Opportunity Cost Saliency on Decisions to Purchase a Car

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Land Transport Authority | becc behavior, energy & climate change

Background and Methodology

Current research: Frederick et al. (2009) only looked for "**Opportunity Cost Neglect**" (OCN) in the context of small purchases. We plan to determine whether OCN (and methods to overcome it) changes in the context of large purchases, such as cars.

To mitigate OCN, we can make the **opportunity cost more salient**, by introducing **reminders that the money can be kept for other purchases.**

Experiment and Survey Design

Scenario: The average cost of car ownership is **$30,000 per year** (for a period of 10 years) vs **annual cost of taking public transport is $0 for Land Transport Authority (LTA) staff**.

Imagine you have just **won a lottery** and will be paid $30,000 each year, for the next 10 years.

Would you purchase a car?

Control
- Yes
- No

Treatment 1
- Yes
- No, I would keep the $30,000 for other purchases

Treatment 2

Activity: LTA's Car Expense Calculator

An avenue in which we can inform car owners of opportunity costs will be **LTA's Car Expenses Calculator**

Interested to find out more?
Scan the QR code on the right to access our Car Expense Calculator
Try to spot the nudges on LTA's Car Expense Calculator

go.gov.sg/car-cost-calculator

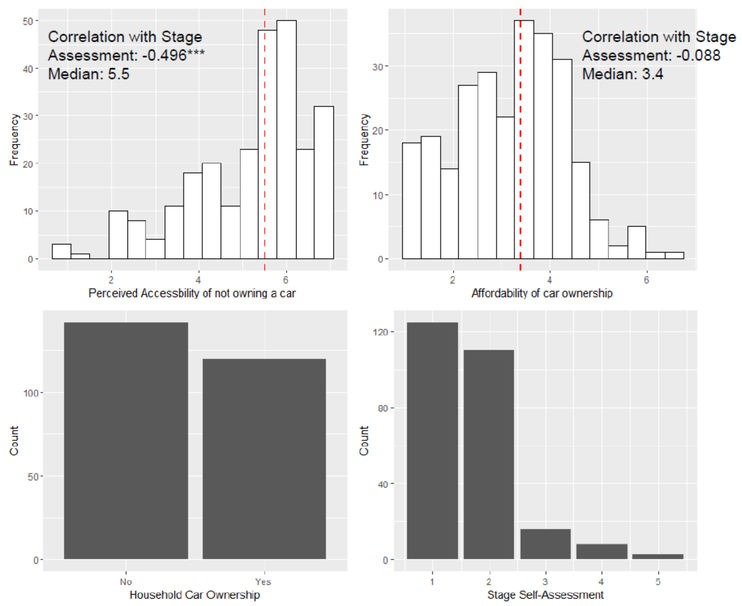
Survey Design: Stage Self-Assessment

Stage	Description
1.	At the moment, I use public transport for most of my trips. I am happy with my current reliance on public transport and see no reason why I should change it.
2.	At the moment, I still use public transport for most of my trips. I would like to own a private vehicle, but, at the moment, I feel it would be impossible for me to do so.
3.	At the moment, I do use public transport for most of my trips. I am currently thinking about owning a private vehicle, but at the moment I am unsure of the vehicle I want to buy or of the steps I need to take to obtain this vehicle.
4.	At the moment, I use public transport for most of my trips, but it is my aim to own a private vehicle. I already know the vehicle I want to buy, and the steps I need to take to buy that vehicle, but I have not actually put this into practice.
5.	Because I am aware of the many problems associated with public transport usage, I have already taken steps to buy the vehicle I want. I will obtain this vehicle in the next few months.

Survey Design: Psychometric Scales

Perceived Accessibility of Non-Car Ownership (1 = Strongly Disagree - 7 = Strongly Agree)	
1.	It is easy to do my daily activities without owning a car.
2.	I would be able to live my life as I want to without owning a car.
3.	I am able to do all the activities I prefer without owning a car.
4.	Access to my preferred activities is satisfying without owning a car.
Perceived Affordability of Car Ownership (1 = Strongly Disagree - 7 = Strongly Agree)	
1.	If I wanted to, I could easily afford to spent at least $17,000 a year over a period of 10 years to purchase a car.
2.	For me to spend at least $17,000 a year over a period of 10 years to purchase a car is… (easy/ difficult)
3.	My personal income permits me to easily spend at least $17,000 a year to purchase a car.
4.	It is affordable for the average Singaporean in their 40s to own a car in Singapore.
5.	Owning a car would not put a significant dent in the savings of the average Singaporean in their 40s.

Summary Statistics



Key Findings

Both **reminders** (simple or fleshed out) led to **lower willingness to purchase the car** vs control

Would you purchase the car?	Control	Treatment1	Treatment2
Yes	23	7	9
No	81	62	80
Pairwise Fisher's Exact Test (Relative to Control)	-	0.0636^	0.0323*

*Significance codes: ^ = p < 0.1, ** = p < 0.05*

Dependent Variable: 1 = Purchase Car; 0 = No Purchase Car *Predictors*	(1) *Odds Ratios*	(2) *Odds Ratios*
Intercept	0.28 ***	0.62
T1	0.40 *	
T2	0.40 *	
CombinedTreatment		0.35 **
Perceived Accessibility		0.49 ***
Affordability of Car Ownership		1.87 **
Stage Assessment (0 = Stage 1, 1 = Stage 2 and above)		1.91
Household Car Ownership (0 = No, 1 = Yes)		1.39
Housing Type (0 = Public, 1 = Private)		0.87
Observations	262	262
R^2 Tjur	0.027	0.205

** p<0.05 ** p<0.01 *** p<0.001*

Odds ratio < 1 means lower odds of purchasing the car
Odds ratio > 1 means higher odds of purchasing the car

From regression analysis, Treatment 1 and Treatment 2 have identical effects on the car purchasing decision

- Being in Treatment 1 or Treatment 2 decreases the odds of car purchase by 60%.

- Key takeaway: People exhibit OCN even for larger purchases and simple reminders can mitigate it, even though there is no harm in using a more fleshed out reminder.

Perceived Accessibility of not owning a car and Perceived Affordability of car ownership also have statistically significant effects, in the expected directions.