so on. The average customer is about 27 years old but ranges anywhere "from an elementary school to 90 years old" (Int#SE8). During the time it has been in operation, OpenCloset has served approximately 170,000 customers in total, a number that was 15–20,000 in 2022 alone – a significant increase from the time of the COVID-19 pandemic. OpenCloset also collaborates with the city government since 2016 to support disadvantaged residents in need of clothing for special occasions.

> ***"If the person goes to a job interview, they receive support from the government in general. They also support online interviews. They do not need to pay the rental fee. This is about 70% of customers". (Int#SE8)***

Another example of household goods sharing is the many Green Toy Libraries offering shared toys for rent and children's play spaces. The company rented 25,000 toys in 2021 and is projected to reach 27,000 toys by 2025 (SIB 2021). During the COVID-19 pandemic, the city government supported Green Toy Libraries' operations and paid delivery charges when people could not come and pick up toys personally (SIB 2021). Most toys and tools are donated, with donors earning points that can be used toward the toy library annual fee or childcare tuition. If donated toys are broken, they are repaired before being

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

shared. Some of these libraries offer courier services, while others provide non-contact delivery options, such as unstaffed drop-boxes for returns. The city government is continuously working to increase Seoulites' awareness of toy sharing by distributing promotional leaflets.

In addition to sharing organisations, second-hand markets are also present in South Korea. For example, Beautiful Store was established in 2002 as a non-profit organisation – the Beautiful Store Foundation – that encourages the recycling and sharing of household items such clothing clothes, housewares, kitchen utensils, appliances, sports equipment and furniture (Beautiful Store 2020a). Today this chain operates more than 120 stores across 16 cities in the country, with two stores overseas (Beautiful Store 2020b). The goods are donated and can be repaired and then resold (Beautiful Store 2020a). The stores operate with the help of volunteers who assess the price of each item and issue a donation receipt to each donor. The organisation also offers a free pick-up service if donors cannot drop off goods (Beautiful Store 2020a). Profits from the sale of donated goods go to help those in need, the marginalised, and to charity projects.

Goodwill operates stores on a similar business model across the country. They launched in South Korea in 2003, with the aim of creating jobs for people with disabilities or otherwise socially disadvantaged (Cardoni 2015). They are part of an international network (Goodwill Industries International) developed in North America, which promotes the recycling of clothing and small household appliances (Goodwill 2023).

OTCAN is another organisation that collects and sells donated items, including shoes, hats, belts, underwear, accessories, curtains, towels, blankets, dolls, infant clothing and equipment collected on the recycled clothing market. Delivery of clothes costs ₩3,000 per box of clothes. Profits from sales then go to various sharing and education projects".

There are also many online or app-based second-hand markets where people can resell used items in good condition, such as the Karrot Market app, with more than 6.5 million users. Karrot Market identifies its customers' location and shows them sellers who are located with a 5 km radius (Tairova 2020). In this way, the application facilitates short-distance deals.

Joongonara is the Seoul-based platform for buying and selling used goods. with more than 21 million sellers offering items ranging from everyday household products to special-occasion items (Tairova 2020). This second-hand market is not so common in other cities yet.

There are many examples of goods sharing that are combined with various services. For example, at a public Starfield Library, patrons can not only borrow books but also read journals and newspapers while they enjoy a cup of coffee, create their own art using different materials, learn the Braille alphabet or engage in therapeutic art activities for different ages and people with different disabilities.

Photo 4 The public Starfield Library offers more than books (Photo by Oksana Mont)

6.2 Drivers and barriers to the sharing of household goods

One of the important drivers for the sharing of household goods is the economic benefits that sharing offers to both resource providers and resource users. This can be explained by Seoul's high cost of living and the large range

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

of incomes among various population groups. Other factors include its high urban density, with more than 60% of residents living in flats with limited access to storage space.

A strict and expensive waste management system also drives people to engage in the sharing or reuse of household goods. Rather than disposing of used goods, Seoulites chose to share or give away goods they no longer need. Many citizens feel compelled to donate idle goods to charity organisations, who then clean and sometimes repairing the items to share them with those in need.

The city government also drives the sharing of goods in Seoul by establishing and supporting lending libraries in different districts. There is also an emerging culture of sharing and using second-hand goods in South Korea; something which was not a common phenomenon before.

> ***"People bought clothes, and then their size changed, and that is why they donated them. They did not want to throw them away". (Int#SE8)***

The pandemic has positively influenced the acceptance of sharing, not the least because of the drastically improved quality and convenience of delivery services. Many sharing organisations are set up and driven by social aspirations, such as providing access to goods and services to those who cannot afford them, such as marginalised persons or lower-income demographic groups such as young adults and the elderly.

In addition, there are relatively few barriers to this sector of the sharing economy in Seoul. As mentioned in several interviews, its regulatory climate is not always favourable to sharing organisations. Outdated laws and regulatory systems concerning insurance and health and safety regulations have been highlighted. Household goods sharing schemes often suffer from a lack of public awareness and participation. In some ways, this is a generational issue as young, IT-savvy residents are much more interested in trying new ways of consuming without owning. Finally, even small-scale start-ups, such as clothes sharing organisations, can face confrontation and conflict with existing industries, such as new clothing retailers.

6.3 Sustainability impacts of household goods sharing

6.3.1 SOCIAL

Sharing household goods is an important element of the SCS programmes driven by social aims. It encourages sharing organisations to demonstrate their contribution to Seoul's social capital. The city is looking for ways to assess to what extent sharing organisations improve the social welfare of Seoulites.

We found interesting examples of people who expressed appreciation for this sharing service category. For instance, the clothing rental company OpenCloset is a non-profit, and most of its inventory is donated. As a 'thank you' for clothing donations, the company sends all donors a story about the individuals who rent their clothes.

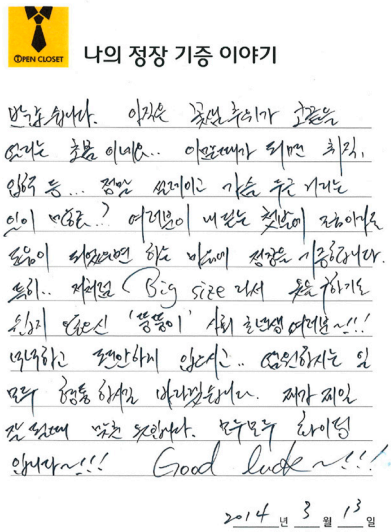

Photo 5 A letter from a donor to a renter at OpenCloset (Photo courtesy of OpenCloset)

> ***"At the end of the year, I take all the stories and send them to the original donors. When they donate, I cannot give them money, but I can give them the story". (Int#SE8)***

In addition, OpenCloset offers people the opportunity to try on formal clothes for free at their sites and take photos for their portfolios or job applications. The company also encourages other types of social interaction among clothing donors and borrowers. For example, clothing donors can also sign up to donate talents or skills, thus serving as mentors who can share their experiences with others, usually younger people looking for jobs and establishing themselves.

URBAN SHARING
Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

6.3.2 ECONOMIC

The economic impacts of clothes sharing are evident among lower-income residents with limited ability to buy new clothes in general, and especially for special occasions such as business attire. The possibility to satisfy such short-term needs at a reduced costs is an important economic benefit for resource users. And in terms of shared goods providers, they may earn a profit, although it will be rather small in the case of sharing or renting clothes, small appliances, etc.

6.3.3 ENVIRONMENTAL

Household goods sharing reduces the environmental impacts associated with goods ownership because it increases the intensity of use and reduces the need to buy and own new products. A single item can satisfy the needs of multiple users who only need short-term access to such goods.

Goods sharing libraries, online sharing platforms, and second-hand merchandise platforms extend product lifetimes and prevent goods from being discarded before they have been used up. Many such organisations offer repair services that can prolong the service life of goods and maximise their utilisation value. This also creates opportunities for individuals to learn repair crafts and skills.

For example, OpenCloset, also cleans, repairs, re-sizes and re-fits clothing. And much of their clothing is delivered to customers in reusable boxes, which customers ca then use to return the items.

Photo 6 A rental suit fitting at OpenCloset (Photo courtesy of OpenCloset)

> ***"When people rent clothes, I send a history message about these clothes. When people return the clothes, they write a letter, and I archive it into a registry book. One girl who failed an interview shared a note and an engraved ring saying that it is worth trying, even if you fail". (Int#SE8)***

OpenCloset conducts an audit every two years to remove unpopular or unwanted garments. These are then repurposed in different ways, such as being donated to schools for practising sewing. The company reduces environmental impacts in one more important way by creating a story about clothes items and people who used them, thereby increasing the products' value and people's willingness to treat their clothes with care and respect. The business card of OpenCloset says: "Story Tailor":

6.4 Impacts from household goods sharing on incumbent systems

Household goods sharing organisations are still small in scale and do not compete significantly with incumbent actors such as toy and tools retailers. Even clothes sharing is still a niche market; thus, clothing manufacturers and retailers do not see it jeopardising their business model and profits. With growing sales of luxury brands and markets for mid-price and low-cost clothing, shoes and accessories, sharing such household goods is of interest to low-income individuals and people with strong environmental interests.

6.5 Regulatory context and institutional systems for household goods sharing

Seoul is known for having some of the most advanced solid waste management laws in the world (Henam and Singh Sambyal 2019), which affects household goods sharing. The waste management segment is based on a deposit/refund system, extended producer responsibility for different product groups, a system of volume-based waste disposal fees (VBWF) and bans on problematic plastic items and packaging. For example, owners who

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European Research Council Grant Agreement No. 771872

dispose of furniture or electronics pay a fee based on volume and weight (Int#SE7).

> ***"Sometimes you want to get rid of a piano, and there are donation centres. People are trying to avoid the fee they must pay for waste management. They look for someone who will need to use it. This was also when the Danggeun market popped up; people loved it. Very valuable things they exchange, they sell. It is a natural growth." (Int#SE7)***

Seoul's strict waste management policies are also a response to the significant waste management challenge of the city's high consumption levels, with over 9,200 tonnes of solid municipal waste being generated in the city daily (Henam and Singh Sambyal 2019).

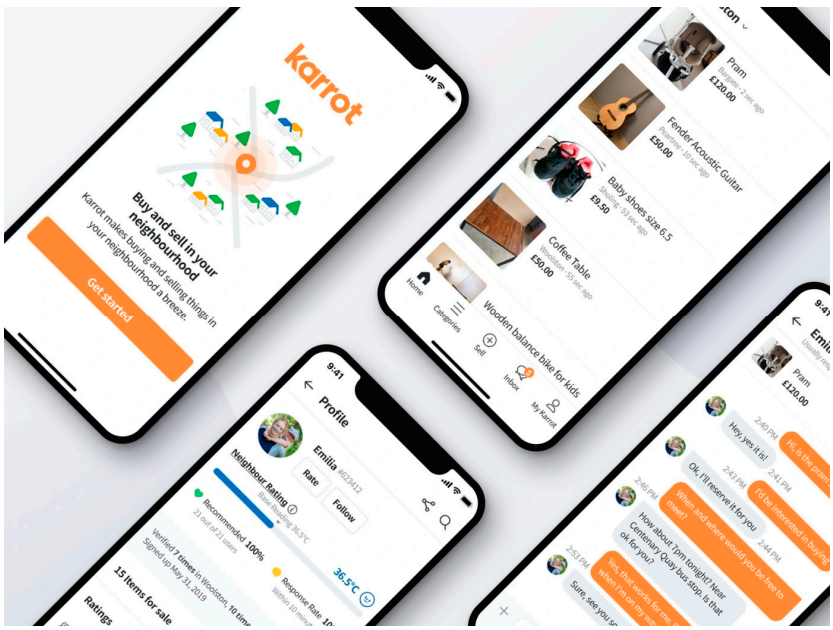

Photo: Danggeun Market

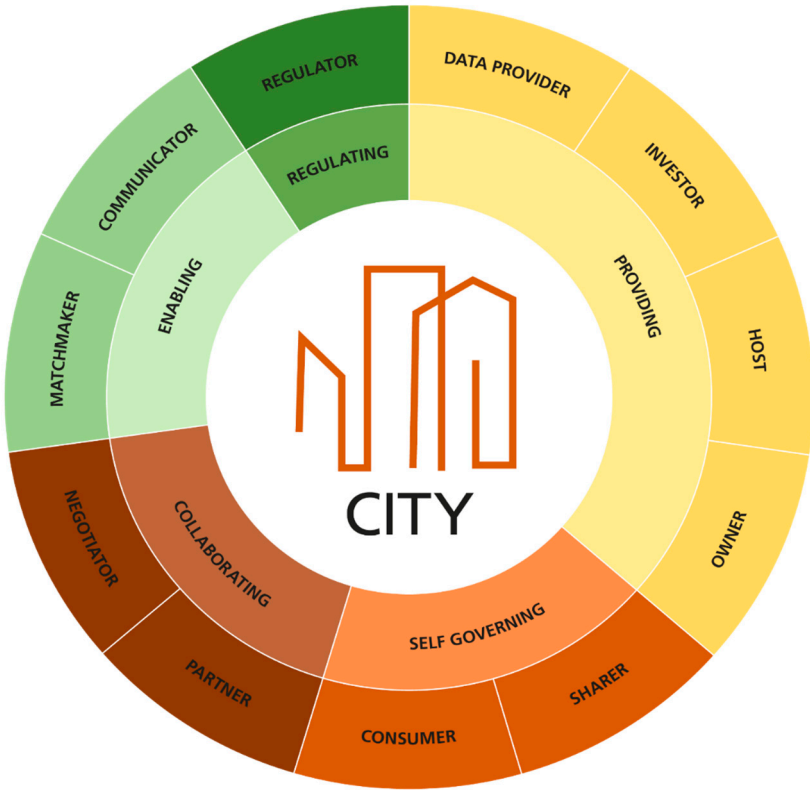

Figure 4 Municipal governance mechanisms and roles in the sharing economy (Voytenko Palgan, Mont, and Sulkakoski 2021).

URBAN SHARING
Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

7 THE ROLE OF THE CITY IN GOVERNING URBAN SHARING ORGANISATIONS

Sharing City Seoul is viewed as a world-leading example of how municipal governments can support the development of the sharing economy:

> ***"The Seoul Municipal Government has … enacted legislation to better enable sharing, runs an incubator programme, and provides financial support to dozens of local sharing enterprises that offer everything from ridesharing to coworking and youth engagement." (Sharp 2016)***

The Seoul Metropolitan Government has several departments responsible for various affairs and tasks related to the sharing economy. After the recent change of administration, the Seoul Innovation Bureau – which was responsible for the oversight and implementation of the Sharing City Seoul initiative from the start – was eliminated. Instead, the SMG has tasked the Social Cooperation Division with overseeing Seoul-based sharing economy companies and organisations and promoting the sharing economy through programmes and subsidies (Int#SE2).

The SMG and Seoul's 25 districts channel their support to urban sharing organisations selected through public competitions (Int#SE2). Specific SMG divisions are responsible for other sharing economy activities. For example, the Transportation Policy Division oversees the Nanum Car programme, and the Bicycle Policy Division is responsible for the Seoul Bike programme (Int#SE2). Whilst these divisions receive some financial support from the

national government (Int#SE7), the SMG is more than 80% financially independent from that funding source. It usually establishes and executes its budget independently (Int#SE12).

One important feature of municipal governance in Seoul is broad citizen engagement in planning and implementing various urban projects (Basu 2016). In particular, the former Seoul Innovation Bureau set up an online platform where citizens can share, discuss and vote on ideas. The proponents of winning ideas could be awarded up to ₩200,000 (~US$175) if their ideas were implemented (Basu 2016). Other municipal channels for citizen engagement include face-to-face meetings between SMG departments and citizens on questions such as budget proposals and an annual "ideas expo" that the city organises to collect ideas from residents (Basu 2016).

According to one local sharing economy expert, the number of urban sharing organisations that operate without SMG support is much larger than that of organisations that receive support (Int#SE7). The SMG selects which sharing organisations to support based on their perceived contribution to the public good and sustainability, according to the organisations' self-reported contribution to sustainable development goals (SDGs) (Int#SE12).

> ***"The government facilitates sharing for the public interest, which I think is very unique. For example, because of traffic and congestion, from the policy perspective, there is a reason why the SMG was interested in the sharing economy: to achieve policy goals." (Int#SE7)***

Our research group has developed a framework for understanding how municipalities govern the sharing economy (Voytenko Palgan, Mont, and Sulkakoski 2021) that distinguishes five key governance mechanisms – regulating, self-governing, providing, enabling and collaborating – along with 11 possible governance roles that explicitly or implicitly promote or inhibit the emergence and operation of urban sharing organisations. When addressing various governance issues, municipal governments can employ any of the five mechanisms and combine them in different constellations.

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

7.1 Regulating urban sharing organisations

Municipalities often govern the establishment and operation of urban sharing organisations through mechanisms of enforcement and sanctioning. Regulating mechanisms include tools such as laws, taxes, bans, and policies that cities use to constrain or encourage the sharing economy and to promote the emergence of certain types of urban sharing organisations.

As discussed in section 2.1.2, in December 2012, the SMG enacted the Sharing Promotion Ordinance, which created an overarching institutional structure and budget to support the Sharing City Seoul initiative and its multiple sharing projects. In addition to this ordinance, the SMG has segment-specific regulations for urban sharing organisations active in space and mobility sharing.

With respect to space sharing, as discussed in section 4.5, South Korea's national laws prohibit the sharing of private accommodation with domestic customers and allows this practice only for foreign visitors (Int#SE9). This is, however, difficult to enforce. On its part, the SMG revised its registration requirements to support accommodation sharing and has also exempted religious facilities and on-road parking spaces from taxes when they are shared with the public (Moon 2017).

However, not all of the SMG's regulatory efforts have supported urban sharing organisations; some have served instead to restrict their operations. For example, in December 2015 the city government banned a ride sharing platform for night travel named Call-bus Lab, which was growing in terms of its user number (Hong and Lee 2018). Interestingly, the platform was launched with the support of the national government, through the Ministry of Land, Infrastructure, and Transport (MOLIT) and of the SMG. The CEO of Call-bus Lab expressed confusion and frustration with this governmental about-face.

> ***"This was embarrassing, as the Seoul government had openly announced its strong support for the sharing economy industries. […] After several months of negotiations with the Seoul government, I am rather confused by whether the city government works for the welfare of Seoul citizens or the interests of taxi associations" (Sisa Press, 2016).***

The SMG also imposed strict limits on the two largest global sharing platforms, Airbnb and Uber. While Airbnb is still present in Seoul, Uber was banned in 2019 and could return to Seoul in January 2022 with a modified business model. However, in January 2022, the SMG changed its 40-year-old taxi regulation to allow taxi companies to provide ride hailing services. At the same time, Uber is changing its business model worldwide toward collaboration with the taxi industry (Mobility Innovators 2022). In handling Uber, the city government has been strongly criticised for infringing free market competition (Moon 2017, WEF 2017).

As discussed in section 5.4, the city regulates car sharing by requiring car sharing companies to report the vehicles they would operate and the parking lots they would use in advance to the start of operations. In addition, their parking lot contracts need to have a duration of more than a year for the city to allow car sharing operations.

When it comes to shared e-scooters, the city sets the minimum rider age at 16 and requires users to wear helmets, to hold a moped driver's license, and to travel using bike lanes. These regulations (along with other factors) resulted in a significant drop in e-scooter ridership, and several larger e-scooter operators – including Lime, Wind Mobility, and Neuron – have suspended their operations in South Korea. Lime expressed its concern over a "chaotic scooter environment", which it largely attributed to regulatory issues that allow a large number of operators with uncontrolled fleet sizes, which in turn causes problems with rider compliance, disorderly parking and congestion (Park and Bellan 2022). Regarding the mandatory helmet rule, one local transportation expert acknowledged that the maximum speed for e-scooters could be capped at 15 km/h to eliminate this requirement, since many riders currently ignore this requirement anyway and thus break the law (Int#SE13).

7.2 Providing for urban sharing organisations

Municipalities can govern urban sharing organisations by providing or withdrawing their practical, material and infrastructural resources. The mechanism for resource provision includes at least four roles: the city as an owner, the city as a host, the city as an investor and the city as a data provider.

The ***'City as owner'*** role implies that a municipality owns or co-owns a sharing economy venture. In their role as investors, municipalities provide funding to urban sharing organisations. City governments act as hosts by providing infrastructure or space to sharing economy initiatives. And as data providers,

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European Research Council Grant Agreement No. 771872

municipalities share their data with residents by, for example, creating and operating open data platforms.

In an example of the SMG acting as an owner, as part of the Sharing City Seoul initiative, it offered up meeting and lecture rooms at community centres for rental to Seoul residents, along with other public spaces that have already been available for open use, such as the Nanji Camping Site and city-owned sports facilities (Moon 2017).

As an investor, the SMG has actively provided financial support to several urban sharing organisations.

> ***"The SMG's grants to participating enterprises and NGOs were quite instrumental in nurturing the market for the sharing economy by ensuring demand." (Moon 2017, p. 241)***

In the period from 2013 to 2021, the SMG provided ₩2,713 million in subsidy to 142 sharing economy projects and supported 196 urban sharing organisations (Int#SE2). It also expanded its financial support to all 25 districts in the city between 2013 and 2019. Normally, urban sharing organisations receive support for three years but can reapply for additional funding (Int#SE14a,b). To qualify for additional support, organisations need to undergo a verification process managed by SMG.

> ***"When they apply for a grant, they put some targets, which the companies need to achieve. If they have achieved these targets according to the audit, they can receive further support." (Int#SE12)***

The accommodation sharing platform WeHome, which aims to promote traditional Korean living, has benefited from financial and administrative

support from the SMG thanks to its commitment to conserving traditional Korean *hanok* houses (Moon 2017).

The SMG, together with district governments, has also financially and administratively parking lot sharing between parking lot owners and those in need of parking in Seoul. Specifically, the SMG provides grants of ₩33 million (~US$ 25,000) for the construction and improvement of parking lots to building owners who are willing to share these lots with residents outside of business hours. In addition, it provides ₩27-40,000 (~US$ 20-30) per month per parking space as an incentive. To those who do not need a grant for construction and improvement, the SMG offers twice the monthly incentive per parking space (Moon 2017). Here the SMG acts as an investor, as it recognises the challenge of the current shortage of parking spaces and the opportunities that the sharing economy offers to address it by using the city's idle parking spaces more efficiently (Int#SE2).

In the mobility sharing segment, the "city as investor" role is also apparent in the SMG's financial support for the car sharing scheme Nanum Car, which operates in collaboration with six private car sharing enterprises. After its inception in 2011-2012, the car sharing company SOCAR received financial support from the city government but soon stopped receiving governmental funding when its business demonstrated its financial viability.

The SMG also administered the Social Innovation Fund for sharing organisations, which loaned money to sharing organisations at low interest rates (Int#SE12).

In addition, as an investor, the SMG funded the set-up of the affordable public Seoul Bike bike sharing scheme out of its budget. Thanks to the SMG's financial support, Seoul Bike can offer rental rates that are six times lower than those of commercial bike sharing platforms. Since the system would not be financially sustainable without this ongoing support, the new city administration decided to support it with a further ₩21.2 billion (~US$ 16 million) to sustain it for some time (Int SE#12).

As an example of the providing mechanism, the SMG's role as host is evident in its support for car sharing by providing public parking lots to car sharing organisations through the Nanum Car programme. At first, Nanum Car users were allowed to collect shared cars and park them in public parking lots. At the programme's start, car sharing companies could park their vehicles in public parking lots for free (Moon 2017). Although the national law does not allow carsharing companies to park vehicles in pre-booked parking spaces that do not belong to car sharing companies, Socar's agreement with the SMG since

URBAN SHARING
Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

2013 allows it to rent about 10% of its car parking space from the municipal government (Int#SE11a).

The SMG also not only provides space for Seoul Bike parking stations but also manages the re-balancing of these bikes between parking stations based on big data and expanding on-site maintenance, which facilitates the growth of Seoul Bike.

In its role as a host, the city of Seoul currently offers dedicated parking spaces for shared e-scooters. According to one local transportation expert, another way for the city to provide infrastructure for e-scooter sharing would be through the introduction of three-layer traffic routes, with one section for car traffic, one for bikes, scooters, and delivery robots, and one for pedestrians (Int#SE13).

In its role as a data provider, SMG opened up public access to data produced by the city and by district offices in the areas of public health, housing and urban planning, transportation and public safety (Moon 2017). This includes almost all governmental documents, from financial reports to mayoral conversations. According to the former Director-General of the Seoul Innovation Bureau, Hyo Gwan Jun, these represent over 90% of all governmental documents (Basu 2016). This data is accessible to citizens and enterprises via the SMG's open data portal (opengov.seoul.go.kr). As of 2020, there were 6,617 data sources that had been accessed more than 11 million times (Int#SE2). The SMG also offers the Open Data Plaza portal (data.seoul.go.kr), which has been useful for sharing services such as the Parking Lot Sharing for All app (Int#SE12).

> ***"[T]he app service for Parking Lot Sharing for All was developed because the SMG and district governments shared public parking lot data to the public through data-sharing. Public data-based service apps developed by citizens or businesses are a good example of crowdsourcing production." (Moon 2017, p. 239)***

One local transportation expert (Int#SE13) recognises that effective data sharing between public and private actors is a key precondition for developing Mobility as a Service (MAAS) in Seoul. One example of a privately developed application programming interface using public and private data is the ODSay

transportation service app (odsay.com), which offers free schedules for both private and public transport services, including subways, city buses, express buses, trains and bullet trains (Moon 2017).

7.3 Enabling urban sharing organisations

Municipalities can regulate urban sharing organisations by enabling or disabling them. Unlike the 'providing' mechanism of providing, enabling relies on intangible methods such as persuasion, argumentation and incentivisation. This mechanism includes at least two roles: city as a matchmaker and city as a communicator.

In their roles as communicators, municipalities may disseminate the best urban sharing practices and market them to different stakeholders. They may also organise competitions and offer voluntary certification schemes to recognise the best sharing practices. The city as matchmaker role is in evidence when municipalities facilitate collaboration between urban sharing organisations and other similar organisations, potential users, research institutes or venture capitalists.

In its role as a communicator, the SMG runs a criteria-based voluntary certification scheme through which it designates both for-profit and non-profit organisations as sharing organisations (Moon 2017), a certification granted to a total of 201 organisations thus far. One purpose of the certification scheme is to encourage wider use of shared services by citizens. In addition, SMG representatives state that without this certification, organisations may struggle to secure investor funding (Int#14a,b).

> ***"Once an organisation is selected and designated as a sharing enterprise or sharing organization, it is likely to obtain a reputation of government approval and increased credibility, both of which are significant assets in promoting a business." (Moon 2017, p. 230)***

To improve understanding of the sharing economy in different parts of the city, the SMG, in collaboration with the 25 district governments, has developed and offered educational programmes in elementary, middle, and high schools,

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including the “Sharing Economy Start-up School” (SCA 2022), through which a company solicited by SMG certified an individual to educate children about the sharing economy (Int#SE12).

An educational TV programme on the sharing economy has also been broadcast, although as of 2022, it was no longer being presented since, according to SMG representatives, “Seoul people already know what sharing is, and they may not need a TV show on sharing” (Int#14a,b).

> ***“People in Korea watch TV a lot, and there was a collaboration with TV and celebrities participating in sharing economy activities, which was broadcasted once per week. During this programme, they needed to use shared services, e.g., they would travel by shared bike or car, and if they needed to buy something, they would use the Danggeun market.” (Int#SE12)***

According to one of Seoul’s sharing economy experts, the TV show was terminated due to a lack of popularity. Overall, Seoul’s media and residents in perceive the sharing economy as not being a profitable activity (Int SE#3).

The SMG also runs a programme to support entrepreneurs in establishing sharing businesses and finding investors (Int#SE7). In it the SMG pays a consulting company that offers knowledge and advice to selected sharing organisations twice a year, over a period of three years (Int#SE14a,b), reaching 144 sharing organisations in this way since 2013 (Int#SE14a,b). The SMG also sponsored the WeHome advertising campaign in Seoul’s subway (Int#SE5).

The SMG acts as a communicator when it endorses sharing initiatives through its official channels and thereby raises awareness about them. One example of this role is the Share Hub website (sharehub.kr), which the SMG launched in June 2013. This citywide online database of sharing services is linked with all the district governments. Through the Share Hub website, the SMG publishes information on sharing, including a list of urban sharing companies in Seoul, as well as the SMG’s sharing policies.

> ***"The Share Hub has many services through which one can find what is available in a specific district. There are many districts which have drills and hammers and other tools, and you can log in and look for what is needed. There are also toy libraries. You can directly go and rent things in one place; you can also look online as a private person. People can only rent items in their own district."***
> ***(Int#14a,b)***

Through Share Hub, SMG also acts as a matchmaker, connecting "the government, businesses, and organisations so that sharing culture takes root in our society" (Share Hub 2023). At the same time, the website has received far fewer updates and activity since 2019, when the SMG administration changed (Int#SE3).

When launching Stage III of Sharing City Seoul, the-mayor Park organised a gathering where he invited all inspirational activists and experts on urban commons (Int#SE6). This communicated the message from the SMG that Stage III of the Sharing City Seoul initiative would mainly focus on urban commons and creating a platform for meeting and matchmaking among urban sharing organisations and other urban commons activists.

7.4 Self-governing urban sharing

Municipalities may engage with the sharing economy through the 'self-governing mechanism'. At least two roles exemplify this mechanism: the city as a consumer and the city as a sharer.

The city takes on the role of consumer when municipalities adopt urban sharing practices into their own operations: for example, in municipal public procurement. The city acts as a sharer itself when municipal units offer assets they own for shared use by others. Often, these are experimental initiatives.

When it comes to the role of the city as a consumer, SMG employees may either borrow SMG-owned cars for business trips via the internal booking system or use municipal smart card "T-money" (https://bizpay.tmoney.co.kr/) to pay for shared mobility services such as taxis, cars or rental vans (Int#SE12).

URBAN SHARING Sustainability & Institutionalisation
European Research Council Grant Agreement No. 771872

One example of Seoul's role as **sharer** is the sharing of household goods between district governments and different departments of the city administration:

> ***"At the national level, there is a database by the Ministry of Interior Affairs and Safety. It has a website with a list of different tools and other items or equipment that district governments can share." (Int#SE12)***

7.5 Collaborating with urban sharing organisations

Municipalities may also engage with urban sharing organisations through collaborative mechanisms, in which both parties play active roles in the governance process. The 'city as negotiator' role refers to situations where a municipality and urban sharing organisations negotiate various aspects of their relationship (e.g., developing new policies or data sharing opportunities). The 'city as partner' role is often evident when a municipality seeks to address its urban sustainability challenges through engagement with the sharing community.

The SMG acted as a negotiator when it established an agreement with the car sharing company SOCAR to rent out municipal parking lots for shared cars (Int#SE11a) – something that is generally not allowed by national law.

The SMG also partnered with WeHome in 2013 for its *hanok* sharing programme, since preserving *hanoks* and preventing them from being replaced by apartment blocks has been an important priority in Korean national policy (Moon 2017).

Photo: ?

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Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

8 CONCLUDING REMARKS

The Urban Sharing project aims to investigate the sustainability impacts of the sharing economy, as well as business models and institutionalisation pathways that can lead to sustainable urban sharing organisations. The primary method for data collection is Mobile Research Labs. This city report is the result of a Mobile Research Lab conducted in Seoul in October 2022, coupled with research on Seoul's sharing economy carried out between April 2022 and January 2023.

We find that Seoul's sharing economy, manifested by the Sharing City Seoul programme, is a successful undertaking by the Seoul Metropolitan Government that has contributed to implementing more than 140 sharing projects and raised Seoulites' awareness about sharing. The city already embraced the concept in 2012 and has developed a long-term plan for its implementation.

However, the SCS is just one part of Seoul's sharing economy, the bulk of which is driven by large companies and conglomerates making major investments for purely economic reasons. Nevertheless, what distinguishes SCS are its several strengths:

1. SCS seeks to address Seoul's social challenges and is thus driven by a socially oriented agenda.
2. SCS relies on long-term planning guided by periodic surveys of public awareness of and participation in the sharing economy. The SMG conducts these annual public surveys, which show impressive results regarding Seoulites' familiarity with at least the most prominent sharing economy sectors involved in SCS, such as mobility and accommodation.
3. SCS projects are integrated into standing or existing departments.
4. SCS is experimental in nature.

When compared with other cities, Sharing City Seoul stands out for its advancement in several aspects, and critical voices posit that it does not disrupt traditional business models (Fedorenko 2017). Our research also demonstrates that Seoul's business-driven sharing economy uses IT solutions to offer goods to the public in novel ways, largely without any special agenda for social benefit. Still, there are many public-private partnership projects where idle resources are shared and societal aspirations are strong.

Thus, there are several areas where SCS can be further improved:

1. Stricter regulation of business-driven sharing organisations to ensure the that the city's environmental and social agendas are not jeopardised by private business interests.

2. Enhanced possibility for sharing organisations that participate in the Sharing City Seoul initiative to focus on profit sharing practices that would enhance the city's social agenda.

3. Methods and standards that go beyond the financial performance of sharing organisations to measure their social and environmental contributions.

4. Dedicated resources and efforts that seek to make citizens both users of sharing services and active participants as sharing resource owners. This shift would contribute to the circulation of resources in the city through platforms provided by sharing companies.

5. Tackling Seoulites' reluctance to try sharing services, which partially reflects their lack of familiarity with the online features of most sharing initiatives. Increasing accessibility of sharing initiatives and greater testing of services could improve public engagement with SCS.

6. User of a combination of different governance mechanisms under the governance framework outlined here, to varying degrees. The most visible mechanisms were the SMG's direct and proactive roles as a *regulator* of and *provider* for the sharing economy. However, the SMG's intention was to act primarily as an enabled. As Phase III of SCS approaches, the SMG has said that there will be a gradual shift in leadership from the government to citizens themselves. Now that the sharing economy has enjoyed a lengthy period of infrastructural and institutional support, the SMG needs to devise innovative ways to encourage public participation in the sharing economy. The demand side needs to be balanced with the supply side, and legislative hurdles will need to be reduced if an appropriate supply level is to be secured.

URBAN SHARING
Sustainability & Institutionalisation
European Research Council
Grant Agreement No. 771872

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Principal investigator: oksana.mont@iiiee.lu.se

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