Urban Sharing in Melbourne

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URBAN SHARING

in MELBOURNE

City report no 4

URBAN SHARING TEAM

URBAN SHARING
IN
MELBOURNE

URBAN SHARING
Sustainability & Institutionalisation

SHARING & THE CITY
Cities – Sharing – Sustainability

City Report no 4

URBAN SHARING TEAM

Oksana Mont, Yuliya Voytenko Palgan, Andrius Plepys,
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2022

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1 INTRODUCTION

This city report is the result of a Mobile Research Lab (Mont, 2018) conducted in the frame of the five-year research programme Urban Sharing (IIIEE, 2018), funded by the European Research Council (2018-2023). The Mobile Research Lab involves a combination of methods, including case studies, interviews, observations, expert panels, and in-situ fieldwork. This report presents insights gained by the team of four researchers from the International Institute of Industrial Environmental Economics at Lund University, Sweden, who collectively wrote the report: Oksana Mont, Yuliya Voytenko Palgan, Andrius Plepys, and Ana Maria Arbelaez Velez.

Case urban sharing organisations (USOs) were chosen on the basis of USO databases as stated in the report “Mapping the Melbourne Sharing Economy” (Kennedy et al., 2017), provided to the authors by the Department of Environment, Land, Water and Planning at Victoria State Government. USOs were also chosen by scouting homepages of sharing organisations, analysis of academic and grey literature, and interviews with experts and practitioners.

Purposeful and snowball sampling (Patton, 2002) was used for choosing case USOs from three sectors of the sharing economy: 1) space sharing, including accommodation, parking and co-working space, 2) mobility sharing, including car-sharing (peer-to-peer and business-to-consumer), bike-sharing and boat-sharing; and 3) physical goods sharing, including clothes and DIY tools. We chose these sectors as they have some of the greatest potential to reduce their environmental impact through sharing. However, sharing of these physical goods may cause environmental, social, or economic impacts, which can potentially be reduced through different organisational models for sharing, such as peer-to-peer and business-to-consumer, as well as for-profit, reciprocal, or free.

These three sharing sectors follow different institutionalisation pathways and are subject to different types of engagement by cities and other actors. They usually vary significantly in terms of prominence in the city and their reputation among the public and other actors.

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erc European Research Council Grant Agreement No. 771872

According to our strict definition, business models for sharing support the temporary use of idling assets (Curtis & Lehner, 2019). This means that peers share resources they already have, i.e., the resources were not purchased for pecuniary purposes for rental or sharing. Ownership stays with the resource owner and is not transferred to a new owner in a series of subsequent users, as is the case with second-hand markets. Resources are shared between resource owners and resource users in a peer-to-peer (P2P) business model. We are investigating USOs in which users may have different motivations for sharing their idling resources: pecuniary, non-pecuniary, or reciprocal. B2C cases are also analysed as a reference point for P2P sharing organisations. In B2C cases, a company owns resources, not peers, and instead provides access to them.

The online research was conducted in 2021. Twenty-five interviews were held with experts from different departments of the city of Melbourne and the Victorian government, sharing organisations from different sectors (mobility, space and physical goods sharing), third-party organisations, users of sharing organisations, and researchers. The transcribed interviews generated more than 350 pages of material for analysis.

The report is structured as follows. Section 2 describes the city context of Melbourne that shapes the sharing economy in the city. Section 3 presents a short overview of the sharing economy in Melbourne, including levels of awareness and acceptance among the public. The subsequent three sections describe our findings and observations from the three sectors of the sharing economy – sharing of space, mobility, and physical goods – focusing on the drivers and barriers relating to USOs and the sharing economy in general, 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.

2 CITY CONTEXT

Melbourne is the second-most populous city in Australia, and is capital of the state of Victoria. It is located in south-eastern Australia. The name of Melbourne refers to a metropolitan area of Greater Melbourne of 9,993 km2, comprising 31 municipalities and 5.1 million inhabitants (ABS, 2021a). Melbourne is also used to refer to its city centre – the City of Melbourne – a municipality around the central business district (CBD) which has an area of 37.7 km2 and a population of approximately 170,000 (as of 2018), living in 14 suburbs (CitiesABC, 2021).

Figure 1. Map of the Greater Melbourne
Source: (City of Melbourne, 2020a).

2.1 Governance structure

2.1.1 VICTORIA STATE AND MELBOURNE CITY GOVERNANCE STRUCTURE

Australia's governance system comprises three levels: national, state, and local. The country has six federal states: New South Wales, Victoria, Queensland, South Australia, Tasmania, and Western Australia. It also has ten federal territories, of which three are on the mainland (the Australian Capital Territory, Jervis Bay Territory, and Northern Territory) and seven offshore (Ashmore and Cartier Islands, Christmas Island, the Cocos (Keeling) Islands, Coral Sea Islands, Heard Island and McDonald Islands, Norfolk Island, and the Australian Antarctic Territory).

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Queensland, South Australia, Tasmania, and Western Australia. It also has ten federal territories, of which three are on the mainland (the Australian Capital Territory, Jervis Bay Territory, and Northern Territory) and seven offshore (Ashmore and Cartier Islands, Christmas Island, the Cocos (Keeling) Islands, Coral Sea Islands, Heard Island and McDonald Islands, Norfolk Island, and the Australian Antarctic Territory).

Victoria is the second-smallest federated state in south-eastern Australia, but includes the country's second-largest city Melbourne. Victoria State is governed by three legislative bodies – the Parliament of Victoria, the Victorian Legislative Assembly, and the Victorian Legislative Council. The governance of Melbourne is split between the government of Victoria and the local governance of the metropolitan area, comprising 27 cities and four shires. The local councils are responsible for urban planning and providing waste management infrastructure and services. Most of the other government services are provided or regulated by Victorian State, including public transport, main roads, traffic control, policing, school education, health and planning of major infrastructure projects.

The City Council administers the City of Melbourne. The council oversees the municipal area, including the Melbourne central business district (CBD) and 14 suburbs. As a capital-city council, it also represents Melbourne in local, national, and international forums. The City of Melbourne's seven neighbouring councils are Hobsons Bay, Port Phillip, Stonington, Yarra, Moreland, Moonee Valley and Maribyrnong.

The taxation system is rather centralised, with the federal government collecting most of the major taxes, including income taxes (payroll tax, capital gains, etc.), excise duties (tobacco, alcohol, fuels, customs duties), Medicare levy, consumption tax (GST), business profits and dividends. State taxes comprise largely only stamp duties and motor vehicle duties at registration and change of ownership. The taxation income of local councils is taxes on land and property, the 'municipal rates'. This implies that public spending on the State and council level depends on redistribution of public incomes via federal level.

2.1.2 CITY REGULATORY POLICIES FOR SHARING

Melbourne does not have an overarching policy or strategy for sharing. However, there are relevant state and municipal policies for the three sharing segments analysed in this report: space sharing, shared mobility and sharing of physical goods. These are briefly presented below and further elaborated in sections 4.5 (space), 5.5 (mobility) and 6.5 (physical goods).

In Melbourne, despite some political discussions about the importance of acknowledging gig labour (Int #ME1), neither the city councils (Int #ME10) nor the Victorian state government (Int #ME4) seem to have a formal say when it comes to space sharing, in particular accommodation sharing. National and state-level regulations mainly concern taxation and health and safety issues rather than the availability and pricing of shared accommodation (Int#ME10). The Victoria State Planning Provisions classify shared properties as a part of residential buildings, which exempts them from a need for a planning permit to operate. According to the City of Melbourne and Consumer Affairs Victoria, short-term rentals do not currently have any zoning restrictions. However, 2019 changes in the Owners Corporations Act of 2006 allowed owner corporations and residents to act against owners and guests who violate housing rules and cause nuisance (Future Melbourne, 2015). Owners of free-standing properties are exempt from this regulation.

Another relevant state-level legislation concerns the minimum standards that regulate the quality of apartment design in Melbourne. These were introduced by the Victorian government in 2017 after lobbying from the Institute of Architects, which resulted in a significant improvement of the standard of apartment development (Int#ME10).

City council regulations for accommodation sharing vary significantly across Australia, and accommodation sharing in Melbourne is generally permitted. At the same time, the extent to which city councils can regulate accommodation sharing remains unclear. Interviewees provided conflicting statements, either implying that, if they wished to do so, state and municipal governments could regulate the extent and the way properties are offered for rent (Int#ME4), or that city councils have little power to regulate large multinational platforms for shared accommodation (Int#ME10).

In the shared mobility segment, the level of regulation varies, subject to policies of the local councils and the business model of shared mobility. The City of Melbourne policy is to promote car-sharing, ride-hailing and attempts to control the use of electric scooters and free-floating bikes. It aims to increase biking and the use of public transport in the city and seeks to integrate bike-sharing, car-sharing, and ride-hailing at public transport stations. In its Transport Strategy 2030, the City of Melbourne recognises the potential of ride-hailing for low-density areas. It is also exploring ways to improve the use of kerb space by ride-hailing vehicles.

The Transport Strategy 2030 of the City of Melbourne recognises the slow growth of the car share fleet as one of the challenges that may lead to further increase in privately owned cars in Melbourne (City of Melbourne, 2020c). As one of support measures, in 2015 the Car Share Policy of Melbourne (2015) dedicated 2,000 parking spaces for shared cars in 2021, of which almost half were to be located in residential areas (Future Melbourne, 2015). The City of Port Phillip is among other proactive city councils promoting car-sharing through a dedicated policy (ME#19).

Although some regulations around shared mobility services have been issued (e.g., mandatory helmet use for biking and e-scooters), the City of Melbourne and the City of Port Phillip argue that the state government should lead the development of more regulatory work (Int#ME19). This was due to the negative experience with dockless bike-sharing systems such as oBike, when shared bikes started to clog public spaces. Today several councils in Melbourne have signed memorandum of understandings (MoU) with various shared micro-mobility services to ensure the city's amenities are better preserved from similar problems.

Sharing of physical goods is supported via the state policy "Recycling Victoria. A new economy" since February 2020, which is referred to as the "circular economy policy" (Int#ME4). The City of Melbourne also has a Waste and Resource Recovery Strategy 2030. Both documents are very detailed and well connected to sustainability and climate issues.

The state circular economy policy is an ambitious ten-year policy and action plan backed by approximately AUD 300 million of funding to advance the circular economy in the state of Victoria (Int#ME4). The policy aims to reduce total waste generation per capita by 15% between 2020 and 2030 and transform the way materials are used in the current Victorian economy towards more reuse, repair and recycling (DELWP, 2020). The policy also implicitly emphasises the importance of physical goods sharing and other local initiatives like repair cafes in reducing waste generation and improving social cohesion in local communities. The policy suggests that citizens will be provided with information and tools to reduce their waste "by reusing, sharing, repairing and recycling products" (DELWP 2020). Victoria State Government also offers opportunities[1] for organisations to apply for state, municipal and community grants if they would like to transform their business model from purchasing to rental or start up a physical goods-sharing organisation, e.g., a tool shed or a repair café (Int#ME4). At the same time, the sharing economy only constitutes a small part of the policy, and the city councils are developing their understanding of what it can offer to the city (Int#ME4).

Specific regulations regarding physical goods-sharing are very limited. There are some rules about operating a goods-sharing organisation, e.g., strict rules for obtaining insurance for tool and toy libraries.

2.2 Geography and demographics

2.2.1 TOPGRAPHY AND URBAN SPRAWL

The City of Melbourne, with its 31 municipalities, covers an area of 9,993 km2 (ABS, 2016a). Melbourne's urban area is approximately 2,450 km2, which is close to that of London and the Mexico City.[2] The city occupies much of the coastline of Port Phillip Bay and spreads into the hinterland towards the Dandenong and Macedon ranges, Mornington Peninsula, and Yarra Valley. Melbourne is situated in the region of alpine forests and extends along the lower territories of the Yarra River.

In the past 150 years, the city has primarily developed through urban sprawl, with a small central business district (CBD) with the main grid of corporate head offices and skyscrapers and 40-50,000 people. The rest of the city is the broader metropolitan region of more than five million people living in the suburbs. The population density in Melbourne is about 500 residents/km2 (WPR, 2022), while the CBD is one of the most densely populated municipalities in Australia, with its 19,000 residents/km2 (Wikipedia, 2022).

2.2.2 SOCIO-DEMOGRAPHICS

The total population of the Melbourne metropolitan area was estimated at 5,061,500 in 2021, with an average annual increase of about 1.6% in recent years (ABS, 2021a). Melbourne is the second-largest city in Australia and Oceania (ABS, 2020a), and is a young city with a median age of 36 according to the latest census. Overall, 37% of the population are aged 25-49 (ABS, 2020b). The population is multi-cultural, with more than a third born outside Australia (WPR, 2022). The city has experienced many waves of immigration, with more than 40% of the population being British or Irish, 28% Australian and 18% of Asian ancestry.

1 Victoria State Government (2020). "Recycling Victoria. A new economy". URL: https://www.vic.gov.au/sites/default/files/2020-02/Recycling%20Victoria%20A%20new%20economy.pdf

2 Wikipedia, URL: https://en.wikipedia.org/wiki/Melbourne

The population is well-educated, and universities in Melbourne are ranked among the 100 best universities in the world (ABS, 2020b). The city has been awarded a perfect score for education from the Economist Intelligence Unit's Global Liveability Survey 2018 (EIU, 2018) and ranked third in the QS Best Student Cities in 2018 ranking (QS, 2018).

2.2.3 TOURISM IN THE CITY

Melbourne is the second most visited destination in Australia after Sydney, with 3 million international tourist visits in 2019, spending on average 21 nights per visit, totalling 63.3 million nights per year. The total annual expenditure in the same year was AUD 20.3 billion. Tourism is also essential for employment, generating approximately 130,000 jobs, or 5.6% of total direct and indirect employment (Budget Direct, 2020).

2.3 Economy

2.3.1 ECONOMIC VIBRANCY

Melbourne is the central hub for business, administration, culture, and entertainment in the state of Victoria. The city's economy is the major contributor to the state's economy and is an integral part of the Australian economy. In 2019, the city's GDP was AUD 105 billion, which is 37% of that of Greater Melbourne, 24% of the Victorian, and 7% of the national economy. The three largest contributing sectors are financial and insurance services; professional, scientific and technical services; and public administration and safety (City of Melbourne, 2022e).

Melbourne's economy is dominated by service and knowledge-intensive sectors, with the ICT sector being one of the leading ones. In 2012, it contributed over AUD 7.7 billion to local GDP and employed more than 36,000 people. In 2020, knowledge-based workers made up two-thirds of the total workforce of around 300,000 (City of Melbourne, 2022g). The city is also a leading financial centre in Asia-Pacific and ranks 15th in the Global Financial Centres Index (Wikipedia, 2022). In 2018, Melbourne had approximately 16,800 businesses, ranging from micro-entrepreneurs to large corporations (City of Melbourne, 2020a).

The recent Covid-19 pandemic had a significant economic impact on the city. The regional annual GDP of the CBD area alone shrunk by 53%, from AUD 74 billion to 39.8 billion, and the economy is not forecast to return to the pre-pandemic scale until 2023-24 (City of Melbourne, 2021c). Service, industry, retail, tourism, and higher education sectors, involving 200-300,000 international students, were most severely hit by the pandemic.

The state government tries to support small-scale start-ups in the city by providing small grants to socially-oriented ideas. Attention is also paid to promoting and testing innovative ideas within the sharing economy.

"Melbourne's a good city if you're interested in social enterprise. ... It's kind of an ecosystem of not quite start-ups, but social businesses. It's got a reputation for being good to start some kind of social enterprise, an enterprise that might be for profit, but also tries to do social good and sharing systems fit neatly into that. … Certainly, with our grants programme, we'll try to encourage that at state government level for it to happen. It could also become part of a wider circular economy conversation, but it's just too early to tell yet." (Int#M4)

2.3.2 JOBS

Melbourne supports 457,465 jobs. This represents about 22% of the 2.1 million people working in Greater Melbourne or 17% of the 2.7 million workforce of Victoria, or 4.3% of the 10.7 million of Australian workforce. Professional, scientific and technical services is the city's largest employment sector, with over 83,000 jobs. The next biggest employment sectors are financial and insurance services (63,400), public administration and safety (44,500), health care and social assistance (35,500), accommodation and food services (31,200) and education and training (30,000) (Remplan, 2022). Jobs in the municipality of Melbourne are concentrated in Melbourne (CBD), Docklands and Southbank (72% of all jobs together). Docklands has the highest concentration of employment per area. Office employment is the most significant, accounting for almost two-thirds of the jobs in the municipality.[3]

Average ordinary full-time weekly earnings in 2020 in the state of Victoria was around AUD 1,700 per household, which equates to about AUD 670 per person, and is close to the Australian average (ABS, 2016b, 2021b). About

3 The employment information is based on scaled data from ABS 2016 Census Place of Work Employment, ABS 2018/2019 National Input Output Tables and ABS 2021 Gross State Product reports.

19% of households in Greater Melbourne earn less than AUD 650 per week and about 18% earn more than AUD 3,000 gross per week (ABS, 2016b). One of the most significant spending items is mortgage repayments, with a monthly median per household between AUD 1,800 and 1,900 (ABS, 2016b).

2.4 Infrastructure

2.4.1 MOBILITY INFRASTRUCTURE

Melbourne has an integrated public transport system delivered by trains, trams, buses, and taxis, which effectively replaces private cars in certain parts of the city. Nevertheless, suburban residents still rely heavily on vehicles, due to sparse or inconvenient coverage of the public transport system, especially first and last-mile travel. Besides different public transport options, there is extensive use of ride-hailing services, such as Uber.

According to 2016 data, 60.2% of the citizens in Greater Melbourne travelled to work by car, 7.2% took a train, 4.2% worked from home, 3.9% used a car as a passenger, and 3% walked. Overall, 15.6% of people travelled to work by public transport and 66.95% – by car as driver or passenger (ABS, 2016b). By 2020, the proportion of trips by public transport was set to reach 20% (City of Melbourne, 2020c).

Today, only 8.7% of households in the Greater Melbourne area do not own a motor vehicle, 34.7% own one, 36.6% own two, and 16.8% own 3 or more cars. This distribution is almost identical with the state of Victoria and the Australian average (ABS, 2016b). On average, about 85% of all personal trips in Melbourne are done by car, although in the inner city, it can be as low as 30-40% (Int#ME6). The big difference in the reliance on a personal car can be explained by low parking availability, high parking costs, and relatively high availability of transport alternatives in the city centre.

There is a large, underutilised infrastructure for car parking. Many of these parking spaces could be repurposed for car share. There are 217,000 bays in total, of which 12,000 are metered, 11,500 unmetered, 49,500 are in private residential areas, 68,300 in commercial areas, and 75,800 in community residential areas. According to some estimates, counting all private residences, business, commercial and public parking, there are 40% more parking spaces available in the city than there are owned cars (City of Melbourne, 2020c).

The public transport system in Melbourne experienced significant funding cuts during the 1990s, which were followed by heavy privatisation of public transport. A significant proportion of operational responsibilities for the train, tram and bus networks were transferred and licensed to private companies (Mees & Groenhart, 2014). Today, public transport is gaining new importance for mobility due to employment growth in central Melbourne. The rapid growth of Greater Melbourne in recent years spurred several large transport projects. Different development strategies prioritise an increased use of public and active transport, improvements for pedestrians, reduced use of private cars following the Transport Integration Act 2010, Plan Melbourne, the Melbourne Planning Scheme, and other Victorian and local strategies.

Walking is essential in the city, as it supports the city's vibrancy and vitality. The City of Melbourne has developed an automated IT-enabled pedestrian counting system to improve understanding of pedestrian activity within the municipality. The information shows how people use different locations at different times, which is essential for city planners (City of Melbourne, 2022l). It also proved crucial for monitoring and improving understanding of pedestrian traffic during Covid-19 lockdowns.

2.4.2 ACCOMODATION INFRASTRUCTURE

In Greater Melbourne, private residences consist of separate houses (68%), semi-detached houses or row or terrace/townhouses (17%), and apartment buildings (15%). Property distribution in terms of tenure is almost equal between wholly-owned, owned with a mortgage, and rents (30.4%, 36% and 30%, respectively). About 72% of the dwellings are occupied by family households, 23.2% by single persons, and the remainder by diverse households sharing accommodations (ABS, 2016b).

According to the 2016 census, Greater Melbourne had 1.8 million dwellings, with 89,200 dwellings located in central Melbourne. Of the latter, 73,500 were residential apartments and 9,900 were houses. Between 2011 and 2016, the total number of dwellings increased annually by 5.9%, and residential apartments increased by 7.3% (idcommunity, 2022). The number of student apartments is estimated as 5,730 (for approximately 80,000 students). Most of the dwellings are concentrated in Melbourne (CBD), Southbank and Carlton; Docklands is the densest in terms of residential dwellings. The proportions of dwellings in Greater Melbourne by number of bedrooms are as follows: 5.7% have one, 20.3% two, 42.1% three, and 29.2% have four or more bedrooms (ABS, 2016b). About 90% of all dwellings are fully occupied and 9.6% are under-occupied, compared to figures for the state of Victoria of 88.3% and 11.7%, respectively (2016 data). This is similar to the Australian average (ABS, 2016b).

Public space use in Melbourne, 2019 (Vic.gov.au, 2022).

- Total residential space – 8,035,000 m2
- Total office space – 5,665,000 m2
- Total parking space – 4,610,000 m2 (except for private and other off-street parking)
- Total parking bays – 217,000 cars
- Unused space – 1,543,000 m2
- Space under construction – 1,533,000 m2
- Education and research space – 1,498,000 m2
- Outdoor sports and recreational space – 1,572,000 m2
- Retail space – 789,000 m2
- Parks and reserves space – 4,979,000 m2

Many households cannot afford their accommodation, due to rapidly increasing property prices. This results in significant demand in the residential rental market and rising investments in new property developments for rent. Nearly 66% of all households rent their accommodation. According to RMIT Professor of Environment and Planning Michael Buxton, in some city blocks (already in 2016), at least 40% of apartments are investor-owned (ABC News, 2016a). Nevertheless, Melbourne is an attractive city for first-time homeowners. In a recent survey, about 56% of first home buyers were likely to consider buying in Melbourne, referring to its economic vibrancy, cultural atmosphere, and sense of community. The city is also more affordable than Sydney (City of Melbourne, 2021a).

At the same time, rental prices are relatively high and increasing. The median weekly rent for rented dwellings is AUD 456 (ABS, 2016c). The extent to which the expanding short-term rental market influences the increasing rental prices is unclear. Likely, the recent lock-downs during the Covid-19 pandemic have significantly changed these trends, but so far, reliable observations are unavailable.

Over the past ten years, regulations and planning for land use in Melbourne municipality have undergone significant change. Previous priorities were given to commercial use of spaces, considering that Melbourne is a place to work, but today, Melbourne is rethinking land use to make the city a "better place to live".

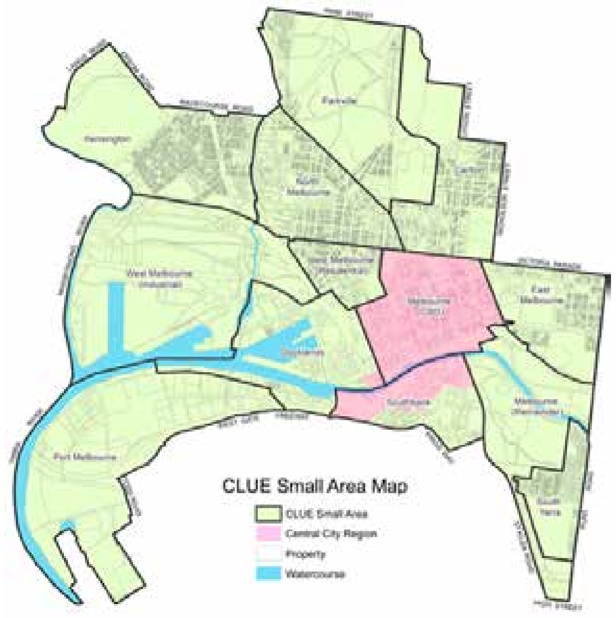


Figure 2. Map of the City of Melbourne (central city parts in red) (City of Melbourne, 2022b).

2.5 Innovation and sustainability

Melbourne is a city with a vibrant innovation landscape. However, investments in innovation and entrepreneurship in the past years have fallen, and the city dropped out of the top 20 best cities with the "world's best start-up ecosystems' in 2015. Therefore, in 2017 the city drew up a new Start-up Action Plan 2017-21, which aimed to create a prosperous city by assisting entrepreneurs and innovators with starting up and extending their business in local and global arenas (City of Melbourne, 2017). In the plan Melbourne states that the entrepreneurial "community is raw, collaborative and has a strong social purpose". An example is KeepUp, a company that created a "circular cup" (KeepCup, 2022), or a Thankyou Group (Yump, 2022), which sells body care and food products and donates to different water-saving and sanitation programmes.

Open and accessible places for community innovation are one of the plan's four main directions, where collaborative community programmes and technology infrastructure are key features (City of Melbourne, 2017). The target outcome is to "Expand the existing 'maker hubs' in City of Melbourne libraries by providing new equipment, technology and training that is accessible to all Melburnians". Another action area is Affordable Spaces. The City of Melbourne seeks to support "greater access to affordable and new forms of meeting and working spaces, labs, shop fronts and open spaces for start-ups, including Council-owned and private sector spaces (e.g., Town Hall meeting rooms, District Hall)."

An essential player in the innovation scenery of Melbourne is the Melbourne Innovation Centre (MIC, 2022), which also seeks to accelerate small business growth. Within the smart city agenda, the City of Melbourne has partnered with RMIT University and the University of Melbourne to create Melbourne Innovation Districts (MID). MIDs aim to "Develop a world-class urban district that supports and develops next-generation Melbourne" (City of Melbourne, 2022i) by attracting small businesses, start-ups and social enterprises to City North and fostering collaboration between academia and knowledge institutions with businesses (City of Melbourne, 2022j).

Melbourne also has ambitious targets to become a sustainable and resilient city in 2050, as described in Plan Melbourne 2017-2050, a refresh of Plan Melbourne 2014. The city aims to become a low-carbon city, and targets net-zero greenhouse gas emissions by 2050 (City of Melbourne, 2020b). There are also goals to develop a 20-minute neighbourhood concept where easy access to everyday services is provided through targeted urban planning. There are also targets for adapting to climate change and to generally encourage action to facilitate renewable energy and reduce GHG emissions. One of the current directions that operationalises sustainability is the circular economy. This focus is reflected in the waste and circular economy theme of the annual Open Innovation Competition in 2020 organised by the City of Melbourne to solve one crucial city challenge per year.

2.6 Socio-cultural conditions

In terms of socio-cultural conditions, Melbourne has consistently ranked as the world's most liveable city for much of the 2010s (Chalkley-Rhoden, 2017). The EIU Global Liveability Index ranked Melbourne as #9 globally in terms of stability, healthcare, culture, environment, education, and infrastructure in 2019. Between 2011 and 2017, Melbourne was the world's most liveable city according to the EIU ranking (Chalkley-Rhoden, 2017). The current slide in ranking is attributed to the multiple Covid-related lockdowns, which greatly affected the cultural, educational and healthcare parameters (Business Standard, 2021).

To better understand the cultural background of the population of Melbourne, we use Hofstede's cultural theory model to describe Australian culture along six dimensions (Hofstede, 1980; Hofstede Insights, 2019): power distance, individualism/collectivism, uncertainty avoidance, masculinity/femininity, long/short-term orientation, and indulgence/restraint (Figure 3).

The power dimension measures how the population perceives inequalities in society, both the leaders and followers. Australia scores low on the power dimension (score of 38), as Australians like being independent and equal, and dislike hierarchy. In Australian organisations, communication is direct, informal, and participative, and superiors are easily accessible. Hierarchy is established for convenience, and managers rely on individual employees and teams for their expertise. At the same time, managers and employees expect to be consulted, and information is shared frequently.

Individualism/collectivism measures interdependence among individuals in a society, i.e., whether people define themselves in terms of "I" or "We". Australia scores very highly – 90 – on this dimension and is an example of a highly Individualist culture. In such a society, people are expected to care for themselves and their immediate family members. Similarly, people are expected to take initiative and be self-reliant at work. Promotions and advancement at work are based on professional merits.

Masculinity/Femininity defines whether society is driven by competition or collaboration, quality of life and care for others. With a score of 61, Australia is seen as a masculine society. Values of competition, striving to be the best and out-competing the others are prevalent and define both professional and personal achievements.

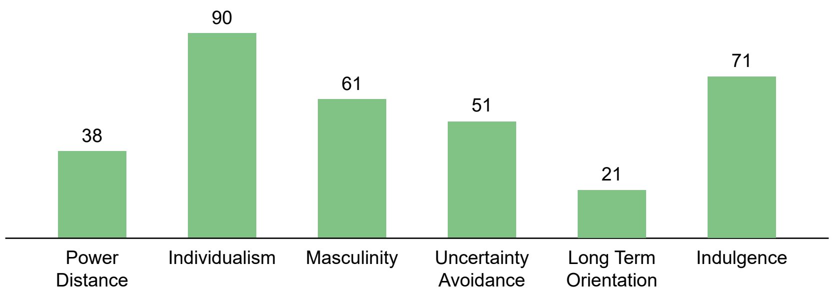


Figure 3. Australian cultural traits measured according to Hofstede's Cultural Theory model (Hofstede Insights, 2019).

Uncertainty avoidance measures the extent to which people feel vulnerable and experience anxiety in the face of the unknown future and unfamiliar situations. It also measures whether people have created institutions, beliefs, and mechanisms to cope with or reduce uncertainties. Australia lies in the middle of this scale with a score of 51.

Long/short-term orientation describes the extent to which the society manages to maintain links with its past, address present challenges, and prepare for the future. Australia scores very low 21 on this dimension and therefore has a normative culture, in which preference is given to maintaining norms and traditions while viewing societal and other types of change with suspicion. Consequently, people in Australia focus more on achieving immediate results and prefer not to save for the future.

Indulgence/restraint describes how children learn to socialise in society, i.e., the extent to which people learn to control their impulses and desires during their upbringing. Weak control is referred to as Indulgence, while heavy control refers to as Restraint. With its high score of 71, Australia is seen as an Indulgent country, in which people seek to satisfy their wants and desires for having fun and enjoying life immediately. Leisure time is valued highly, as well as the freedom to spend money as one likes and to behave as one pleases.

3 URBAN SHARING IN MELBOURNE

3.1 The landscape of urban sharing in the city

Melbourne is home to a great diversity of sharing organisations in different sharing sectors, from mobility and accommodation to physical goods sharing, using peer-to-peer (P2P) as well as business-to-consumer (B2C) models. Commercial activities are more prevalent than non-profit, many of which are hobby-related. According to our interviews, there has been a certain decline among peer-to-peer community-based service exchanges (Int#ME1) since the publication of the mapping of the sharing economy report in 2017 (Kennedy et al., 2017).

> ***"There's a huge diversity in Melbourne's sharing ecosystem, from cooperatives and social enterprises to grassroots innovators who are running repair cafes and maker spaces and … Men's Sheds, where retired men come together to do carpentry and woodwork and other things. And so local councils provide space for that to happen. … other councils doing stuff with older people as well…" (Int#ME1)***

Car-sharing

Car-sharing is well established in Melbourne, represented by P2P platforms, such as Car Next Door, DriveMyCar or Camplify, and typical B2C companies, such as GoGet, Flexicar, GreenShareCar, Popcar or Kinto. There are also inter-urban ridesharing platforms, such as Share Your Ride, Carpool Melbourne, or Co-Seats. In addition, ride-hailing platforms, such as Uber, Bolt Ola, Didi or Shebah, have a firm foothold in the city.

In the B2C segment, there could be about 600 shared vehicles operating in Melbourne, although the exact number is uncertain and prone to rapid change. Additionally, an estimated 500-700 cars are offered through P2P sharing platforms, with Car Next Door being the largest single platform. Ride-hailing services are dominated by Uber, with over 60,000 registered drivers (Money Australia, 2022). The average number of ride-hailing vehicles in traffic varies significantly during the day, but typically it is 3-4 times lower than the total number of Uber-registered drivers. In addition, the same driver can be registered on more than one ride-hailing platform.

Source: (ABC News, 2018)

There have been several attempts to introduce bike-sharing in Melbourne. The first one, called the Melbourne Bike Share programme, was a stationary (dock-based) system owned and operated by the city. It was not optimally designed and suffered low usage rates. In 2017, a Singapore-based company, oBikes, introduced a dockless bike hire service competing with the city's bike share programme (ABC News, 2018). The platform flooded the city with bikes without proper maintenance and logistics systems, which resulted in many abandoned and often vandalised bikes littering walkways or even being dumped in the Yarra river. At a certain point, oBike started putting their bikes into public bike racks, enraging regular bicycle riders who did not have space to park their bikes. This caused significant public discontent, and repulsed many potential users. After this, the city government decided to withdraw the license to operate from oBike (Int#ME8a), but public opinion towards shared bikes seems harder to restore. Currently, trials to offer shared e-bikes and e-scooters are taking place.

Space sharing

The space-sharing segment is best represented by private accommodation sharing platforms, such as Airbnb, which offers the largest pool of over 14,000 active listings in the Greater Melbourne area. Other platforms for short-term rental include Stayz, Flatmates and Roommates, WarmShowers, Melbourne Homestay and CouchSurfing. Several platforms offer storage (e.g., Spacer) and parking sharing (e.g., Divvy, JustPark, ParkHound). Co-working platforms in the city are represented by, e.g., Rubberdesk, SpacetoCo or Arcade.

Physical goods sharing

There are several platforms for sharing physical goods, such as DIY tools in different tool libraries, toys (e.g., Kindershare), clothes for adults (e.g., The Volte), and baby clothes, books, and sports equipment (e.g., Quipmo). Many of these platforms also offer educational and skill-building services, e.g., MensShed (AMSA, 2022) and tool libraries. Unlike many other sharing organisations that are run in informal ways, almost 1,000 "men's sheds" are organised into an all-Australian Men's Shed Association. The Toy Libraries Australia (TLA) is an association of 280 sharing organisations sharing toys (TLA, 2022). There is some cooperation between these associations, and Men's Shed helps to repair toy libraries.

A new model of the sharing economy has emerged in Melbourne based on cooperative governance. One example of such platforms is Bhive, or GiveGet Build. Bhive is Australia's first platform cooperative that seeks to develop community-owned grassroots sharing infrastructure to support physical goods sharing, car-sharing, accommodation sharing, and other activities (bHive, 2022). It aims to keep ownership and decision-making in the hands of local community members, neighbours or residents (MaCA, 2021). GiveGet Build develops the skills of women in the DIY and home renovation sectors. The organisation builds community by running workshops and organising events, running a resource library, a tool share service, and providing a reclaimed materials service (LinkedIn, 2022).

Besides physical goods and assets sharing platforms, the gig economy is vibrant, including a Melbourne-based platform Airtasker, which is similar to TaskRabbit and offers to sell or exchange services. The Good Karma Effect is a charity that maintains Good Karma Networks, an area-specific Facebook group where people can ask for help from their neighbours and get help with material goods and services, knowledge or skills through exchange or gifting. There are also examples of services exchanged between primarily non-profit organisations, in the style "… I'll do your accounting if you build me a website".

However, many organisations struggle to find sufficient critical mass and a suitable business model to make their activities sustainable.

One exciting feature of the sharing economy in Melbourne is organisations created by and for women, such as Shebah and Happy Hubbub, which attempt to fill different gaps in security and childcare systems. Shebah is a ride-hailing service offering safer rides for women, while Happy Hubbub is a co-working space with kindergarten services.

3.2 Public perception of urban sharing

Some years ago, the ‘sharing economy’ was a global buzzword, including in Australia. Today the term is hardly used by Melbourne city or state officials, the public and even by sharing organisations themselves. According to our interviewees, the initial enthusiasm and interest in new ways of consuming goods and services have cooled down. Probably its novelty was depleted, and public curiosity subsided, accepting sharing as a norm, though still at a tiny scale in relation to prevailing lifestyles.

> ***“There was a lot of… optimism and hope around the sharing economy in 2016... My feeling is [that] some of the energy has kind of drained away from it and the excitement around it.” (Int#ME1)***

In general, perceptions of the effects of sharing are very diverse and somewhat polarised, depending on peoples’ personal experiences with it (Int#ME1). Sharing users and sharing providers tend to have positive attitudes towards sharing. Users appreciate the low cost and the flexibility of access to shared goods and services, and providers appreciate the additional income. Of course, for the latter, the attitudes depend on the balance between earnings and effort put in when providing sharing services. For instance, drivers in ride-hailing platforms have to work increasingly longer hours to keep an acceptable level of earnings. Meanwhile, individuals associated with the incumbent industries affected by new sharing solutions (e.g., taxi businesses) are likely to have different perceptions (Int#ME1).

> ***“We have people who love it, and it’s great, and then we have people who say it’s a nightmare, it’s destroyed my community [or] … they’ve destroyed the taxi industry. And there have been so many suicides and lost livelihoods and people buying medallions for half a million dollars. And then they find that their cab is worth nothing.” (Int#ME1)***

According to some interviewees, there is no strong culture for sharing in Australia, as people are atomised and encouraged to provide for themselves and their immediate family, but not beyond. On the other hand, examples such as Good Karma Networks show that this might not be entirely true, and that people in Melbourne are willing to help each other and provide access to their resources and knowledge.

> ***“…there is a lot of grassroots activity that happens in a very ad hoc unstructured way [in Melbourne], but that seems to work for many people.” (Int#ME12a)***

Ride-hailing and car-sharing services are very popular and have become mainstream. They provide easy and cheap public transportation options, especially in the suburbs: “they have done an excellent job of introducing people to the sharing economy” (Int#ME12a). Melbourne has a relatively young population and many single-person households, which are important factors in people sharing accommodation or getting around without owning a car. Today, the younger generation – teenagers – are less likely to get a driving licence than the previous generations, and have a tendency to rely more on public transportation and ride-hailing companies.

Bike-sharing has not yet gained a foothold in Melbourne, and previous attempts of both public and privately operated systems were unsuccessful. The prospects for bike-sharing remain unclear. People who bike tend to own their bikes. Meanwhile, biking lanes are still underdeveloped outside certain city districts, car traffic is dense, and the city is too spread geographically for biking to be practical for the suburban commute. However, shared bike systems might find a niche to fill the last-mile gap between public transport lines and people’s residences. Shared bikes might also find a niche among city visitors and temporary residents such as students.

Bike-sharing no longer exists in Melbourne because of the hostile experience with the oBike system. Bike littering and the general disorder in parking dockless bikes have repulsed many people who could otherwise have supported and used bike-sharing for the local commute (Int#ME8a).

At its peak, it was not uncommon for 20-30 bikes to be pulled out of the Yarra river daily. For AUD 50 a bike, this became a financial issue for many city councils. Magnet-fishing out bikes from water has become a viral sport for YouTube. (Int#ME8b)

Short-term rental platforms, e.g., Airbnb, are very popular and facilitate tourism and generate additional income to property owners. It does not pose significant competition to the traditional hospitality sector (hotels). On the other hand, certain negative attitudes might have been created due to the adverse effects on local community spirit. In addition, accommodation sharing contributes to gentrification trends, and increasing property and rental prices.

Sharing household items or physical goods is not as popular as sharing mobility, accommodation, or co-working space (Int#ME12b). However, toy libraries seem to be quite popular in Melbourne due to limited and relatively expensive childcare services. Toy libraries become a kind of 'refuge' for (mostly) mothers with small kids who need to be activated, stimulated, and educated (Int#ME23). However, it seems that not all city councils and a large proportion of the public are not familiar with the concept of toy libraries and services offered, even though they have been around since the 1980s. This may have to do with the diverse population in Melbourne, with many students and large new immigrant communities.

Small sustainability-oriented communities are emerging that want to live sustainably with a lower environmental footprint. They are the ones who are starting or joining tool libraries or cafes, maker spaces, starting platform co-ops, etc. However, this is still a rather small proportion of the population. For most people, the sharing economy is still mainly Uber and Airbnb.

Initiatives such as the Good Karma Network build sharing practices around the ethos of problem-solving and helping each other through sharing and gifting.

The Karma network saw a dramatic increase in the number of members over the past years (100,000 members and 110 administrators globally). The largest group, for example, has 18,000 members across four states of Australia. However, the gig economy is also sometimes seen as “dirty work”, as it is often associated with the casualisation of labour, even though many services offered through sharing economy platforms serve specific customer segments, who are excluded from many events and work opportunities due to accessibility (Int#ME14).

At the same time, the rhetoric of the circular economy is on the rise in Australia. It is slowly becoming mainstream among policymakers and public servants and, to a lesser extent, among the public. Some of the sharing economy organisations and platforms, especially those sharing physical assets, are positioning themselves within the circular economy, linking to the familiar goals of waste reduction, recycling and, now, reuse.

4 SPACE SHARING IN MELBOURNE

In this report, 'space sharing' refers to a segment of the sharing economy where short-term access to the unoccupied property (accommodation, workplaces, parking, or storage spaces) is mediated by and to private individuals or business entities via an online platform. Long- and medium-term access to such spaces relate more to regular renting and are only briefly addressed.

4.1 Business models and examples

4.1.1 SOCIALLY-ORIENTED SPACE SHARING

The ecosystem of non-commercial space-sharing initiatives in Melbourne is rather diverse, and formalised as different cooperatives or grassroots social enterprises. Examples include repair cafes, maker spaces, co-working spaces, or men's sheds of DIY hobbyists. Local councils in Melbourne generally support socially-oriented initiatives and have different strategies and tools to help, including the provision of underutilised spaces. An example could be a Community Sharing Strategy (2016) and a Community Sharing Toolkit to enable older residents to start or get involved with sharing activities in their local community, everything from community gardens to repair cafes and libraries (Int#ME1). However, new grassroots initiatives initially have difficulty getting visibility, demonstrating impacts, gaining support from local authorities, and ensuring their longevity (Int#ME1).

4.1.2 CO-WORKING SPACE SHARING

Co-working space sharing is highly popular in Melbourne, catering to on-demand and a flexible work life.[4] Almost half of all coworking spaces in Australia are located in Melbourne, concentrated predominantly in the city centre (Figure 3) (City of Melbourne, 2022c). Such spaces are popular among start-ups, entrepreneurs, not-for-profits, freelancers, and various sustainability businesses. They offer opportunities for collaboration, innovation, mentoring and networking, all at more affordable cost than a permanent office.

4 A comprehensive list of co-working platforms in Australia (The Fetch, 2011).

URBAN SHARING Sustainability & Institutionalisation erc European Research Council Grant Agreement No. 771872 35

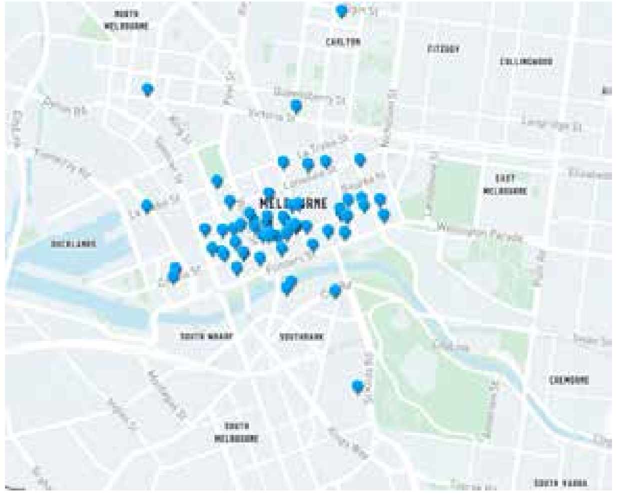


Figure 4. Map of co-working space locations in Central Melbourne (City of Melbourne, 2022c)

Different platforms provide anything from a simple workstation at a shared desk to private offices and meeting rooms with complete office infrastructure, community managers, event hosts, and professional productivity facilitators (Int#ME1).

For instance, Rubberdesk is a global working space sharing platform. Melbourne (Aug 2021) offers 500 private offices, 100 co-working desks and 30 meeting rooms primarily situated in the city centre (Rubberdesk, 2022). Across Australia, it has 3,000-4,000 offices in total (Rubberdesk, 2021). The platform realised there are many companies interested in renting or letting office space and, inspired by Airbnb concept, created a marketplace to facilitate efficient searches and seamless transactions in this market segment.

> ***"He saw an ad for Airbnb, and then the idea came to his mind. He wants to reduce the friction in office renting to enable offices to be rented without barriers. Thus he made it possible to find office space to rent easily." (Int#ME20)***

However, unlike Airbnb, Rubberdesk allows guests to inspect the rented property and get to know other people renting the same premises. The platforms also vet the renters to avoid competitors renting the same office space due to IP, security, and competition issues. The platform realised that businesses generally do not want to have strangers coming in and out of the office, facilitating a two-way peer-to-peer checking where both the new and the existing office guests can get to know each other. Smaller businesses typically look for office spaces on a month-by-month basis, while larger organisations seek longer terms rentals (Int#ME20).

Similar platforms include SpacetoCo (SpacetoCo, 2022), ACMI X Coworking, HubAustralia, Inspire, and YBF Ventures, offering office space at a price of AUD 30-60/hour. Unfortunately, during the Covid lock-downs, several platforms ceased operating (e.g., Depo8, Electron Workshop, Nest Co-Working).

Victoria's first registered cooperative coworking space is 888 Cooperative Causeway, set up for small businesses and organisations in the social economy and run by membership fees (888 Causeway, 2022). For an annual fee of AUD 2,500, access to one fully-equipped co-working space is available in the centre of Melbourne. So far, it has four members. An example of an integrated sharing platform offering the sharing of space, vehicles, staff, service, and finances is bHive (bHive, 2022), which started in Melbourne to facilitate the creation of localised sharing cooperatives between neighbours in Australia (Int#ME1).

Some co-working spaces are profiled for particular users. For instance, The Arcade is Australia's first, not-for-profit, collaborative workspace created specifically for game developers and creative companies (The Arcade Melbourne, 2022). OneRoof offers co-working for female entrepreneurs (One Roof, 2022), while HappyHubBuB is an example of a business offering co-working space and child care (Happy Hubbub, 2022). The founder of HappyHubBub reflected on their struggles to combine her professional life with the challenges of raising small children. The original business idea was to offer co-working spaces and childcare services. The main focus was on co-working with additional short-period child services, and a pricing scheme aligned to this. After several years of experimenting, the eventual formula for success was to realise the primary importance of childcare and not the other way around (Int#ME11). Although the federal government in Australia provides financial support to parents with small children (min 15 hours of childcare per week), this corresponds to about 60% of full-time childcare costs. Parents who cannot afford to pay childcare costs for the remaining time often opt to stay at home rather than work. This hits especially women who are self-employed entrepreneurs or who are trying to establish start-ups.

However, although co-working space initiatives with full-day childcare are proving successful, they struggle to establish or scale-up. Establishing a sustainable operation requires long lead times and finding a successful recipe for high-quality services, attractive, practical amenities with outdoor space, and creating personal relationships and a community feeling. The most significant bottleneck for scaling up a successful enterprise is access to initial capital (Int#ME11). Investments through regular bank loans might prove difficult due to lack of collateral, lack of scale, and slow payback times.

A variation of co-working and creative spaces are the so-called maker spaces, which offer physical spaces and equipment for people to learn, exchange knowledge, invent, build, and test different engineering or other creative projects. Examples in Melbourne include HackMelbourne (CCHC, 2022) and Space Tank Studio (Space Tank, 2022).

4.1.3 ACCOMMODATION SHARING

Like the whole of Australia, Melbourne has a significant surplus of residential space. Australian houses are rather large for the relatively small households, which often have spare space to rent (Int#ME24). Victoria's taxation rules also indirectly encourage people to list surplus spaces on sharing platforms, since owners of several properties can get certain tax breaks. Melbourne has diverse architecture and culturally different local communities. This is attractive to tourists seeking new cultural experiences offered by different neighbourhoods (Int#ME18). As a result, Melbourne offers various types of short-term accommodation on different sharing platforms, from shared rooms to single rooms or entire properties.

Airbnb is one of the best-known international platforms, which quickly became popular in Australia due to increasing tourist flows and many international students. Many listings on Airbnb in Australia are second homes of middle-aged or older generations, and some listings are purely investment properties (Int#ME10). In 2020, Airbnb had about 14,000 active listings available in the greater Melbourne area, with average rates ranging from AUD 184 and 250/night (low and high seasons, respectively). The average corresponding occupancy rates were 30% to 65% (AirDNA, 2022).

Today, investments in property for short-term rentals are growing at a rapid pace, since the revenues are much higher here than long-term rentals. In extreme cases, some owners may never visit their rental property, leaving the maintenance to facility management businesses (Int#ME10). For instance, HomeTime is a property management services and housekeeping platform for

Airbnb hosts and investment homeowners to book cleaning and maintenance services (Hometime, 2022).

Stayz, with its over 40,000 shared properties in Australia, is a similar example of short-term holiday rental platforms. The platform lists mainly second residences, such as a beach or country houses. This distinguishes it from Airbnb, where many listings are investment properties for short-term rentals (Int#ME10).

Other platforms, such as RoomMates or Flatmates, in addition to serving the general market, also offer accommodation specifically for women or other target customers (RoomMates, 2022). For example, Melbourne Homestay focuses on non-Australian temporary residents, such as students (Melbourne Homestay, 2022). Some platforms offer accommodation free of charge. For instance, Couch Surfing is a social network for cultural exchange and free lodging for travellers (Couchsurfing, 2022). Warm Showers is a social network exclusively for bicycle tourists, finding hosts to offer free accommodation (Warmshowers, 2022). However, platforms such as Couch Surfing are less popular and cater to a niche market, since Australians tend to find comfort in the feeling that paid accommodation provides "some sort of scaffolding around their stay in terms of a perceived idea of support and somebody to call if something goes wrong" (Int#ME10).

4.1.4 STORAGE AND PARKING SPACE SHARING

Melbourne also has platforms for sharing other spaces, such as storage or parking, such as Spacer (Spacer, 2022). It is a well-known Australia's peer-to-peer marketplace for self-storage and parking. Examples of platforms for just car parking, for instance, are Divvy (Divvy, 2022), JustPark (Justpark, 2022), ParkHound (Parkhound, 2022). Services include both short-term (daily) and long-term (monthly) parking options with prices ranging from AUD 10 to 75/day and from AUD 300 to 800/month, respectively).

4.2 Drivers and barriers to space sharing

The apparent drivers to space sharing in Melbourne are the availability of idling properties, high market demand, and the financial reward (Int ME#10, ME17).

Financial motivation is the main driver for both property owners and renters. According to Airbnb data, Melbourne's median annual, monthly host revenue is about AUD 1,860, with seasonal averages between AUD 960 and 2,600, including nightly rates and cleaning fees and excluding taxes, service fees, and additional guest fees (AirDNA, 2022).

Besides short-term, there are also platforms for longer-term accommodation sharing. Flatmates.com.au is the largest shared-accommodation website allowing people to list their spare rooms and find accommodation or team up with others for shared living. Different kinds of properties from a single room to shared houses, granny flats, homestays or studios are offered there. Today, this is a critical low-cost housing option for both 'marginal renters' and the mainstream private rental market, including professionals, students, young couples, and families. Although the platform's annual revenue does not exceed AUD 6 million (compared to Airbnb's AUD 5-6 billion), it has about 60% of the market for property introduction mediation for co-habitation, which means it facilitates a rather significant number of rental transactions outside the platform.

Covid lockdowns have affected accommodation platforms significantly, due to reduced demand among tourists, students and professionals seeking temporary accommodation. For instance, rental prices among Flatmates members dropped by 20-30%, one in five roommates moved out through being unable to pay the rent, while only half of the tenants who asked for a rent reduction were successful (McSmith, 2021).

Shared parking reduces the well-known parking shortage in the city at a reduced cost for drivers. In the central city, hourly parking costs average AUD 7, and outside the central city AUD 1-4 (City of Melbourne, 2022k). Melbourne's average daily parking price is about AUD 35-40 on the street and about AUD 30 in carparks (City of Melbourne, 2022k). Shared parking spaces also fill the market niche for needs not fulfilled by regular parking infrastructures. For instance, some need a place to park a vintage car, parents looking to place their child's vehicle while they are away from home studying, or store a car temporarily while their garage is renovated.

Shared parking also reduces land use for new parking bays and can facilitate car-sharing. Many commercial car-sharing businesses struggle to expand their networks because it is rather difficult to negotiate with 21 local councils, each of which have their own regulations for parking (Int#ME13). On the other hand, the effects of shared parking on traffic congestion, emission reduction or car dependency are not very well explored.

City authorities generally take a neutral stance in promoting or regulating shared parking other than regular provisions for all parking. Parking sharing

does not seem to face the same regulatory barriers as short-term rentals because this type of space sharing creates lower risks to public safety, consumer protection, and community nuisance. It is unlikely to result in the same negative consequences for the housing market as accommodation sharing.

Organisations offering co-working spaces for women with small children are driven by huge demand. Women generally are those who tend to stay away from work after childbirth. Men's wages are usually higher while childcare is expensive, which forces many women to stay at home with their children. After a long time, it is rather difficult for them to get back into the workforce. Initiatives that address this issue, e.g., Happy HubBub, struggle to establish or scale. There is insufficient public funding, and private loans are generally not feasible for small-scale operations. To break through the market barriers, a much more significant initial investment is needed, which is not attainable for small-scale entrepreneurs despite the existing apparent demand (Int#ME20).

4.3 Sustainability impacts of space sharing

4.3.1 SOCIAL

The social impacts of space sharing, particularly accommodation sharing, are not well explored and are often context-specific. Property sharing opens new possibilities for short-term renters at more affordable prices, offers unique experiences of local culture, an opportunity to meet new people, and generates additional income to hosts.

Some sharing developments offer a higher quality of living. For example, Nightingale Housing in Melbourne (Nightingale Housing, 2022) is a property development project that offers well-designed residences with common open spaces and shared facilities for tenants (Int#ME10). Another example is Happy Hubbub, a co-working space for small entrepreneurs and start-ups. Not only does it facilitate new professional contacts, but it also offers childcare services and creates local parents' communities (Int#ME11). City initiatives, such as Creative Spaces, help creative persons to gain access to underused spaces to co-create and exhibit to the public, which otherwise could not afford it (Int#ME18a).

The city puts much effort into promoting tourism, since it brings significant revenues to local businesses. Here accommodation sharing is an important facilitating factor. However, shared properties compete with the traditional long-term rental market, which increases the already high costs of rental and property

(Int #8). Short-term sharing is often concentrated in coveted city districts and may have a strong gentrification effect, destroying community feeling.

"The growth of short-term stays in high-rise apartments facilitated by (short-term rental) companies, is seeing permanent residents living through all-night parties, pop-up brothels, and building damage caused by weekend renters... for some residents, the existence of short-stay apartments has ruined their experience of living in the area." (Morris, 2016)

4.3.2 ECONOMIC

Accommodation sharing and tourism have a significant positive economic impact on the city. They generate additional income for property owners and new revenues for local businesses and the public sectors. A report by Deloitte Access Economics on the economic effects of Airbnb in Victoria was published in 2017 (Deloitte, 2017). In the pre-Covid period, Victorian Airbnb hosts accommodated 651,600 guests for over 1.1 million nights in Melbourne and the rest of the state. The total contribution to Victoria's added value was AUD 413 million and 4,084 jobs, excluding the hosts. The bulk of this was in Melbourne, with AUD 343.4 million value added and 3,467 jobs in the regional Melbourne economy.

Estimates by Airbnb suggest that, during the high season, an average host in Melbourne earns AUD 2,180 per month from renting out an average apartment or small house (Skantzos, 2021). According to AirDNA, the average daily revenue rate of a host in Melbourne is between AUD 213 and 250 per listing per night at average occupancy rates of 28% and 63% in low and high seasons respectively (AirDNA, 2022). Hosts spend about half of these revenues on mortgage and utilities. The remaining income is used for property improvements or different goods and services.

"Many people have loans to pay back, so some people are making good money out of getting groups of apartment owners to act as a quasi-hotel, and it's causing many problems to long-term residents who like living here." (Morris, 2016)

Airbnb estimates that its guests tend to stay longer and spend more than when they stay in regular hotels (Hospitality Net, 2021). An average Airbnb guest renting a whole property (apartment or a house) spends about AUD 65-70 per person per night in direct expenditures and an additional AUD 150-180 as indirect expenses for transport, food, entertainment and shopping (Cheng et al., 2020). According to some estimates, average Airbnb guests in Melbourne spend 40% more than average hotel residing guests, AUD 248 and 175 per day respectively (Deloitte, 2017).

4.3.3 ENVIRONMENTAL

According to a recent study, the direct carbon footprint of an Airbnb guest in Sydney was 7.3-9.4 kg-CO2e/room/night (Cheng et al., 2020). This is less than the carbon footprints of staying in hotels, which often have large, shared spaces, including business, food, sport, health, and entertainment services. However, indirect carbon footprints from other guest expenditures during their stay and re-spending of hosts' income can be significant, and range from 3.84 to 602 kg-CO2e per room per night, depending on carbon intensities of purchased goods and services (Cheng et al., 2020).

Accommodation sharing can induce excessive water and energy use, since shared properties are rented for a fixed price without additional charges for utilities. Sharing guests can also generate more unsorted waste, since they might be not familiar with it or be less motivated to engage in recycling (Int#ME3).

"Short-term accommodation sharing hurts waste sorting compared to the long-term resident, because the former either do not have the habit of sorting, do not know how or where to put the sorted waste, or simply do not feel the obligation to comply with municipal regulations." (Int#ME3)

Shared parking spaces could potentially lower the environmental impacts (air emissions and noise) of cars if they are effective in reducing unnecessary driving when searching for available parking bays. On the other hand, more available parking can also increase the use of cars. Unfortunately, there are no reliable quantitative estimates available regarding the net emission reduction potential from shared parking. More reliable information about such issues could help more informed decision-making to support different strategies for improving the sustainability agenda of the city.

At the same time, an interviewee representing a local authority was sceptical about the sustainability agenda driving the sharing economy. If there is such an agenda in the sharing initiatives, it is generally among grassroot movements interested in cooperative solutions for accommodation, gardening, or task sharing. However, there is little relationship between sustainability and the 'platform capitalism' that dominates in Melbourne.

> ***"I would say that if any sustainability agenda exists in the sharing economy, it is generally in grassroots sharing movements like this. There are a few (similar) housing cooperative developments in Melbourne …, which are genuinely cooperative, affordable, low cost. … those sorts of developments are the ones that tend to have shared gardens, shared sustainability agendas in terms of cooperative domestic labour, or cooperative energy. But I don't see many relationships between platform capitalism that's dominant in Melbourne and sustainability at all." (Int#ME10)***

4.4 Regulatory framework for space sharing

Like many coastal cities in Australia, Melbourne is experiencing a growing housing market pressure due to the increasing population and competition between long-term residents and holiday rental investors (Gurran et al., 2020). However, despite some political discussions about the importance of acknowledging gig labour (Int #ME1), neither the city councils (Int #ME10) nor the Victorian state government (Int #ME4) seem to have a formal say when it comes to space sharing and accommodation sharing in particular.

National and state-level regulations mainly concern taxation and health and safety issues rather than the availability and pricing of shared accommodation (Int#ME10). The Victoria State Planning Provisions classify shared properties as a part of residential buildings, which exempts them from the need for a planning permit to operate. According to the City of Melbourne and Consumer Affairs Victoria, short-term rentals currently do not have any zoning restrictions.

Notably, however, one line of regulatory development addressing sharing accommodation businesses was initiated in 2016. As a result, in 2019, the

Victorian Parliament amended the Owners Corporations Act of 2006,[5] which allowed owners, corporations and residents to act against owners and guests who violate housing rules and cause nuisance (Government of Western Australia, 2019). The owners of free-standing properties are exempt from this regulation.

Another relevant state-level legislation concerns building codes, i.e., the minimum standards that regulate the quality of apartment design in Melbourne. The issues regulated by the building codes include the amount of natural light coming into a bedroom, living area per person, parking infrastructure, and building height and density in different city zones (Int#ME10). Due to the boom in accommodation sharing, many investments in 2013-2017 were directed toward short-term rental apartments, which could generate much more revenue to property owners than long-term rentals. This has induced rapid development of entire city blocks with many apartments destined for rent on different sharing platforms. The resulting quality of new developments was lower than that in other cities, e.g., Sydney, which made residents unhappy:

> ***"…from 2013 to about 2017, the design of apartments in Melbourne was unregulated. There was no minimum standard to control, e.g., (the amount of) natural light in bedrooms, no mandates for private outdoor space, regulations, which generally should apply to the regular domestic dwellings. Many developers were targeting Melbourne, mainly because they could get high yields because they were not required to meet such stringent design standards. … architects in Melbourne were highly frustrated by constant requests to increase the density within the tall apartment buildings at the expense of the resident's amenity." (Int#ME1)***

Building codes regulating the quality of accommodation design and property development in Melbourne were finally introduced by the Victorian government in 2017 after lobbying from the Institute of Architects, which resulted in a

5 Previously, owners' corporations (the stratas - a model of property ownership in Australia, which allows private people to buy property in a building) were not permitted to make rules that would ban short-term rentals. They were also not able to enforce the regulations issued by the Victorian Civil and Administrative Tribunal (Consumer Affairs Victoria, 2022).

significant improvement of the standard of apartment development (Int#ME10). Again, the introduction of these regulations happened at a languid pace compared to other states, e.g., New South Wales (Int#ME10):

> ***"...Melbourne's been very slow to take that up, which is probably an illustration of, again, the kind of laissez-faire type attitude to business and economics that we have here." (Int#ME10)***

City council regulations for space sharing vary significantly across Australia. Accommodation sharing is generally permitted in Melbourne (in Docklands and the CBD Melbourne) without any capping of annual rental days, as long as the host has the right to lease the space and is not in breach of any lease or rental agreement. However, since the 2019 changes in the Owners Corporations Act of 2006, owners and residents may take action against owners and guests who violate the existing rules (Government of Western Australia, 2019). Most of the rules relate to the issues of excessive noise, unacceptable behaviour, health, safety, or security hazards, damage to common property, and obstructing access to the property. Some of the provisions are relevant both for long- and short-term rentals.[6]

At the same time, the extent to which city councils can regulate accommodation sharing remains unclear. Interviewees provided conflicting statements about this. One interviewee implied that state and municipal governments could regulate the extent and the way properties are offered for rent, if they wished to do so (Int#ME4).

> ***"[C]ouncils have the power to set local planning regulations and bylaws. So, if they wanted to keep Airbnb out from taking all the properties in coastal towns, they could restrict Airbnb's license to operate...using planning codes. Otherwise, it's a state issue about having codes of practice..." (Int#ME4)***

6 Consumer Affairs, Victoria (2020) "Short-stay accommodation - owners corporations" (Consumer Affairs Victoria, 2022)

According to another interviewee, local councils have little power to regulate large multinational platforms for shared accommodation (Int#ME10). There have been discussions at the national level among some parties on becoming more involved in the sharing economy by designing more regulations (e.g., labour relations of gig economy workers, demanding better provisions for workers). However, after the last elections, such parties remained marginal at the national level (Int#ME10).

> ***"I don't think the local council will have much of a role in regulating any of these large, you know, large sort of global multinational platforms. ... Generally speaking, the sharing economy and the platforms remain fairly unregulated in the Australian context, and I think they have just injected so much money, particularly into the Victorian economy. In 2017 ... sharing economy provided AUD 300 million to the Victorian economy alone. So it was a huge player. And I think it's just been a pretty sweet spot for the government." (Int#ME10)***

4.5 Institutional work of space-sharing organisations

The sharing of space in Melbourne is not a new concept. Room-sharing is a traditional and familiar form of living among the younger generation, which cannot afford their property or pay high rental prices for an individual room. With the advent of different sharing platforms facilitating a much more efficient information search, renter profiling and vetting process, accommodation sharing has gained new momentum and become rather well institutionalised in Melbourne.

Melbourne's local authorities do not actively support space sharing by the private sector, but there are some interesting institutional initiatives to support non-profit public-oriented space sharing. An example can be the initiative of the City of Melbourne called Creative Spaces, launched in 2008 in collaboration with the RMIT Design Research Institute and Creative Victoria (City of Melbourne, 2022d). The idea was to create a partnership between local government, private organisations, and educational institutions to facilitate the provision of a range of services, including physical spaces for creative arts and cultural production. The programme supports cultural production by brokering, letting, and developing affordable space for the creative industries. Today, it manages Boyd School Studios, River Studios, Creative Spaces Guild, Meat Market Studios, Artist-in-Residence programmes, and two public art galleries. It also operates a national website (Creative Spaces, 2022, with a searchable database of available space for creative use, case studies, resources and a blog, and assists venue managers and owners in promoting their spaces to people who need them.

The Creative Space initiative is revenue-generating but runs on a cost-neutral model (Int#ME18a). It partly competes with other private for-profit enterprises, such as Spacely and Space and Co (Int#ME18a), which offer information mediation services for commercial and residential spaces. Recently, these commercial platforms also started including creative listings.

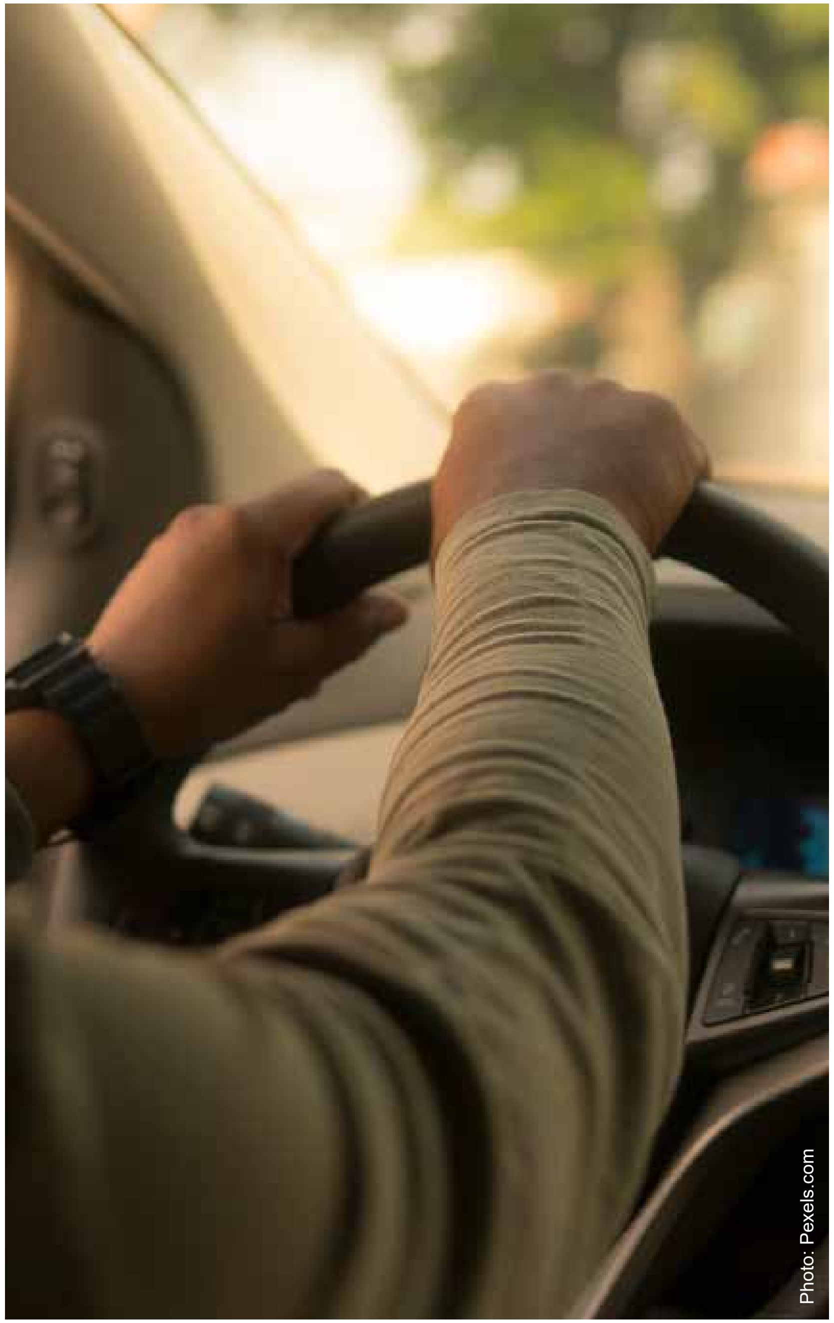
The Victoria regional government, to some extent, supports businesses that want to offer sharing services. However, currently it is only a very small proportion of Victoria's AUD 300-million Recycling Policy support that is available as grants for companies that want to offer or use sharing services. In theory, a company that wants to change from a sales model to a rental model could get a grant from specific programmes (Int#ME4). Local councils also provide financial support to local initiatives like repair cafés, tool sheds, or other initiatives at neighbourhood level. Generally, more attention is paid to the circular economy. The state government is still working out how much sharing will work and needs government support (int#ME4).

4.6 Effects of the pandemic, and response strategies

Local authorities in Melbourne are interested in reducing redundant or under-utilised office space in the city, which became especially relevant during the Covid-19 pandemic and since. In Victoria, the government allows only 25% of the workforce to return to on-site work with uncertain regulations in the future (Int#ME18a), while some organisations are considering a complete shift to working from home. The authorities realise that office workers are not returning to their work full-time and there will be much leftover space, but understanding about the scale of under-utilised office space is still rather low (Int#ME18a).

Restrictions induced by the Covid-19 pandemic increased the availability of empty offices. This has had a significant effect on the business office space-sharing organisations, such as Rubberdesk, observing a drop in demand for their listings in the city centre (and so in their revenue based on a 10% commission). At the same time, the new market is emerging, visible in an increase in searches to work in the suburbs. The only limiting factor for new space-sharing opportunities away from the city centre is the lack of easily accessible public transport (Int#ME20).

According to the Creative Spaces platform, demand has declined for space among creative actors, and the types of spaces that people are searching have also changed compared to pre-Covid. The primary market was for smaller spaces – studio spaces, desk or office spaces, or dance studios. "Now, there is a big swing towards the larger spaces, such as warehouses, film, and photography studios. Reasons for that are not clear so far. Maybe there is a growing demand for more room to interact, work in larger groups or larger-scale creative projects" (Int#ME18a).



5. MOBILITY SHARING IN MELBOURNE

Residents of Melbourne are heavily car-dependent – about 72% of trips to work are mainly done by private vehicles, 16% by public transport, and 12% by walking and biking (Deloitte, 2018). City public transport comprises 16 metropolitan train lines, six regional train lines, 22 tram and 28 bus routes (City of Melbourne, 2020c). The area of the city is only approximately 40x20 km, with long distances between residential suburbs and main concentrations of workplaces in the city centre. The public transport service is relatively well developed in the downtown area but is underdeveloped towards the suburbs. This inevitably translates into high vehicle ownership, daily commuting, traffic congestion, and air pollution. Private cars are responsible for 52% of greenhouse gas (GHG) emissions, followed by heavy commercial vehicles and trains (City of Melbourne, 2020c).

The city aims to decrease GHG and other emissions by implementing different strategies and actions. Shared mobility solutions are one of them. These include business-to-consumer (B2C) and peer-to-peer (P2P) car-sharing and, to some degree, carpooling. Ride-hailing schemes, such as Uber, are already established in the city, with severe impacts on incumbent taxi services. The city is also re-evaluating the feasibility of re-introducing systems for shared e-bikes and e-scooters (Int#ME19, Int#ME16b). The following sections will briefly review the different schemes and models for shared mobility.

5.1 Business models and examples

Several car-sharing companies operate within a 10-km radius of the city centre, such as GoGet, Flexicar, GreenShareCar, Popcar, Evee or Kinto, some of which have up to 40,000 members (Int#ME22). Customers usually pay a fixed membership fee and a variable fee depending on the frequency and duration of vehicle rentals. Almost all car-sharing is station-based with rented parking or owned spaces. Free-floating car-sharing services are not available anywhere in Greater Melbourne due to high parking costs in public bays and regulatory restrictions for parking in certain hours and locations.

The largest operator in peer-to-peer car-sharing in Australia is Car Next Door. Other P2P sharing platforms are Drive My Car and Camplify. All have pay-per-use pricing models, and are station-based with parking spaces provided by car owners.

The carpooling segment in the city is represented by Share Your Ride, Carpool Melbourne and CoSeats, which are matchmaking platforms between drivers and riders. The demand for carpooling in the city is marginal, and most trips are inter-city.

In the ride-hailing segment, the largest and the oldest player since 2012 is Uber, with 62,000 registered drivers (Money Australia, 2022). Other platforms and operators include Bolt (previously Taxify), Ola, Didi, and Shebah. The latter is a women-only platform with female drivers and only women and children as customers. Shebah found strong demand among parents booking company drivers (often the same) for school rides for their children (Int#ME14). About 45% of the company's rides are school-related. Another significant part of the business is related to social services trips for children.

> ***"A huge part of our business is taking children to and from courts, foster homes, schools; there's no other service that can take children under 18. So we take many children in state care, for example, which government runs, and they need to be looked after by a driver. We do some training on vulnerable passengers as well." (Int#ME14)***

Currently, there are no e-scooter sharing schemes in Melbourne. So far, the City authorities are hesitant to grant a permit to commercial operators, but a system is currently being tested on a small scale to map how the system would work (Int#ME16a and Int#ME19).

Bike-sharing in Melbourne has undergone a few experiments in recent years. Its first scheme was a docked bike system introduced by the city. It operated for a relatively short time and was discontinued as being not economically sustainable. There were not enough bikes at certain stations, and their locations were concentrated mainly in the city centre. In other areas, the bikes were underutilised (Int#ME5). In 2017, a private operator, oBike, introduced dockless bikes in a free-floating scheme distributed across inner Melbourne.

The scheme lacked proper management, maintenance, or a strategy to comply with the city's standards. This resulted in inappropriate clustering of bikes, clutter on footpaths, damaged bikes left longer than agreed timeframes, and storage of bikes near public bicycle bays (City of Melbourne, 2020c p. 94). The city government considered that the environmental impacts and clean-up cost were higher than the system's benefits, and introduced a series of regulations (Int#ME8a). Shortly after, the private operator decided to stop offering the service because it was no longer profitable. In 2019, Lime e-bikes (owned by Uber) were made available in the city for three weeks after launching the service due to the COVID-19 pandemic (Int#ME5). Currently, there is a memorandum of understanding with some municipalities within Victoria to run trials of bike-sharing (City of Melbourne, 2022h).

5.2 Drivers and barriers to shared mobility

Some city councils see environmental and social values of car-sharing, and are interested in devising proactive policies and strategies to support more car sharing. For instance, the transport policy of the City of Melbourne (CBD) includes promoting an increase in the number of shared cars, but an existing goal will not be met in 2021 (Int#ME16A). There are several barriers to shared mobility.

Melbourne is a geographically dispersed city. The coverage of its public transport network is limited outside the city centre, both of which cause high levels of vehicle ownership by households (Int#ME7). People living in the suburbs need a car to fulfil their transport needs. Over 94% of households in Australia own at least one motor vehicle (Koster, 2018). Car ownership is also rather strongly connected to people's identity and is a social norm ("…it often seems strange to people if someone does not own a car" (Int#ME7). High vehicle ownership levels make people rely solely on their vehicles to transport themselves and their families.

The diversity of rules and regulations in 31 local councils poses a regulatory barrier for parking shared cars (Int#ME6). Rolling out a sharing scheme across several councils at once requires negotiations with each local authority (e.g., reserve bays and negotiate parking rates). A piecemeal rollout of shared cars is economically unsustainable, as many vehicles have to be made available at once in well-placed locations (Int#ME22). In addition, the lack of parking spaces makes communities more resistant to shared car parking in their area (Int#ME19 and Int#ME16ab).

Another barrier for car-sharing is the low availability of shared cars (Int#ME7). Our estimates suggest that the fleet of shared vehicles in central Melbourne, including business operators and P2P sharing platforms, is in the range of 1,000-2,000 cars. This is marginal for a population of about 170,000 in the city centre. Although more cars are available in Greater Melbourne (population 5 million), this might well be far below a threshold for accessibility and availability, essential to changing people's behaviour.

There is a lack of private investment or access to government funding for ride-hailing and carpooling organisations. Investors are hesitant to invest in specific sharing organisations to cater to a niche market (Int#ME14). When there are openings to seek smaller governmental funding, sharing organisations often do not have the workforce to comply with the required deliverables (Int#ME22 and Int#ME15). Overall, requirements for shared mobility drivers, such as those working in ride-hailing schemes, are gradually increasing. This poses additional barriers (e.g., many are new immigrants) or requires other investments from sharing platforms, which can prove difficult (Int #ME14).

On the other hand, according to our interviewees, there are essential enablers to develop more shared mobility. These include working closely with the city council and finding new mobility needs that are currently underserved. For instance, shared mobility provider Shebah found a significant part of its business (up to 45%) among parents of children under the age of 12 who use the same Shebah driver to take them to and from school. Children and parents are more comfortable with the same driver. Another part of Shebah's business is to transport children who are under state care, e.g., the government hands over such children to be looked after by a driver trained in transporting children with autism (e.g., the driver knows such passengers' preferences for favourite music, can engage in small talk etc.). Such drivers are given comprehensive information about how to make passengers' experience as pleasant as possible (Int#ME14).

Another enabler is the possibility to offer predictable costs of transport services by the platforms. The same example is Shebah, which has a list of predictable (booked) rides and is able to offer stable pricing independent from temporary price surges on other platforms at peak hours. An important enabler for business is the ability to offer rides by drivers of the same gender as passengers. This is important in certain immigrant communities where women might not be allowed to travel with a male driver (Int#ME14).

Shared mobility organisations generally struggle to navigate local policies and initiatives, but some engage closely with the local authorities on several issues, especially parking. A successful car-sharing platform can have up to 60% of their vehicles eligible for public parking bays with beneficial conditions (Int#ME22). Other sharing organisations find unserved market niches, and develop required services to cater for them. For instance, ride-hailing organisations can specialise in transporting children with special needs or schoolchildren in general. Beneficial factors are that the drivers can be the same each time, and the rates are more or less known in advance, regardless of the impact of peak times. Drivers can also know their passengers better and provide higher quality service, including favourite music, climate control, or a more engaged chit-chat with someone their passengers know (Int #ME14).

The availability of dedicated parking (usually at a lower rate than regular on-street parking) is crucial for operating car-sharing schemes. However, car-sharing organisations need to secure many parking spots at once to make the rollout of sharing plans feasible. Unfortunately, the process of applying for shared parking places varies considerably among the 31 local councils of the Melbourne area. The general feature is that it is a lengthy process with an uncertain outcome, pending different approvals from local authorities and sometimes residents. For instance, in Port Philips (CBD), the shared mobility organisations apply for on-street parking. The application demonstrates whether the organisation fulfils the established requirements and whether the parking spot is suitable (City of Port Phillip, 2018). In some cases, residents must consent to dedicate a space to shared cars from the regular on-street parking, which is often somewhat scarce. This may attract resistance from the residents (Int#ME22).

One logistical challenge is parking costs and who pays them, the last user or the following user, and the costs can vary significantly. Another logistical challenge is that, even if a free-floating shared vehicle can be parked on the street in non-rush hours, the uncertainty that it will be moved during the rush hours is still present and can cause transit problems.

The introduction of bike-sharing faces several barriers. Free-floating bike schemes require more rules and better enforcement to avoid the previous bad practices of oBike (Int#ME5). A docked bike-sharing system would, on the other hand, require meticulous planning for adequate numbers of bikes and optimal placements for economic viability and high use rates. Additional investments into docking infrastructure is also needed, about which private investors are likely to be hesitant to invest on trheir own without cooperation with the public transit authorities, including, for instance, the possibility to integrate station-based bike-sharing and public transport systems. In the past, experimental access to a free tram in the same area where the shared bikes were located was very successful (Int#ME8ab).

The law that mandates the use of helmets by riders is currently a barrier (Int#ME6). Helmets could be made available together with the bikes, but it is not clear if the public is ready to use shared helmets. A generic barrier is the lack of bike culture in the city. People do not feel safe when riding a bike (Int#ME1).

5.3 Sustainability impacts of shared mobility

Shared mobility generates different social, economic, and environmental impacts in Melbourne. Local councils generally see the potential of car-sharing in reducing traffic congestion, freeing up urban land and reducing emissions. The City of Melbourne (CBD), for instance, included car-sharing in its Transport Policy, since each shared car takes nine private vehicles off the road.

5.3.1 SOCIAL

Business models for shared mobility are related to social impacts in Melbourne. In some cities, shared mobility is seen as a strategy to create community. However, since most companies are business-to-consumer in Melbourne, there is not much space to “know your neighbour”. Some P2P vehicle sharing companies have a digital key with which users open and close the cars, so there is no need to hand in the keys, which is the case in other P2P companies in other cities.

Some shared mobility organisations provide services that help close the gender gap, for example, employing mothers who need a flexible schedule or the possibility to occasionally bring their children to work (Int#ME14). Some organisations also provide services for citizens with special needs, such as children with disabilities, adults with limited mobility, or special needs due to cultural background and traditions (Int#ME14).

Shared bikes generated a considerable negative impact on the city’s liveability when oBike offered this service. Bikes were parked everywhere, and citizens started vandalising them (Int#ME6). This impact was temporary, but this business model’s reputation might be permanently damaged.

One social impact that has been internationally discussed is the working conditions of people engaged in on-demand ride services. This discussion is ongoing in Australia, as workers are often independent and lack social security or a basic income (Chanthadavong, 2021).

Car-sharing might also reduce the need for parking spaces, for which there is already a surplus. If car-sharing together with ride-hailing service become effective in reducing the number of vehicles entering the central city, commercial parking facilities will likely become underused. Many of these are on the ground floors of buildings and could be repurposed for more productive uses, such as residential, office, retail, or hospitality, making the city a more attractive place to live (City of Melbourne, 2020c).

5.3.2 ECONOMIC

Shared mobility schemes generally struggle to be economically viable and attract more investment (Int#ME14, Int#ME15). To break market barriers, shared mobility must scale up, because increased accessibility and availability are most effective in changing people’s behaviour and adjusting lifestyles (Int#ME22). This also requires an integration of shared mobility options with public transport, which together with multiple shared mobility can reduce the dependence on the private car and reduce household spending on ownership and mobility. Additional revenues are also generated for car owners renting their idling cars in P2P sharing schemes or providing ride-hailing services, such as Uber and others. The extra household income is more likely to be re-spent on other goods and services, which in turn generates new employment opportunities in other businesses, and bring new tax revenues for the state.

Car-sharing might have positive economic effects on the real estate sector. According to some estimates, a parking bay belonging to a property can increase the price of the property by an average of AUD 50,000-80,000 (City of Melbourne, 2020c). By reducing vehicle ownership, car-sharing minimises the need to own parking space and generates the equivalent cost saving. The existing free space can be repurposed to residential, commercial or entertainment spaces, while increasing property value and generating extra income for the owners and the city.

On the other hand, negative impacts on incumbent businesses can be expected. This was the case, for instance, with the taxi sector affected by the popularity of ride-hailing services (See Section 5.4). The level at which other business models of shared mobility have affected the transport system (direct incumbent business of shared mobility) is not widely discussed other than in the case of the taxi segment, where the impact was significant. Taxis lost somewhere between one-third to half of their customers due to the arrival of ride-hailing services. Many taxi drivers shut down or migrated to Uber (ABC News, 2016b). The taxi sector protested against the unfair regulations exempting ride-hailing drivers, who essentially provide taxi services, to buy a taxi license, the cost of which can go as high as AUD 500,000. Although some mobility experts point out that Uber and taxis might target different customer segments (Int#ME7), the state of Victoria decided to compensate the value of licences to taxi drivers. However, many were still not satisfied, filing a class action against Uber for the loss of revenues (Xu, 2019).

5.3.3 ENVIRONMENTAL

Many car-sharing organisations in B2C and P2P segments explicitly advocate lifestyles without car ownership (Int#ME6). Indeed, research evidence suggests that car-sharing has the potential to reduce transport emissions and save parking space (Arbelaez Velez & Plepys, 2021). Some local authorities in Melbourne have started to recognise the environmental value of shared mobility but generally still have a passive role or little means to support or promote it (Int#ME19, Int#ME16a).

Car-share users tend to drive less than in private cars and are more inclined to use other more environmentally friendly mobility options, such as public transport, biking, or walking. The B2C car share segment also offers newer, smaller, and more fuel-efficient shared vehicles than the average private fleet or vehicles shared in the P2P segment. Shared cars in B2C are typically used for 2-3 years before being replaced by new, more efficient vehicles (Int#ME22). However, car-sharing in this segment also fuels the supply of relatively new used cars to the second-hand market, making the net effects on emissions challenging to estimate.

The definitive positive effect of car-sharing is that people using it tend to drive considerably less than when they own a car. Experience from Europe and other countries suggests that an average private car owner shedding car ownership and replacing it with a portfolio of shared mobility, public transport, and biking can typically reduce their annual driving distance by at least an order of magnitude (Plepys & Arbelaez Velez, 2021).

Potential environmental savings can also come from the electrification of vehicle fleets – electric cars, bikes, and e-scooters – which, as global practice shows, is much faster in the B2C car-sharing sector. This has the positive effect of reducing inner-city transport emissions. However, the environmental benefits overall depend on primary energy sources for charging electric fleets.

This is a point to consider, as 80% of the energy in Australia comes from burning black coal and gas (Australian Government, 2022). Another problem is that, in the long run, increased electricity demand for e-vehicle fleets might cause energy shortages if power infrastructures are not developed in parallel.

5.4 Institutional work and regulatory issues around shared mobility

Like many cities worldwide, Melbourne has evolved to regulate shared mobility organisations. The level of regulation varies according to the type of shared mobility and its business model, and among local councils. The latter are responsible mainly for regulating parking spaces and the use of public spaces. This implies that shared mobility organisations need to negotiate with every local council, which is cumbersome and time consuming (ME#6, ME#7).

Local councils have different views and perceptions regarding shared mobility, with some being more proactive and aiming to increase the number of shared cars, while others are much less engaged (Int#ME7, Int#ME22):

> ***"Some local governments support car sharing, maybe 5 or 6 out of 30 local governments are promoting carshare actively, but others are not." (Int #ME7)***

City councils such as Port Phillip (Int#19) and Melbourne (Int#16a,b) have car-sharing policies. For instance, Melbourne Car Share Policy from 28 July 2015 aimed to create 2,000 parking spaces for shared cars by 2021, of which 850 were to be located in residential areas (Future Melbourne, 2015). The Transport Strategy 2030 of the City of Melbourne recognised the slow growth of the car share fleet as one of the challenges that may lead to a further increase in privately owned cars in Melbourne (City of Melbourne, 2020c). Its Action 17 sets out to "[d]eliver a new car share policy that aims to support car share growth in consultation with stakeholders" (City of Melbourne, 2020c). Key areas of work to achieve this goal involve securing more parking spaces for shared cars, both on-street (mainly in the city centre, where it is currently capped) and off-street:

> *"[W]e're working with the shared vehicle people at the moment to try to get them to make arrangements more off-street, either at a hotel, car parks or commercial car parks, and that rather than take any more of our street parks." (Int#ME8a)*

Municipal parking spaces were divided between Flexicar, GoGet, GreenShareCar and RACV according to the official information by the City of Melbourne from October 2018 (City of Melbourne, 2018). and they are allocated both in Melbourne municipality and several neighbouring municipalities (Int#ME8a). According to the City of Melbourne employee, the parking fee rate is lower at these car parks and, as of spring 2021, there were about 800 shared vehicles parked there, with an ambition to increase this number to 2300 (Int#ME8a).

Car sharers and mobility service providers (e.g., Uber and Shebah drivers) pay taxes on their income. Collecting taxes from private vehicle sharing might be a problem for the tax authorities. Usually, the incomes are fairly negligible (approx. AUD 2 000-2500 per year). Although expenses for such incomes are tax-deductible, collecting taxes on such a small scale is a challenging. The tax offices are in the process of consulting with P2P vehicle sharing platforms about possibilities to share information about vehicle sharers (Int#ME6). Approximately 10% GST (VAT) taxes do not need to be collected by the renters under a certain income. For most of the renters, this is usually the case. This makes P2P vehicle sharing on a smaller scale more competitive (Int#ME6).

The City of Melbourne recognises the both opportunities and potential challenges associated with ride-hailing (e.g., Uber, Shebah):

> *"Disruptive technology such as rideshare apps and dockless bike-share provide opportunities to improve transport and increase accessibility. However, there is a risk that the benefits will not be realised or that the negative impacts of unregulated new technologies will not be mitigated." (City of Melbourne, 2020c p. 27)*

The City of Melbourne is exploring ways to improve efficiency in the use of kerb space (Action 20 of Transport Strategy 2030), acknowledging that "people shift to different types of car travel (such as car share and rideshare)" (City of Melbourne, 2020c p. 71). It also recognises the advantages of ride-hailing services in low-density areas, where they "can provide access to public transport…making it easier to live without owning a car" (City of Melbourne, 2020c p. 93).

Overall, the City of Melbourne aims to increase biking and the use of public transport in the city, not least by integrating shared bikes and public transport at the stations: "More bicycle-public transport trips could be made if… share bikes were located at public transport stops with integrated payment options" (City of Melbourne, 2020c p. 79). The same goes for the integration of car-sharing and commercial passenger vehicles (including on-demand mobility services) at public transport stations and stops, which "could make it easier for people to use efficient modes of transport and help establish a framework to integrate future technologies" (City of Melbourne, 2020c p. 92).

At the same time, previous experience with bike-sharing has shaped how the city councils in Melbourne relate to and regulate shared micro-mobility today. When a private dockless bike-sharing organisation oBike entered the market in mid-2017, Melbourne city council, neighbouring councils and citizens were not satisfied due to the unprofessional set-up of the service. The streets quickly flooded with bikes, which clogged public spaces and created chaos, making the government and the citizens unhappy. After the city council demanded that oBike tidy up and organise their vehicles (Int#ME8ab, Int#ME16ab, Int#ME19), oBike decided to end its service due to its unprofitability (and since they did not have personnel available on the spot to organise the bikes).

When oBike entered the City, there was no regulation and no clear procedures on organising and managing the dockless bike-sharing system. Consequently, Policy 36 of Melbourne Transport Strategy 2030, while acknowledging that "[d]ockless shared services such as bikes and e-scooters have potential to provide new sustainable transport options" (p. 88), highlighted the importance of regulating these mobility options since "dockless mobility in Melbourne has created numerous problems and delivered few benefits" (City of Melbourne, 2020c p. 88).

The significant issues with these micro-mobility options recognised by the Strategy include footpath obstacles and obstructions to pedestrians' safe and efficient movement. After the negative experience with oBike, the City of

Melbourne had changed its strategy when other shared mobility organisations tried to enter the city. Since then, both the City of Melbourne (Int#ME8ab) and the City of Port Phillip (Int#ME19) have been using a Memorandum of Understanding (MoU) where the city council and the shared micro-mobility providers agreed on a set of issues relating to compliance with urban amenity principles. Such a MoU is not legally binding but instead offers a guide on what is acceptable when it comes to the use of public space by the shared micro-mobility providers (Int#ME8).

As with bike-sharing and in addition to MoU, the City of Melbourne indirectly regulated electric scooter sharing (e.g., Lime) by requiring its users to wear helmets.

The local councils expect a clear framework from the state government on regulating e-bike-sharing and e-scooters (Int#ME19). For example, the City of Melbourne argues that the state government should lead the development of regulation:

> ***"A regulatory framework is needed for dockless transport, to manage large numbers of vehicles and risks, and to maximise benefits. The City of Melbourne has limited regulatory power to manage the range of associated issues, including parking, amenity, safety, vehicles, insurance, liability, competition between companies, consumer protection, and other issues…. The Victorian Government is best placed to work inner-city city councils to lead the development of regulation." (City of Melbourne, Transport Strategy 2030, p. 91)***

5.5 Effects of the pandemic, and response strategies

The effects of the Covid-19 pandemic in Melbourne were mixed. During the pandemic, more people felt safer avoiding public transport and, instead of riding a bike, taking a ride-hailing service or a car-share instead. Some sharing platforms provided transport services for individuals returning from overseas travels, when they were forced to stay at quarantine hotels (Int#ME14). However, the strict lock-down in Melbourne has generally hurt shared mobility organisations, causing some of them to lose up to half of their customers or close down (Int#ME14). For example, the shared bikes introduced by Jump just before the pandemic were operating well (Int#5). During the lock-down, they suffered from low use rates and were forced to suspend operations (de Neef, 2020). It remains to be seen how things will develop after the pandemic.

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6 SHARING OF PHYSICAL GOODS IN MELBOURNE

Compared to accommodation sharing and shared mobility, the sharing of physical goods relies on a bottom-up approach organised by grassroots, community-based actors, or businesses across Melbourne. The observed cases are a mixture of peer-to-peer or organisation-to-users non-profit forms of sharing and business-to-consumer (B2C) models and, to a lesser extent, sharing organisations supported by local councils. We studied sharing of DYI tools, toys libraries, clothes and sports equipment sharing initiatives, and other networks for exchanging and gifting physical goods.

Some of these physical goods-sharing organisations are one-off initiatives. In contrast, others, like toy libraries and Men's Shed, are associations with several hundred organisations that have been around for several decades. This section reviews the observed business models, describes identified drivers and barriers, and highlights existing regulations and institutions relevant to physical goods sharing.

6.1 Business models and examples

Tool sharing is represented by different business models, including non-profit grassroots organisations, for sharing DIY tools, such as the Brunswick Tool Library. BTL is "a member-led local community organisation founded on the principles of sharing resources to reduce consumption and to divert waste from landfill" (BTL, 2022). Members of the BTL pay an annual membership fee, ranging between AUD 55 and 85, which allows them to borrow a certain number of tools each week. Membership can also be gained through volunteering with the organisation. There are nearly 80 volunteers, including people working remotely.

One physical goods-sharing organisation is the Sharing Shed, Melbourne. It is also a community-run organisation that promotes less resource-intensive lifestyles by encouraging people to borrow from others what they might need instead of buying, or to donate items that people no longer need themselves so that others may use the items. In this way, the Sharing Shed helps reduce waste in landfills. The rhetoric of sustainability is very prominent in the organisation's communication, which has a tagline: "Own Less, Live More" (Sharing Shed Melbourne, 2021). Before the current focus on providing access to items, the organisation was primarily a repair café, but running both operations proved to be a challenge. Sharing Shed has now re-profiled itself and is in the preparation phase to launch the sharing activity. Currently, the core team consists of five people, and there are about 30 volunteers. A great variety of items will be shared once Sharing Shed opens, such as sports equipment, musical instruments and camping gear, all donations from people. The Sharing Shed recently received a grant[7] from the Moonee Valley City Council and rent-free premises from which to run their operations. The business model will be based on annual membership fees, with different categories and organisational membership. The highest cost is the insurance fee. Otherwise, the model is light on actual operating and capital expenditure. However, the long-term viability of the business model without funding from grants will need to be tested.

Even though the organisations themselves do not conduct consumer surveys, interesting observations about the customer base for tools and goods sharing have been made. For example, young families trying camping for the first time are interested in borrowing different camping gear rather than buying all the items they might need from the outset. A similar situation has been observed with lawnmowers and garden equipment. Many people have relatively small lawns and do not want to buy a lawnmower to trim 10 m2 once a month. There we also see a mix of younger families and students. Many tools and goods-sharing organisations have a 50% discount on annual membership for lower-income demographics. Older adults usually own many kinds of equipment and do not need to borrow anything; instead, they engage with goods sharing by donating items they do not use. Goods sharing organisations also mention one particular group of people interested in their services – people who are interested in sustainability and environmentalism, seeing the benefits of fewer new purchases not only in terms of financial gain but also in terms of reduced volumes of waste that go to landfill as well as resources that go into producing new goods (Int#ME12a).

7 Grants to non-commercial organisations cannot be spent on wages.

Kindershare is another peer-to-peer platform facilitating exchange and borrowing baby gear from the local community, emphasising vicinity and convenience (Kindershare, 2021). It started in 2017, to help people get temporary access to baby equipment. A wide range of products can be found on the platform, from rocking cradles to travel cots and strollers.

There is also another type of organisation where goods are shared through Good Karma Networks – a network of suburb-specific online communities that provide members with the opportunity to connect, collaboratively solve problems and build relationships, and in the process, if needed, exchange or gift physical goods (GKE Network, 2021). In the first place, the network seeks to help individuals with their everyday challenges by activating local human, social and material resources, thereby developing community resilience and resourcefulness.

The sharing of toys in Australia and Melbourne has a long history. The first five toy libraries formed an umbrella organisation called the Toy Libraries Association of Victoria (TLAV) already in 1977. In 2012 it changed its name into Toy Libraries Australia (TLA), the organisation for over 280 not-for-profit toy libraries across Australia (TLA, 2022). This is run by a not-for-profit committee, which now has one part-time employee. Membership fees fund the work of the association. Fundraising activities, corporate sponsorships and limited grants from philanthropic sources and local governments help toy libraries extend their toy collections. However, they do not receive continuous funding from local, state, or federal governments. About 130 toy libraries in Melbourne are members of TLA, but other toy libraries are not members. Members of TLA promote play and education of children and offer support to families. They offer access to educational toys, games, and puzzles.

Toy libraries are usually located in the library building or buildings shared with other community services. Some are open full time, while others operate a few hours a week (average 3 hours per week). Small toy libraries (in rural towns) can cater to as few as 20 families, while large toy libraries could support over 500 families. If they are situated in libraries, library cardholders can borrow toys with the same library card. All toy libraries are non-profit, and the majority are government-funded within library buildings. Most toy libraries are run by volunteers and, around Australia, more than 14,000 volunteers work in toy libraries. When toy libraries become sufficiently large (30% of the total number), they might get a salaried worker (paid from governmental funds), although many local councils are reluctant to pay salaries. In 2019, TLA commissioned a survey of the social benefits of toy libraries in Australia (Ozanne et al., 2019).

It showed that the responding libraries (121 libraries, 43% response rate) had 18,228 members, served 32,784 children, and had 138,141 toys. Toy libraries also serve low socio-economic groups (9%), immigrants (19%), children with special needs (4%), and to a much lesser extent, elderly or older adults (1%).

Clothes sharing has become popular among the younger population, with many different organisations renting, sharing, hiring, and exchanging designer and cheap clothing for everyday, business, and special occasions. Other business models are found, most of them B2C models, where the renting organisation holds a stock of clothes to be rented out. Many companies, e.g., The Volte, emphasise enjoying hassle-free clothing as they offer dry cleaning services for a fee included in the dress hire price (The Volte, 2021). An often heard rhetoric is the opportunity to reduce “the number of single-wear items in [one’s] wardrobe while helping to reduce the environmental impact of a piece of clothing” (Dreghorn, 2021). For example, GlamCorner, a B Corp Certified, supports “designer labels by introducing brands to a larger market while offering a service that empowers every customer to reduce their contribution to landfill by borrowing clothing for once-off occasions as a sustainable alternative to purchasing and disposing of afterwards” (GlamCorner, 2021). In addition, renting clothes also provides a variety of clothing choices suitable for all possible occasions, without the commitment to purchase. Therefore, many brands have also started to offer subscriptions to their styles and entire wardrobes.

There are also some peer-to-peer clothes-sharing platforms where personally owned clothes items are offered through a platform with a fee for access or through a buy-in mechanism. Rent a Dress is a peer-to-peer platform that allows women to capitalise on their wardrobes and access outfits for a fraction of the price (Rent a Dress Australia, 2021). Designerex is a platform for renting clothes from designers, businesses, and individuals (Designerex, 2021). For example, SWOP Clothing Exchange gives “pieces new life” by buying used clothes from individuals and giving SWOP credits which can be used for purchasing other items on the platform (Swop Net, 2021). There are also many clothes-swapping events held around Australia (The Clothing Exchange, 2021), with the help of Facebook groups (e.g., @clothingexchangeaustralia) or apps. For example, the Outdress app offers the possibility to hire clothes for some time close to the home (Outdress, 2021). The Hunter Markets have become very trendy (Hunter Markets, 2021). They feature stalls from social media influencers, who ensure that they sell original second-hand, i.e., pre-loved (and often unworn), clothing, footwear and accessories that are still trendy to their young followers.

Sharing of sports equipment is also quite popular in Melbourne. For example, Quipmo (Quipmo, 2021) is a peer-to-peer gear rental marketplace that enables access to adventure equipment at any time. The platform shares equipment for surfing, biking, and snow sports. In terms of asset owners, they invite individuals who own sports gear and businesses and shops that would like to capitalise on their stock of second-hand equipment via the platform.

6.2 Drivers and barriers to sharing of physical goods

Sharing and renting/hiring seems to be rising in Melbourne, with some sectors, e.g., clothing, experiencing fast growth and mainstreaming of various business models. On the other hand, toy libraries have been operating for more than 40 years and have worked primarily voluntarily. The different business models, i.e., B2C and peer-to-peer, and community-based volunteer-run organisations, have other drivers, but here are the common drivers that reflect the changing trends towards ownership, sharing and renting in society, as well as barriers.

Drivers. The affordability of sharing and renting physical goods has been emphasised by many sharing B2C and peer-to-peer organisations as an essential driver for people to use these services. It can be about using luxury clothes for a special occasion without needing to buy expensive brand clothes, gaining access to costly DIY tools to perform home improvements or garden projects, or hiring sports equipment for a weekend to go on an adventure. Some organisations reveal that customers are “not able to justify the price of something they won’t wear many times, even though they could probably afford to buy it” (ATD Blog, 2018). Often, the price goes together with the desire to obtain access to high-quality products.

The possibility to earn money from owning goods and assets is a driver for many consumers to participate in the sharing economy in the role of resource owner.

Convenience is a critical driver for users to engage with the sharing economy. Almost all organisations emphasise ease of renting or hiring compared to the ownership-based model of using products. Some of the additional services are to reduce the burden on consumers. For example, tool sharing organisations often offer maintenance and repair services, while clothes hire provide cleaning services.

Even though sustainability and environmental considerations are of importance only to some groups of the population, many organisations use the rhetoric of saving resources, such as reducing the volume of waste that goes to landfills, in their communication to users. This driver also includes the wish to declutter the wardrobe or storage place, leaving only items that people often use and love (ATD Blog, 2018).

Many sharing organisations provide a missing service to people living in Melbourne. For example, several sharing organisations emerged to cater to the needs of women and children. This reflects the poor childcare infrastructure and weak institutions in the city and Australia.

Organisations that solicited grants or rent-free premises for their activities discuss the importance of local city councils in enabling, encouraging, and supporting sharing organisations, especially those that activate idling resources, which becomes a win-win situation for people and the environment. To apply for grants, the volunteer-run organisations need to obtain official not-for-profit status.

Barriers. As in many other cities we have studied, non-profit organisations have difficulty obtaining recognition and soliciting support from a local city council because they do not generate paid employment and sell anything. Consequently, there are no consumer laws that could apply to them. Community-based sharing organisations typically seek support with premises or seed grants to maintain their operations.

Many sharing organisations run by volunteers experience difficulties soliciting continuous and sufficient support. Over time, people cannot commit the required time; people lose interest or become disengaged. So, it is a constant struggle to get new members and volunteers to ensure that operations proceed seamlessly.

> ***“The organisation will live and die by volunteers.”***
> ***(Int ME12a)***

Several organisations that share tools and electrical products mentioned the difficulty of finding the proper insurance to cover potential problems when people hire or borrow equipment that they might not know how to use safely. Even for toy libraries, insurance was a significant barrier they managed to overcome.

Many goods-sharing organisations also felt that they were unknown to a broader public. Local city councils could play a more active role in spreading the word about the existence and operations of sharing services, especially the grassroots organisations that lack the funds to engage in a commercially-run marketing campaign.

6.3 Sustainability impacts of sharing physical goods

The perceived sustainability potential of physical goods sharing was discussed in several interviews.

6.3.1 SOCIAL

Tool Libraries Australia initiated professional research by the University of Melbourne on the social impact of toy libraries. The study identified many positive social impacts of toy libraries. Toy libraries offer special support to families in need of emotional and informational support or families with health issues or financial issues. Also, many other goods-sharing organisations cater to the specific needs of low-income customers by offering them annual membership at 50% of the price. Tool libraries report attracting people who have not had traditional access to these kinds of DIY and tinkering areas, such as women and people who are queer, who join tool libraries because they feel it is a safe environment. They get access to the tools at a low price and some help with knowledge.

Good Karma Networks go further than sharing goods and seek to create community and build social capital where everybody can feel safe to ask for help from others, whether it be material or immaterial help.

Since many of these organisations are built on volunteer work, this also creates a sense of belonging to a community, which might be hard to achieve, for example, for immigrants or people with disabilities.

6.3.2 ECONOMIC

Capitalising on idling assets allows people to generate additional income, which can be very attractive for some groups of people. Some of the goods-sharing organisations report offering goods for free to those who need them if they are not in high demand or if people donate and the organisation has multiple copies of the item.

> ***“It might not be the sharpest tool in the shed, I joke, but yeah, it’ll work, it’ll do the job, and they can take it.” (Int#ME21)***

Toy sharing libraries annually purchase new toys for AUD 418,755 and receive AUD 161,860 of toys per year in donations (Ozanne et al., 2019). However, most importantly, toy sharing libraries donate the services of their volunteers to their members and community with an annual net worth of AUD 216,512. The 121 toy libraries provide more than 2000 hours of volunteer service per week (Ozanne et al., 2019). The value of services provided exceeds the value of purchased toys.

6.3.3 ENVIRONMENTAL

The environmental potential of the goods-sharing platforms and organisations is through reducing net consumption by facilitating access to tools, toys, clothes, baby equipment, and sports equipment. In peer-to-peer settings, many of these goods are donated. Consequently, goods libraries, sharing networks and exchange platforms all extend product lifetimes and prevent the discarding of goods that might otherwise have been thrown away or end up as e-waste. In these sharing organisations, volunteers often repair or clean donated goods, again extending the lifetime of products and providing an opportunity for members to learn repair skills. In goods-sharing organisations, not only goods are shared, but also other resources, knowledge, and skills. The culture of fully utilising limited resources is promoted and celebrated. Some sharing organisations also run repair cafés to share their skills with their community. They also ensure proper recycling at the end of life of the goods to complete the cycle. There are also many collaborations between the sharing organisations, such as between tool libraries and sustainable garden projects, e.g., CERES Community Environment Park (CERES, 2008), or between toy libraries and Men’s Sheds (AMSA, 2022). These collaborations further reduce the environmental impacts of activities.

6.4 Regulatory framework for sharing of physical goods

Sharing of physical goods is supported via the state policy “Recycling Victoria. A new economy”, which is referred to as the “circular economy policy” (Int#ME4). It is a framework policy, which views city councils and communities as well-positioned to steer the transition to the circular economy, particularly by benefiting “from circular initiatives such as repair cafes, community gardens and local sharing platforms to reduce cost-of-living pressures and waste, build local skills, encourage social connections and create new business opportunities” (DELWP 2020). Melbourne also has Waste and Resource Recovery Strategy 2030, which has strong connections to sustainability and climate issues.

The state circular economy policy encourages using products to create more value (Goal 2) and aims to reduce total waste generation per capita by 15% in 2020-2030 (DELWP, 2020). One specific way for how this target can be reached includes sharing of goods:

> ***“In a circular economy, businesses offer products in different ways. Renting and sharing become more common choices and products are used for longer or by more people—saving consumers money and reducing waste.” (DELWP 2020)***

With a budget of AUD 300 million, this policy offers opportunities for organisations to apply for state, municipal and community grants if they would like to transform their business model from purchasing to rental or start up a physical goods-sharing organisation, e.g., a tool shed or a repair café (Int#ME4). The Victorian government organised workshops to explain the grant system to the businesses (Int#ME4).

At the same time, the sharing economy constitutes a small part of the policy, and the city councils are still developing their understanding of what it can offer to the city:

> ***“We want to say that the Recycling Victoria Policy supports the sharing economy and… businesses that want to do sharing. It’s a relatively small slice of the policy… it’s still new. We’re still working on what areas of the circular economy are most promising and… how much sharing is going to work and needs government support in Melbourne.” (Int#ME4)***

Since many physical goods-sharing organisations are non-profit, they need to obtain a non-profit status to apply for small grants available from the local city councils. Some of them managed to get sufficient funds to start their operations, while many other grassroots community-based initiatives are struggling financially. Some local city councils seem to be more proactive and support such organisations by providing toy libraries with rent-free space.

Overall, there is minimal regulation around the sharing of physical goods, but there are some specific rules about different aspects of operating a goods-sharing organisation. For example, there are strict rules around obtaining insurance for tool and toy libraries. Since access-based models are not yet mainstream, insurance companies need to customise their offers to suit the needs and operations of the sharing organisations.

6.5 Institutional work of physical goods-sharing organisations

Many sharing organisations, both commercial and non-profit, are engaged in different types of institutional work to create visibility for their activities among potential users and the local city councils or state-level governments. All of them are involved in the normative work (Zvolska et al., 2019), because they all challenge prevalent ownership norms and promote alternative practices of getting temporary access to goods.

At the same time, the individual sharing organisations are often too small to become engaged in regulatory work, such as lobbying or litigation. Those organisations, e.g., toy libraries and Men's Shed, that engage in the institutional work mechanism called 'delimiting organisational fields' when they define which organisations can become their members. They construct rule systems that confer status or identity and define membership boundaries. At the same time, these networks, e.g., Toy Libraries Australia, are also an example of another mechanism of institutional work called "forming normative networks". TLA represents a network established to create a common identity and a united voice within a particular sector and develop collective codes of conduct. We have not found examples of intra-field networks in Melbourne, e.g., cross-sectoral sharing associations, such as the Sharing Economy UK (SEUK).

The problem is that the scenery for these organisations in Melbourne is very diverse. An additional challenge is that sharing organisations often do not

talk to each other (Int#ME1). There is no shared vision among the various sharing initiatives and platforms or a consolidated strategy. Many of them suffer from difficulties measuring and demonstrating their impact on and values for society (Int#ME1). Some of these projects have a short lifespan, reducing their chances of becoming visible. Overall, these grassroots initiatives remain invisible, primarily to state and national level governments. Many city councils do not recognise their critical role in building social capital, creating a more robust community, and connecting and strengthening the urban commons (Int#ME1&2).

However, earlier there were several earlier attempts (in 2012-2016) to consolidate the sharing landscape in Melbourne. They were led by ShareMelbourne – a loose network of sharing organisations run by a volunteer, Darren Sharp, who sought to connect local sharing economy groups, including community gardens, tool & seed libraries, car-sharing programmes, collaborative consumption startups, food co-ops and coworking communities. ShareMelbourne organised several events, such as Mapjam in 2013, ShareFest and Yarra City MapJam in 2014 (Drift, 2016) to help increase visibility and create stronger ties between sharing organisations. Another initiative, Social Surplus, runs asset mapping workshops seeking to activate local sharing communities across Melbourne by making people and community assets more visible (Sharp, 2020), thereby creating legitimacy and recognition among the populace and local city councils.

6.6 Effects of the pandemic, and response strategies

The COVID pandemic greatly affected goods-sharing organisations. The majority of them had to close or drastically reduce their operations due to the strict lock-downs in Melbourne.

> ***"We're not operating officially. So it's only a lot of volunteers who are doing work behind the scenes in maybe grant writing or planning events online..." (Int#ME21)***

Some organisations, while remaining dormant, took the opportunity to upgrade their IT systems. They also had to introduce many changes to their operations, such as changing processes and monitoring, creating, and updating catalogues of goods to shift them to new 'click and collect' systems, which many goods-sharing organisations had to introduce when restrictions were in place. As shared by a representative of a tool library: "We used to have people come through the library and browse around and pick things up and then bring them to the desk, and we would check them out. Now we introduced the 'click and collect' system and offer tool deliveries. So, we now encourage people to look through the catalogue and use the code on the items to put them on their cards. We prepare the orders in advance, and they get notified that it has been processed and is ready to be collected. And we also started offering tools' delivery."

Toy libraries lost about 20% of members during the pandemic. They also had to adjust their operations to suit the 'click and collect' system that some of the larger toy libraries had introduced. However, the 'click and collect' mode caused more work for the volunteers, who needed to register the users, find the toy, clean/disinfect them, etc. Some libraries reported that to be open for just two hours/week, it took them 4-5 hours to prepare the toys for collection.

In addition to changing the delivery mode of goods, many organisations had to update their accounting systems and develop different procedural guides for operating during the pandemic.

6.7 Impacts of sharing physical goods on incumbent systems

The operations of goods-sharing organisations could potentially negatively impact incumbent industries, e.g., producers of DIY tools, toys, clothes and sport, garden and other types of household equipment and items. However, so far, the scale of the activities is insignificant, and linear resource consumption remains the prevalent model.

> ***"I can't imagine that we ever have so many customers that are constantly borrowing things that would ever create a noticeable impact on, say, for example, the local hardware stores who sell goods. I would love it if we could, but yeah, I can't imagine at this stage any potential negative influence." (Int#ME21)***

At the same time, in the fashion and clothes sector, we see that some brands are starting to diversify their offers, allowing the possibility to rent or hire fashion items temporarily. Some incumbent companies are therefore learning from the newcomers and grassroots organisations in spotting changing trends and adjusting business models to satisfy new consumer needs.


Photo: Pixabay


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7 THE ROLE OF THE CITY IN GOVERNING URBAN SHARING ORGANISATIONS

In Australia, the role that city governments play in urban sharing depends on the mandate of different levels of government, i.e., national, state, and local, in the multi-level governance structure. As discussed in section 2.1.2, the Victorian state government has a significant influence on the actions of local councils in Melbourne, primarily because it controls most of the financial resources available for municipalities:

> ***"So even things that are administered by the councils… including the City of Melbourne, … like recycling bins at a household level, … are managed by councils. But the funding… comes from the state government. So in practice… for initiatives that are delivered by local councils, the funding and policies will be set at the state government level… Probably the main player of those three levels of government for circular and sharing economy is the state government." (Int#ME4)***

In addition to the multi-level governance complexity, there are 31 municipalities in Melbourne, and the ways in which they frame the sharing economy vary (Int#ME1). Different framings are likely related to the objectives and priorities of each of the councils. The City of Melbourne tends to engage with the sharing economy from innovation and smart city perspectives, connecting it to smart technology, entrepreneurialism, and new business models "to drive a kind of homegrown Melbourne start-up ecosystem" (Int#ME1). The City of Boroondara instead focuses on how the sharing economy could support its elderly residents in accessing nutritious food, and becoming more mobile, active, and socially connected to overcome isolation, loneliness, and depression (Int#ME1). The City of Yarra, known as "the greenest and the most progressive than any other part of Melbourne" (Int#ME1), considers the sharing economy to have the potential to support sustainable consumption, e.g., through urban agriculture, and therefore relates to the City of Yarra's environmental strategy:

> ***"So in Yarra's case, it's about sustainable consumption, environmental issues, urban agriculture. In the city of Melbourne, it was more about startups, innovation, in Boroondara it's more about an age-friendly city and ageing in place and supporting older residents." (Int#ME1)***

Like the City of Yarra, the City of Moreland, where The Brunswick Tool Library is located, is also somewhat more progressive and interested in sustainability. It often has The Green Party councillors (Int#ME21).

Our research has developed a framework for how municipalities govern the sharing economy (Voytenko Palgan et al., 2021). We distinguish between five key governance mechanisms, which include 11 governance roles. These mechanisms are regulating, self-governing, providing, enabling, and collaborating, see Figure 5. Municipal governments can employ any of the five mechanisms and combine them in different constellations when dealing with various governance issues (Voytenko Palgan et al., 2021). The roles could explicitly or implicitly promote or inhibit the emergence and operation of urban sharing organisations.

Similar to our conceptualisation, the City of Melbourne's Waste and Resource Recovery Strategy 2030 divides the city council's actions into three categories: deliver, influence, and govern (City of Melbourne, 2019a). Delivering refers to the provision of services, pilot trials and leading by example, and it is closely related to the self-governing mechanism in our framework. Influencing includes the provision of information and advice and funding and support of innovations. It is therefore similar to the providing mechanism in our framework. Governing encompasses the development of guidelines, regulations and exercising local laws, and it is closely linked to the regulating mechanism in our network.

> ***"While the City of Melbourne's role in influencing the pathway towards 2030 is limited, there are ways we can engage the community through information, education and advance new solutions through regulation, advocacy, and partnership with other stakeholders. We can also create change by providing support for innovation by businesses and the community best practice." (City of Melbourne 2019, p.30)***

In the following sections, we present our data on how municipalities in Melbourne govern urban sharing using our framework of municipal governance of the sharing economy. The summary framework for Melbourne is shown in Figure 6.

Figure 5. Municipal governance mechanisms and roles in the sharing economy (Voytenko Palgan et al., 2021).

7.1 Regulating urban sharing organisations

Municipalities often regulate the sharing economy through mechanisms of enforcement and sanction. In the regulating mechanism, cities use regulatory tools such as laws, taxes, bans and policies to govern the establishment and operation of sharing organisations. In this way, cities may constrain the sharing economy, or encourage the emergence or spreading of, or support, certain types of urban sharing organisations.

As discussed in sections 2.1.2 and 4.5, in Melbourne, neither the city councils (Int #ME10) nor Victorian state government (Int #ME4) seem to have a formal say when it comes to space sharing. Accommodation sharing is generally permitted in Melbourne (in particular in Docklands and the CBD Melbourne) without any capping of annual rental days, as long as the host has the right to lease the space, i.e., they are not in breach of any lease or rental agreement. However, since the 2019 changes in the Owners Corporations Act of 2006, the owners' corporations and residents may act against owners and guests who

Figure 6. Municipal governance mechanisms and roles in Melbourne sharing economy. 2021).

violate the existing rules (Government of Western Australia, 2019). Most of the rules relate to the issues of excessive noise, unacceptable behaviour, health, safety or security hazards, damage to common property, and obstructing of access to the property. Some of the provisions are relevant not only to long- but also to short-term rentals (Consumer Affairs Victoria, 2022). At the same time, the degree to which city councils can regulate accommodation sharing remains unclear. Interviewees provided conflicting statements about this.

As discussed in section 2.1.2, the City of Melbourne has the policy to promote carsharing and regulations for electric scooters and free-floating bikes. Melbourne Car Share Policy from 28 July 2015 aims to offer 2000 parking spaces for shared cars by 2021, of which 850 are mainly located in residential areas (Future Melbourne, 2015). According to the City of Melbourne employee, the parking fee rate is lower at these car parks and, as of spring 2021, there were about 800 shared vehicles parked there, with an ambition to increase this number to 2300 (Int#ME8a). The City of Port Phillip also has a carsharing policy (Int#19).

As discussed in section 5.5, the City of Melbourne aims to increase biking and public transport in the city, not least by integrating shared bikes and public transport at the stations. At the same time, previous experience with bike-sharing has shaped how the city councils in Melbourne relate to and regulate shared micro-mobility today. When a private dockless bike-sharing organisation, oBike entered the market in mid-2017, Melbourne city council, neighbouring councils and citizens were not satisfied, due to the unprofessional set up of the service. After regulation, the bike-sharing service, oBike stopped offering it because of its lack of profitability.

Similar to the bike-sharing, and in addition to the Memorandum of Understanding established between the city council and the providers of the shared micro-mobility, the City of Melbourne indirectly regulated electric scooter sharing (e.g. Lime) by requiring its users to wear helmets before the service had been even offered to Melbourne citizens. Eventually, e-scooters entered the market in 2019 after overcoming the regulatory issues on mandatory helmet requirements and speed limits.

Ride-hailing platforms seem to have overcome regulatory challenges posed when they entered Melbourne. Citizens and incumbent businesses demanded their regulation. In particular, the ride-hailing platform Shebah was very successful in Victoria before the COVID-19 pandemic, and was generally welcomed by the government (Int#ME14). At the same time, in other states in Australia, e.g., New South Wales and Queensland, "it's been a more difficult conversation because their taxi driver lobby is very, very strong" (Int#ME14). In its Transport Strategy 2030, the City of Melbourne recognises the potential of ride-hailing for low-density areas. It explores ways to improve the use of kerb space by ride-hailing vehicles.

7.2 Providing for urban sharing organisations

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

'City as an owner' implies that a municipality owns or co-owns a sharing economy initiative. In their roles as investors, municipalities provide funding to urban sharing organisations. City governments act as hosts by providing infrastructure or space to the sharing economy initiatives. The 'city as a data provider' role relates to municipalities sharing their data with the citizens by, for example, creating and operating open data platforms.

The Creative Spaces platform exhibits all municipal roles under the providing mechanism in Melbourne. The City of Melbourne owns the platform, and the staff employed at the municipality invest their time in managing and running Creative Spaces while the city pays their salaries (Int#ME18a). The City of Melbourne is also a host in this case. It offers both physical infrastructure (spaces to be shared) and digital infrastructure (Creative Spaces website), and shares the data about available spaces for creative activities in the city.

> ***"[O]ur salaries are funded through the Council as a base. The programme itself has a base… funding from the Council and then any additional funding we attract ourselves through our… space rentals and… the data sales on the website, which then allow us to make small expansions in what we do in terms of programming with the Creative Spaces programme." (Int#ME18a)***

The state policy 'Recycling Victoria. A new economy' shows the 'city as investor' role by offering opportunities for physical goods-sharing organisations to apply for start-up grants from the city councils or communities:

When the grant calls are released, the Victoria state government and state government organisation, Sustainability Victoria, organise information sessions for the applicants, explaining the application procedure and eligibility requirements (Int#ME4).

In addition to the state grants, the City of Melbourne has a waste minimisation and innovation fund that supports "social enterprises that are contributing to Melbourne's circular economy, by working to reduce waste generation, promote reuse and repair, recycle what cannot be reused" (City of Melbourne, 2022m). The fund is a part of the Waste and Resource Recovery Strategy 2030 (City of Melbourne, 2019a). In 2021, Hyyro Technologies Pty Ltd. received support from this fund to develop a P2P platform for the rental of household items. As of February 2022, this was up and running as "Hyyro – a platform to share and rent items within your community" (Hyyro, 2022). In 2019, Transition Town Kensington received a similar grant to fund the project 'Community bike workshop space to teach people to build and fix bikes' (City of Melbourne, 2022m). The City of Melbourne also organises an Open Innovation Competition, and the theme in 2020 was 'Waste elimination and the circular economy' (City of Melbourne, 2020d), with its winners working with redistribution or donation of previously owned items and promoting food sharing and urban farming. Similarly, at the end of 2021, the City of Melbourne offered up to AUD 10,000 through its Social Enterprise Grant to small businesses, social enterprises and charities working with sustainability, circular economy and waste reduction (City of Melbourne, 2021b).

The Brunswick Tool Library received a two-year grant from Moreland City Council, which helped them cover operational costs and deliver services (Int#ME21). They also received a state government grant from Volunteering Victoria, which allowed them to invest in COVID safety measures, prepare the repair cafes, and buy consumables (e.g., glue, sewing threads, tools):

> ***"So now we've got several kits in tool bags that the repairers can use. If you don't have tools, you don't have to worry. You can come along and still help people repair their items, if you have the skills … we've had support from the government, local area government, and through other organisations like Volunteering Victoria." (Int#ME21)***

Another example of when urban sharing organisation in Melbourne received state funding is the previously described platform Creative Spaces:

> ***"[I]t has been quite well funded and partnered with the state government of Victoria. Creative Victoria is the arm of the state government that we partner with...we have a lot of touchpoints with…state government." (Int#ME18a)***

Specifically, in 2006-2007, the state government, Creative Victoria (or Arts Victoria at the time), funded the expansion of the Creative Spaces database to cover the whole state of Victoria, which was a spreadsheet mapping creative spaces in Victoria (Int#ME18a). The programme then received further funding through the state government and Design Institute at the RMIT University for a standalone website, which preceded its current website and allowed the users to list their creative spaces themselves (Int#ME18a).

A ride-hailing platform, Shebah, currently does not receive any government funding since, according to its founder, the service falls into silos between governmental units. In addition, the government may not prioritise supporting any specific for-profit organisation due to the free-market competition rules (Int#ME14). Shebah wishes it received some financial support from the government, arguing that they provide critical infrastructure for children and youth:

> ***"I think they should invest in us as critical infrastructure for youth and child services. And see us as part of that and fund us for the work that no one else can do… that would be good. We do charge and have a commercially successful framework, but it needs support." (Int#ME14)***

One example of the 'city as an owner' role has been brought up earlier, the Creative Spaces platform. The City of Melbourne owns the platform, but it also owns, lists, and manages some of its spaces, e.g., artist studios and exhibition venues (Int#ME18b). Another example of a sharing initiative owned by the city was the Melbourne Bike Share scheme (Crikey, 2019). This failed, arguably due to several reasons, including low cycling safety on Melbourne roads, low

city coverage with bikes and stations, the mandatory rule for cyclists to wear helmets, cyclists owning bikes, as there is sufficient storage space in their homes, and a rich supply of alternative and competitive transportation modes (e.g., trams in Melbourne CBD are free to ride) in the areas that Melbourne Bike Share covered.

When it comes to the 'city as a host' role, the City of Melbourne provides parking spaces for shared cars (City of Melbourne, 2022m), and it also provides space on footpaths for the Melbourne Bike Share scheme (Int#ME8a). According to Shebah, there is an ongoing discussion between the Lord Mayor of Melbourne and the platform about the city providing curb spaces for Shebah, to prevent parking fines for its drivers:

When municipalities offer public spaces for companies for free or at a subsidised rate, this risks breaching the rules of free market competition. For example, in Sydney, the City Council offered its building in the CBD at a low rent for space-sharing businesses:

> ***"And it wasn't done in a constructive way to the local market, partly because they effectively undercut many businesses that were doing the same sort of job in the area anyway." (Int#ME20)***

There seems to be some competition between municipally owned co-working spaces and those provided by the commercial co-working space sharing platforms. While Rubberdesk would welcome listings and advertisement of public spaces on their platform, which could ensure their higher visibility and more efficient use, because of the nature of the Rubberdesk business model, they cannot do this for free, and this goes against how public institutions like city councils operate:

In its role as a host, the city may provide physical infrastructure to urban sharing organisations and digital infrastructure. This is the case with the Creative Spaces platform, which realised that the website built by the City of Melbourne for Creative Spaces in 2020 was an essential resource for the creative community in Melbourne, so they rebuilt it in 2020 to include some new features:

> *“[W]e’ve expanded it so that you can list yourself as an artist on the website. You can pin yourself on a map; you can list your creative events. You can connect both artists to artists, artists to industry, commercial artists to local governments, state governments. And we’ve also expanded… the ability for users to access the data that the website collects.” (Int#ME18a)*

Another role under the providing mechanism is ‘city as a data provider’. The City of Melbourne has an Open Data web portal (Tyler Data & Insights, 2022), offering multiple datasets to its citizens, sharing initiatives (Sharp, 2016), and anyone interested in such data. Open data is available in the following categories: business, city council, environment, events, people, property and transport (Tyler Data & Insights, 2022).

7.3 Enabling urban sharing organisations

Municipalities may govern urban sharing organisations by enabling or disabling them. Unlike the mechanism of providing, enabling relies on intangible methods, such as persuasion, argument, and incentives. This mechanism includes at least two roles: ‘city as a match-maker’ and ‘city as a communicator’.

The ‘city as a match-maker’ role is evident when municipalities facilitate or encourage collaboration of urban sharing organisations with other similar organisations, potential users, knowledge institutes, or venture capitalists. Municipalities may disseminate best urban sharing practices and market them to different stakeholders in their roles as communicators. They may also organise competitions and offer voluntary certification schemes to recognise some of the best sharing practices.

In its role as a communicator, on its homepage, the City of Melbourne discusses the benefits of car-sharing, framing it mainly as a cost-effective and convenient mode of transportation, and provides contact information to the following car-sharing companies: FlexiCar, GoGet, KINTO, Popcar and Car Next Door (City of Melbourne, 2022a)

> *“If you drive less than 15,000 km per year, car sharing will probably save you money. Car sharing is an ideal choice for people living or working in inner city locations where other modes of transport such as walking, cycling, trams, and buses are available. It’s also perfect for people who don’t need a car every day or want to get rid of a second car.” (City of Melbourne, 2022a)*

Likewise, in its Waste and Resource Recovery Strategy 2030, the City of Melbourne acknowledges the possibility to use its communication channels to raise general awareness about sharing platforms and other alternative consumption models to encourage “more waste-conscious behaviours”:

> *“We can use our promotional channels to encourage residents, workers, visitors, and students to adopt more waste-conscious behaviours... Instead of individual ownership, alternatives would include buying second-hand, swapping or giving things away, ‘product as a service’ … and sharing platforms, which enable shared use or access to products (such as cars or household tools).” (City of Melbourne, 2019a)*

The theme for the City of Melbourne’s Open Innovation Competition 2020 was ‘Waste and the Circular Economy’. In addition to monetary awards to the top competitors, in its role as a matchmaker, the City of Melbourne offered them admissions to workshops, incubator and accelerator programmes, and facilitated the provision of mentorship and support from partner organisations (City of Melbourne, 2020d). Another example of how the City of Melbourne is acting as a matchmaker towards urban sharing organisations is by encouraging car-sharing platforms to make parking arrangements with commercial actors in the city, e.g., hotels or car parking companies, and in this way remove more (shared) cars from the on-street car parks (Int#ME8a).

The Brunswick Tool Library entered into an agreement with a privately owned residential apartment complex, where building developers provided a space to the tool library at a nominal rental fee and free temporary use of empty retail space at the top of the building with "more airflow for covid safety and excellent visibility" (Int#ME21). According to the license agreement, the tool library offers discounted membership fees to the residents in the apartment complex and weekly access to a residents' social DIY club. While the city council has not purposefully acted as a matchmaker, in this case, the building developers sought to meet their vision for "environmentally and socially sustainable growth and development" and offer a "community-focused space" following their agreement with the local council that they would support community activities and sustainability ventures within the complex (Int#ME21).

An expert on sharing in Melbourne summarised the potential that enabling governance mechanism offers to urban sharing organisations in Melbourne:

> ***"I think it would be great to see the larger councils play more of a coordinator, an enabler kind of role, to bring all these different actors together and visibility to the full spectrum from grassroots P2P community based, to the big commercial platforms. I think a lot of it is under the radar still in Melbourne." (Int#ME1)***

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 of Melbourne can model best practice by striving towards becoming a zero-waste organisation by 2030. This means City of Melbourne operations, tenanted buildings and publicly available facilities all encourage avoidance and reuse, offer waste stream separation for resource recovery and strive for a 90 per cent recovery rate." (City of Melbourne, 2019b, p. 40)***

The 'city as a consumer' is where municipalities adopt urban sharing practices in their operations, for example, through municipal public procurement. The 'city as a sharer' is the role when municipal units offer assets they own for shared use by others. Often these are experimental initiatives.

> ***"We don't exclude other councils other parts of our council from using our spaces, especially with some of the exhibition spaces… For instance, in January, we've got the Lord Mayor's Commendation Award presented in one of our spaces." (Int#ME18a)***

In its role as a consumer, the City of Melbourne owns and runs the Creative Spaces platform, but it also uses its own spaces through the platform, e.g., if there is a need to hold an event or a workshop (Int#ME18a). In addition, the City of Melbourne seeks to lead by example through its operations and events when it comes to waste management (including engaging with sharing and rental activities), as outlined in its Waste and Resource Recovery Strategy:

> ***"I've only used it once. People are still able to use their private vehicles and most people just prefer to do that because it's more convenient. You don't have to go out to the depot, get the car, do other things… this may be 100 cars… and they are used frequently, but it's not massive and it's not that every Victorian government employee would use it." (Int#ME4)***

The City of Melbourne not only owns, runs, and borrows spaces on the Creative Spaces platform, but also offers opportunities for other municipal units and other municipalities to rent spaces on the platform, thereby acting as a sharer:

There is a Victorian carpool at a state government level, a shared car service for government vehicles, which is open to governmental employees for their business travel. There are no other examples of sharing between departments in the Victorian government (Int#ME4). While the Victorian government encourages its employees to use the carpool, it may not be used to its total capacity, as people often prefer driving their own vehicles:

7.5 Collaborating with urban sharing organisations

Municipalities may also engage with urban sharing organisations through collaborative mechanisms when both parties play active roles in the governance process.

The 'city as a negotiator' role refers to situations when a municipality and urban sharing organisations negotiate various aspects in their relationship (e.g., the development of a new policy or data sharing opportunities). The 'city as a partner' role is often present when a municipality seeks to address its urban sustainability challenges through its engagement with the sharing community.

In Melbourne, the 'city as a negotiator' role has been evident when the Cities of Melbourne, Yarra (Int#ME8ab) and Port Phillip (Int#ME19) decided to sign a Memorandum of Understanding (MoU) with the shared micro-mobility providers (i.e., dockless bike and e-scooter sharing platforms) as discussed in sections 2.1.2 and 5.5. In such MoUs, the parties agreed on a set of issues relating to compliance with urban amenity principles. They are not legally binding but instead offer a guide on what is acceptable when it comes to the use of public space by the shared micro-mobility providers (Int#ME8). The first MoU was signed between the dockless bike sharing company oBike and the three Melbourne City Councils:

While oBike signed this MoU, they failed to adhere to it, resulting in multiple problems relating to street clogging. This produced complaints from Melbourne citizens and negative reports in the media, vandalism, and thefts of oBikes by the citizens, and misuse of public bike parking spaces by oBike users. Eventually these problems and the lack of resources and management capacity from oBike made them leave Melbourne (Int#ME8a):

> ***"oBikes… started putting their bikes into our public bike racks and… it… disengaged the regular bicycle riders because they would turn up in the city to park their bike and lock it up. And every rack had been taken by oBike, which they weren't supposed to, and the Memorandum of Understanding was supposed to put them elsewhere." (Int#ME8b)***

Uber, Lime, and other e-scooter providers wanted to come to Melbourne. Some of them sought a MoU with the City of Melbourne instead of just dropping their vehicles on the streets, arguably because of the experience that oBike faced and the removal of the bikes by the city council. However, the On-Street Support and Compliance department at Melbourne City Council was reluctant to let them enter the city streets:

When it comes to a partner role, the City of Melbourne, like other municipalities, is facing challenges when collaborating with the business sector. Municipal employees running the Creative Spaces platform recognise that they often need to work directly with business actors, while the mandate of the City Council is to support its community. Another challenge of such collaborations is linked to the different pace of decision making in the business and governmental sectors:

> ***"…if we are responding to the sector that's moving at a different pace to the council, it does make it quite challenging at times to get approvals at council level where you have lots of steps… and a lot of people need to agree. So the major hurdle with our programme is that… we… operate within the constraints of… government systems." (Int#18a)***

A partner role has not been found in our data on urban sharing in Melbourne.

8 CONCLUDING REMARKS

The Urban Sharing Project investigates business models, the sustainability impact, and institutionalisation pathways of the sharing economy in five cities. The primary method of data collection is a mobile research lab. This city report comprises a comprehensive literature review and over twenty interviews with different stakeholders, representing city councils, municipal and Victorian state governments, sharing organisations, NGOs, and academia. This city report focuses on urban sharing in Melbourne, and is the result of research conducted in 2021.

The sharing economy in Melbourne is among the most vibrant and diverse in Australia. Together with sharing of typical assets such as cars, bikes and accommodation, there are many other examples of sharing in Melbourne, such as the entire network of toy libraries across Australia and shared spaces for creative activities, which we have not encountered in other cities we have studied (Amsterdam, Toronto, and Shanghai). Specific for Melbourne are several sharing organisations that cater their services to women and children, such as a ride-hailing platform Shebah and a co-working space combined with daycare services offered by Happy Hubbub.

The sharing economy concept is rather well known among the public In Melbourne. Most people typically know of the larger platforms, such as Uber and Airbnb, and sometimes local car-sharing initiatives like GoGet or CarNextDoor. However, many smaller initiatives remain virtually unknown and struggle to scale up. The sharing economy also has a small place in public governance agendas when it comes to sustainable development. Recently, the notion of the circular economy seems to have come to the fore and become a more important goal for the city councils and the Victorian government. Sharing organisations, especially voluntary and non-profit, looking for financial and other support from local authorities, might benefit from framing their social and environmental benefits in line with the circular economy.

In Melbourne, as in the rest of Australia, car ownership is a strong social norm and is strongly connected to people's identities. Many households cannot picture a lifestyle without a car. The city infrastructure, large distances, and underdeveloped public transport towards city outskirts dictate the reliance on private cars. Shared mobility solutions, from car sharing to ride-hailing services, could partly reduce this dependency if they could be effectively integrated into a multimodal transport system along with public transport, including shared bikes and e-scooters. However, there is no culture of riding bikes in Melbourne, as infrastructure for bike riding is largely absent and residents do not feel safe riding bikes on roads.

Shared economy solutions such as bike sharing or on-demand ride-hailing face different challenges. In the past years, the image of bike sharing was damaged because of the chaos created in the public space by the international free-floating bike sharing company oBike, with chaotic parking and vandalised bikes. On-demand ride services caused negative impacts on the incumbent taxi business and raised concerns about working conditions, basic income, and social security of drivers. To address at least some of these challenges there is a role for local policy makers in co-creating effective regulations and supporting good sharing initiatives that do not have negative side effects.

Space sharing is popular in Melbourne, including accommodation, storage, parking, and co-working spaces. There are even coworking spaces catering for specific groups, like creative artists and women with children. However, such combined coworking spaces often face difficulties obtaining initial investments and scaling up. Like the rest of Australia, Melbourne has a surplus of residential space, i.e., large houses often have spare space to rent. Here Victoria's taxation rules help, since people listing their surplus spaces on sharing platforms can get certain tax reductions. Today accommodation sharing is a growing business among tourists and students, although lately it has been severely affected by Covid restrictions. Nevertheless, the future is bright for space-sharing initiatives, because there is general lack of residential and office spaces, and property prices are increasing. A positive side is that space sharing also facilitates the emergence of new businesses, such as facility management services.

Unlike mobility and accommodation sharing, populated mainly by large international or local commercial sharing organisations, sharing physical goods is dominated by grassroots, community-based organisations, or small businesses across Melbourne. Some of these organisations are small or one-off initiatives. Others, such as toy libraries and Men's Shed, are associations of several hundred organisations that have operated in Melbourne and across Australia for several decades. There are also online organisations, such as Good Karma Network, which is a network of organisations operating in different suburbs that provides an opportunity to help its members solve specific problems, get in contact with people and, if need be, exchange or get access to physical goods.

The COVID-19 pandemic severely impacted the sharing economy. Physical

distancing has rendered mobility sharing almost impossible, and sharing physical goods and space complicated. At the same time, during the pandemic, people needed sharing more than ever. Our research on how sharing organisations have responded to the pandemic identified how sharing contributed to addressing the acute needs of cities and their population by activating idling resources (Mont et al., 2021). Clothes sharing has expanded across Australia, and many offer rental of clothes from businesses and exchange of clothes among individuals. Many of these organisations, especially voluntary ones, experience difficulties soliciting support from city councils, who do not see synergies between the sharing economy organisations and the circular economy agenda that some of them have. As our interviewees indicated, physical goods-sharing organisations create positive social impacts and have the potential to reduce the environmental impact, and should therefore be recognised for this potential and supported.

The role of municipalities in urban sharing depends on the mandates of national, state, and local governments. Melbourne does not have an overarching strategy for sharing, but there are state and municipal policies for sharing space, mobility, and physical goods.

National and state-level regulations mainly concern taxation and health and safety issues rather than the availability and pricing of shared accommodation. The Victoria State Planning Provisions classify shared properties as a part of residential buildings, exempting them from planning permits for their operation. Municipal policies generally permit accommodation sharing in Melbourne.

In the shared-mobility segment, the level of regulation varies. The City of Melbourne promotes car-sharing through Melbourne Car Share Policy (2015), and attempts to control the use of e-scooters and free-floating bikes. It seeks to integrate bike-sharing, car-sharing, and ride-hailing at public transport stations. In its Transport Strategy 2030, the City of Melbourne recognises the potential of ride-hailing for low-density areas. It also explores ways to improve the use of kerb space by ride-hailing vehicles.

Sharing physical goods is supported via the state policy "Recycling Victoria. A new economy" (2020), which offers opportunities to apply for government grants for organisations seeking to transform their business model from purchasing to rental or starting a sharing business. Regulations of physical goods sharing are limited. There are some rules about operating a goods-sharing organisation, e.g., obtaining insurance for tool and toy libraries.

Insights contained within this report may help the City of Melbourne, sharing organisations, and third-party actors in Melbourne and beyond in utilising the sharing economy's potential more strategically. Based on our findings, we provide the following recommendations to the city and its citizens:

1. Identify and build on synergies between city agendas relating to the circular economy and climate change, and capitalise on the sharing economy's potential to contribute to these agendas. Be transparent and strategic about what types of sharing organisations are of critical importance and can potentially obtain the support of city governments. Priority could be given to voluntary sharing organisations and other types of sharing organisations that cater to specific needs of particular groups of the population that are not served by public service, e.g., the lack of comprehensive daycare services for children, which marginalise women on the labour market.

2. The sharing economy has the potential to contribute to multiple city agendas, including but not limited to the circular economy and climate change. It can offer many services and resources that are currently idling in cities. As its sustainability impacts are subject to careful design, contextual influence and regulation research is needed that would help define what designs of sharing business models have the best sustainability profiles. Also, what policies from the city and state levels might help reduce negative sustainability impacts of sharing in a specific city context, including population, density, culture, access to technology, affluence, and climate.

3. The landscape of the sharing economy is changing rapidly. An overview of the sharing organisations from 2016 is a valuable account (Kennedy et al., 2017), but it needs to be updated and complemented with insights about the sharing economy in Melbourne in the past years. This should include information on how the Covid-19 pandemic has affected sharing organisations and how they responded to the pandemic by activating their members and assets, and innovating to fulfil the acute needs of the society in crisis.

Photo: Pixabay

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