Movement & Place Consulting

Investigating the Social Licence for Buses in Australia

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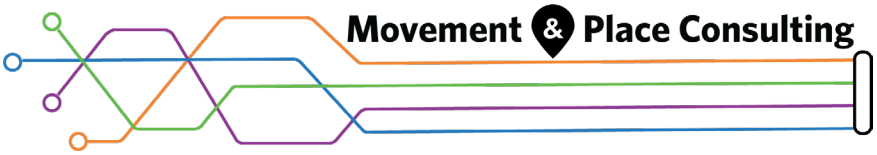
Movement & Place Consulting acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community. We pay our respects to their rich cultures and to Elders past, present and future.

The deep and intricate connection Aboriginal and Torres Strait Islander people have with Country is engrained in their cultural, social and spiritual practices. They have always travelled with light footsteps and focus on minimising negative impacts on Country.

Australia's transport sector is increasingly having negative impacts on Country due to inefficient use of space, impacts on habitat and construction materials. To Heal Country the community needs to embrace more efficient transport modes. Bus networks are key to the solution and understanding how to improve perceptions of bus services is key to increasing their use.

IndigeDesign Labs worked with Leigh Harris to create this bus wrap
Photo credit: ABC Far North: Carli Willis



Executive Summary

Buses are the most accessible form of public transport in Australia, yet they attract comparatively low patronage numbers in Australian cities. As a form of public transport, buses have an unmet potential to increase the efficiency of Australia's road networks while also improving the overall sustainability of Australia's transport sector. In this context, there is a clear need to investigate the reasons for why buses are underutilised and underappreciated.

This study specifically focused on addressing two primary objectives:

- To understand the needs of bus users and potential users to inform policy and practice to encourage greater bus patronage; and
- To measure the public's acceptance of bus service operations using a *social licence to operate* framework. Encouraging greater public acceptance of bus service operations will make it more palatable for politicians to want to invest in bus service improvements given such actions will likely gain wide public approval.

To address the two objectives, primary data was collected through an online survey targeting bus users and non-users living in metropolitan Melbourne, metropolitan Sydney and South East Queensland (SEQ). The development of the questionnaire was informed by a literature review and a theoretical framework on the social licence to operate (a concept used to measure the community's level of approval for a specific activity).

The survey was distributed by IPSOS and included a screening component to ensure a representative sample was obtained. The initial screening survey received 13,537 responses and the detailed survey received 2,420 responses.

Descriptive and statistical analysis approaches were applied to gain a deeper understanding of socio-demographic factors, transport habits, attitudes towards buses, social licence to operate and the importance-performance of various bus service attributes.

Key findings include social approval for buses being low across Sydney, SEQ and Melbourne, with the lowest level of social approval being in Melbourne and the relative highest being in Sydney. Socio-demographic factors, such as age, income, gender and bus usage frequency were found to have a statistically significant relationship with the level of social approval.

Importance-performance analysis identified significant differences in how various bus service attributes were perceived to rank in importance and performance amongst different socio-demographic cohorts such as respondent age, gender and income.

The study identified the following key areas that require improvement to encourage greater bus patronage and improve wider social approval levels for buses:

- Service level improvements including improved frequency, punctuality and reliability;
- Safety, specifically the perceived level of safety at night; and
- Enhanced comfort, including in-vehicle comfort and cleanliness, as well as the comfort levels while waiting at the bus stop.

Overall, public transport authorities and bus operators need to make a much more concerted effort to improve the social licence for buses across Australia, while also meeting the needs and expectations of users and potential users.

The findings of this research has major implication on transport policy and practice outcomes. Specifically, that it is not good enough just to provide a good service to existing users, rather the overall benefits of the bus system needs to be marketed to the wider community to generate overall support for the public expenditure – even from non-users.

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1 Introduction

For over 70% of the Australian population buses are the only form of public transport within walking distance. Despite the high level of accessibility, buses are often an underutilised and underappreciated mode of transport.

Buses have significant potential to increase the efficiency of Australia's road networks while also improving the overall sustainability of Australia's transport sector. As climate imperatives become ever more urgent, encouraging a shift to more sustainable transport modes, including greater use of buses, will be a key step in Australia's transition to a low-emissions future.

Promoting greater bus use has a host of benefits, both for the individual and for the wider community. This includes:

- Transport network capacity improvements - increased bus patronage will reduce traffic congestion[1];
- Safety improvements– increased bus patronage reduces road crashes, and bus lanes increase road safety (for all road users) by 18% and bus priority measures improve safety by 11%[2];
- Liveability improvements – increased bus patronage reduces negative transport impacts including emissions, noise, urban barriers and loss of natural habitat; and
- Amenity, affordability and health improvements – bus services reduce the cost of living, improve access to employment and increase community health outcomes.

This study aims to investigate the reasons for why buses are underutilised and underappreciated. Such insights can inform transport policy and practice to encourage a long-term increase in bus use.

Insights were gathered by surveying bus users' and non-users' in three Australian regions:

- Brisbane and South East Queensland (SEQ);
- Metropolitan Melbourne; and
- Metropolitan Sydney.

[1] Nguyen-Phuoc, D Currie G, De Gruyter C and Young W (2018) 'Modelling the net traffic congestion impact of bus operations in Melbourne ' Transportation Research Part A Part A 117 (2018)

[2] Goh K, Currie G, Sarvi M and Logan D (2013) 'Road Safety Benefits from Bus Priority? – An Empirical Study' TRANSPORTATION RESEARCH RECORD, No. 2352, Transportation Research Board of the National Academies, Washington,D.C., 2013, pp. 41–49

The three regions have different bus use contexts, with buses much more utilised in SEQ and Sydney than in Melbourne. Understanding the factors behind this patronage difference is key to determining how transport policy and practice might need to evolve to encourage a greater uptake of bus travel.

1.1 Project objective

This study has two primary objectives:

- Understand the needs of bus users and potential users to inform policy and practice to encourage greater bus patronage; and
- Measure the public's level of acceptance for bus service operations using a *social licence to operate* framework. Encouraging greater public acceptance of bus service operations will make it more palatable for politicians to want to invest in bus service improvements given such actions will likely gain wide public approval.

The two objectives: *growing patronage* and *social licence* are similar but notably not the same thing:

- Growing patronage relies on buses better meeting specific transport needs of more people; while; and
- Social licence relates to the general public (including non-users) respecting and valuing the bus network for the benefits it provides to society. Ultimately, those who believe a strong social licence should exist for buses recognise that spending taxpayer funds on improving the service creates benefits for everyone, even non-users.

1.2 Structure of this report

The remainder of this report is structured as follows:

- Chapter 2 analyses bus patronage levels in Australia as part of the *Project Background;*
- Chapter 3 provides insights gained from the *Literature* Review;
- Chapter 4 outlines the *Theoretical Framework and Methodological Approach;*
- Chapter 5 presents the *Survey Findings;*
- Chapter 6 contains the *Discussion; and*
- Chapter 7 highlights the *Conclusion and Future Research Directions.*

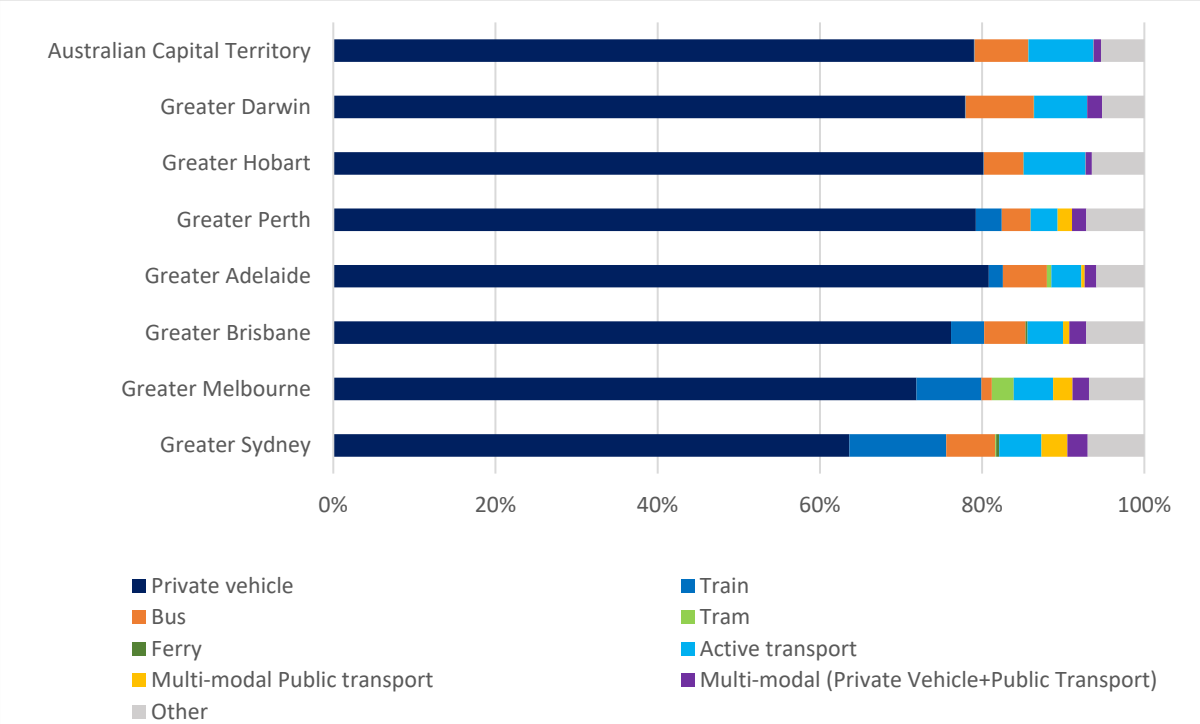
2 Background

This section of the report examines historic bus use and patronage patterns across various Australian cities. For comparison, bus use in two international cities are also presented.

2.1 Bus patronage across Australia

Private vehicular travel, particularly by the private car, continues to be dominant across all Australian cities. Work journeys are predominantly made by private vehicles, with mode share ranging from 64% in Sydney to 81% in Adelaide as shown in Figure 2-1 below.

Figure 2-1: Journey to Work Mode Share



Source: ABS, 2016

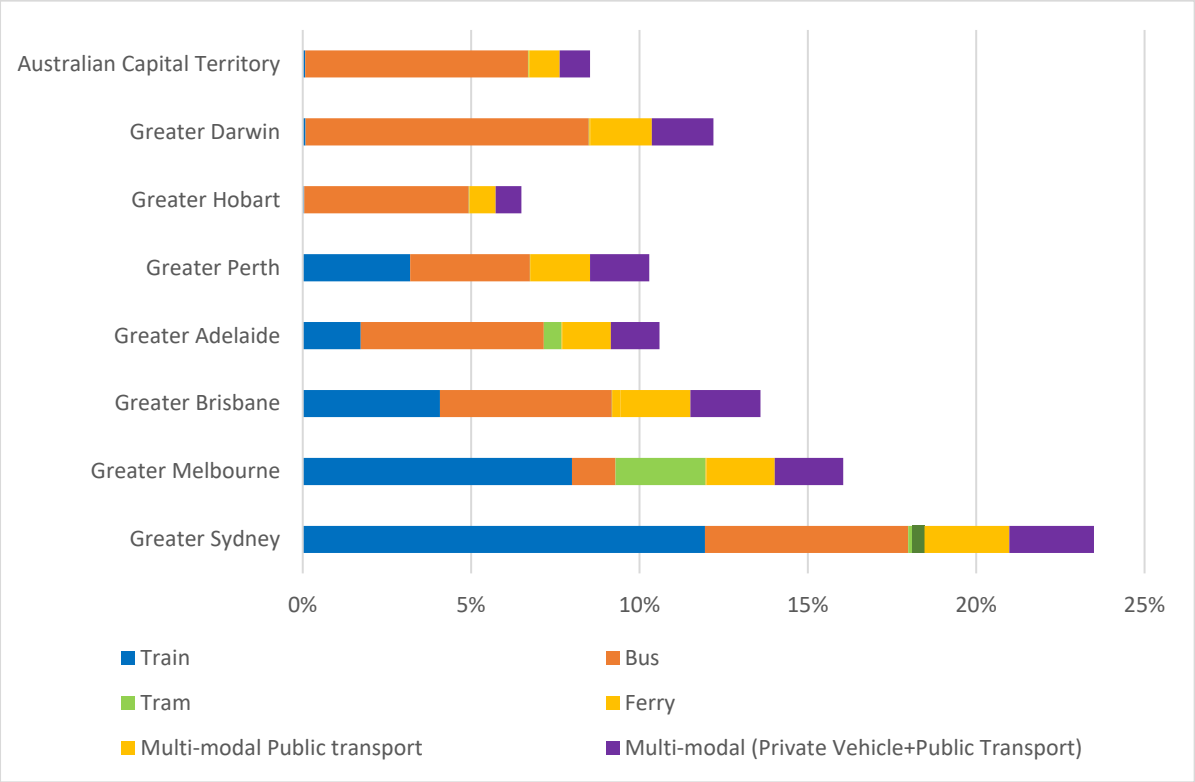
Car dependence in Australia has been attributed to the rapid suburbanisation of Australian cities post-World War II, dispersed low density sub-urban settlement patterns and transport and urban planning policies that prioritise car travel. Though many States' current transport policies refer to prioritising more sustainable modes such as public and active transport, the action and funding to give effect to such policies has been lacking. Public transport service and infrastructure provision has not kept pace with the needs of Australia's rapidly growing cities and regions.

Changing ingrained travel behaviours and mindsets also presents a barrier to increasing public transport patronage, though research indicates that younger generations are less wedded to private vehicle travel and are more likely to make the switch to taking public transport, walking or riding a bicycle if it is reasonably fast, reliable and safe to do so.

Gaining a deeper understanding of user and non-user perceptions of buses is critical to raising awareness that buses can be a competitive alternative to the car.

Bus mode share varies widely amongst Australian cities as shown in Figure 2-2 below.

Figure 2-2: Public Transport Journey to Work Mode Share



Source: ABS, 2016

Cities that do not have extensive metropolitan rail networks such as Canberra, Darwin and Hobart understandably have a relatively high proportion of bus usage. Amongst the cities with multi-modal networks, bus usage varies markedly. Though approximately 16% of Melburnians use public transport for their work commute, only 1% solely use the bus to get to work. Conversely in Brisbane–where there is a dedicated Bus Rapid Transit (BRT) System–approximately 5.1% of commuters used only a bus to get to work.

Understanding the variability in bus use across Australia's capital cities is key to formulating the policy levers which will improve buses' reputation relative to other transport modes. This is especially important in Melbourne, where buses have an exceptionally low journey-to-work mode share.

With the exception of Hobart, bus passenger kilometres travelled in all Australian cities have increased since 1980 (BITRE, 2020). This trend does not hold once population growth is factored in. Australian cities have rapidly grown in population, however, there has not been a commensurate growth in bus patronage.

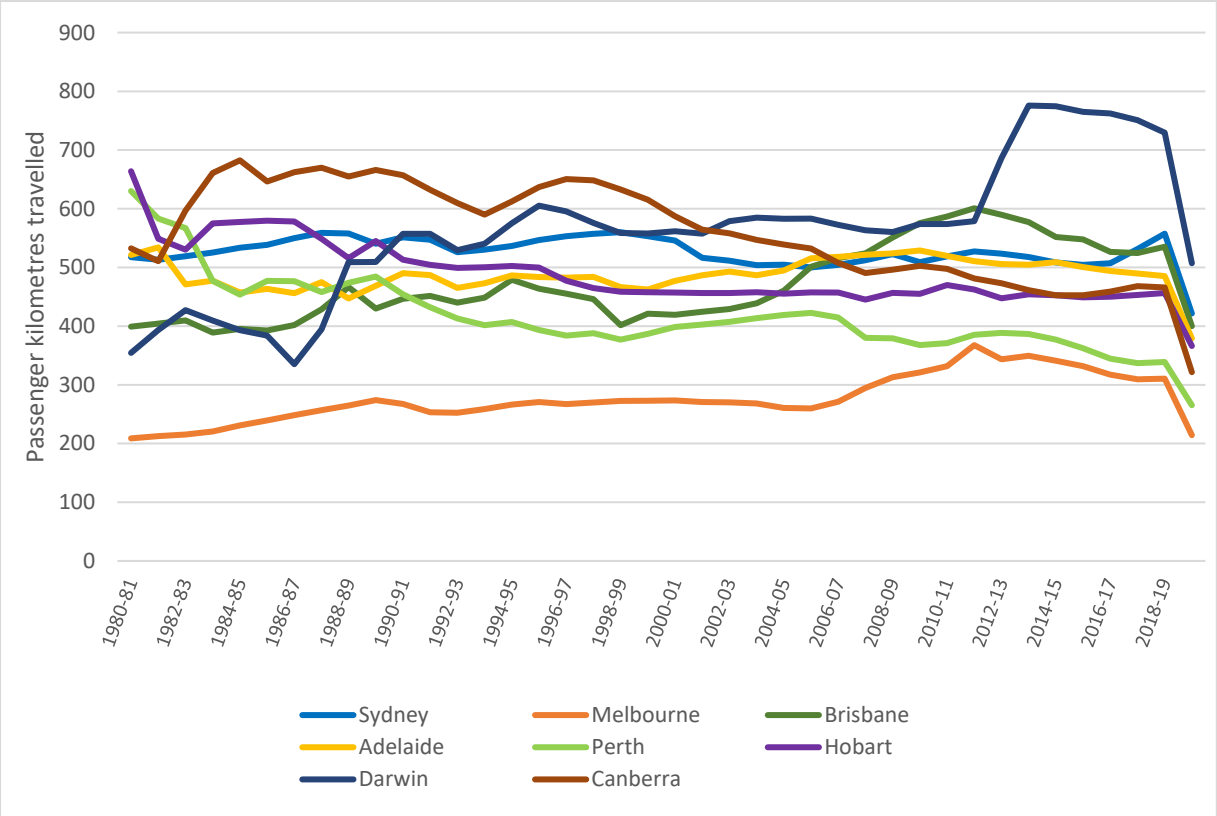
Only Darwin has seen a sharp increase in bus passenger kilometres per capita, indicating increasing bus patronage. Every other city–including Sydney, Brisbane and Hobart which have relatively high shares of bus use – has either recorded a plateau or decline in bus passenger kilometres travelled per capita since 1980.

Periods of sustained patronage growth seem to correlate to times when there is significant new expenditure, which often attracts media attention given to new infrastructure or specific marketing campaigns that accompany significant service level increases such as the introduction of SmartBus brand in Melbourne from 2007-2012.

With the onset of the COVID-19 pandemic, public transport has seen patronage declines in part because of an increase in working from home and commuter concerns about contracting COVID-19. This is reflected in the sharp dip across all cities in bus passenger kilometres travelled per capita in the 2019-2020 time period.

Delving into the general public's perceptions and approval of buses might provide some insight into the factors which have resulted in the sustained declining bus passenger kilometres travelled per capita since the 1980s.

Figure 2-3: Bus passenger kilometres travelled per capita, 1980-2020



Source: BITRE, 2020

2.2 International comparison

In several cities, such as in Curitiba and Singapore, bus networks attract a much higher mode share.

Curitiba, Brazil, a city of 1.9 million residents, is home to one of the world's first Bus Rapid Transit (BRT) systems. The metropolitan government's investment in bus network planning and integrated transport and land use development from the 1970s resulted in a substantial mode shift from the car to the bus, with approximately 75% of all commuters using the BRT system (Development Asia, 2016). This feat is even more impressive, considering that 4 in every 10 Curitiba residents owns a car (Lindau et al., 2010).

Curitiba's BRT system is lauded internationally as a best-practice BRT implementation, and it is clear from the BRT's dominant mode share that buses are the most competitive transport mode. Part of Curitiba's success lies in the BRT's role as the only rapid transit system in the city. This context differs from most of Australia's capital cities, which have rapid transit rail and/or tram systems.

Similar to much of Australia's trunk and feeder system, Singapore utilises Mass Rapid Transit (MRT) rail as its cross-town rapid transit system, relying on buses for supporting trunk and feeder services. Although buses in Singapore do not have the same performance parameters as the MRT (they are not as fast or frequent), buses enjoy a similar level of commuter satisfaction to the MRT (Public Transport Council (PTC) Singapore, 2021). Buses even have a higher mode share than the MRT in Singapore (Land Transport Authority (LTA), 2019), reflecting commuters' positive perceptions of the bus.

The experiences of cities internationally indicate that buses can be a competitive and valued component of a city's overall transport network. Investigating the *hows and whys* behind the reputation of buses in Australia is an important first step in determining how Australia's cities might be able to replicate the successful ways that community needs are met in cities such as Curitiba and Singapore.

3 Literature Review

A rigorous systematic literature search was utilised to identify relevant literature across multiple databases. The process undertaken is explained in the following section.

3.1 Systematic literature search

The primary objective of this search was to identify scholarly, peer-reviewed literature which investigated factors related to the perceptions, acceptance and use of buses.

The first step in the systematic literature search process involved defining the fundamental research question(s) which this study seeks to answer. A list of three research questions were formulated, closely aligned to the project objectives, and crafted in close collaboration with Roads Australia. For each research question, variations of key words were defined which were ultimately used as the search terms across four databases.

The search parameters are listed below:

Q1. What factors influence bus patronage?

Search terms: (public transport* OR mass transit OR trans* OR *bus OR bus OR buses) AND (patron* OR rider* OR user*)

Q2. What factors influence perceptions of buses?

Search terms: (public transport* OR mass transit OR trans* OR *bus OR bus OR buses) AND (attitude* OR perception* OR expectation* OR choice OR desire)

Q3. What factors influence the acceptance of buses?

Search terms: (public transport* OR mass transit OR trans* OR *bus OR bus OR buses) AND ((social AND licen*) OR acceptance OR approval OR trust)

Inputting the search terms into four major databases yielded over 250,000 papers (see Table 3-1 below).

Table 3-1: Databases included in systematic literature search

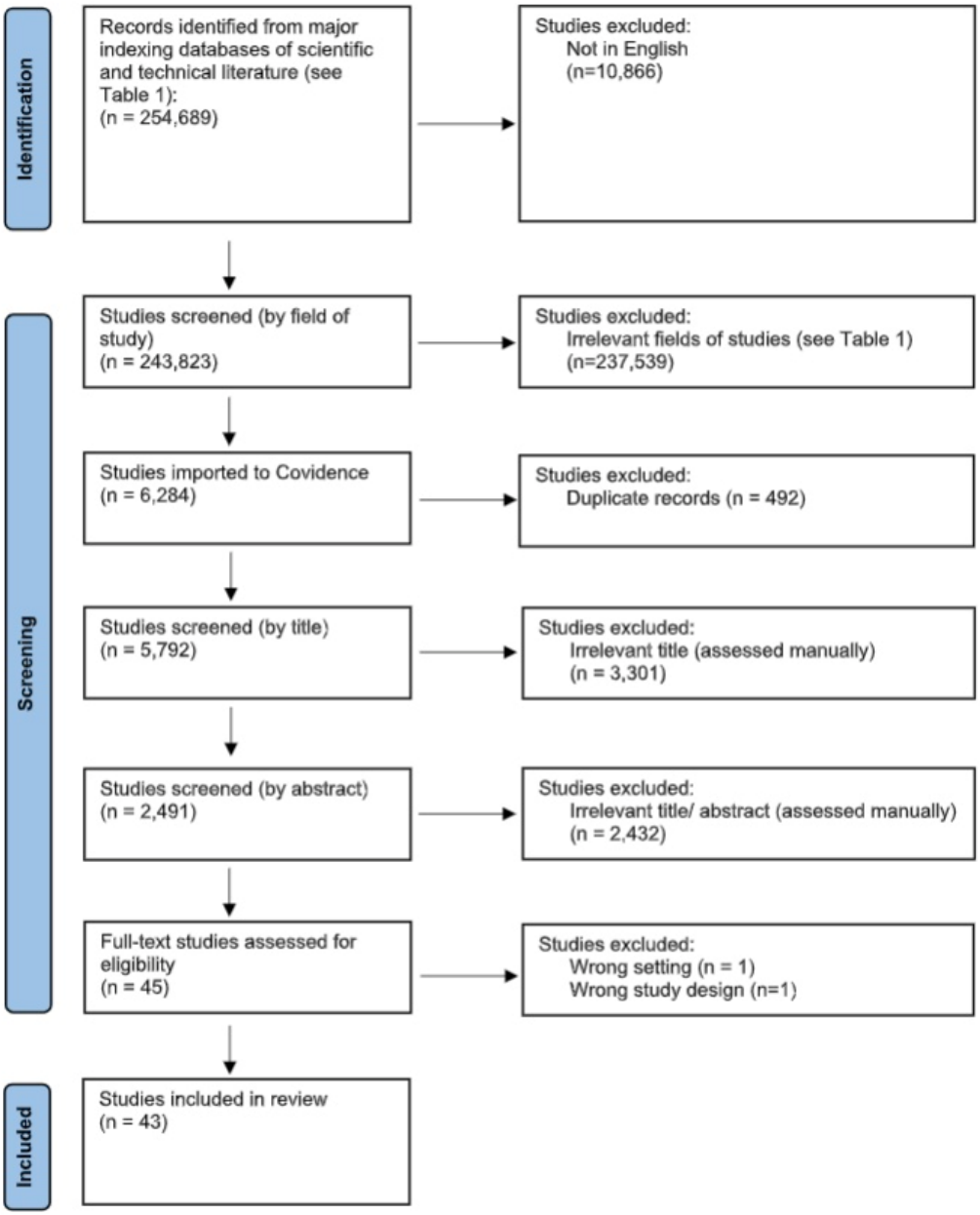
Database	Initial search input	English language results	Results (as imported to COVIDENCE)
Scopus	6,002	5,747	3,176
Compendex	114,230	109,599	1,449
Inspec + Geobase	134,457	128,477	1,659
Total Studies	**254,689**	**243,823**	**6,284**

* Permutations of the suffix/prefix (for example trans* = trans*it* or trans*port* or transport*ation*)

A total of 6,284 articles were imported into the online literature review software Covidence, where duplicates (the same article appearing across different databases) were deleted. This was followed by three rounds of screening to assess each article's relevance to this project (based on a first round review of the paper title followed by a screening of the abstract and then a review of the entire paper). This process is illustrated in Figure 3-1 below.

A total of 43 articles were considered relevant to the research questions.

Figure 3-1: PRISMA flow chart of the systematic literature search process



Source: Monash University with M&PC analysis

3.2 Synthesis of the literature

The literature reviewed spans a range of international contexts, but most studies converged on a common set of measures to understand peoples' perceptions, acceptance and use of buses. These measures were classified into two broad factors. These include:

- Objective factors; and
- Latent factors.

Studies which focused on objective measures of bus performance primarily employed methodologies which directly measured service levels and performance, for example bus frequency, to determine its relationship with patronage. Conversely, studies measuring service quality (perceptions & acceptance), which cannot be directly measured (ie. latent factors), primarily investigated commuters' attitudes of various quality features, such as comfort and safety.

Findings from the literature exploring objective factors and latent factors are synthesised below.

Objective Factors

In the literature, objective factors which influence bus patronage are those which directly measure service levels. These factors are more easily identifiable due to their mostly quantitative nature, lending itself well to statistical tests for correlation with bus patronage. Extensive research, focusing on the objective factors, has been undertaken - ensuring the adoption of this insight, from the literature into practice, will be integral to increasing the uptake of buses as a transport mode.

Service frequency is considered vital to increasing bus patronage levels. Devney (2011) assessed the quality of branded express bus services, including Melbourne's smart buses, and found that the popularity of a bus route may be related to its service frequency levels with more frequent services associated with greater patronage. A direct correlation between bus patronage and frequency was also found in Berrebi et al. (2021) assessment of bus ridership in four metropolitan areas in the USA. However, Berrebi et al. (2021) further qualified that each provision of an additional bus service would not necessarily improve the productivity of a bus route. These findings illustrate that additional service frequency may itself induce additional demand for bus use.

Service punctuality is also associated with increased patronage levels. Han et al. (2018) defines service punctuality as the amount of delay in arrival time, operation speed of the bus and bus stop waiting time. Clayton et al. (2017) found that improving these factors can improve perceptions of buses, facilitating increases in bus ridership. Diab & El-Geneidy (2012) go further to suggest that investments to improve reliability, such as bus-only lanes

and signal pre-emption systems, are valuable in improving service flow and reducing service delay effects. This study went on to further state that faster and more reliable services successfully attract more passengers.

Service directness and travel time is another important factor influencing bus service patronage. de Õna et al. (2013) noted service directness played an important role in fostering an attractive bus service. Direct services can reduce travel times – ensuring the time taken for a given journey is more comparable with the journey times by private vehicle. Jansson (2003) identified straightening out routes can offer travel time savings in the order of 30%. Although Ljungberg (2005) argues the benefits and costs of straightening out routes impact different demographic groups differently. Chica-Olmo et al. (2018) also identified bus stop density played a role in how attractive a bus service is. While accessibility improvements are noted for services with greater stop densities, increases in in-vehicle travel time make such services less attractive.

Accessibility to, from and between services had mixed effects on ridership. Clayton et al. (2017) found that frequent and direct services were preferable, and attracted higher patronage levels, compared to services that were closer to a users' place of origin or destination. Anwar & Yang (2017) and Chakrabarti & Giuliano (2015) also found that bus services that are faster, more direct and make fewer stops along the way have greater patronage levels.

However, Hess' (2012) study on the relationship between older adults use of public transport and proximity to a bus stop found that older adults were more likely to use buses if they were within a comfortable walking distance.

Badia et al.'s (2017) study on the effect of changes in Barcelona's bus network saw increased ridership from improving accessibility between services by co-locating bus stops, allowing for easy transfer between lines by shortening the walking distance between them. Badia et al. (2017) also clarified that the benefits generated by improved bus stop accessibility rely on buses running frequently. It is clear that accessibility alone does not improve bus ridership, although it does play a vital role in improving connectivity and access for all user groups, particularly those who may not be able to walk as far for a public transport connection.

Legibility of the network or the ease of which the network can be understood by users and potential users plays a role in how attractive a bus service is (Daniels & Mulley, 2012). Scott et al. (2016) identify the importance that knowledge of a public transport system has on the choice to use public transport. This suggests simple, clear and easy-to-understand public communication tools are needed to promote bus service awareness. Bordagaray et al. (2014) and de Õna et al. (2013) note the positive effect service information availability has, although this effect is smaller than other variables like frequency, reliability and journey speed. Devney (2011) identified the importance of branding, distinct colour

schemes, logos, signage and information display boards in improving awareness and attractiveness of service.

Latent Factors

Many factors influencing the perception and acceptance of buses were identified in shortlisted research papers. These latent factors were investigated by exploring attitudes and perceptions of bus users in relation to various bus service attributes. These factors are important because attitudes and perceptions play an important role in whether a person is likely to use bus services (Beirao & Sarsfield Cabral, 2006). Investigations into bus and non-bus users' perceptions are therefore required to facilitate the improvement of bus services in Australian cities.

Perceptions on the provision of frequent and wide spanning services were identified as key service qualities that bus users value. Devney (2011), van Lierop et al. (2018) and Islam et al. (2016) recognised bus frequency levels as the most important factor in improving bus service satisfaction. Although these studies involved analyses of bus services in cities of varying levels of socio-economic development, both studies linked improved satisfaction resulting from more frequent services. Islam et al. (2016) and Güner (2018) also place service span as a particularly important service trait that bus users value, although in both studies it has less of an effect on bus service satisfaction compared to service frequency.

Perceptions of punctuality was another service-related feature that had a strong influence on bus service satisfaction levels. Islam et al. (2016) and Clayton et al. (2017) identified that reliable and on-time services are defining features of a high quality, highly valued bus service. The punctuality of services was further explored by Clayton et al. (2017) and found to be positively correlated with user comfort and general perceptions of a city's bus network.

Although frequency was rated higher in de Õna's et al. (2013) study, punctuality had strong influences on perceived service quality. The provision of punctual bus services is even more critical for time-sensitive users, travelling mainly for work and education (Tavares et al., 2021). Infrastructure improvements including dedicated busways and intersection priority measures improve punctuality from an objective sense but also results in improved satisfaction and fosters more positive perceptions of bus services (Chakrabarti & Giuliano, 2015; Tavares et al., 2021).

Bus users' s sense of comfort was found to be an important quality affecting the perception of bus services. Islam et al. (2016), Carreira et al. (2014) and van Lierop et al. (2018) identified factors including availability of a seat, ride quality, crowding and overall commuting experience as highly influential factors influencing satisfaction. Bordagaray et al. (2014) and Han et al. (2018) identified a positive correlation between individuals'

comfort level and willingness to travel by bus. Higher levels of comfort can also improve users' perception of operational characteristics like bus speed and journey time (Tavares et al., 2021). Tao et al. (2016) and Tavares et al. (2021) identified protection from the surrounding environment, including weather, as important in improving users' perception of bus service quality. Tavares et al. (2021) further stated that the importance of comfort is more valued by older adults who are more sensitive to negative environmental factors.

These negative factors can be mitigated by installing weather protection features, seatings and ensuring cleanliness at bus stops (Douglas, 2015). It is important to understand that although consumers place importance on comfort, other factors like reliability and frequency have stronger influences on the overall bus service quality (dell'Olio et al., 2010; Han et al., 2018).

The sense of security, both in terms of road safety and personal security, was found to influence individual's perception of bus service quality (Scott et al., 2016). Shaaban & Kim (2016) and Han et al. (2018) identified the importance of maintaining a high safety levels, as the likelihood of bus use is only high when users feel completely safe. Guiver (2007) and Casas & Delmelle (2017) support this by acknowledging the impact negative experiences (either experienced themselves or heard from others) can have on the perception of buses. This anxiety is especially felt by females, who in Islam et al.'s (2016) study of important bus service qualities, rated the safety from harassment as an important bus quality attribute.

General attitudes toward public transport can influence the perception of bus services. Van Lierop & El-Geneidy (2018) and van Lierop et al. (2018) found that positive attitudes of public transport led to higher customer satisfaction levels and an increased likelihood of public transport use. Heath & Gifford (2002) list potential variables that might influence the perception of buses, including the social attitudes individuals and the people they associate with might have. It was found that perceived belief systems of friends influenced whether an individual was likely to use bus services, where individuals who felt that their friends hold approving views on buses were more likely to use bus services.

Van Lierop et al. (2018) found that the level of emotional attachment with public transport can improve positive perceptions of public transport. Heath & Gifford (2002) also uncovered the people who believed that using public transport and reducing car dependence would improve environmental outcomes, perceived bus services in a more positive light and used bus services more often. Munim & Noor (2020) also saw a connection between perceptions of a bus's environmental performance and an increase in bus user satisfaction levels.

Heath & Gifford (2002) identified potential bias amongst non-bus-users, who had negative perceptions of the broader benefits of bus services. This has been observed in practice. For example, bus lanes along Stud Road were removed after community backlash, despite wider transport network benefits[4].

[4] https://www.alantudge.com.au/speeches/stud-road-bus-lane/

4 Theoretical Framework and Methodological Approach

A robust study methodology was developed to address the two research objectives (*growing bus patronage* and *measuring the social licence to operate*).

In collaboration with Roads Australia, Monash University and IPSOS, a questionnaire was developed to investigate the research objectives. The questionnaire was worded in such a way that it was applicable for both bus users and non-users. Key avenues of investigation in the questionnaire included:

- A screening component to ensure a representative sample[5] was selected to complete the detailed survey;
- An importance-performance component for bus users and non-users to note the perceived performance and importance of various service level attributes; and
- Questions to measure and distinguish respondents' level of social licence towards bus operations. The questions were formulated from a well-defined theoretical framework used to measure the social licence to operate.

In this section of the report, a theoretical framework outlining the concept of *Social licence to operate* is detailed. Following this, the research method is outlined including the questionnaire development, sampling design and survey data analysis.

4.1 Theoretical Framework: Social Licence to Operate

The term "social licence" is attributed to a mining executive, who used it to highlight that social importance is integral to the mining sector being able to continue functioning (Boutilier, 2017). While social licence is often used colloquially to refer to ongoing public acceptance of a particular activity/industry/company, it has a particular conceptual meaning in the literature.

The social licence to operate (SLO) framework prompts researchers to engage with affected stakeholders and communities to gauge general attitudes and levels of acceptance, in order to determine if a company has the social licence to continue their operations (Howard 2020). Thomson and Boutilier (2011) claim that a company with a greater social licence to operate tends to face lower levels of community opposition and risk to company operations.

The SLO framework has primarily been applied by researchers to understand the social acceptance of extractive industry activities (Boutilier, 2017). Although the SLO framework

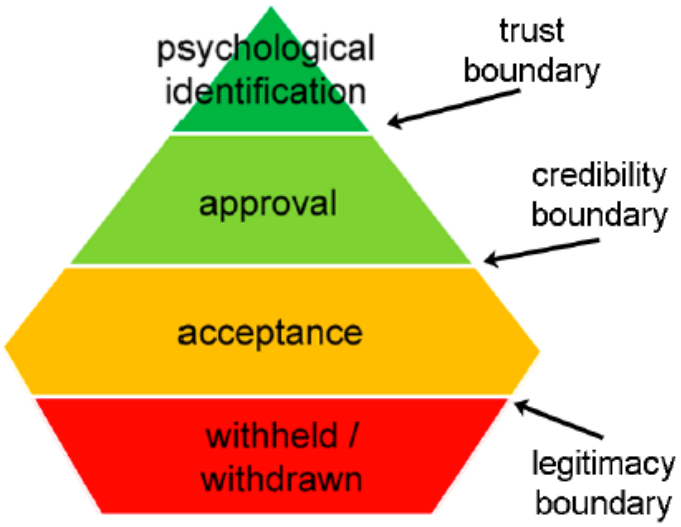
[5] Representative in terms of the gender split, income and age range for each of the three geographic regions (metropolitan Melbourne, metropolitan Sydney and South East Queensland)

has increasingly been applied to non-mining industries by government and non-government organisations to evaluate the social licence for their projects (Boutilier, 2017).

In Australia, the SLO framework has been used to assess the level of community support for major transport infrastructure projects in New South Wales (Australian Government Department of Industry, Innovation and Science, 2018). The rationale for undertaking an SLO study arose because of the effect that community opposition can have on project costs and delays.

As part of this study, the SLO framework outlined by Thomson and Boutilier (2011) is utilised. Thomson and Boutilier (2011) illustrate the SLO framework as a pyramid reflecting varying levels of social acceptance as illustrated in Figure 4-1 below.

Figure 4-1: Pyramid SLO model – four levels



Source: Thomson and Boutilier (2011)

The lowest level, *withheld/withdrawn*, suggests that the activity/industry/company completely lacks public legitimacy.

Acceptance, the level above, occurs when a project is deemed legitimate by stakeholders, but operations have little credibility.

Once a project gains credibility, public sentiment shifts to *approval*.

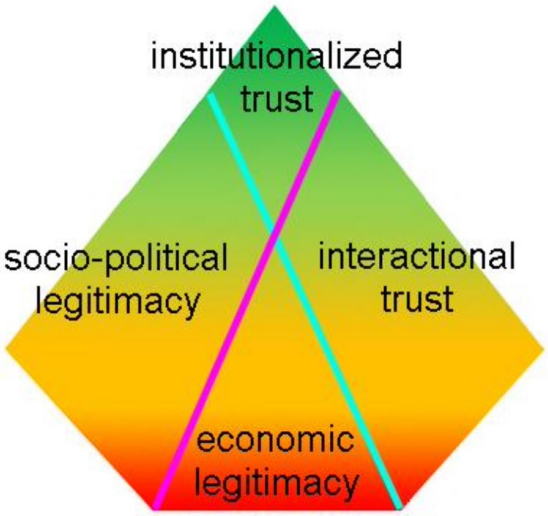
What separates this level from the highest level of *psychological identification* is whether the project had gained complete trust from stakeholders. If a project reaches this level, the operations and intentions of the company is believed to be genuine and important, and the level of community opposition is likely to be very low.

In order to classify an individual into one of the four SLO levels, Thomson and Boutilier (2011) proposed measuring four constituent factors (see Figure 4-2 below). These include:

- Economic legitimacy - the perception that the activity/industry/company offers a benefit to the perceiver;
- Socio-political legitimacy - the perception that the activity/industry/company contributes to the well-being of the region, respects the local way of life, meets expectations about its role in society, and acts according to stakeholders' views of fairness;
- Interactional trust - the perception that the activity/industry/company and its management listens, responds, keeps promises, and exhibits reciprocity in its interactions; and
- Institutionalised trust - the perception that relations between the stakeholders' institutions and the activity/industry/company are based on an enduring regard for each other's interests.

To measure social licence, the questionnaire incorporated specific questions to measure each of the four constituent factors.

Figure 4-2: Pyramid SLO model – constituent factors

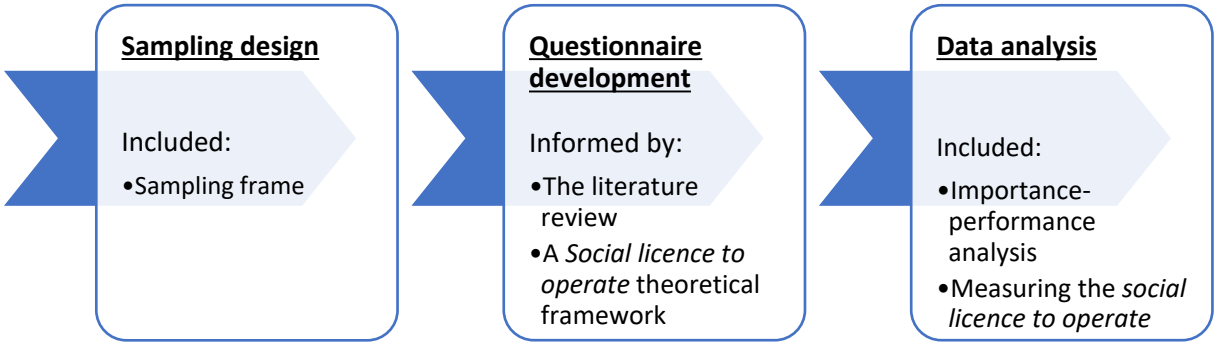


Source: Thomson and Boutilier (2011)

4.2 Methodological Approach

The research method is outlined in Figure 4-3. Key components of the research method involved the sampling design, questionnaire development and data analysis.

Figure 4-3: Research method



Sampling design

The sampling design involved specifying the *target population*, outlining the *sampling frame*, selecting a *sampling* process, and defining the desired *sample*. Each of these components are outlined below.

Target population (population of interest):

- Bus users and non-users living in metropolitan Melbourne, metropolitan Sydney and South-East Queensland.

Sampling frame (accessible target population for the study):

- IPSOS registered survey respondents living in the cities of interest.

Sampling (method to draw sample from the frame):

- Bus users and non-users[5]; and
- As far as possible, to be representative of age, income and gender.

Sample (participants selected for the study):

- A minimum of 400 bus users and 400 non-users for each geographic region.

Quota allocation specifications were used to ensure the survey sample consisted of bus users and non-users that were, as much as possible, representative of the age, income and gender distribution in each geographic region (see Appendix A for quota allocation).

Questionnaire development

The development of the questionnaire was informed by the literature review and the social licence to operate framework. The broad structure of the questionnaire is outlined in

[6] Bus users were classified as respondents who use a bus at least once a year (pre-COVID-19);
Non-users were classified as those who either had never used a bus or use it less than once a year on average (pre-COVID-19)

Table 4-1 overleaf. The full questionnaire can be found in Appendix B. Qualtrics, an online surveying tool, was used to administer the survey.

A *screening component* of the questionnaire was used to filter and select participants for the *detailed survey*. Selection was based on the sampling design detailed above. The screening component of the questionnaire measured public transport use, attitudes towards buses and socio-demographic attributes.

The *detailed survey* measured the SLO constituent factors including economic legitimacy, socio-political legitimacy, interactional trust and institutionalised trust. Importance-performance perceptions of various bus service attributes were also measured.

Table 4-1: Questionnaire structure

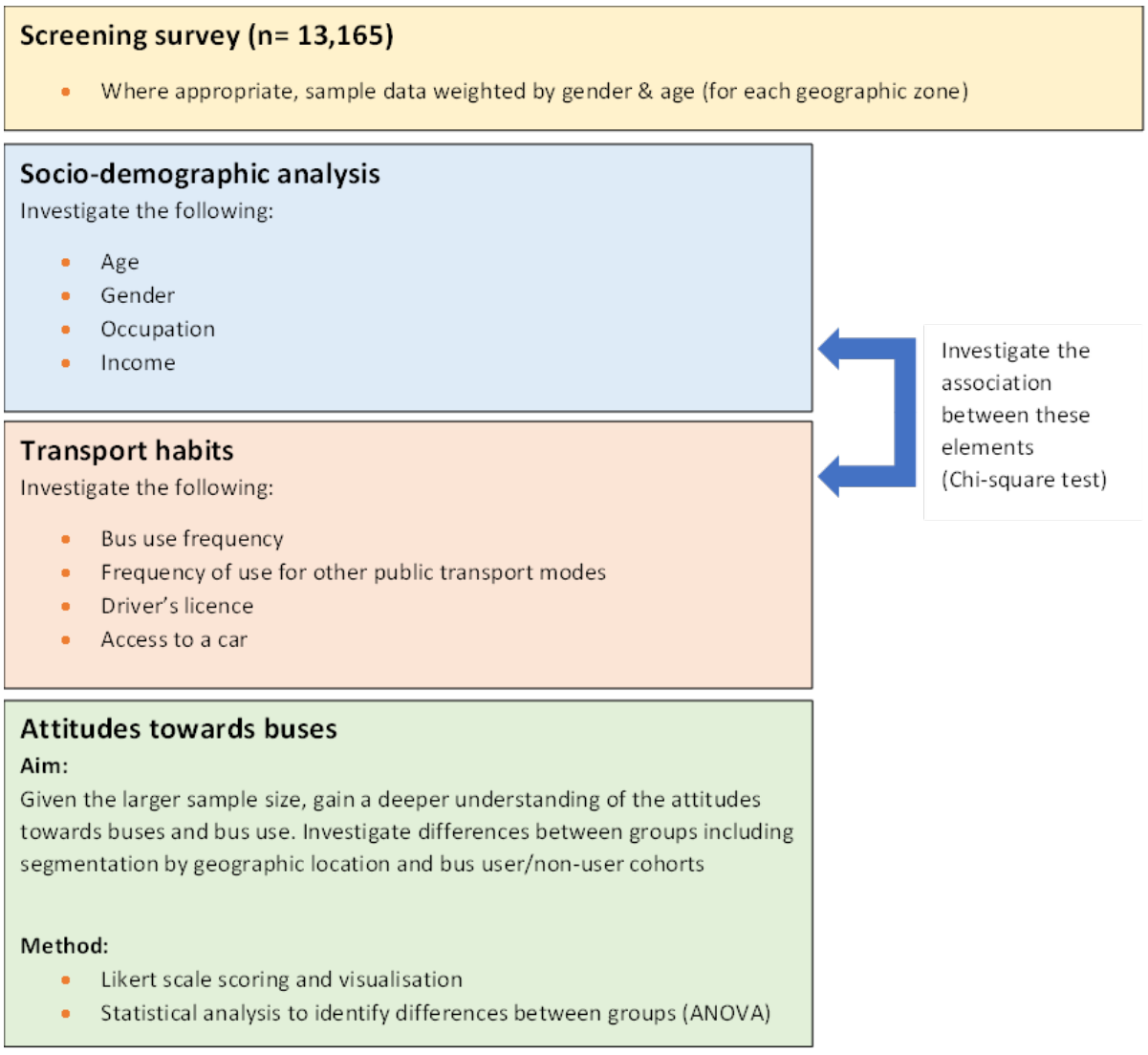
Questionnaire component	Theme		Sample questions
Screening component	Public transport use		Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus?
	Attitudes towards buses		On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • Buses help to reduce congestion; and • Buses do not improve social inclusion.
	Socio-demographic attributes		What is your gender? Do you have a driver's licence?
Detailed survey	SLO constituent factors	Economic legitimacy	The following statements concern buses in your area and how they affect YOU. On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • Buses improve my access to jobs and services; and • Buses help me be more independent.
		Socio-political legitimacy	The following statements are about the role of buses in your community. On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • Buses are bad for the environment; and • Buses are good for jobs and employment in my community.
		Interactional trust	The following statements are about bus drivers. On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • Bus drivers are friendly; and • Buses drivers are not helpful.
		Institutionalised trust	The following statements are about the public transport authority that manages bus companies and services in your area, such as PTV, TransLink or TfNSW. On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • The public transport authority responds to community concerns; and • The public transport authority is slow to act.
	Importance-performance perceptions		The following statements are about the performance of buses in your area. On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements? • I usually do not have to wait long for a bus; and • Buses often run late.

Analysis overview

The approach taken to analyse the survey data is outlined below. Given the distinct nature of the data collected, two separate analysis approaches were taken to analyse the *screening component* and the *detailed survey*.

These two approaches are summarised below.

Screening component analysis approach



Detailed survey analysis approach

Detailed survey analysis (n= 2,420)

- Where appropriate, sample data to be weighted by gender & age (for each geographic zone)
- Socio-demographic analysis performed for this sample

Social License to Operate

(Application of SLO theoretical framework)

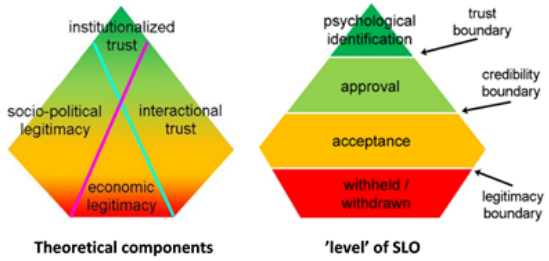
On a 7 point Likert scale, the following were measured:

- Economic legitimacy
- Socio-political legitimacy
- Interactional trust
- Institutionalised trust

Aim: Applying a theoretical framework, gain a deeper understanding of the community's 'level' of social acceptance for bus service operations and investment

Process:
For different market segments (by geographic location & user/non-user cohorts):

- Understand the 'level' of social licence to operate (see below image – right) by measuring and scoring# the theoretical components of the framework (see below image – left)



Theoretical components **'level' of SLO**

Method:

- Likert scale scoring & visualisation
- Segmentation (into 'levels' of SLO)
- Statistical analysis to identify differences between groups (Chi-square test)

 # Noting the negatively worded elements will have a 'reversed' score

Performance-Importance Analysis

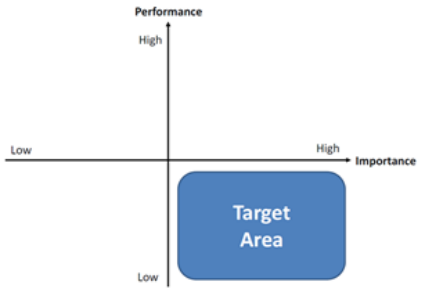
On a 7 point Likert scale, the following were measured:

- The (perceived) performance of buses in their area
- The (perceived) importance of specific service attributes

Aim: Understand how to increase bus use by looking at the performance and importance of specific bus service attributes

Process:
For different market segments (by geographic location & user/non-user status, gender & age):

- Explore the *performance* of service attributes
- Explore the *importance* of service attributes
- Map different attributes on the performance/importance axis
- Drill down on attributes in the target area (outlined below)



Method:

- Likert scale scoring and visualisation
- Statistical analysis to identify differences between groups (ANOVA)

Integrated analysis

Undertake a performance/importance analysis for the four SLO segments (SLO 'levels')

Likert scale scoring

A 7-point Likert scale was used to measure the *attitudes towards buses*, *the social licence to operate* and the *performance-importance analysis* theme. For these three sections, a *strongly agree* to *strongly disagree* scale was used. When measuring the importance of specific service attributes, the scale used ranged from *extremely unimportant* to *extremely important*.

Scoring of the Likert scale responses included assigning an integer of -3 for strongly disagree/extremely unimportant to +3 for strongly agree/extremely important (see Table 4-2). A score of 0 would indicate a *neither agree nor disagree/neither important nor unimportant*. Where the survey measured a negative trait (i.e. Buses often run late), the scoring was inversed.

Table 4-2: Likert scale scoring

Score	-3	-2	-1	0	1	2	3
Likert scale measure	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	Extremely unimportant	Unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Important	Strongly important

Segmentation into a SLO 'level'

Thomson and Boutilier (2011) proposed measuring four constituent factors (economic legitimacy, socio-political legitimacy, interactional trust and institutionalised trust) to classify an individual into one of the four SLO levels (withheld, acceptance, approval and psychological identification).

The process of segmenting participants into a SLO 'level' involved calculating the aggregated, mean Likert scale score for each of the four constituent factors. Subsequently, the following ordered process was applied:

1. The average Likert scale score for *economic legitimacy* was assessed. If the average score is less than zero (indicating some level of disagreement) the participant was assigned to the *withheld/withdrawn* SLO 'level'

2. If a participant jumps this hurdle, the average score for *institutionalised trust* is assessed. An average score greater than or equal to two (indicating agreement or strong agreement) would result in the participant being assigned into the *psychological identification* SLO 'level'

3. If a participant is still not allocated into a SLO 'level', the average scores for both *socio-political legitimacy* and *interactional trust* are summed. A score greater than three (indicating, at the least, a combination of *agree* and beyond *somewhat agree*) would result in the participant being assigned into the *approval* SLO 'level'. An aggregate average score less than or equal to three would result in the participant being allocated into the *acceptance* SLO 'level'.

Statistical analysis

The survey data was analysed using various statistical analysis approaches. This enabled us to investigate whether statistically significant relationships or differences across groups exist. The post hoc analysis was performed to identify the specific groups that has significant differences at 95% confidence interval. The statistical analysis involved:

- Chi-square test; and
- Analysis of Variance (ANOVA)

The statistical approach adopted primarily depended on the nature of the data which was being analysed.

Where the variables being compared were categorical in nature (for example gender and bus use frequency), a Pearson's chi-squared test was used to reveal the relationship between the variables.

Where a dependent variable contains continuous data (for example the Likert Scale mean scores) a one-way ANOVA was used for the hypothesis testing.

5 Survey Findings

This chapter outlines the key findings from the survey data analysis. The first section focuses on the insights from the screening survey (n=13,537), and the second section presents the analysis from the detailed survey (n=2,420).

5.1 Screening survey

A total of 13,537 people responded to the preliminary screening survey. This large sample size offers unprecedented insights into the travel behaviours, attitudes and perceptions of those living in Australia's east coast metropolitan cities.

The analysis undertaken for the screening survey data included:

- Demographic analysis;
- Bus use frequency analysis; and
- Attitudes towards buses.

Demographic analysis

The socio-demographic variables included in the survey were age, gender, income, occupation and location. The demographic composition of screening survey respondents is shown in Table 5-1 below. The age, gender and income variables were weighted to reduce the sample bias for disproportionate responses. Other variables were not weighted because data on their population distribution is inconclusive.

There was a similar number of respondents in Melbourne (n=4,789) and Sydney (n=4,878), but a smaller number of respondents from SEQ (n=3,870). Most respondents earn $400 or more per week, and 66% of respondents are employed.

Around 8% of screening survey respondents did not own or have access to a car, aligning with Census figures on household car ownership. This indicates the sample relevance and highlights that while car ownership is prevalent in Australia, one in every ten households do not own a car – these households are heavily reliant on public transport such as bus services.

Bus usage varied wildly, with 'never' being the most common response (23%). 32% of respondents use the bus weekly, while slightly over 50% of respondents use the bus infrequently, between once a month to less than once a year. In the context of high car ownership/access rates amongst respondents, private car travel is likely the predominant travel mode amongst those surveyed.

Table 5-1: Demographic and travel related variables

Variables	Categories	Percentages (Sample size)
Age	18 to 34	Weighted-34.51% (4,629). Un-weighted 34.58% (4,681)
	35 to 54	Weighted-30.38% (4,076). Un-weighted 30.15% (4,082)
	55 or over	Weighted-35.11% (4,708). Un-weighted 35.27% (4,774)
Gender	Female	Weighted-52.32% (6,938). Un-weighted 65.53% (8,841)
	Male	Weighted-47.68% (6,323). Un-weighted 34.47% (4,651)
Income	$1000 or more a week ($52,000 or more per annum)	Weighted-38.63% (5,192). Un-weighted 38.26% (5,179)
	$400 to $999 a week ($20,800 to $51,999 per annum)	Weighted-37.62% (5,056). Un-weighted 37.73% (5,107)
	Less than $400 a week (up to $20,799 per annum)	Weighted-23.74% (3,191). Un-weighted 24.02% (3,251)
Location	Melbourne	35.38%(4,789)
	Southeast Queensland (SEQ)	28.59%(3,870)
	Sydney	36.03%(4,878)
Occupation	Employed Full Time	43.8% (5,929)
	Retired	16.35% (2,213)
	Employed Part Time	14.72%(1,992)
	Employed Casual	7.52%(1,018)
	Home Duties/Home Maker/Child Care	5.68%(769)
	Student	4.88%(661)
	Unemployed	3.12%(423)
	Other	1.96%(266)
	Volunteer in an unpaid role	1.1%(149)
	Looking after an ill or impaired person	0.86%(117)
Access to Car	I do not own a car, but I have access to one	11.01%(1,491)
	I do NOT own OR have access to a car	8.37%(1,133)
	I own a car	80.62%(1,0913)
Bus usage frequency	Never	23.23% (3,144)
	Less than once a year	12.81% (1,734)
	About once a year	7.56% (1,024)
	About once every six months	12.17% (1,648)
	About once every month	12.2% (1,651)
	One day a week	7.14%(966)
	Two days a week	7.56%(1,024)
	At least three days a week	17.33%(2,346)

Bus use frequency analysis

An interesting avenue of research and exploration undertaken in this study involved investigating the correlations of various socio-demographic variables with respondents' bus use classification (user/non-user) and frequency of bus use.

Chi-Square tests were conducted to determine if statistically significant relationships exist between bus use frequency and age, gender, geographic location and income level. Table 5-2 summarises the Chi-square test results. Statistically significant relationships were found between bus use frequency and age, gender, income, location and occupation.

Table 5-2: Frequency of bus use chi-squared analysis

	Age (weighted)	Gender (weighted)	Income (weighted)	Location	Occupation
Bus use frequency	Significant relationship exists (p<.001).	Significant relationship exists (p<.001).	Significant relationship exists (p<.001).	Significant relationship exists (p<.001).	Significant relationship exists (p<.001).

Bus use frequently differed significantly amongst the three age groups. The youngest cohort aged between 18 to 34 years were more likely to use the bus more frequently than people aged 35 and over. In fact, those aged 18 to 34 years were twice as likely to use the bus weekly than those aged 35 and over. Approximately half of all respondents who either never use a bus or use it less than once a year were aged 55 years and over.

Men were found to use the bus more frequently than women. For example, approximately half of the female respondents take the bus once every six months or less compared to less than one third of male respondents. Similarly, a lower percentage of women (15%) use the bus at least weekly compared to men (18%).

Bus use frequency differed across income groups. Higher income groups tend to use the bus more often, specifically:

- People earning $1,000 or more weekly tend to travel more frequently by bus than those earning less; and
- Similarly, the lowest income cohort (those earning less than $400 a week) included more non-users (i.e. those who never use the bus or use it less than once a year) than the higher income cohorts (those earning over $1,000 a week).

Respondents who work full-time also use the bus more frequently than other cohorts. In fact, they comprise approximately half of all respondents who use the bus at least weekly.

Respondents working part-time or casually, as well as retirees, were more likely to use the bus more frequently than respondents who are unemployed or people working from home. One factor influencing this finding might be that the survey sample has a high proportion of full-time workers.

Attitudes towards buses

The screening survey included questions about respondents' attitudes and perceptions of buses. A one-way ANOVA test was performed to determine if socio-demographic

characteristics were significantly linked to differences in attitudes towards buses. A post-hoc test was used to explore these differences in detail. Table 5-3 summarises the ANOVA results.

Table 5-3: Statistical differences between the groups using ANOVA

	Age	Gender	Income	Location	User/Non-User
Buses help to reduce road congestion	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)
Buses do not improve social inclusion	There is no significant difference exist between groups (p=.976)	Significant difference exists between the groups (P<.001)	There is no significant difference exist between groups (p=.077)	There is no significant difference exist between groups (p=.32)	Significant difference exists between the groups (P<.001)
Buses do not contribute to social well-being in my city	There is no significant difference exist between groups (p=.229)	Significant difference exists between the groups (P<.001)	There is no significant difference exist between groups (p=.454)	There is no significant difference exist between groups (p=.33)	Significant difference exists between the groups (P<.001)
Buses help me to access opportunities, such as jobs and education	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	There is no significant difference exist between groups (p=.101)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)
Overall, buses are worthwhile	There is no significant difference exist between groups (p=.102)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)	Significant difference exists between the groups (P<.001)

The aggregated mean scores for each statement are outlined from highest to lowest (from greatest level of agreement to the least):

- 'Overall, buses are worthwhile' (mean=1.60);
- 'Buses help to reduce road congestion' (mean=1.05);
- 'Buses help me to access opportunities, such as jobs and education' (mean=0.60);
- 'Buses do not improve social inclusion' (mean=-0.27); and
- 'Buses do not contribute to social well-being in my city (mean=-0.50).

This indicates that while respondents generally believe that buses have a positive role in their cities, they are less likely to believe that buses have a social equity function.

Gender and bus use were found to result in statistically significant differences in responses to all five of the above statements. Men were more likely to believe that buses contribute to reducing congestion, while women were more likely to believe that buses play a social equity role including improving access to opportunities and improving social well-being and

inclusion. Bus users were significantly more likely to believe that buses play a positive role, scoring all the statements more highly than non-users.

Age significantly influenced responses to the statements on congestion reduction and access to opportunities. Respondents aged 35 and over were more likely to agree that buses help to reduce congestion while respondents aged 18 to 34 were more likely to agree that buses improve access to opportunities.

Income significantly influenced responses to statements on congestion reduction and the worthwhileness of buses. Higher income groups were more likely to believe that buses are worthwhile and help to reduce traffic congestion.

Location significantly influenced responses to the statements on congestion reduction, access to opportunities, and the worthwhileness of buses. Respondents from Sydney and SEQ were more likely to believe that buses contribute to reducing congestion, improve access to opportunities, and are overall worthwhile. It is possible that negative attitudes towards buses are contributing to a lower bus mode share in Melbourne compared to Sydney and SEQ.

5.2 Detailed Survey

A total of 2,420 respondents were selected for the second stage of the survey based on the sampling criteria.

In total, 1,555 men and 860 women participated in the detailed survey. Due to the disproportionate difference in the number of male and female respondents, responses were weighted by gender. Responses were also weighted by age and income to emulate population distributions. There were a similar number of respondents from Melbourne (n=801), Sydney (n=812) and SEQ (807). Table 5-4 provides a summary of the demographic composition of the respondents selected for the detailed survey.

Table 5-4: Demographics of the respondents across three location

	Age (weighted)	Gender (weighted)	Income (weighted)
Melbourne	18 to 34=271(33.8%), 35 to 54=284(35.4%), 55 or over=247(30.8%)	Female=405(51.07%), Male=388(48.93%)	$1000 or more a week=286(35.8%), $400 to $999 a week=271(34%), Less than $400 a week=241(30.2%)
Southeast Queensland	18 to 34=265(33.1%), 35 to 54=288(36%), 55 or over=247(30.9%),	Female=404(50.88%), Male=390(49.12%)	$1000 or more a week=297(37.1%), $400 to $999 a week=287(35.9%), Less than $400 a week=216(27%)
Sydney	18 to 34=265(33.2%), 35 to 54=284(35.5%), 55 or over=250(31.3%)	Female=408(50.75%), Male=396(49.25%)	$1000 or more a week=312(38.9%), $400 to $999 a week=261(32.5%), Less than $400 a week=229(28.6%)

The analysis undertaken for the detailed survey data included:

- Bus SLO analysis; and
- Importance/performance analysis (IPA).

Bus SLO analysis

Using the process outlined in Section 4, respondents were assigned to one of the four SLO levels. Figure 5-1 shows that most respondents (61%) are in the 'acceptance' category and very few respondents (6%) are in the 'psychological identification' category.

Figure 5-1: Percentage of respondents in each SLO level

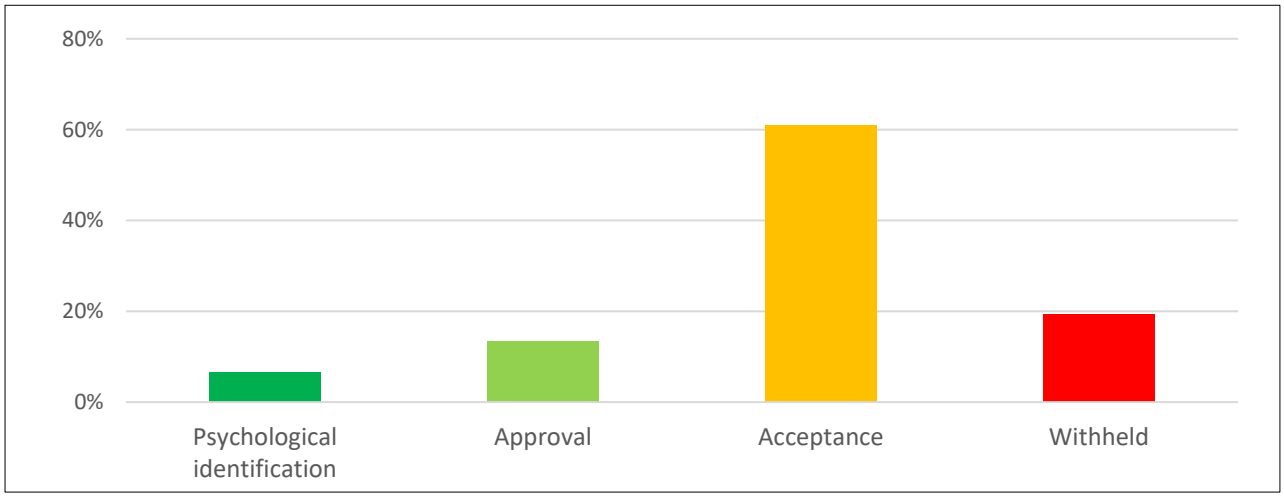
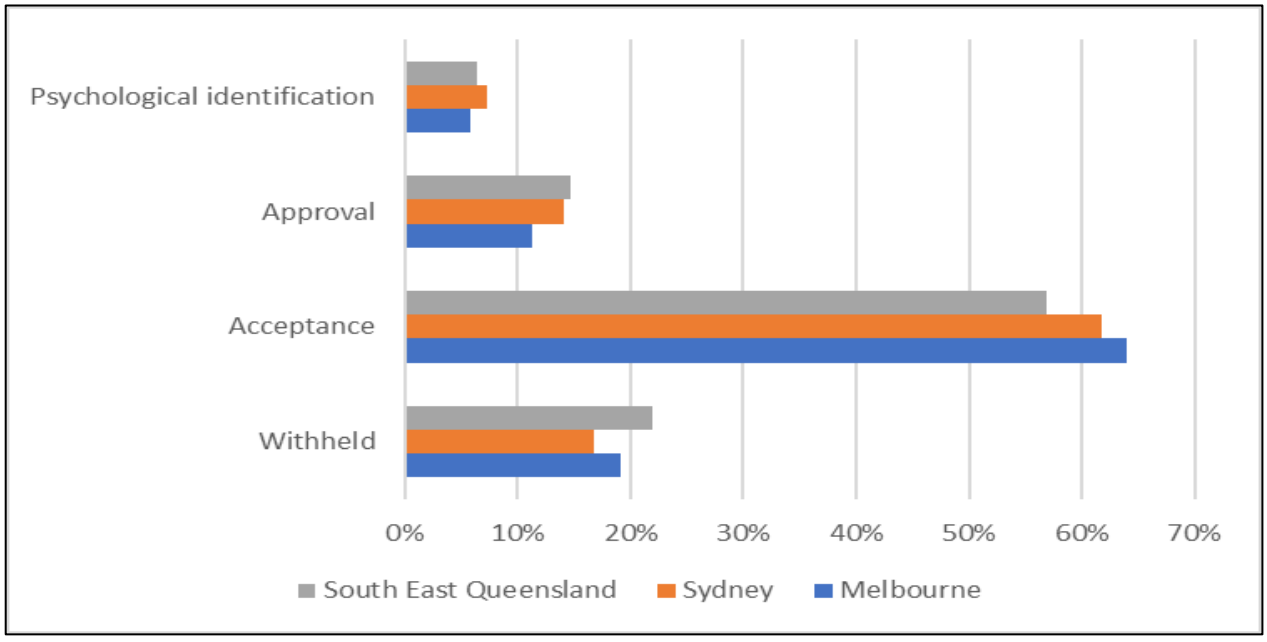


Figure 5-2 shows the proportion of respondents in each SLO category by geographic region.

Figure 5-2: SLO distribution by geographic region



SEQ had the highest proportion of respondents in the 'withheld' category, but also had the highest proportion of respondents in the 'approval' category, suggesting a significant deviation in approval levels for the bus in SEQ.

Melbourne had the lowest proportion of respondents in the 'psychological identification' and 'approval' categories, and the highest proportion of respondents in the 'acceptance' category, suggesting that there is generally weak social approval for buses in Melbourne.

Sydney had a comparatively high proportion of respondents in the 'psychological identification' and 'approval' categories, and the lowest proportion of respondents in the 'withheld' category, suggesting that approval levels for buses are generally higher in Sydney compared to SEQ and Melbourne.

Table 5-5 summarises the results of the Chi-Square test used to determine if significant relationships exist between the SLO levels, socio-demographic factors and bus use frequency.

Table 5-5: Exploring the relationship between SLO, demographics and bus use variables

	Age (weighted)	Gender (weighted)	Location	Income	Usage Frequency
Psychological Identification SLO Level	Significant relationship exists (p=.018).	No significant relationship exists (p=.091)	No significant relationship exists (p=. .091).	No significant relationship exists (p=.074).	No significant relationship exists (p=.553).
Approval SLO Level	Significant relationship exists (p<.001).	Significant relationship exists (p=.018).	Significant relationship exists (p=.031).	Significant relationship exists (p=.011).	No significant relationship exists (p=.346).
Acceptance SLO Level	Significant relationship exists (p<.001).	Significant relationship exists (p=.018).	Significant relationship exists (p=.031).	Significant relationship exists (p=.011).	No significant relationship exists (p=.346).
Withheld/Withdrawn SLO Level	Significant relationship exists (p=.018).	No significant relationship exists (p=.091).).	No significant relationship exists (p=. .091).	No significant relationship exists (p=. .091).	Significant relationship exists (p<.001).

Age

There is a significant relationship between the SLO levels and age. A significantly higher proportion of respondents aged 55 and over were in the 'psychological identification' and 'approval' SLO categories than those under 55. Conversely, a higher proportion of respondents aged 18 to 54 years were in the 'acceptance' and 'withheld' SLO categories. This indicates that older people are more likely to think that buses have a social licence.

Gender

There is a significant relationship between the 'approval' and 'acceptance' SLO categories, and gender. Male respondents were more likely to be in the 'approval' SLO category, and less likely to be in the 'acceptance' category than female respondents. This indicates that men might view buses as having a stronger social licence than women.

Location

There is a significant relationship between the 'approval' and 'acceptance' SLO categories, and location. Respondents from Melbourne were less likely to be in the 'approval' SLO category, while respondents from SEQ were less likely to be in 'acceptance' category. This indicates that respondents from SEQ are more likely to think that buses have a strong social licence, while respondents from Melbourne are more likely to think that buses have a weak social licence.

Income

There is a significant relationship between the 'approval' and 'acceptance' SLO categories, and income. Respondents with higher incomes were more likely to be in the 'approval' and 'acceptance' SLO categories than those with lower incomes. This indicates that higher income levels are positively associated with the view that buses have a social licence to operate.

Bus use

There is a significant relationship between the 'withheld' SLO category and bus use. Bus non-users were far more likely to be in the 'withheld' SLO category than bus users. This indicates that not using the bus is associated with the view that buses do not have a social licence to operate.

Importance performance analysis

An importance performance analysis (IPA) was also performed on the detailed survey responses. This analysis aimed to identify the perceived importance and the perceived performance of 23 bus service attributes (outlined in Table 5-6 below).

Table 5-6: Bus service attributes and IPA Analysis summary with overall score

Items	Importance	Performance	Quadrant (by overall score)
A. I usually do not have to wait long for a bus	1.71	0.49	C
B. Buses arrive frequently	1.80	0.52	A
C. Buses often run late	1.96	0.39	A
D. Buses show up when they are supposed to	2.00	0.55	A
E. Travel times on buses are too long	1.78	0.28	C
F. Travel times on buses are consistent from one day to the next	1.84	0.72	A
G. Buses get me where I need to go when I need to be there	1.80	0.69	C
H. It is convenient to get to and from my nearest bus stop	1.72	1.06	D
I. Waiting at bus stops is uncomfortable	1.75	0.35	C
J. I feel safe travelling on the bus during daylight*	2.11*	1.40	B
K. I feel safe travelling on the bus at night*		0.05	A
L. Buses are clean and hygienic	1.90	0.67	A
M. Bus trips are comfortable	1.65	0.79	D
N. Buses are crowded	1.79	0.11	C
O. Bus service information is easy to find	1.74	0.78	D
P. Bus service information is easy to understand	1.74	0.81	D
Q. Bus fares are affordable	1.91	0.78	B
R. I can easily get on and off the bus	1.81	1.38	D
S. Bus services operate in my area at night	1.32	0.58	C
T. Bus services operate in my area on the weekend	1.58	1.18	D
U. I can easily connect from buses to other public transport lines, such as trains, trams or other buses	1.84	0.92	B
V. It is easy to purchase a [Myki/Opal/Go Card]	1.74	1.10	D
W. I feel safe getting to and from the bus stop	1.89	1.04	B

* A single attribute was used to measure the importance of feeling safe. This was used for both the feeling of safety at night and during the day

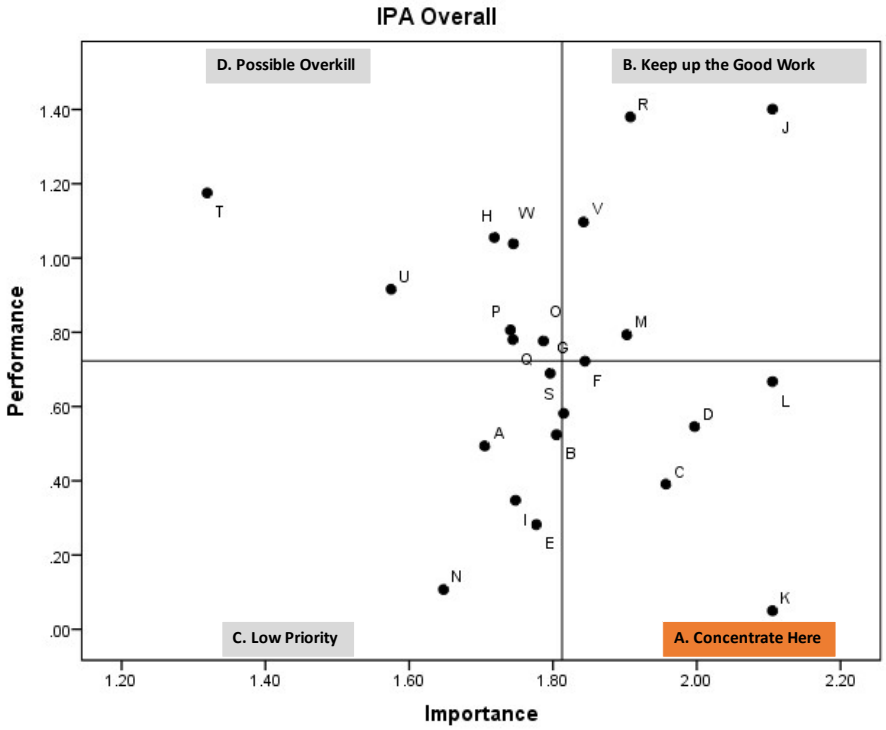
A key goal of the research was to investigate the relative variation in the IPA across different cohorts. The cohorts investigated included:

- An overall cohort (n = 2,420);
- By geographic region;
- By user/non-user segmentation; and
- By SLO 'level'.

Overall cohort

Figure 5-3 shows the overall IPA distribution. This analysis focuses on the attributes which fall within *Quadrant A: Concentrate here*, because respondents rated them as the most important but deemed them to be low performing.[7]

Figure 5-3: Overall IPA score distribution



Safety, both perceived and actual, was found to be the most important attribute overall. Interestingly, this attribute's performance varied markedly by time of day. Safety was a high-performing attribute during daytime (see attribute J), but plunged to the worst performing attribute at night (see attribute K).

The other attributes of interest in quadrant A all relate to bus service-levels. Bus service frequency, punctuality and timetable adherence (reliability) were found to be relatively important but are poor performing attributes (see attributes B, C & D). Journey time reliability and in-vehicle cleanliness were also found to be relatively important attributes with poor performance (see attributes F & L).

[7] Addressing the attributes in Quadrant A will result in the biggest improvements to bus user perceptions given these attributes are found to be low performing but highly important. While the focus of the IPA analysis is on the Quadrant A attributes, improving the performance of attributes in Quadrant C will also help improve bus user perceptions.

A one-way ANOVA test was conducted to determine if age and gender significantly influence performance/importance scoring for Quadrant A attributes (see Table 5-7).

Table 5-7: ANOVA results for importance/performance scores by age and gender

	AGE		Gender	
	Importance	Performance	Importance	Performance
B. Buses arrive frequently	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.69, 35 to 54 is 1.86 , and 55 or over is 1.86	No significant differences between Age Groups. Mean score for age group 18 to 34 is 0.57, 35 to 54 is 0.47 , and 55 or over is 0.54	Significant differences exist between Male and Female groups. Mean score for gender group Female is 1.9, Male is 1.64	No significant differences between Male and Female. Mean score for Gender group: Female is 0.51, Male is 0.55
C. Buses often run late	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.81, 35 to 54 is 2.01 , and 55 or over is 2.06	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 0.6, 35 to 54 is 0.46 , and 55 or over is 0.08	Significant differences exist between Male and Female groups. Mean score for gender group Female is 2.06, Male is 1.76	No significant differences between Male and Female. Mean score for Gender group: Female is 0.43, Male is 0.33
D. Buses show up when they are supposed to	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.79, 35 to 54 is 2.05 , and 55 or over is 2.16	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 0.43, 35 to 54 is 0.47 , and 55 or over is 0.75	Significant differences exist between Male and Female groups. Mean score for gender group Female is 2.08, Male is 1.85	Significant differences exist between Male and Female. Mean score for Gender group: Female is 0.5, Male is 0.63
F. Travel times on buses are consistent from one day to the next	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.73, 35 to 54 is 1.9 , and 55 or over is 1.91	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 0.5, 35 to 54 is 0.38 , and 55 or over is -0.07	Significant differences exist between Male and Female groups. Mean score for gender group Female is 1.87, Male is 1.61	No significant differences between Male and Female. Mean score for Gender group: Female is 0.32, Male is 0.22
K. I feel safe travelling on the bus at night	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.92, 35 to 54 is 2.12, and 55 or over is 2.28	Significant differences exist between Age groups. Mean score for age group 18 to 34 is -0.07, 35 to 54 is 0.14, and 55 or over is 0.09	Significant differences exist between Male and Female groups. Mean score for gender group Female is 2.24, Male is 1.86	Significant differences exist between Male and Female. Mean score for Gender group: Female is -0.27, Male is 0.63
L. Buses are clean and hygienic	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 1.73, 35 to 54 is 1.93, and 55 or over is 2.06	Significant differences exist between Age groups. Mean score for age group 18 to 34 is 0.35, 35 to 54 is 0.68, and 55 or over is 1.01	Significant differences exist between Male and Female groups. Mean score for gender group Female is 2.03, Male is 1.67	Significant differences exist between Male and Female. Mean score for Gender group: Female is 0.56, Male is 0.86

There was a significant difference in how women and men scored night-time safety. Women scored night-time safety poorer on performance than men, but scored night-time safety higher on importance.

Age also significantly influenced the perceived importance and performance of night-time safety. The importance score of night-time safety increased from youngest to oldest age cohort, indicating that older commuters deem night-time safety more important than younger commuters. However, respondents aged 35 to 54 scored night-time safety performance much higher than those aged 18 to 34 and those aged 55 and over. This indicates that age and gender should be considered during the implementation of safety improvements.

Women rated the importance of bus service attributes, such as frequency, punctuality, timetable adherence (reliability) and in-vehicle travel times higher than men did, potentially indicating that women are more time-sensitive than men are.

Age also significantly influenced the perceived importance of bus service attributes, such as frequency, punctuality, timetable adherence (reliability) and in-vehicle travel times. Respondents aged 18 to 34 rated these attributes as less important than those aged 35 and over, potentially indicating that older commuters are more time-sensitive.

Women rated the importance of bus cleanliness higher than men did and rated its performance lower than men did. Age also significantly influenced the importance/performance scoring of bus cleanliness, with older cohorts deeming it more important and better performing than younger cohorts.

Geographic location

Figure 5-5, and Figure 5-6 show the relative[8] importance/performance scores for Melbourne, Sydney and SEQ respectively.

[8] The IPA figures for each cohort have a relative axis. The axis values are based on the median values of *importance* and *performance* for each of the 23 attributes for that specific cohort. For example, across the 23 attributes, the median value of *importance* in Melbourne was around 1.79 (see Figure 5-4 above), while the median value of *importance* for Sydney was around 1.88 (see Figure 5-5 overleaf).

Figure 5-4: IPA score distribution for Melbourne

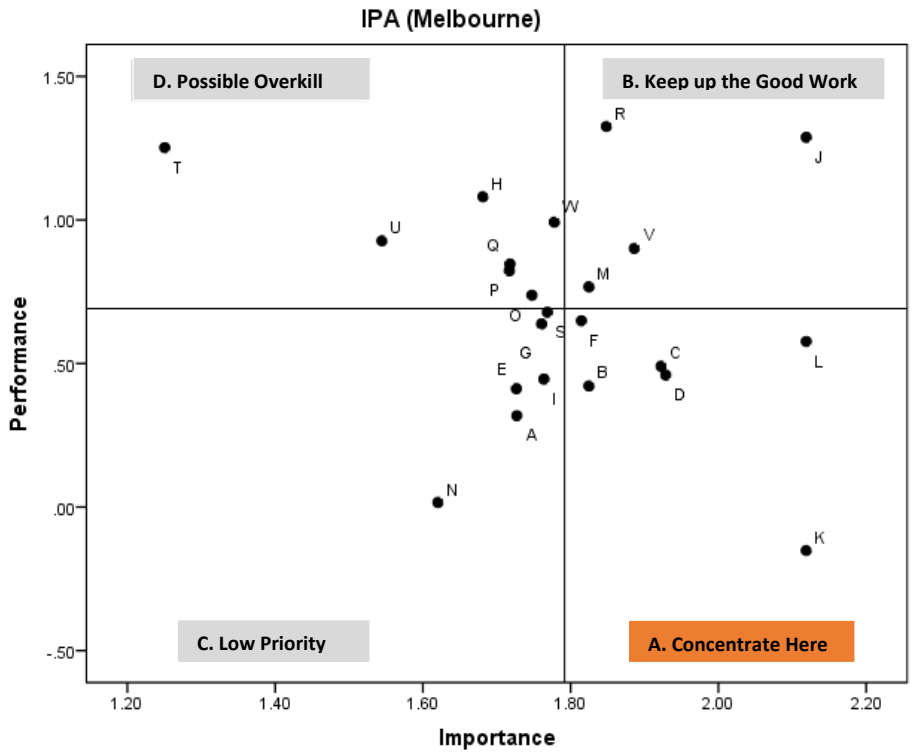


Figure 5-5: IPA score distribution for Sydney

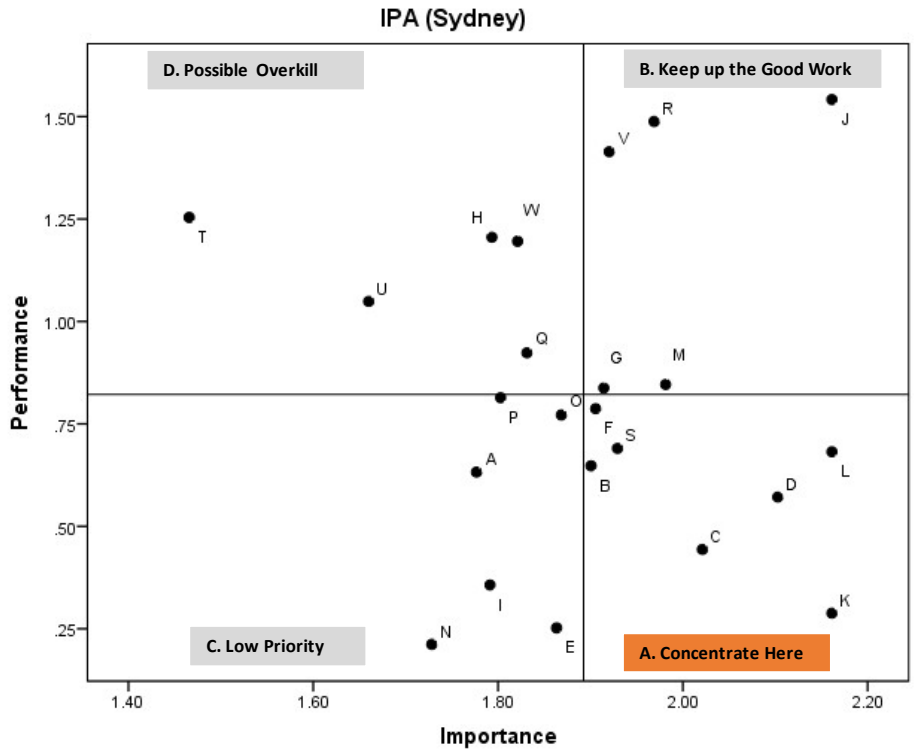
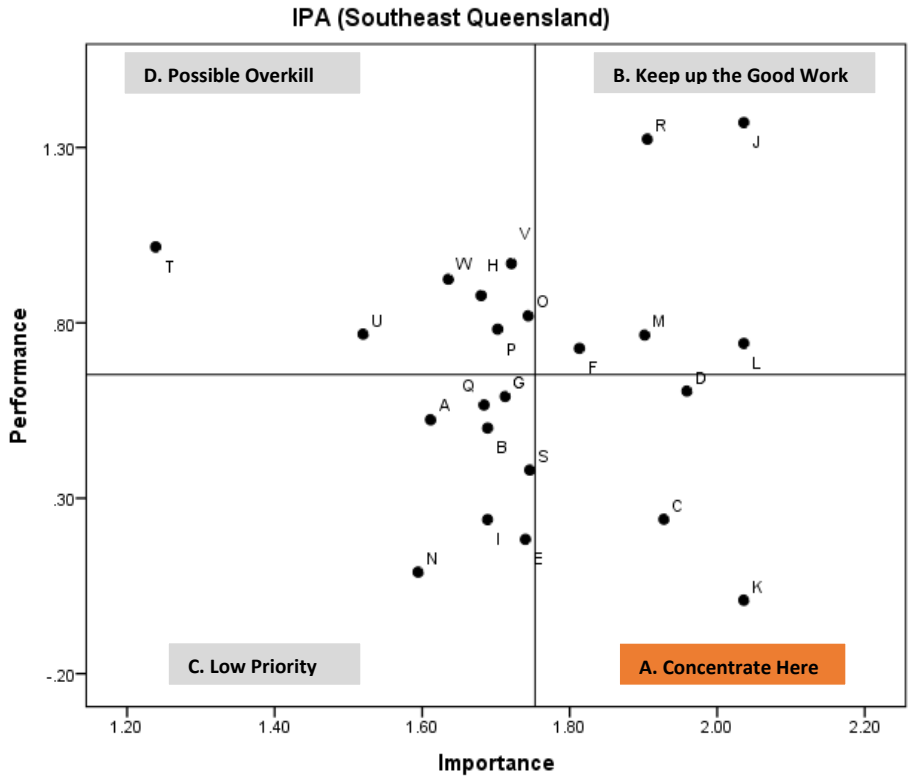


Figure 5-6: IPA score distribution for SEQ



Respondents from all three locations consistently rated day-time and night-time safety, and bus cleanliness as the three most important attributes. Respondents also consistently rated night-time safety as one of the worst performing attributes, indicating that night-time safety is a key attribute requiring improvement across all three jurisdictions.

Respondents from Sydney and Melbourne identified more attributes as relatively high in importance but low in performance compared to SEQ. These attributes were related to bus service levels, such as punctuality, frequency and timetable adherence (reliability), suggesting that Melbourne and Sydney might require service-level improvements more immediately than SEQ does.

A one-way ANOVA test was conducted to determine if location significantly influences performance/importance scoring for Quadrant A attributes as shown in Table 5-8 below.

Table 5-8: ANOVA results for importance/performance scores by location

Items	Importance (ANOVA)	Performance (ANOVA)
B. Buses arrive frequently *(Melbourne; Sydney)*	Significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 1.9, Melbourne is 1.82, and Southeast Queensland is 1.69	Significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.65, South East Queensland is 0.5 , and Melbourne is 0.42
C. Buses often run late *(Melbourne; Sydney & SEQ)*	There is no significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 2.02, Melbourne is 1.92, and Southeast Queensland is 1.93	Significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.44, South East Queensland is 0.24 , and Melbourne is 0.49
D. Buses show up when they are supposed to *(Melbourne; Sydney& SEQ)*	Significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 2.1, Melbourne is 1.93, and Southeast Queensland is 1.96	There is no significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.57, South East Queensland is 0.61 , and Melbourne is 0.46
F. Travel times on buses are consistent from one day to the next *(Melbourne; Sydney)*	There is no significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 1.91, Melbourne is 1.82 , and South East Queensland is 1.81	There is no significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.79, South East Queensland is 0.73 , and Melbourne is 0.65
K. I feel safe travelling on the bus at night* *(Melbourne; Sydney& SEQ)*	There is no significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 2.16, Melbourne is 2.12 , and Southeast Queensland is 2.04	Significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.29, Southeast Queensland is 0.01 , and Melbourne is -0.15
L. Buses are clean and hygienic *(Melbourne; Sydney)*	Significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 1.98, Melbourne is 1.82 , and Southeast Queensland is 1.91	There is no significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.85, Southeast Queensland is 0.77 , and Melbourne is 0.77
S. Bus services operate in my area at night *(Sydney; SEQ)*	Significant difference exists for mean Importance score across Location. Mean score for location group Sydney is 1.47, Melbourne is 1.25 , and South East Queensland is 1.23	Significant difference exists for mean Performance score across Location. Mean score for location group Sydney is 0.69, South East Queensland is 0.38 , and Melbourne is 0.68

Night-time safety is equally important across all three jurisdictions, but respondents from Melbourne feel more unsafe than those in SEQ and Sydney.

Travel time consistency is similarly important across all three jurisdictions, with respondents also scoring its performance similarly across all jurisdictions.

Punctuality is similarly important in all three jurisdictions, but respondents from SEQ rated punctuality poorly compared to those from Melbourne and Sydney.

Night services, bus cleanliness, timetable adherence (reliability) and frequency are more important to respondents in Sydney than those in SEQ and Melbourne.

Low service frequencies are a relatively greater concern for respondents in Melbourne than those in SEQ and Sydney.

Tardiness and a lack of night services are a relatively greater concern for respondents in SEQ than those in Sydney and Melbourne.

Bus user/non-user segmentation

Figure 5-7 and Figure 5-8 show the importance/performance score distributions for bus users and non-users respectively.

Figure 5-7: IPA score distribution for bus users

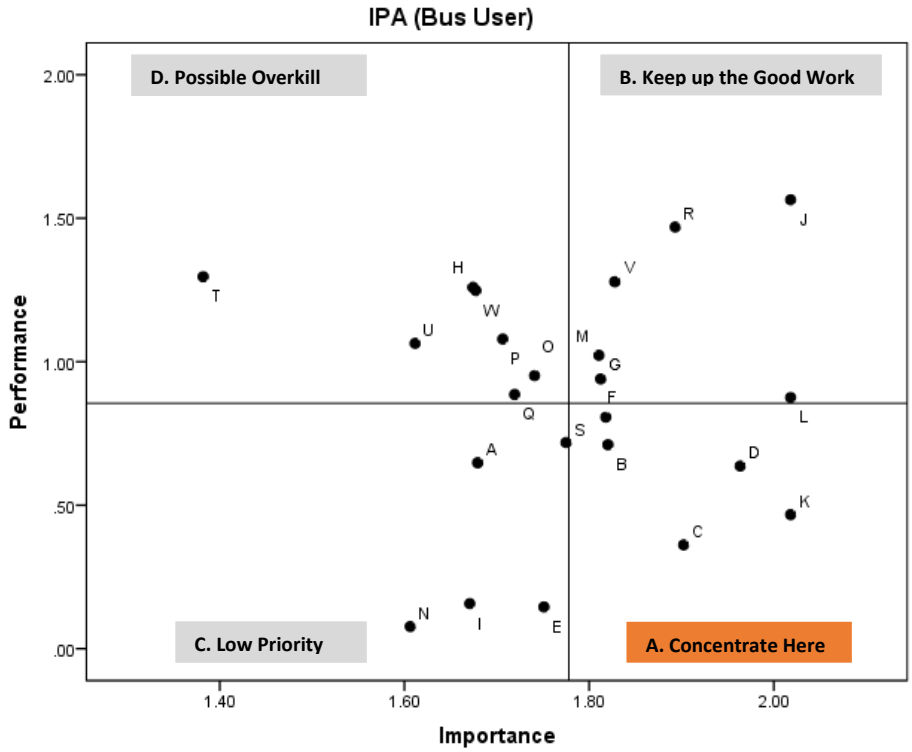
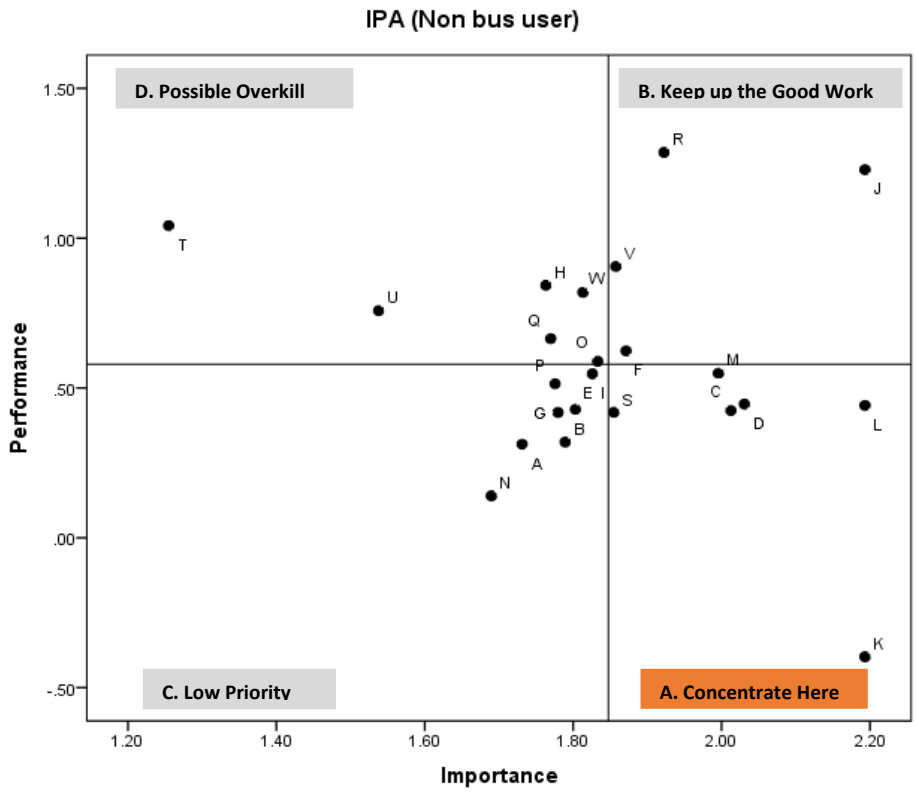


Figure 5-8: IPA score distribution for non bus-users



There are some differences in the Quadrant A attributes for bus users and non-users.

Consistent with previous sections, night-time safety was deemed to be an important but poorly performing attribute by both users and non-users. Both cohorts also think running night buses is important and there are currently not enough services at night.

Bus cleanliness and journey comfort were both deemed important by users and non-users, but non-users felt they were both underperforming attributes while the bus users did not.

Frequency and timetable adherence (reliability) were more important to bus users than non-users, with bus users also rating these attributes' performance poorly compared to non-users.

A one-way ANOVA test was conducted to determine if bus use significantly influences performance/importance scoring for Quadrant A attributes as shown in Table 5-9 overleaf.

Table 5-9: ANOVA results for importance/performance scores by bus use

Items	Importance (ANOVA)	Performance (ANOVA)
B. Buses arrive frequently *(User)*	There is no significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 1.81, Non-user is 1.8	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.37, User is 0.78
C. Buses often run late *(User; Non-user)*	Significant difference exists for mean Importance score across User/Non-user. Mean score for user/non-user group: User is 2, Non-user is 1.88	There is no significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.38, User is 0.41
D. Buses show up when they are supposed to *(User; Non-user)*	There is no significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 2.03, Non-user is 1.93	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.48, User is 0.66
F. Travel times on buses are consistent from one day to the next *(User)*	There is no significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 1.88, Non-user is 1.78	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.65, User is 0.84
K. I feel safe travelling on the bus at night* *(User; Non-user)*	Significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 2.18, Non-user is 1.97	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is -0.27, User is 0.6
L. Buses are clean and hygienic *(User; Non-user)*	Significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 1.98, Non-user is 1.77	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.53, User is 0.91
M. bus trips are comfortable (Non-user)	Significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 1.7, Non-user is 1.56	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.64, User is 1.06
S. Bus services operate in my area at night *(User; Non-user)*	Significant difference exists for mean Importance score across User/Non user. Mean score for user/non-user group: User is 1.27, Non-user is 1.41	Significant difference exists for mean Performance score across User/Non user. Mean score for user/non-user group: Non User is 0.44, User is 0.8

Night-time safety ratings on both importance and performance were significantly different between bus users and non-users. While non-users rated night-time safety as less important than bus users, non-users identified night-time safety as the worst performing attribute.

Non-users also identified journey comfort as a problem, even though it was overall less important to non-users than users.

Timetable adherence (reliability) and punctuality were similarly important to bus users and non-users. However, non-users rated their performance poorly compared to bus users.

SLO 'level'

Figure 5-9, Figure 5-10, Figure 5-11, and Figure 5-12 show the importance/performance scores for the 'psychological identification', 'approval', 'acceptance' and 'withdrawn' SLO levels.

Respondents in the 'psychological identification' SLO level identified the following attributes as relatively high in importance but low in performance:

- Punctuality;
- In-vehicle travel times; and
- Safety while travelling on the bus at night.

Respondents in the 'approval' SLO level identified the following attributes as relatively high in importance but low in performance:

- Service frequency;
- Timetable adherence (reliability);
- Safety while travelling on the bus at night; and
- Punctuality.

Respondents in the 'acceptance' SLO level identified the following attributes as relatively high in importance but low in performance:

- Service frequency;
- Timetable adherence (reliability);
- Safety while travelling on the bus at night; and
- Punctuality.

Respondents in the 'withheld' SLO category identified the following attributes as relatively high in importance but low in performance:

- Safety while travelling on the bus at night;
- Punctuality;
- Comfort while waiting at the bus stop;
- Crowding on buses;
- Travel time consistency;
- Bus fare affordability;
- Timetable adherence (reliability); and
- Bus cleanliness.

Figure 5-9: IPA distribution for 'Psychological Identification' SLO level

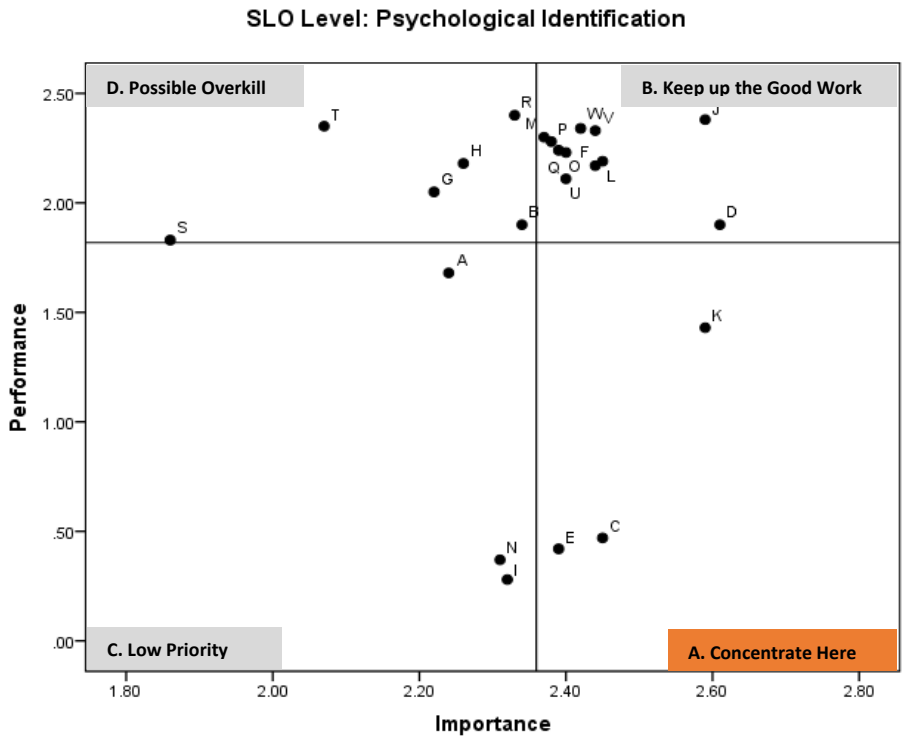


Figure 5-10: IPA distribution for 'Approval' SLO level

Figure 5-11: IPA distribution for 'Acceptance' SLO level

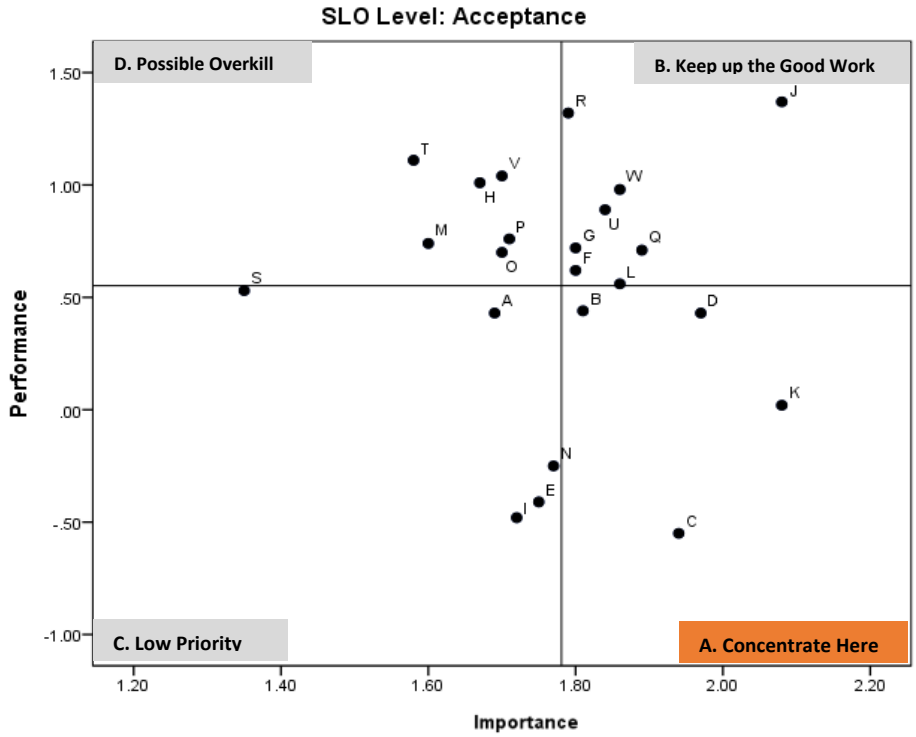
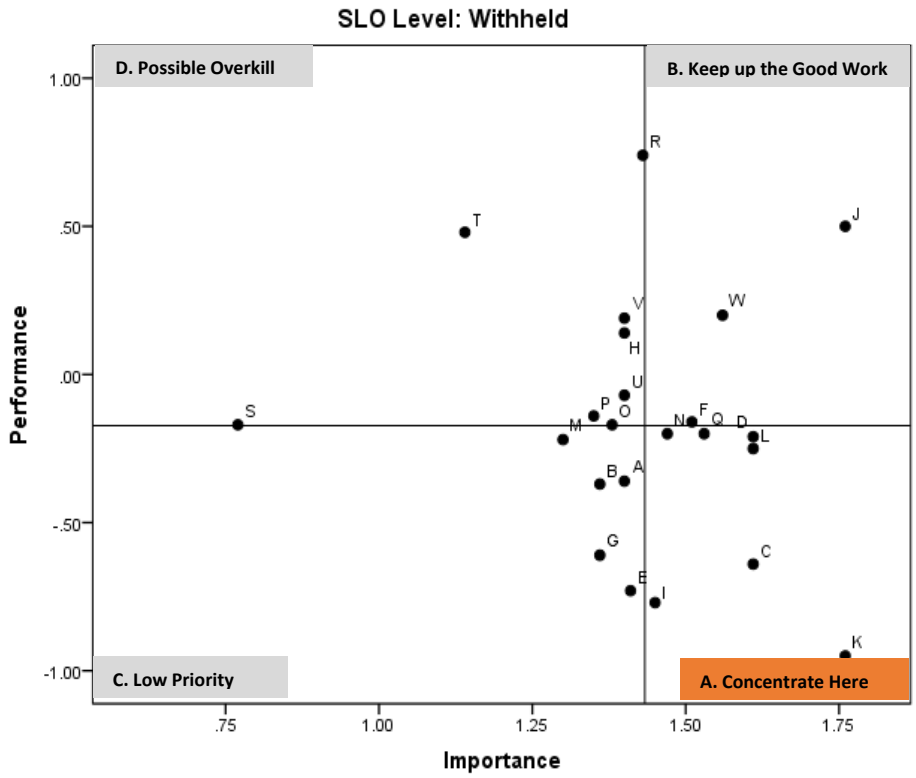


Figure 5-12: IPA distribution for 'Withheld' SLO level



Overall, respondents in the 'psychological identification', 'approval' and 'acceptance' SLO categories identified less attributes which require urgent improvement compared to those in the 'withheld' SLO category. The one attribute which consistently needs urgent improvement across all SLO categories is night-time safety, which was also identified as a key concern for multiple demographic groups.

Besides night-time safety, respondents in the 'psychological identification', 'approval' and 'acceptance' SLO categories were more concerned about improving service level attributes, such as frequency, punctuality and reliability. This contrasts with respondents in the 'withheld' SLO category, who identified comfort as a key concern in addition to low service levels. Improving the perceived comfort of buses appears to be a key aspect which policy and practice will have to address to improve the general social approval for buses.

6 Discussion

In this chapter, the research findings are synthesised to provide tangible Policy and Practice insights.

The survey findings indicate that socio-demographic characteristics significantly mediate respondents' perceptions and attitudes towards buses.

As mentioned in Section 1, growing bus patronage and improving the social licence to operate are related topics, but they are not the same. Growing patronage requires buses to meet more people's transport needs and is thus closely linked to improving service levels/quality.

Social licence is about the wider public valuing the bus network, even if the individual might not utilise it. A strong social licence increases community support for investment in bus services, because the general public recognise the indirect benefits the service provides to everyone (including non-users), such as improved road safety and reduced congestion. When social licence is high, voters are supportive of proposals to improve the service through expenditure on new infrastructure and services (Boutilier 2017).

To explore this nuance, the Discussion Chapter is broken down into two main sections and is structured around:

- A Scorecard for each of the three geographic regions; and
- Broad Policy and Practice Implications that can be generalised across Australia.

6.1 Scorecard

To investigate geographic-specific insights a Scorecard was developed for Metropolitan Melbourne, Metropolitan Sydney and South East Queensland.

The Scorecard provides a snapshot of performance in each geography and is structured around the following sections:

- The context;
- Key insights; and
- Overarching recommendations.

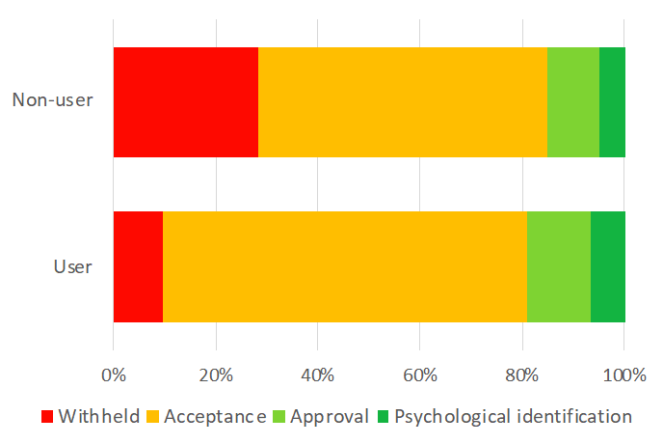
Melbourne Context and Policy Insights

Context

Across Australia, Melbourne has the lowest mode share by bus for journeys to work (ABS, 2016). The passenger kilometres travelled, by bus, is also the lowest across any State or Territory.

A comparison of the SLO classification composition suggests Melbourne has the highest percent of people (83%) in the *withheld* and *acceptance* SLO categories.

Bus users are more likely to have a higher social licence for bus operations than non-users.

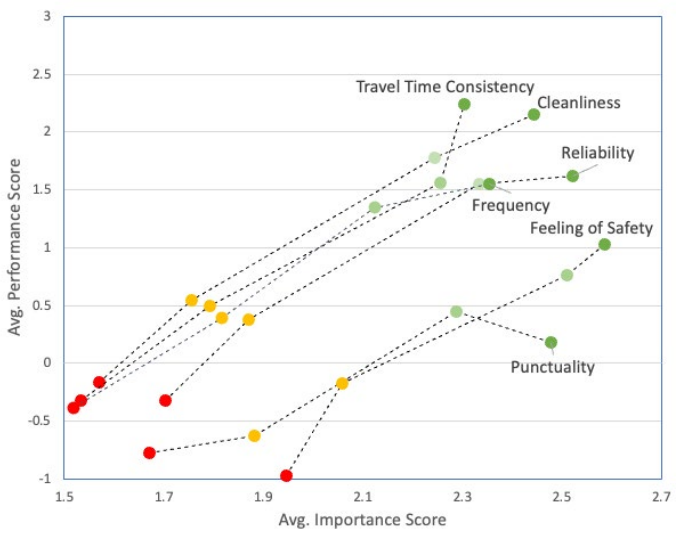


Key Insights

The IPA analysis identified the following attributes to be the most important but worst performing in Melbourne:

1. Punctuality
2. Feeling of Safety
3. Travel Time Consistency
4. Reliability
5. Cleanliness
6. Frequency

The difference in how these five attributes are perceived, by the four SLO classes, are tracked in the figure to the right. In general, both the *importance* and *performance* of these attributes increase as you move up the SLO ladder.



Recommendations

1. Focus on enhancing bus service punctuality, reliability, and travel time consistency by prioritising bus movements on the road network
2. Market and advertise the bus service in a positive light to build public awareness and trust
3. Embed customer-focused key performance metrics into bus contract agreements to monitor performance
4. Improve the sense of safety by expanding PSO patrols on the bus network

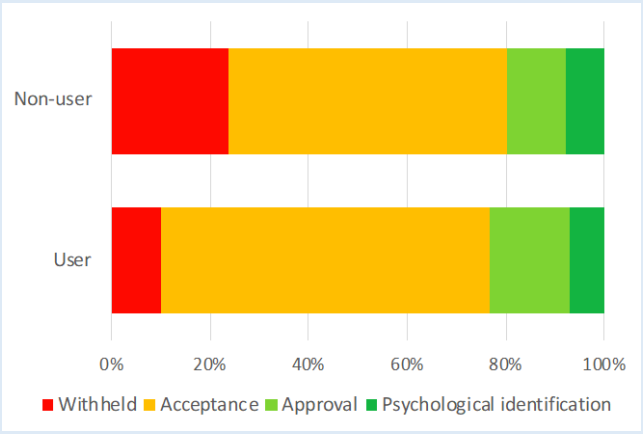
Sydney Context and Policy Insights

Context

Across Australia, Sydney has the third highest mode share by bus for journeys to work ahead of Brisbane and Melbourne (ABS, 2016).

A comparison of the SLO classification composition suggests Sydney has the lowest percent of people (78.6%) in *withheld* and *acceptance* SLO categories.

Bus users are more likely to have a higher social licence for bus operations than non-users.

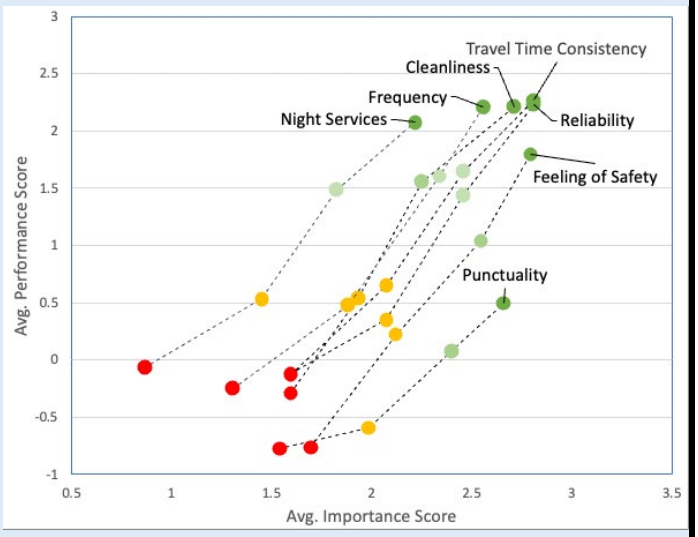


Key Insights

The IPA analysis identified the following attributes to be the most important but worst performing in Sydney:

1. Bus coverage at night
2. Frequency
3. Reliability
4. Travel Time Consistency;
5. Feeling of Safety
6. Cleanliness
7. Punctuality

The difference in how these six attributes are perceived, by the four SLO classes, are tracked in the figure to the right. In general, both the *importance* and *performance* of these attributes increase as you move up the SLO ladder.



Recommendations

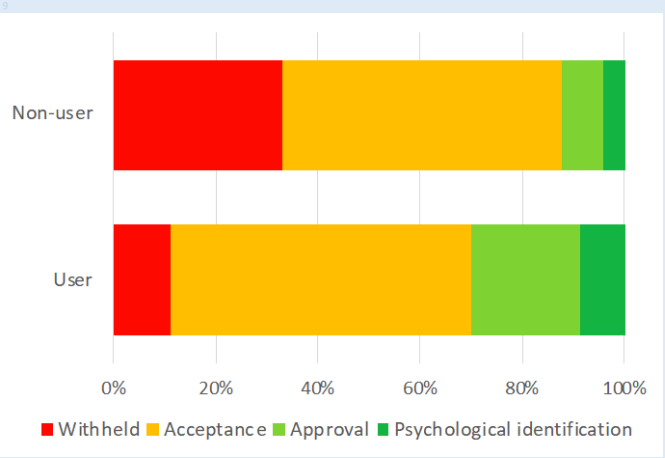
1. Continue expanding the network of dedicated bus lanes and signal priority at identified red spot locations
2. Market and advertise the bus service in a positive light to build public awareness and trust
3. Review bus route coverage and service catchments, especially at night
4. Improve the sense of safety by increasing staffing at interchanges
5. Enhance bus service frequency along key transport corridors

South East Queensland Context and Policy Insights

Context

The passenger kilometres travelled by bus per capita, in Brisbane has steady increased from less than 400 km travelled in 1980 to over 530 km travelled in 2018 (ABS, 2016). Brisbane sits third amongst the States and Territories for bus passenger km travelled (behind Hobart and Sydney).

Relative to Melbourne and Sydney, the composition of SLO cohorts for bus users and non-users are markedly different. 30% of bus users *approve* or *psychologically identify* with buses compared to 12.4% for non-users.

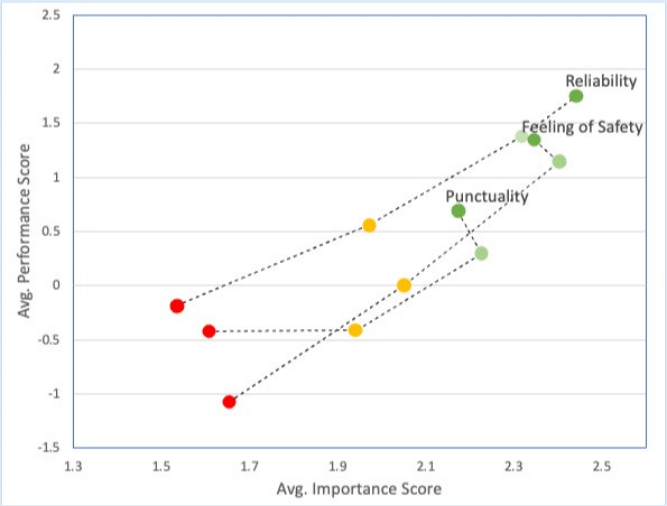


Key Insights

The IPA analysis identified the following attributes to be the most important but worst performing in SEQ:

1. Punctuality
2. Reliability
3. Feeling of Safety

The difference in how these three attributes are perceived, by the four SLO classes, are tracked in the figure to the right. In general, both the *importance* and *performance* of these attributes increase as you move up the SLO ladder.



Recommendations

1. Market and advertise the bus service in a positive light to build public awareness and trust
2. Move towards a real-time based timetabling approach on turn up and go routes
3. Improve the sense of safety by increasing staffing presence at busway stations
4. Investigate opportunities to minimise service delays and vehicle queuing in busways due to driver behaviour

6.2 Broad policy and practice implications

The learnings from this study can be broadly applied to the wider Australian context. In translating the insights of this study to the Australian context, policy and practice implications, in this section, are framed around the following themes:

- Safety
- Public support for investment
- Service levels & quality
- Comfort

Safety

Safety stood out as the key concern for respondents across multiple demographic groups and SLO categories. All safety attributes, namely safety while travelling on the bus during the daytime and at night, and safety getting to and from the bus stop, were ranked as very important attributes of the bus network.

However, while daytime safety and safety accessing bus stops were considered relatively well-performing attributes, night-time safety was the worst performing attribute overall. Demographic variables, such as gender and age, significantly influence how night-time safety is perceived. Female respondents were more likely to feel unsafe at night (Islam et al 2016). Age was also a contributing factor, with respondents aged 18 to 34 years and 55 years and over more likely to feel unsafe at night.

Interestingly, bus non-users believe that travelling on the bus at night is more unsafe than bus users, suggesting that perceived safety–especially at night–could be inhibiting greater bus patronage. Guiver (2007) similarly found that car drivers commonly perceive bus users as being vulnerable to their surroundings – the research suggests drivers tend to focus on the 'worst-case' safety scenarios of bus travel.

While night-time safety was a poorly performing attribute in all locations, respondents in Melbourne rated night-time safety much more poorly than respondents in SEQ and Sydney. This suggests that Melbourne has a greater task to improve perceptions of night-time safety than other cities.

Safety is a key objective across all the jurisdictions' transport plans, such as Victoria's Bus Plan, NSW's Future Transport Strategy 2056, Queensland Transport Strategy, and the Transport Plan for Brisbane. However, there is a distinction between crash safety and personal security, with many of the above plans more focused on crash safety than on addressing commuters' sense of personal safety and security.

The Transport Plan for Brisbane is an exception. The Plan lists personal safety as a key factor influencing mode choice. To address this, the Plan lists initiatives such as installing closed-circuit television cameras (CCTV) and emergency call-points were highlighted as ways to improve the perceived safety of the public transport network.

Addressing perceived night-time safety from a gender and age perspective will be critical to encouraging more people to view the bus as a viable transport alternative. Previous research has found that feeling safe has a positive influence on how often people use public transport. Improving commuters' sense of personal safety could therefore potentially encourage bus users to travel more frequently by bus[9], and might even encourage some non-users to travel by bus (Libardo & Nocera 2012).

As Section 5 highlighted, night-time safety is a key concern for respondents across all SLO levels, including those in the 'withheld' SLO category. Improving night-time safety might therefore have the potential to progress people up the SLO levels, increasing the social licence for buses.

Research indicates that Crime Prevention through Environmental Design (CPTED) approaches can improve commuters' sense of safety, especially at night (Libardo & Nocera 2012). These include:

- Well-lit footpaths, stations and stops;
- CCTV;
- The presence of staff, such as customer service staff and security personnel;
- Emergency call-points; and
- Safety audits.

Sydney, Melbourne and SEQ have implemented various safety improvement initiatives, such as the use of Protective Services Officers (PSOs) in Melbourne. However, the general consensus of responses highlighting safety while travelling on the bus at night as a key concern indicates that targeted personal safety programs for buses should be considered as a core part of public transport policy in Australia.

Public support for investment in buses

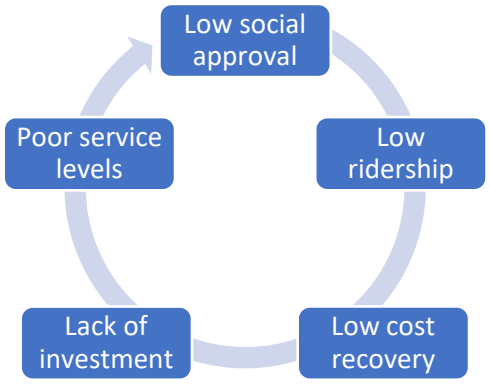
The study found that the majority of respondents in Melbourne, Sydney and SEQ were in the 'acceptance' SLO category, indicating that there is weak social approval for buses and the public does not generally recognise the wider societal benefits that buses provide.

[9] Delbosc, A., & Currie, G. (2012). Modelling the causes and impacts of personal safety perceptions on public transport ridership. *Transport Policy*, *24*, 302-309.

A weak social approval can impact the public's willingness to use taxpayer funds to improve bus services and it can also undermine road-space allocation projects required to give buses priority through traffic congestion (Thomson and Boutilier, 2011). This therefore impacts on the level of investment in buses and the ease with which those investments can be deployed. There is thus a need to shift people into higher SLO levels, to increase community support for bus reform and investment.

However, it is a '*Catch-22*' situation because bus service improvements are required to raise social approval, but high social approval is needed to support funding for bus service improvements (see Figure 6-1). The only way out of the Catch-22 is to focus on easy wins to improve services and ensure that marketing is constantly reinforcing a range of positive messages about bus services and their community benefits.

Figure 6-1: Cycle of bus use and social approval



Adapted from Infrastructure Australia - Outer Urban Public Transport

Improving social perceptions of buses–especially amongst non-users–should therefore be a prime concern of public transport authorities and bus operators. This will require decision-makers to take policy leadership on bus reform and prioritise attributes such as safety, service levels/quality and comfort to shift public perceptions of buses.

An effective national marketing and advertising campaign to improve the perception of buses and its use is required.

Service levels and quality

Service level and quality stood out as issues across all locations, for bus users and non-users alike.

In Melbourne, the service level attributes which require the most attention are:

- Service frequency
- Punctuality
- Timetable adherence (reliability)

- Travel time consistency

In Sydney, the service level attributes which require the most attention are:

- Service frequency
- Punctuality
- Timetable adherence (reliability)
- Travel time consistency
- Night bus service operation

In SEQ, the service level attributes which require the most attention are:

- Punctuality
- Timetable adherence (reliability)

Bus service frequency, punctuality and reliability were service quality attributes that were identified to have a high level of importance but assessed to perform poorly (see Table 5-6). The literature notes the importance of these service attributes in enticing people to use buses and more broadly public transport services (Lierop et al, 2018; Islam et al, 2016). Service punctuality and service reliability scored relatively higher in importance than service frequency. Providing services which show up when they are supposed to (punctuality) and having consistent travel times from one day to the next (reliability) provide certainty to the traveller. This emphasises the importance of infrastructure improvements which prioritise bus movements. Reducing delays and impacts of on-road congestion through dedicated bus lanes and signal priority is as important as increasing service frequency.

Increasing service levels, through frequency improvements, result in commensurate increases in bus patronage (Devney, 2011). Increasing frequencies to every 10-15 minutes, especially for bus routes which run in areas which have a high propensity to use public transport, will be especially beneficial for increasing bus patronage (Berrebi et al. 2021). This should be considered in Sydney and Melbourne, where service frequency is a concern for commuters.

Night bus service provision should be expanded in Sydney, especially in areas with an established or emerging night-time economy. The planning of such services must prioritise night-time safety in all elements of the bus journey, such as in-vehicle safety and safety while accessing the bus stop.

Comfort

One of this study's key objectives was to determine the factors which contribute to the underutilisation of buses, in order to provide recommendations which increase bus patronage and improve the overall social licence of buses.

Understanding the distinctions between bus user and non-user perceptions is therefore critical to this project's objectives. Journey comfort was identified as a major concern by non-users and respondents in the 'withheld' SLO category. This differed significantly from bus users, who rated comfort as a less important and higher performing attribute than non-users did. Heath & Gifford (2002) suggested that occasional-users tend to have a biased view of bus services - which leads to more negative perceptions despite neutral or positive experiences. Addressing perceived user comfort levels of bus services should encourage the uptake from non-users.

The comfort attributes which require the most attention are:

- Cleanliness and hygiene;
- In-vehicle comfort;
- Comfort while waiting at the bus stop; and
- Vehicle crowding.

Since the COVID-19 pandemic, cleanliness and hygiene has become a chief concern, with all states ramping up public transport cleaning programs to minimise infection risk. While cleaning awareness campaigns have publicised the steps taken to keep commuters safe from COVID-19, other general concerns such as removing graffiti should be enforced to keep the branding of bus services strong.

Zero emissions buses (ZEB) have the potential to significantly improve in-vehicle comfort because they lack the vibration of an internal combustion engine, and contribute to the overall sustainability of the public transport network. Sydney, Melbourne and SEQ have ZEB fleet rollover plans, with NSW the most ambitious of the three States.

NSW has committed to ZEB transition by 2030, while Victoria and Queensland have pledged to procure only ZEBs from 2025 onwards. A stronger commitment to the ZEB transition will not only benefit climate objectives in these locations, but could also improve general perceptions of the comfortability of bus journeys. Both factors are likely to improve the social licence for buses in areas where the ZEB deployment is marketed. Indeed, just marketing bus services is likely to increase their social licence to operate.

The provision of high-quality bus stops and interchanges will also be an important way to improve overall perceptions of bus journey comfort. Quality bus stops will need to provide:

- Comfortable seating with is accessible for all;

- Easy-to-understand commuter information; and
- Effective shelter from the weather which includes consideration of thermal comfort.

Improved service frequencies and reliability will contribute to a more consistent passenger load across vehicles, reducing the likelihood of services being overcrowded. Melbourne is currently trialling real-time crowding tracking on public transport, including on several bus routes. This has the potential to improve public perceptions of crowding on public transport, generating more social approval for buses.

7 Conclusion and Next Steps

This project aimed to study the public's perceptions of buses in Sydney, Melbourne and Southeast Queensland, in order to identify attributes which need improvement to foster increased bus patronage. Understanding social approval for buses is key to determining how to improve community support for bus service investment, supporting political appetite for bus reform.

The study is the first (globally) to use the social licence to operate (SLO) framework – initially developed to study mining and extractive industries – to gauge social approval levels for bus systems across Melbourne, Sydney and SEQ. A systemic literature review was conducted to:

1. Determine the objective and latent factors which impact bus patronage
2. Discover how the SLO framework has been applied to transport research

A survey was crafted to investigate the public's perceptions and attitudes towards buses, including whether buses have a social licence to operate in the three regions. The survey design was significantly informed by findings from the literature review. The survey was conducted by IPSOS and a screening process was undertaken to ensure the sample was as demographically representative as possible.

The survey findings were tested for statistical significance using Chi-Square tests and One-Way ANOVA tests. These tests indicated that socio-demographic characteristics such as age, gender, income, location and bus use significantly impact how people perceive the bus network, as well as their approval level for buses.

Night-time safety was consistently rated as a highly important but poorly performing attribute, indicating that night-time safety improvements should be a primary focus for public transport authorities and bus operators. Service levels/quality and comfort were also identified as key areas which need improvement to encourage greater bus patronage and improve social approval for buses.

This study identified the key areas which public transport policy must pay greater attention to, in order to encourage greater bus patronage and higher social approval for buses. Most notably, there are significant perception gaps and a lack of social licence that undermines both patronage on bus networks and political support for improvements. Both these factors will require concerted marketing campaigns (that could be nationally funded and coordinated) to improve overall community perceptions.

7.1 Next Steps

This research study provides novel insights linking bus use and the concept of social licence to operate (SLO). There is a distinct lack of research investigating the SLO bus services within an Australian context. This limitation of knowledge can reduce the ability for government bodies and service operators to understand the needs of the Australian public. There is an exciting opportunity to expand on this study's findings. Next steps include:

- Ongoing data collection to monitor perceptions of bus performance and also to gauge the level of social licence for buses. Regular collection of this data can help develop a longitudinal dataset to track changes in public perception over time;
- Expanding the geographic regions in which SLO and bus service performance data is collected. Consider expanding to other states and territories within Australia and to similar international contexts including New Zealand;
- Curate a marketing campaign to improve the social licence of buses. Utilise the research findings to build a campaign that seeks to build legitimacy, credibility and trust of bus services; and
- Advocate state transport road authorities to increase service awareness of bus operations through advertising campaigns and, where beneficial, re-branding. Branding initiatives like the SmartBus network in Melbourne were highly successful and were able to respond to the transport needs of the community.

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Appendix A: Survey Quotas

Table 0-1: Survey quotas

BUS USERS	400 for each city							
Brisbane								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	18	8	18	Less than $399/Week	23	17	25	
$400 to $999/Week	24	17	22	$400 to $999/Week	26	27	28	
$1000 or more/Week	25	46	20	$1000 or more/Week	17	29	11	
							Check	400
Melbourne								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	21	8	19	Less than $399/Week	27	20	27	
$400 to $999/Week	23	17	20	$400 to $999/Week	23	25	27	
$1000 or more/Week	24	45	19	$1000 or more/Week	17	27	11	
							Check	400
Sydney								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	19	8	19	Less than $399/Week	24	19	26	
$400 to $999/Week	21	16	20	$400 to $999/Week	22	23	26	
$1000 or more/Week	26	47	21	$1000 or more/Week	19	30	13	
							Check	400

NON USERS	400 for each city							
Brisbane								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	18	8	18	Less than $399/Week	23	17	25	
$400 to $999/Week	24	17	22	$400 to $999/Week	26	27	28	
$1000 or more/Week	25	46	20	$1000 or more/Week	17	29	11	
							Check	400
Melbourne								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	21	8	19	Less than $399/Week	27	20	27	
$400 to $999/Week	23	17	20	$400 to $999/Week	23	25	27	
$1000 or more/Week	24	45	19	$1000 or more/Week	17	27	11	
							Check	400
Sydney								
MALE	18 to 34	35 to 54	55 or over	FEMALE	18 to 34	35 to 54	55 or over	
Less than $399/Week	19	8	19	Less than $399/Week	24	19	26	
$400 to $999/Week	21	16	20	$400 to $999/Week	22	23	26	
$1000 or more/Week	26	47	21	$1000 or more/Week	19	30	13	
							Check	400

Appendix B: Questionnaire

Bus Use Survey

Start of Block: Introduction

Q1.1 This survey is being undertaken by Movement & Place Consulting and the Public Transport Research Group at Monash University. Your answers will help us understand what influences your decision to use or not use buses.

All responses will be anonymous. Findings from the study will only be published in aggregated form, so no individual will be able to be identified.

When responding to the following questions think about public transport bus services in your area.

End of Block: Introduction

Start of Block: Bus use

Q2.1 Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus?

- At least three days a week (1)
- Two days a week (2)
- One day a week (3)
- About once every month (4)
- About once every six months (5)
- About once a year (6)
- Less than once a year (7)
- Never (8)

Page Break

Q2.2 Before COVID-19 which of the following public transport modes did you regularly use in your city? (Select all that apply)

- ☐ Train (regional or suburban) (1)
- ☐ Tram or light rail (2)

Display This Choice:

If Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? != Never

- ☐ Bus (3)
- ☐ Ferry (4)
- ☐ Other (5)
- ☐ ⊗ I don't use public transport (6)

End of Block: Bus use

Start of Block: Attitudes and perceptions

Q39 On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
Buses help to reduce road congestion (1)	○	○	○	○	○	○	○	☐
Buses do not improve social inclusion (2)	○	○	○	○	○	○	○	☐
Buses do not contribute to social well-being in my city (3)	○	○	○	○	○	○	○	☐
Buses help me to access opportunities, such as jobs and education (4)	○	○	○	○	○	○	○	☐
Overall, buses are worthwhile (5)	○	○	○	○	○	○	○	☐

End of Block: Attitudes and perceptions

Start of Block: Socio-demographic questions

Q3.1 What is your gender?

- Female (1)
- Male (2)
- Non-binary/Other gender (3)

Q3.2 Select your age range from the options below

- 18 to 34 (1)
- 35 to 54 (2)
- 55 or over (3)

Q3.6 Before the COVID-19 outbreak, which of the following best describes your main occupation?

- Employed Full Time (1)
- Employed Part Time (2)
- Employed Casual (3)
- Volunteer in an unpaid role (4)
- Student (5)
- Retired (6)
- Home Duties/Home Maker/Child Care (7)
- Looking after an ill or impaired person (8)
- Unemployed (9)
- Other (10)

Q3.7 Do you have a driver's licence?

- Yes (1)
- No (2)

Q3.8 Do you own or have access to a car?

- I own a car (1)
- I do not own a car, but I have access to one (2)
- I do NOT own OR have access to a car (3)

Q3.3 What was your weekly personal income (before tax) in 2019?

- Less than $400 a week (up to $20,799 per annum) (1)
- $400 to $999 a week ($20,800 to $51,999 per annum) (2)
- $1000 or more a week ($52,000 or more per annum) (3)

Q3.4 Which of the following locations do you currently live in?

- South East Queensland (including Brisbane, Gold Coast, Sunshine Coast, Ipswich, Logan, Moreton Bay, Redland, Lockyer Valley, Scenic Rim and Somerset) (1)
- Melbourne (2)
- Sydney (3)
- Other (4)

Skip To: End of Block If Which of the following locations do you currently live in? = Other

Q3.5 What is your postcode?

_____

Page Break

Q5.1
The following statements concern buses in your area and how they affect YOU.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)	Not applicable (2)
Buses improve my access to jobs and services (1)	○	○	○	○	○	○	○	☐	☐
Buses help me to be more independent (7)	○	○	○	○	○	○	○	☐	☐
Buses free up my time by allowing members of my household to travel independently (8)	○	○	○	○	○	○	○	☐	☐
I do not want my tax used to fund buses (9)	○	○	○	○	○	○	○	☐	☐
Buses add congestion on the roads I use (10)	○	○	○	○	○	○	○	☐	☐
Dedicated bus lanes reduce my travel time (11)	○	○	○	○	○	○	○	☐	☐
Buses benefit me in general (12)	○	○	○	○	○	○	○	☐	☐
Buses provide a real alternative to using my car (13)	○	○	○	○	○	○	○	☐	☐
Buses are good value-for-money (14)	○	○	○	○	○	○	○	☐	☐
I do not want to be associated with people who use buses (15)	○	○	○	○	○	○	○	☐	☐
I feel comfortable travelling on a bus (16)	○	○	○	○	○	○	○	☐	☐
I feel sorry for people who have to use buses (17)	○	○	○	○	○	○	○	☐	☐
Buses help in addressing climate change (3)	○	○	○	○	○	○	○	☐	☐

Q6.1
The following statements are about the role of buses in your community.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
Buses are bad for the environment (1)	○	○	○	○	○	○	○	☐
Electric buses will benefit the environment (7)	○	○	○	○	○	○	○	☐
Buses lead to increased crime (18)	○	○	○	○	○	○	○	☐
Public nuisance is common on buses (19)	○	○	○	○	○	○	○	☐
Buses are good for jobs and employment in my community (20)	○	○	○	○	○	○	○	☐
Buses help the poor and disadvantaged in my community (21)	○	○	○	○	○	○	○	☐
Buses are a good investment for my community (22)	○	○	○	○	○	○	○	☐
Buses improve peoples' access to jobs and services (23)	○	○	○	○	○	○	○	☐
I support politicians improving bus service (24)	○	○	○	○	○	○	○	☐
Buses have a poor reputation in my community (25)	○	○	○	○	○	○	○	☐
Bus passengers are dodgy (27)	○	○	○	○	○	○	○	☐

End of Block: Socio-political legitimacy

Start of Block: Interactional trust

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Q7.1
The following statements are about bus drivers.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
Bus drivers are friendly (1)	○	○	○	○	○	○	○	☐
Bus drivers are not helpful (28)	○	○	○	○	○	○	○	☐
Bus drivers respond to my concerns (29)	○	○	○	○	○	○	○	☐
Bus drivers do not care about my needs (30)	○	○	○	○	○	○	○	☐
Bus drivers help deal with problem passengers (31)	○	○	○	○	○	○	○	☐
Bus drivers drive safely (32)	○	○	○	○	○	○	○	☐
Bus drivers treat everyone equally (33)	○	○	○	○	○	○	○	☐
I trust bus drivers (34)	○	○	○	○	○	○	○	☐

Q7.2
The following statements are about the bus companies which run buses in your area.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
Bus companies are just trying to increase their profits (1)	○	○	○	○	○	○	○	☐
Bus companies do more for the community (more than just running buses) (35)	○	○	○	○	○	○	○	☐
Bus companies do not provide enough information about disruptions (36)	○	○	○	○	○	○	○	☐
Bus companies do not handle customer complaints well (37)	○	○	○	○	○	○	○	☐
It is easy to provide customer feedback to bus companies (38)	○	○	○	○	○	○	○	☐
Bus operators are good at managing anti-social behaviour on buses (39)	○	○	○	○	○	○	○	☐

Q7.3
The following statements are about the public transport authority that manages bus companies and services in your area, such as PTV, TransLink or TfNSW.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
The public transport authority responds to community concerns (1)	○	○	○	○	○	○	○	☐
The public transport authority is slow to act (40)	○	○	○	○	○	○	○	☐
Paying to use the bus is easy (41)	○	○	○	○	○	○	○	☐
The public transport authority does not tell us about service disruptions (42)	○	○	○	○	○	○	○	☐
The public transport authority responds well to customer complaints (43)	○	○	○	○	○	○	○	☐
Providing customer feedback to the public transport authority is easy (44)	○	○	○	○	○	○	○	☐
The public transport authority is good at responding to anti-social behaviour on buses (45)	○	○	○	○	○	○	○	☐
Improving bus services is more about politics than community need (46)	○	○	○	○	○	○	○	☐
I trust the public transport authority to keep my travel and payment information confidential (47)	○	○	○	○	○	○	○	☐
The public transport authority always acts in the best interest of the community (48)	○	○	○	○	○	○	○	☐
The public transport authority and my community have similar aspirations for the transport system (49)	○	○	○	○	○	○	○	☐

The public transport authority cares about my community's interests (50)	○	○	○	○	○	○	○	☐
Public transport contracts are fair (51)	○	○	○	○	○	○	○	☐
Public transport contracts are transparent (52)	○	○	○	○	○	○	○	☐

End of Block: Interactional trust

Start of Block: Perceptions

Q9.1
The following statements are about the performance of buses in your area.

On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly Agree (7)	I don't know (1)
I usually do not have to wait long for a bus (1)	○	○	○	○	○	○	○	☐
Buses arrive frequently (58)	○	○	○	○	○	○	○	☐
Buses often run late (59)	○	○	○	○	○	○	○	☐
Buses show up when they are supposed to (60)	○	○	○	○	○	○	○	☐
Travel times on buses are too long (61)	○	○	○	○	○	○	○	☐
Travel times on buses are consistent from one day to the next (62)	○	○	○	○	○	○	○	☐
Buses get me where I need to go, when I need to be there (63)	○	○	○	○	○	○	○	☐
It is convenient to get to and from my nearest bus stop (64)	○	○	○	○	○	○	○	☐
Waiting at bus stops is uncomfortable (65)	○	○	○	○	○	○	○	☐
I feel safe travelling on the bus during daylight (66)	○	○	○	○	○	○	○	☐
I feel safe travelling on the bus at night (67)	○	○	○	○	○	○	○	☐
Buses are clean and hygienic (68)	○	○	○	○	○	○	○	☐
Bus trips are comfortable (69)	○	○	○	○	○	○	○	☐
Buses are crowded (70)	○	○	○	○	○	○	○	☐

Bus service information is easy to find (71)	○	○	○	○	○	○	○	☐
Bus service information is easy to understand (72)	○	○	○	○	○	○	○	☐
Bus fares are affordable (73)	○	○	○	○	○	○	○	☐
I can easily get on and off the bus (74)	○	○	○	○	○	○	○	☐
Bus services operate in my area at night (75)	○	○	○	○	○	○	○	☐
Bus services operate in my area on the weekend (76)	○	○	○	○	○	○	○	☐
I can easily connect from buses to other public transport lines, such as trains, trams or other buses (77)	○	○	○	○	○	○	○	☐
It is easy to purchase a [Myki/Opal/Go Card] (78)	○	○	○	○	○	○	○	☐
I feel safe getting to and from the bus stop (79)	○	○	○	○	○	○	○	☐
I am satisfied with the overall quality of bus services (80)	○	○	○	○	○	○	○	☐

Q9.2
On a scale of Extremely unimportant to Extremely important, how important are the following bus service attributes to you?

	Extremely unimportant (1)	Unimportant (2)	Somewhat unimportant (3)	Neither important nor unimportant (4)	Somewhat important (5)	Important (6)	Extremely important (7)	I don't know (1)
Short waiting times (1)	○	○	○	○	○	○	○	☐
Frequent bus services (81)	○	○	○	○	○	○	○	☐
Punctual bus services (82)	○	○	○	○	○	○	○	☐
Reliable bus services (83)	○	○	○	○	○	○	○	☐
Acceptable bus travel times (84)	○	○	○	○	○	○	○	☐
Consistent bus travel times (85)	○	○	○	○	○	○	○	☐
Having bus services available where and when I need them (86)	○	○	○	○	○	○	○	☐
Getting to and from bus stops easily (87)	○	○	○	○	○	○	○	☐
Feeling comfortable while waiting at bus stops (88)	○	○	○	○	○	○	○	☐
Feeling safe while travelling on the bus (89)	○	○	○	○	○	○	○	☐
Cleanliness of buses (90)	○	○	○	○	○	○	○	☐
Comfort on buses (91)	○	○	○	○	○	○	○	☐
Space on buses to sit (92)	○	○	○	○	○	○	○	☐
Accessing bus service information easily (93)	○	○	○	○	○	○	○	☐

Accessing bus service information easily (94)	○	○	○	○	○	○	○	☐
The affordability of bus fares (95)	○	○	○	○	○	○	○	☐
Being able to physically get on/off the bus (96)	○	○	○	○	○	○	○	☐
Bus services which run at night (97)	○	○	○	○	○	○	○	☐
Bus services which run on the weekend (98)	○	○	○	○	○	○	○	☐
Ease of connection between buses and other public transport (99)	○	○	○	○	○	○	○	☐
Ease of purchasing a [Myki/Opal/Go Card] (100)	○	○	○	○	○	○	○	☐
Getting to and from bus stops safely (101)	○	○	○	○	○	○	○	☐

End of Block: Perceptions

Start of Block: Lastly

Display This Question:

If Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = About once every six months

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = About once a year

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = Less than once a year

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = Never

Q10.1 Lastly, what is your level of agreement with the following statement?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
After Covid, I intend to start using buses for my travel needs (1)	○	○	○	○	○	○	○

Display This Question:

If Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = At least three days a week

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = Two days a week

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = One day a week

Or Thinking about your travel before the COVID-19 pandemic, how often did you travel by bus? = About once every month

Q10.2 Lastly, what is your level of agreement with the following statement?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
After Covid, I intend to use buses more often. (1)	○	○	○	○	○	○	○

End of Block: Lastly