

The Free Fare Initiative (Trips4Free)

Sharman MJ, Stanesby O, Jose KA, Greaves S, Cleland VJ

“The free bus fare initiative really impacted me in a positive way, I was able to be more social with friends and I was able to go to the gym more often and even do more in person job searches, free bus fares really took a bunch of stress off of my shoulders”

Background

In Australia (and globally), adults and young people are insufficiently physically active for health (1). National guidelines recommend adults accumulate 150 minutes of moderate or 75 minutes of vigorous physical activity per week for health (2). Most initiatives to improve population level physical activity have focused on leisure time, with little attention given to the way people travel in their daily lives (3). Findings from the limited evidence available indicate that public transport users may accumulate 8-33 minutes/day of additional/incidental walking, which could contribute substantially to physical activity targets (4,5). Further, preliminary evidence indicates that financial incentives may motivate people to use public transport more (6). However, physical activity gain through financially incentivised public transport use has been under-explored.

What we did

From the 28 March 2022 to 1 May 2022 (inclusive) Tasmanian public transport was free because of a state government initiative to grow ridership to help ease cost of living pressures from the petrol price spike. Opportunistically, the research team developed an online survey (Trips4Free) to gain preliminary evidence about the link between free bus fares, bus use and

physical activity. The survey was for adults (18+ years) who had used a public bus during the campaign. The survey was open for six weeks (4 May to 14 June 2022) and included twenty-one questions regarding demographics, transport behaviour and physical activity (Appendix 1). To encourage survey completion, participants could enter a draw to win one of five \$100 Mastercard vouchers.

What we found

Five hundred and forty-eight valid surveys were completed. Thirty-two participants did not complete the final section of the survey containing the physical activity questions, leaving a sub-sample of n=516. Participants were more commonly women, less than 45 years old and residing in the most populated local government areas in southern Tasmania (Table 1). The survey findings are summarised in Tables 2-5 and Figures 1-2.

Key findings include:

- Almost half of participants (45.6%) reported using the bus more during the free bus fares initiative than they did before it. Average days per week of bus use increased from three days (before the free bus fares) to four days (during the free bus fares).
- The two most common reasons for no increase in bus use were: the cost of using the bus did not influence the decision to use it (27.9%) and that it did not suit to use the bus more often (13.3%).
- Most participants (81%) planned to continue using the bus although it was no longer free. Of the n=93 who did not use public buses prior to the free bus fares, 35.5% planned to continue using the bus, 39.8% did not and 24.7% were unsure.
- Many participants (61.8%) reported that they walk more on days they used the bus compared with days they drove.

- Average reported weekly walking time to and/or from a bus stop increased for 40.7% of participants (38% reported an increase in time walking of at least 25%), stayed the same for 53.5%, and decreased for 5.8% (5.2% reported a decrease in time walking of at least 25%). Participants accumulated a median of 10 additional minutes/week of incidental walking to/from the bus stop during the free bus fares initiative.
- Amongst those with complete physical activity data (n=516), 36.1% reported higher, 3.9% reported lower and 60.1% reported about the same overall physical activity during compared to before the free fares.
- Amongst those reporting increased bus use during the free period, with complete physical activity data (n=240), 77.1% reported higher, 2.5% reported lower, and 20.4% reported about the same overall physical activity during the free fares period compared to before it. Amongst those reporting reduced bus use with complete physical activity data (n=15), 6.7% reported higher, 46.7% reported lower, and 46.7% reported about the same level of overall physical activity during the free fares period compared to before it.

Thematic analysis of an open-ended survey question inviting comment regarding the relationship between free bus fares, bus use and physical activity revealed:

- The free bus fare initiative was popular and there was a desire for a free bus fare initiative to occur again or operate in perpetuity.
- Limitations in bus service provision thwarted its reach and was a reason given for no increase in bus use.
- For some, COVID-19 was a reason for not taking full advantage of the free bus fares due to required isolation, self-limited socialisation or concerns about transmissibility in the enclosed bus environment.

- Physical activity gain was through walking to and from bus stops, attending physical activity settings more often, such as the gym and walking to a destination because of buses not showing, being late or being crowded.
- Physical activity loss associated with bus use was due to using the bus instead of walking, or if using a motor vehicle parking was further from their destination than the bus stop.
- Individual or household level cost savings and improved travel opportunities and social and mental health were other related benefits.
- Individual level cost savings can be undermined by an unreliable service if alternate unplanned transport is needed (e.g. using an Uber when bus did not show).

Limitations

The study used a convenience sample and a non-randomised and non-controlled post-intervention design, so the generalisability of the findings is unknown. Due to time constraints, the number of questions were deliberately minimised to ensure that the study could be conducted immediately post the free bus fare period and to maximise responses. Bus use and physical activity were self-reported which has known limitations. The free bus fares period occurred when COVID-19 continued to impact public transport service provision due to bus service staff shortages which may have influenced the results of this study.

Strengths

This novel opportunistic study has provided useful insights into the impact of a free bus fare initiative. Other strengths include the rapid responsiveness to the state government initiative, large number of survey responses and reasonable diversity in the sample. The findings also align with other data shared by state government and a public transport provider who reported an approximate increase in public transport patronage of 15% during the free bus fares period (7,8).

Recommendations

- Promote to appropriate agencies that the individual level benefit of free bus fares is not restricted to cost savings and therefore the social impact is likely broader.
- Consider the merits of similar short-term interventions to attract and potentially retain new riders as well as encourage existing riders to use the bus more.
- Advocate for improved public transport service provision given the individual, societal and environmental gains from public transport usage compared with private motor vehicle use.
- Encourage appropriate agencies to trial free public transport initiatives in consultation with public health researchers so that the intervention effect can be comprehensively and rigorously evaluated.

Conclusions

This exploratory study provides useful information for government, public health and public transport agencies. The findings add to the building evidence that incentivising public transport improves its usage and that pursuing physical activity gain through travel behaviour has merit. Further, the perceived benefits of free public transport are broad and extend beyond the individual level fiscal benefit underpinning the genesis of the campaign.

References

1. Chau J, Chey T, Burks-Young S, Engelen L, Bauman A. Trends in prevalence of leisure time physical activity and inactivity: results from Australian National Health Surveys 1989 to 2011. *Aust N Z J Public Health* 2017;41(6):617-24.
2. Australian Department of Health. Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults (18-64 years). Canberra: Australian Government Department of Health; 2014.
3. Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJ, Martin BW, et al. Correlates of physical activity: why are some people physically active and others not? *Lancet* 2012;380(9838):258-71.

4. Rissel C, Curac N, Greenaway M, Bauman A. Key health benefits associated with public transport: an Evidence Check rapid review brokered by the Sax Institute (<http://www.saxinstitute.org.au>) for the NSW Ministry of Health. New South Wales: NSW Ministry of Health; 2012.
5. Rissel C, Curac N, Greenaway M, Bauman A. Physical activity associated with public transport use--a review and modelling of potential benefits. *Int J Environ Res Public Health* 2012;9(7):2454-78.
6. Sharman MJ, Lyth A, Jose KA, Ragaini BS, Blizzard L, Johnston FH, et al. Acceptability and perceived feasibility of strategies to increase public transport use for physical activity gain - A mixed methods study. *Health Promot J Austr* 2019.
7. Government of Tasmania. Free public bus travel has ended. Government of Tasmania; 2022 [cited 2022 3 August 2022]; Available from: https://www.transport.tas.gov.au/public_transport/bus_timetables/service_changes/service_up_dates/free_public_bus_travel_until_end_of_april_2022.
8. Podwinski I. Tasmania's free public buses deemed a success, despite hundreds of route cancellations and driver shortages. *ABC News* 2022 29 April 2022.

Table 1. Characteristics of participants (N=548)

Characteristic	n/%	
Gender		
Woman	400	73.0
Man	131	23.9
Other (includes "Prefer not to say")	17	3.1
Age group		
18-24	137	25.0
25-34	163	29.7
35-44	108	19.7
45-54	87	15.9
55-64	41	7.5
65-74	10	1.8
>75	2	0.4
Local government area		
Central Highlands	26	4.7
Clarence	109	20.0
Derwent Valley	20	3.7
Glenorchy	117	21.4
Hobart	107	19.5
Huon Valley	18	3.3
Kingborough	64	11.7
Launceston	58	10.6
Sorell	10	1.8
Other*	19	3.5
Education [†]		
Low	165	30.1
Middle	152	27.7
High	231	42.2

* Brighton, Southern Midlands, Dorset, Meander Valley, Latrobe, Central Coast, Burnie, Waratah/Wynyard

[†] Low (year 12 or less); middle (cert/diploma); high (university qualification)

Table 2. Transport behaviour and characteristics (N=548)

Variable	n/%	
Bus service used		
Metro	508	92.7
Tassielink	14	2.6
Merseylink	2	0.4
O’Driscoll	5	0.9
Redline	13	2.4
Other*	6	1.1
Reasons for bus use not increasing (multiple answers allowed) [†]		
My bus use did increase	250	45.6
The cost of using the bus does not influence my decision to use it	153	27.9
It does not suit me to use the bus more often	73	13.3
The cost of fuel does not influence the way I choose to travel	31	5.7
I have cut back on spending on other things (e.g. eating out) due to the increase in fuel prices	33	6.0
Other (see below)	81	14.8
<i>Most common “other” reasons for no bus use increase</i> <i>Illustrative quotes</i>		
Already using bus/bus use unchanged (n=27)	I have to use the bus because I have no other option, regardless of cost. I only use the bus to travel to work (5 days per week)	
Service provision limitations (n=22)	There weren't any buses running to get me to work and back Many routes {sic} were dropped, so I had to use uber	

Do you intend to continue using the bus now that it is not free?

	Existing and new bus users (n=548; n/%)		New bus users only (n=93; n/%)	
Yes	446	81.4	33	35.5
No	52	9.5	37	39.8
Unsure	50	9.1	23	24.7

*One each of O'Driscoll and Merto {sic}, Coal River, Derwent Ferries, Derwent Valley Link, East Tamar bus lines, Sainty[†] Error in responses may be present due to no option to select if bus use was unchanged (n=31 of 251 whose bus use increased selected a reason for a decrease, n=1 of those whose bus use decreased selected "my bus use actually increased").

Figure 1. Estimated minutes to walk from home and place of work/study to nearest bus stop (N=548)

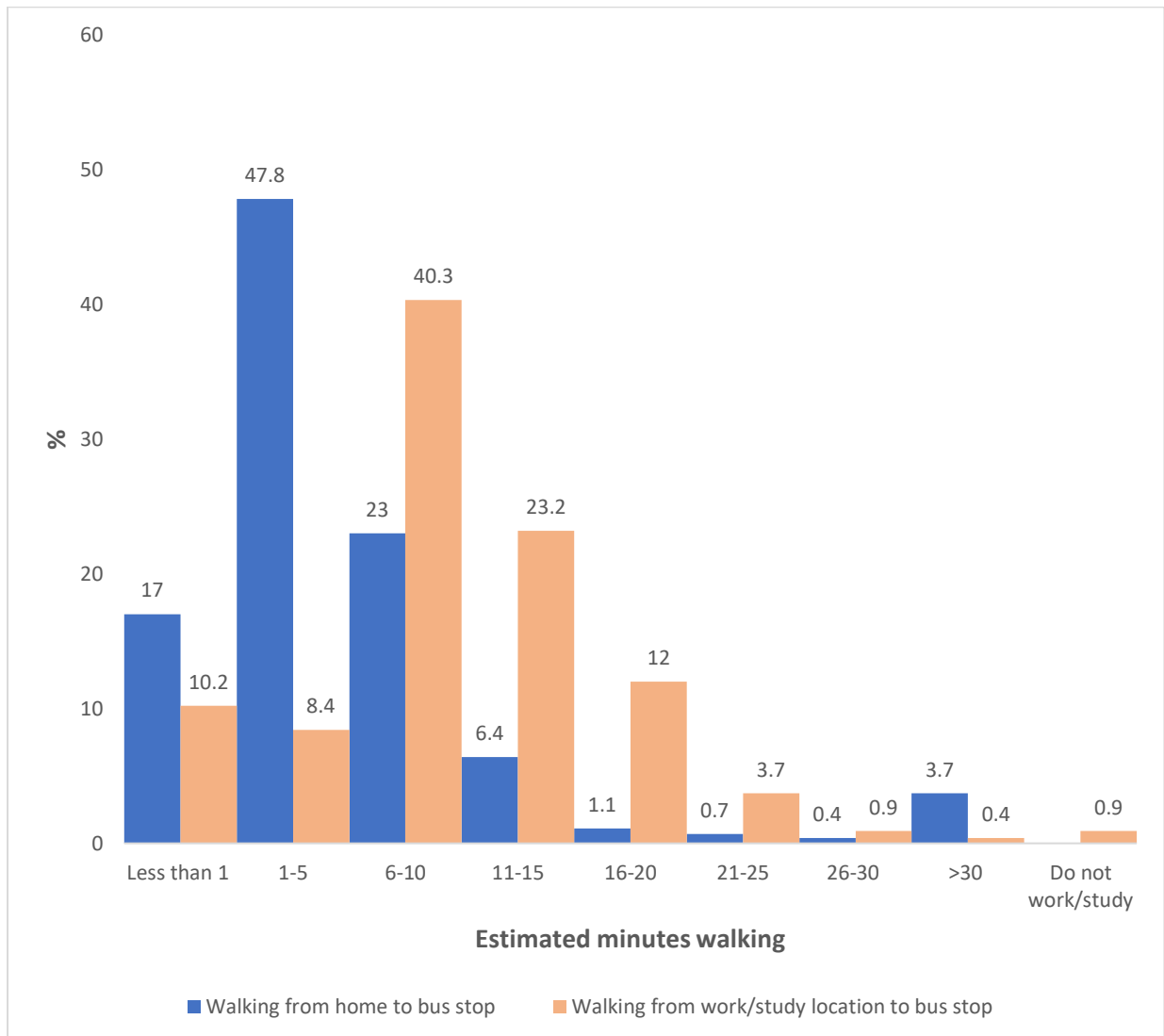


Figure 2. Average weekly bus use before and during free bus fares initiative (N=548)

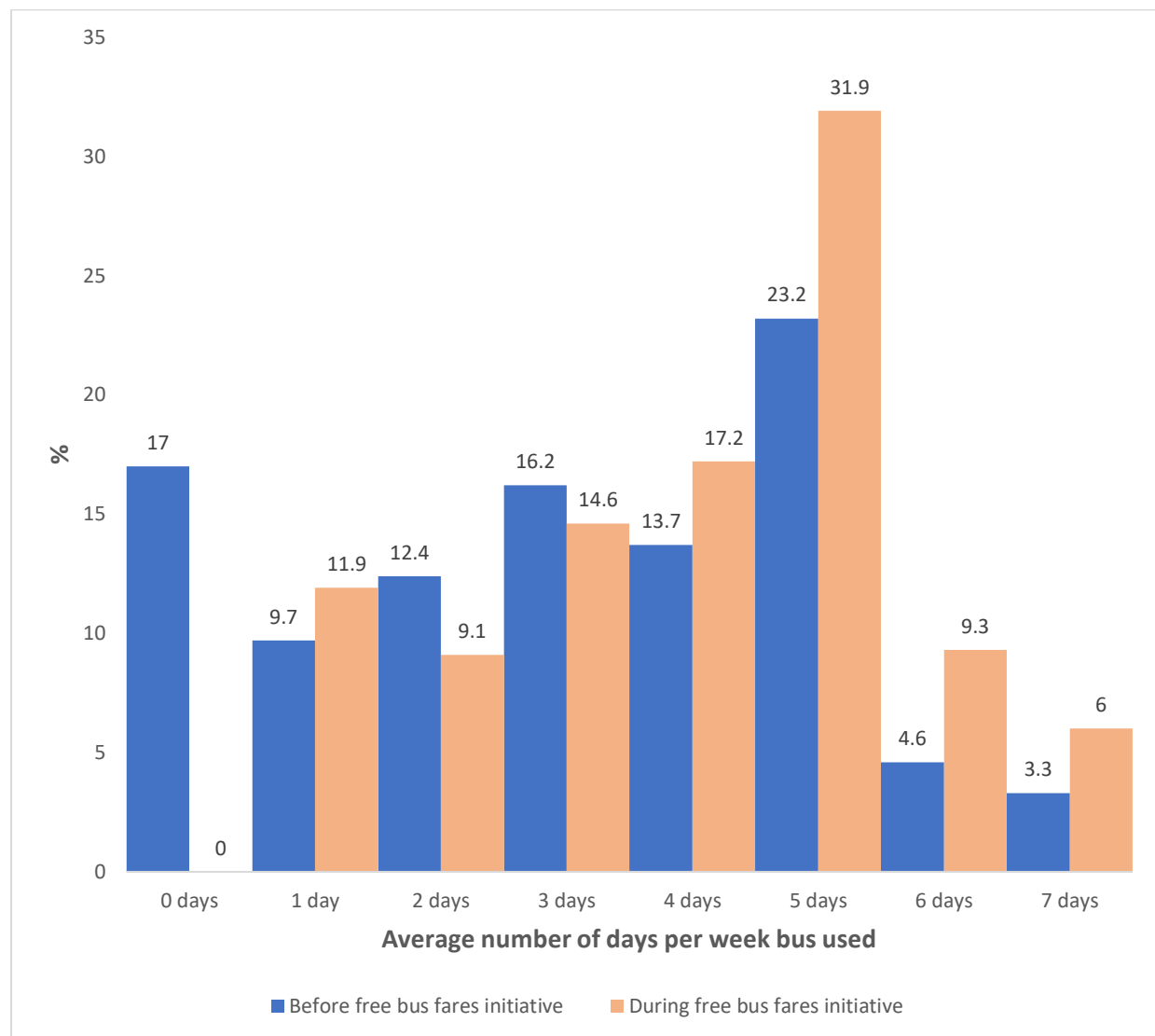


Table 3. Physical activity behaviour and characteristics (N=516)

On days when you catch the bus, do you walk more, walk less or walk about the same as when you drive?* (n/%)

Walk more	319	61.8
Walk about the same amount	143	27.7
Walk less	54	10.5

On days when you catch the bus, do you think you are more active overall, less active overall, or do about the same level of activity overall as when you drive?* (n/%)

More active	313	60.7
About the same amount of physical activity	155	30.0
Less active	48	9.3

Reported total minutes walking to and/or from a bus stop in a regular week before the free bus fare initiative (median (IQR) and mean (SD))

24 (50) 39.0 (47.4)

Reported total minutes walking to and/or from a bus stop in a regular week during the free bus fare initiative (median (IQR) and mean (SD))

30 (45) 49.3 (51.0)

Change in reported total minutes walking to and/or from a bus stop in a regular week during compared with before the free bus fare initiative (n/%)

More walking	210	40.7
The same amount of walking	276	53.5
Less walking	30	5.8

Amount of change in reported total minutes of weekly walking to and/or from a bus stop in a regular week during compared with before the free bus fare initiative (n/%)

Increased by at least 15 minutes	143	27.7
Stayed about the same (within 15 minutes)	356	69.0
Decreased by at least 15 minutes	17	3.3

Relative change in reported total minutes of weekly walking to and/or from a bus stop in a regular week during compared with before the free bus fare initiative (n/%)

Increased by at least 25%	196	38.0
Stayed about the same (within 25%)	293	56.8
Decreased by at least 25%	27	5.2

Do you think the free fares initiative changed your overall physical activity levels? (n/%)

Yes - I was more physically active overall (physical activity increased)	186	36.1
No – my physical activity did not change	310	60.1
Yes - I was less physically active overall (physical activity decreased)	20	3.9

Physical activity change by bus use change during compared with before the free bus fare initiative (n/%)

	<i>More physically active</i>	<i>The same physical activity</i>	<i>Less physically active</i>
<i>More bus use (n=240)</i>	185 (77.1)	49 (20.4)	6 (2.5)
<i>The same bus use (n=261)</i>	24 (9.2)	220 (84.3)	17 (6.5)
<i>Less bus use (n=15)</i>	1 (6.7)	7 (46.7)	7 (46.7)

* The question did not include a comparison to transport types other than a motor vehicle therefore was limited in its scope

Table 4. Key themes regarding perspectives on the relationship between free bus fares, bus use and physical activity, supported by illustrative quotes

Theme	Illustrative quote
Free bus fares is a positive initiative	Great initiative to encourage public transport use to decrease traffic congestion. Though buses are my primary use of transport I appreciated the free fares and noticed more people using the bus during this time. Overall a great idea I feel that free bus travel would encourage more workers to catch the bus, ease congestion in the CBD and benefit tourists visiting Tasmania. Public transport needs to be free in order for it to be valued and utilised properly.
Bus use More (most common) Less (least common) The same	I used buses on weekend trips into town for the first time. Usually I would drive I used the bus less frequently when it was free because of the Easter break and because I worked from home one week. I loved it but it didn't change my behaviour except I spent the saved money on small local businesses
Physical activity More (most common) Less (similarly less common) The same (similarly less common)	The free bus encouraged me to take the bus rather than drive/Uber so I spent more time walking to bus stops than before It made me less active as I used to walk all the way to work (city) from (suburb name) I was already catching the bus to work each weekday, so it didn't change my physical activity
Cost saving	I was very pleased with the initiative as it saved my family approximately \$50 pw. I earn low income and the free buses meant I had extra money to afford groceries for my child
Service limitations impact	While the initiative ran there were significant delays or cancellations of bus services, meaning it was an unreliable method of transport to get to work on time. For that reason I ceased catching the bus. One thing that did impact it was the limited services in and out of my area and due to covid some buses got cancelled...
COVID-19 impact (in addition to service provision impact)	I didn't have the opportunity to take much advantage of the offer due to Covid isolation followed by school holidays, but I would quite like to going forward because it is healthier for me and the environment. I would have probably used the bus more if I wasn't limiting my movement due to COVID. Being in an enclosed bus when covid numbers were high was also a little off-putting and may have put potential users off.
Improved social connectedness	Having the buses being free allowed me to do more things than I usually would, as bus fares impact how often I can travel. This has

	allowed me to have more freedom, which has now {sic} been restricted due to bus fares returning. The free fares allowed me the opportunity to go out and explore new places and to go to the shops more often. I signed up to meet with friends. It felt liberating although the frequent cancellations weren't helpful. I believe bus travel should be made free in our state to allow for more social connections.
Mental health benefit	However, the free service was a relief to me in financial terms as I was not always stressed about topping my bus card.
Environmental benefit	Free bus fares made my environmental decision to take the bus much easier and more rewarding. I will take it anyway though to have less pointless cars on the road.