

Exploring the Social Licence to Operate Buses in Australian Cities

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Abstract

This paper presents the results of a study to measure the Social Licence to Operate (SLO) of buses in Australian cities. This also measures how SLO varies by city, socio-economic background, and between bus user and non-user groups.

SLO is assessed through a model that provides 4 varying levels of support. These stages are the following: withheld (person believes bus operations lack legitimacy), acceptance (person believes bus operations are legitimate but lack credibility), approval (person believes bus operations are legitimate and credible, but lacks trust), and psychological identification (person believes bus operations are valuable and trusted).

Overall SLO for buses in urban Australia is weak with almost 1 in 5 surveyed participants withholding support, and 61% accepting bus services with weaker levels of approval. Only 20% of people approve or psychologically identify with buses. SLO varies by city; approval/psychological identification is lowest in Melbourne and higher in Sydney/SEQ. Lower relative approval in Melbourne might be related to Melbourne's tram network which provides most inner city and city access functions. In Sydney/SEQ, higher SLO is potentially explained by a better provision of high frequency buses (in SEQ this includes the high frequency busways/BRT systems).

SLO for buses is also strongly related to the characteristics of respondents. Bus users have higher SLO ratings and non-users are far more likely to withhold SLO for buses. Older Australians (over 55) and those with higher incomes are far more likely to have higher levels of approval of buses. Men are also more likely to be in the 'approval' SLO category than women.

Implications for policy are further discussed in this paper.

1. Introduction

Buses have a poor reputation in urban Australia (Wade, 2015). Studies that investigated the preferences of public transport development in urban Australia have overwhelmingly found a stronger preference for rail over bus investment (Hensher & Mulley, 2015). This is despite buses providing local public transport access within a walking distance to many residents in Australian cities. Without public support for bus investment, low service levels will remain prevalent in Australian cities of which will render buses uncompetitive against other transport modes (Infrastructure Australia, 2018). There is a need to investigate public support for buses in urban Australia, and the factors that influence people's level of support.

This paper presents the results of a study to measure the Social Licence to Operate (SLO) of buses in Australian cities. The research explores how SLO of buses varies by city, socio-economic groups, and between user and non-user groups. This research is part of a project commissioned by Roads Australia to explore the perceptions of buses (Movement & Place Consulting, 2022). The project was undertaken by Movement & Place Consulting in association with the Public Transport Research Group at Monash University.

The paper is structured as follows; a short literature review, an outline of the research methodology and analytical framework, results, and final discussions and conclusions.

2. Literature Review

The term "social licence" is attributed to a mining executive, who used the term to highlight the importance of gaining social approval amongst stakeholders to ensure that the mining sector is able to continue operations (Boutilier & Thomson, 2011). 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.

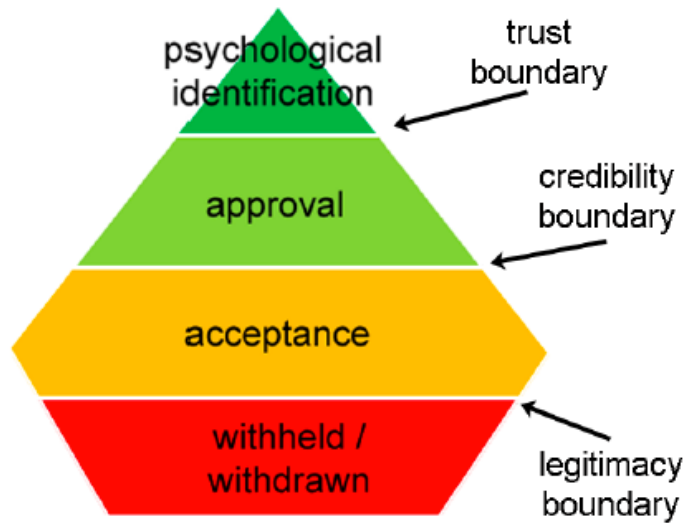
The SLO framework prompts researchers to engage with affected stakeholders and communities to gauge general attitudes and levels of acceptance, in order to determine if a company has the social licence to continue their operations. Thomson & Boutilier (2011) claim that a company with a greater SLO tends 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, 2018). Although the SLO framework has increasingly been applied to non-mining industries by government and non-government organisations to evaluate the social licence for their projects (Boutilier, 2017). We are not aware of any research measuring SLO in relation to public transport services or buses in particular.

In Australia, the SLO framework has been used to assess the level of community support for major transport infrastructure projects (Infrastructure Partnerships Australia, 2020). The rationale for undertaking an SLO study arose because of the effect that community opposition can have on project costs and delays.

Thomson & Boutilier (2011) conceptualized the SLO framework as a pyramid reflecting varying levels of social acceptance as illustrated in Figure 1 overleaf.

Figure 1: Pyramid SLO model – four levels



Source: Thomson and Boutilier (2011)

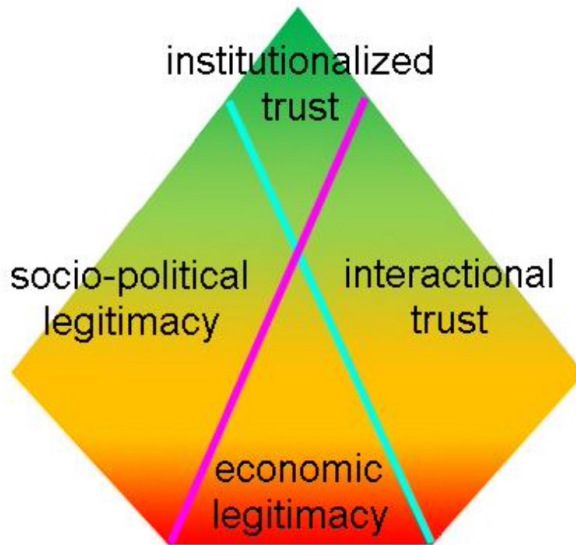
The lowest level, withheld/withdrawn, suggests that the activity/industry/company completely lacks public legitimacy. Acceptance, the level above, occurs when a project is deemed legitimate by stakeholders, but operations have little credibility. Once a project gains credibility, public sentiment shifts 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 2 overleaf). 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, a questionnaire was adopted which incorporated particular questions that measured each of the four constituent factors.

Figure 2: Pyramid SLO model – constituent factors



Source: Thomson and Boutilier (2011)

3. Methodology & Analytical Framework

The research approach involved:

- Developing a questionnaire which measures respondent perceptions of elements of the SLO framework shown in Figures 1 and 2.
- Implementing the questionnaire in an online survey of Melbourne, Sydney and South East Queensland (SEQ)
- Analyzing survey results to establish overall perceptions of the SLO including a disaggregate analysis by city, socio-economic groups and user/non-user groups.

3.1. Measuring SLO Elements in a Questionnaire

Table 1 illustrates the approach taken to measure SLO elements in the questionnaire. For each SLO factor, aspects of bus service provision were measured by assessing respondent agreement/disagreement using 7 point Likert scales. Key dimensions and scoring ranged from -3 for strongly disagree/extremely unimportant to +3 for strongly agree/extremely important. A score of 0 would indicate a *neither agree nor disagree/neither important nor unimportant*.

In addition, the research sought respondent perceptions of service attributes using an importance performance analysis (IPA) framework (Currie G & Delbosc A, 2015). Some 23 service attributes were considered, which were developed from a review of research literature. The IPA results were used to explore different perceptions from users with varying approval levels of the SLO of buses.

Table 1: Approach to Measuring SLO Factors in the Questionnaire

SLO constituent factors	Economic legitimacy	<p>The following statements concern buses in your area and how they <u>affect YOU</u>.</p> <p>On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?</p> <ul style="list-style-type: none"> ● Buses improve my access to jobs and services ● Buses help me be more independent
	Socio-political legitimacy	<p>The following statements are about the role of buses in <u>your community</u>.</p> <p>On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?</p> <ul style="list-style-type: none"> ● Buses are bad for the environment ● Buses are good for jobs and employment in my community
	Interactional trust	<p>The following statements are about <u>bus drivers</u>.</p> <p>On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?</p> <ul style="list-style-type: none"> ● Bus drivers are friendly ● Buses drivers are not helpful
	Institutionalised trust	<p>The following statements are about the <u>public transport authority</u> that manages bus companies and services in your area, such as PTV, TransLink or TfNSW.</p> <p>On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?</p> <ul style="list-style-type: none"> ● The public transport authority responds to community concerns ● The public transport authority is slow to act
Importance-performance perceptions	<p>The following statements are about the <u>performance of buses</u> in your area.</p> <p>On a scale of Strongly disagree to Strongly agree, what is your level of agreement to each of the following statements?</p> <ul style="list-style-type: none"> ● I usually do not have to wait long for a bus ● Buses often run late 	

A central research objective is to understand respondents overall level of acceptance of buses in relation to the four hierarchical levels of SLO shown in Figure 1 (i.e. from best to worst; psychological identification, approval, acceptance and withheld/withdrawn).

The process of allocating participants into a SLO ‘level’ involved calculating the aggregated mean Likert scale score for each of the four constituent factors (Figure 2 and Table 1). The following ordered process was applied:

1. The average Likert scale score for economic legitimacy (at the bottom/low end of the model) 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 displays a positive level of economic legitimacy, 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 yet to be 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 of less than or equal to three would result in the participant being allocated into the acceptance SLO ‘level’.

3.2. Survey Design

The survey aimed to achieve a representative sample using a random sample within a frame structured by age, income and gender including:

Target population (population of interest):

- Bus users and non-users living in metropolitan Melbourne, metropolitan Sydney and SEQ

Sampling frame (accessible target population for the study):

- IPSOS¹ registered survey respondents living in the cities of interest

Sampling (method to draw sample from the frame):

- Bus users and non-users
- To be representative of age, income and gender (as much as possible)

Sample (participants selected for the study):

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

Based on the survey design, IPSOS ran the survey and collected responses from applicable participants living in the three regions.

3.3. Analysis Approach

Survey analysis presents the aggregate findings of the sample with respect to SLO levels (Figure 1). Findings are then disaggregated by city, socio-economic group and bus use/non-use. The survey data was analysed using various statistical analysis approaches. This enabled an investigation of whether statistically significant relationships or differences across groups exist. A post hoc analysis was performed to identify specific groups that have significant differences at 95% confidence interval. The statistical analysis involved a Chi-square test and Analysis of Variance (ANOVA) tests.

4. Results

This section outlines the key findings from the survey and data analysis. The survey quota outcomes are firstly described followed by the aggregate SLO results. Results are then disaggregated by socio-economic groups followed by the results of the importance performance analysis.

4.1. Survey Sampling Outcomes

A total of 2,420 respondents were selected for the sample quota. In total, 1,555 men and 860 women participated in the detailed survey. Due to the disproportionate difference in the number

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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 2 provides a summary of the demographic composition of the respondents selected for the detailed survey.

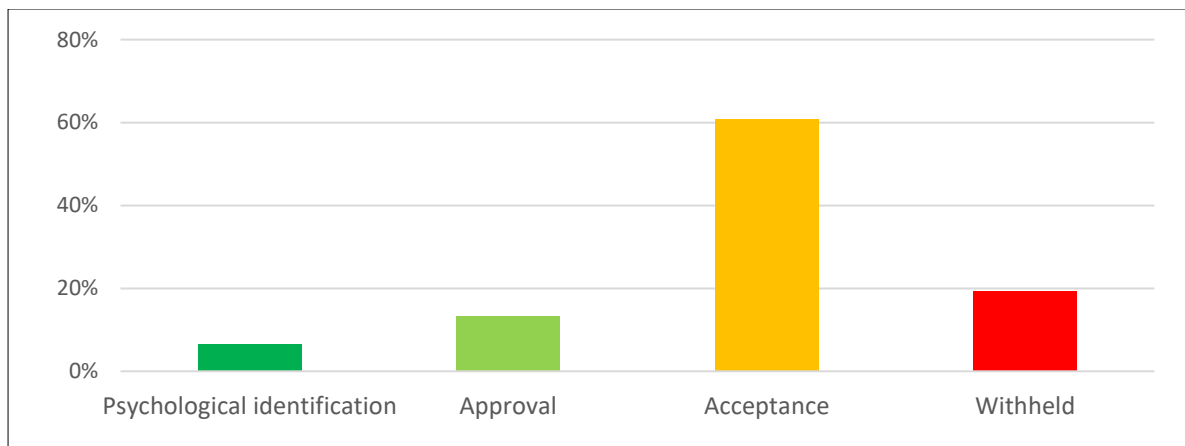
Table 2: Demographics of the respondents across three locations

	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%)

4.2 Aggregate SLO Results

Figure 3 shows the overall SLO level ratings resulting from the analysis.

Figure 3 Percentage of Weighted Respondents by SLO Level



Most respondents (61%) are in the ‘acceptance’ category and very few respondents (6%) are in the ‘psychological identification’ category. 19% are in the ‘withheld’ group while 14% are in the ‘approval’ group. Overall, this implies that there is not a strong SLO for buses in Australian major cities.

4.3 Disaggregate SLO Results

Figure 4 shows the overall SLO level ratings and how they vary by city. 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 buses.

Melbourne had the lowest proportion of respondents in the ‘psychological identification’ and ‘approval’ categories, and the highest proportion of respondents in the ‘acceptance’ category. This suggests 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. This suggests that approval levels for buses are generally higher in Sydney compared to SEQ and Melbourne.

Figure 4 Percentage of Weighted Respondents by SLO Level by City

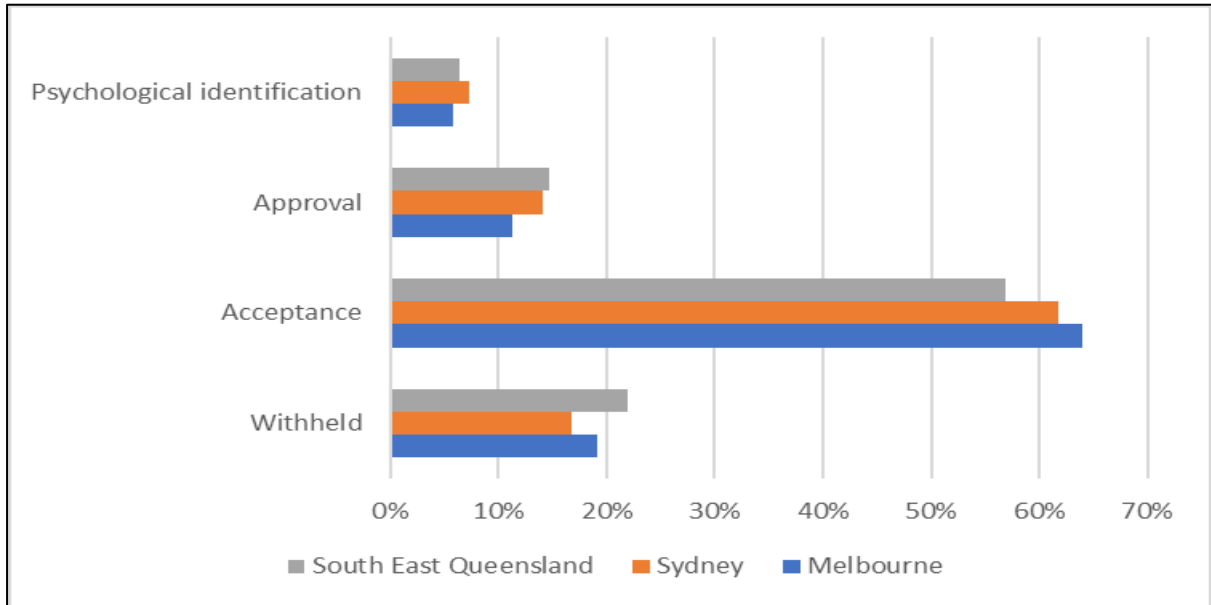


Table 3 summarises the results of the Chi-Square test used to determine if significant relationships exist between the SLO levels, socio-demographic factors and bus use/non-use.

Table 3 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 to operate.

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 to operate 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 to operate, while respondents from Melbourne are more likely to think that buses have a weak social licence to operate.

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 people with higher income levels have a more positive association with buses and believe that they 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.

4.4 Disaggregate SLO Results – Importance Performance Analysis

Figure 5 illustrates the results of the importance performance analysis by SLO Level (the ‘psychological identification’, ‘approval’, ‘acceptance’ and ‘withdrawn’).

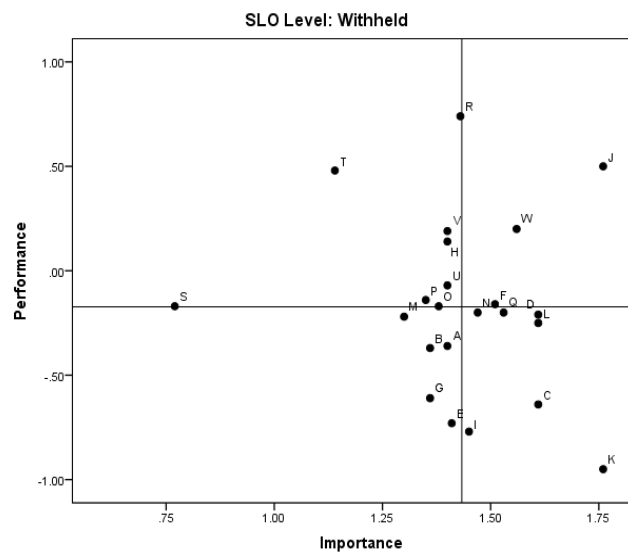
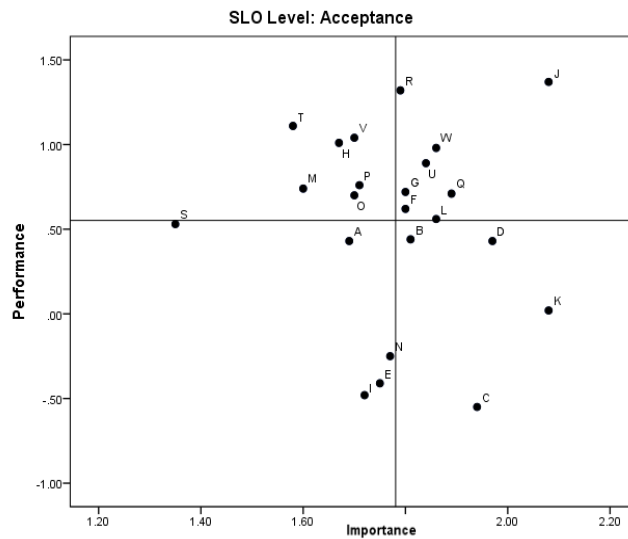
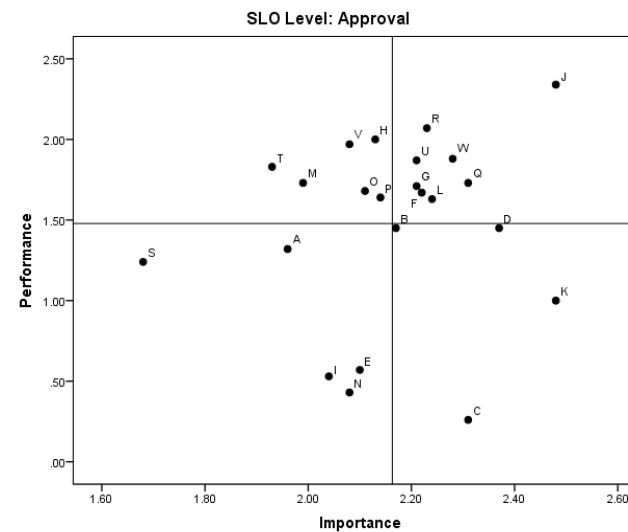
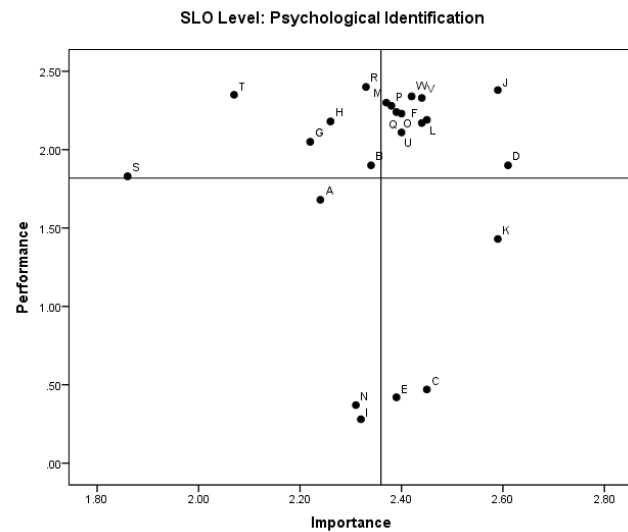
Respondents in the ‘psychological identification’ SLO level identified the following attributes as relatively high in importance but low in performance:

- Punctuality
- In-vehicle travel times
- 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
- Punctuality

Figure 5 importance performance analysis by SLO Level



Attribute Key:

- A. I usually do not have to wait long for a bus
- B. Buses arrive frequently
- C. Buses often run late
- D. Buses show up when they are supposed to
- E. Travel times on buses are too long
- F. Travel times on buses are consistent from one day to the next
- G. Buses get me where I need to go when I need to be there
- H. It is convenient to get to and from my nearest bus stop
- I. Waiting at bus stops is uncomfortable
- J. I feel safe travelling on the bus during daylight*
- K. I feel safe travelling on the bus at night*
- L. Buses are clean and hygienic
- M. Bus trips are comfortable
- N. Buses are crowded
- O. Bus service information is easy to find
- P. Bus service information is easy to understand
- Q. Bus fares are affordable
- R. I can easily get on and off the bus
- S. Bus services operate in my area at night
- T. Bus services operate in my area on the weekend
- U. I can easily connect from buses to other public transport lines, such as trains, trams or other buses
- V. It is easy to purchase a [Myki/Opal/Go Card]
- W. I feel safe getting to and from the bus stop

0 Respondents in the ‘acceptance’ SLO level identified the following attributes as relatively
1 high in importance but low in performance:

- 2 • Service frequency
- 3 • Timetable adherence (reliability)
- 4 • Safety while travelling on the bus at night
- 5 • Punctuality

6
7 Respondents in the ‘withheld’ SLO category identified the following attributes as relatively
8 high in importance but low in performance:

9 Safety while travelling on the bus at night

- 10 • Punctuality
- 11 • Comfort while waiting at the bus stop
- 12 • Crowding on buses
- 13 • Travel time consistency
- 14 • Bus fare affordability
- 15 • Timetable adherence (reliability)
- 16 • Bus cleanliness

17
18 Overall, respondents in the ‘psychological identification’, ‘approval’ and ‘acceptance’ SLO
19 categories identified less attributes which require urgent improvement compared to those in the
20 ‘withheld’ SLO category. The one attribute which consistently needs urgent improvement
21 across all SLO categories is night-time safety, which was also identified as a key concern for
22 multiple demographic groups.

23
24 Besides night-time safety, respondents in the ‘psychological identification’, ‘approval’ and
25 ‘acceptance’ SLO categories were more concerned about improving service level attributes,
26 such as frequency, punctuality and reliability. This contrasts with respondents in the ‘withheld’
27 SLO category, who identified comfort as a key concern in addition to low service levels.
28 Improving the perceived comfort of buses appears to be a key aspect which policy and practice
29 will have to address to improve the general social approval for buses.

30 **5. Discussion and Conclusions**

31 This paper presents the results of a study to measure the Social Licence to Operate (SLO) of
32 buses in Australian cities. It also investigated how SLO varies by city (Melbourne, Sydney and
33 South East Queensland), by socio-economic group and between user and non-user groups. In
34 addition, an importance performance analysis of bus attributes was adopted to explore how
35 perceptions of bus issues varies by level of social licence.

36
37 Overall SLO for buses in urban Australia is low. Almost 1 in 5 withhold support for bus
38 operations and 61% generally accept bus services with modest levels of approval. Around only
39 1 in 5 surveyed participants approve or psychologically identify with buses. SLO varies by
40 city; approval/psychological identification is lowest in Melbourne and higher in Sydney/SEQ.
41 Lower relative approval in Melbourne might be related to Melbourne tram network which
42 provides most inner city and city access functions. In Sydney and SEQ this is provided by high
43 frequency buses (and in SEQ this includes the high frequency busways/BRT systems).

44
45 SLO for buses is strongly related to the characteristics of respondents. Bus users have higher
46 SLO ratings and non-users are far more likely to withhold SLO for buses. Older Australians
47 (over 55) are far more likely to have higher levels of approval of buses than younger age groups,

48 as are those with higher incomes. Men are also more likely to be in the ‘approval’ SLO category
 49 than women.

50
 51 When asked to consider bus attributes which were important but which had low levels of
 52 performance, respondents with a strong ‘psychological identification’ with buses identified far
 53 fewer bus attributes which required attention than those who ‘withheld’ or ‘acceptance’ SLO
 54 levels. However, personal safety at night was a consistent top priority concern for respondents
 55 in all SLO categories. Other than this issue, respondents in the ‘psychological identification’,
 56 ‘approval’ and ‘acceptance’ SLO categories were concerned about improving service attributes
 57 including frequency, punctuality and reliability. Interestingly respondents in the ‘withheld’
 58 SLO category were more concerned about comfort related attributes.

59
 60 These findings have a number of implications for policy. Firstly, it is apparent that the bus
 61 industry needs to address the lack of understanding on the role of buses in reducing congestion,
 62 addressing environmental concerns and providing mobility options for socially disadvantaged
 63 Australians. It is telling that Melbourne has lower levels of SLO than Sydney and SEQ. This
 64 likely related to the strong mass transit role of buses in Sydney and SEQ, which are provided
 65 by trams in Melbourne. The role of buses in reducing congestion in Melbourne is not well
 66 accepted or articulated, which is partly mirrored in the weaker provision of bus priority
 67 measures in Melbourne compared to Sydney and SEQ. Provision of higher quality BRT like
 68 bus implementations in Melbourne might be useful in filling this gap.

69
 70 There is also a significant SLO problem with those who do not use buses, of which in the
 71 Australian context represent a majority of the voting (and non-voting) public. Increasing
 72 political support for bus investments will be reliant on building the support of non-users.
 73 Stating the important role buses have in congesting ‘busting’, social inclusion and positive
 74 environmental impacts are key messages to be better communicated to those who do not use
 75 services.

76
 77 This research has also highlighted the key concerns about personal safety attributes of
 78 travelling by buses. This finding is confirmed by previous research (Currie G & Delbosch A,
 79 2015). This implies that measures to improve perceptions of personal safety (staff presence,
 80 security personnel, CCTV, emergency call-points, safety audits) should be prioritised.
 81 Interestingly, since buses have a driver in close proximity to all passengers in vehicles, buses
 82 have a number of personal safety benefits compared to rail which should also be a key priority
 83 for public communications.

84
 85 The dominance of service level concerns, including frequency and reliability, are also a priority
 86 area for policy. This is backed up by strong evidence found in previous research (e.g. Currie
 87 & Wallis, 2008).

88
 89 This research has found buses have a weak social licence to operate in urban Australia. This
 90 is despite the fact that buses are the only accessible local public transport option for the majority
 91 of urban residents. Improving political support for buses is important as a means to address
 92 urban congestion, environmental and social issues. This will require proactive approaches to
 93 address weak social acceptance in the long term.

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