To drive or not to drive? A qualitative comparison of car ownership and transport experiences in London and Singapore

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ARTICLE INFO

ABSTRACT

Cities are responding to their growing transportation demands in different ways. We interviewed city dwellers in two cities, Singapore and London, with highly developed transport infrastructure to understand individual transport decisions and experiences in the context of two different city cultures that support distinct transport policies. Compared to London, cars and other private transport are valued and priced beyond the reach of most in Singapore. Seventeen adults from London and sixteen from Singapore were interviewed and presented with an overview of the other city's transportation system to elicit their opinions on the differences and whether an alternate system could be applied in their city. Differences were observed in perceptions of, and beliefs concerning, private transport. In Singapore, cars served more than utilitarian purposes and were viewed as socially desirable status and success symbols. In London, car ownership and usage were viewed as a necessity due to a perceived lack of accessible, alternative transport. Both samples valued accessibility, affordability and comfort in relation to transport mode choice. There was also general acknowledgement and support for managing the car population and use in both cities, though how it should be done remains highly context-specific. Our findings suggest that public engagement and effective communication are important components when interventions and policies are introduced to better manage the car population and use in cities.

1. Introduction

Economic activities are increasingly concentrated in expanding cities that need efficient transport systems (Rode et al., 2017; Rodrigue et al., 2017). Transportation becomes challenging for cities when transport systems, cannot satisfy mobility requirements. Some common transport challenges include (i) traffic congestion and parking difficulties resulting from motorisation and inadequate infrastructures; (ii) longer commutes due to congestion and increasing home-to-workplace distance; (iii) public transport inadequacy and cost because of over- or under-utilisation; (iv) high maintenance or replacement costs of aging transport infrastructures; and (v) difficulties incorporating non-motorised transport due to high traffic density or lack of infrastructure and facilities (European Commission, 2016).

Private vehicle use contributes, directly and indirectly, to these challenges and continues to grow globally, fuelled by economic development and the advantages it offers (e.g., on-demand mobility, comfort, status, speed and convenience; Gardner and Abraham, 2007; Rode et al., 2017; Rodrigue et al., 2017). Since the 1980s, congestion in cities has become increasingly noticeable and cities have been implementing policies and strategies to limit vehicular traffic (e.g., traffic prohibition and tolls). Some cities, including Beijing and Mexico City, attempted to prohibit vehicle use according to licence plate numbers and day of the week but affluent drivers circumvented the system by purchasing a second vehicle, so worsening the situation (Gallego et al., 2013; Yang et al., 2015). To date, Singapore is the only city that has successfully imposed a heavy tax burden and purchasing permits on ownerships to control its vehicle fleet and growth rate (Pow, 2014).

Although car mobility may have peaked in developed countries because of transportation policies and other factors, such as higher energy prices, congestion, shifting economic prospects and an aging population, car ownership and use will continue to grow in emerging economies (PricewaterhouseCoopers, 2016). Private vehicles remain the prime choice for urban mobility in the short to medium term. Therefore, better understanding of transport behaviours in cities and how these relate to transport polices is needed to regulate car use.

1.1. The present research

This study interviewed transport users in London and Singapore to investigate: 1) experiences in the two cities; 2) factors considered during

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Table 1

Selected comparisons between London and Singapore.

	London	Singapore
Per Capita GDP (2015)	£43,629[a]	£36,538 (S$72,711)
Big Mac Index (July 2016)	£2.99	£3.05
Public transport monthly season pass (June 2016)	£227	£95.48 (S$190)
Unleaded (95) fuel (per litre, June 2016)	£1.12	£0.98 (S$1.95)
Mercer Quality of Living ranking	26th	39th
2016 Honda Jazz 1.3[b]	£14,145	£44,221 (S$87,999)

Notes: For ease of comparison, the prices have been normalised to the Great British Pound (£) using the pre-Brexit exchange rate with reference to 1 June 2016: £1 = S$1.99.

[a] Gross Value Added statistics for London.

[b] Car prices as current in January 2017.

transport decisions; 3) cultural differences; and 4) opinions of current transport policies in their own and the other city. These two cities were selected because they are culturally and geographically distinct with advanced but different transport systems and policies that have similar aims of reducing private car use in favour of public transport and active transport. As will be explained in the following sections, both cities, even with similar aims, have taken different approaches to managing their vehicle population and this raises the question of how this shapes the transport decisions and behaviour, and concept of private car ownership in their population. The following sections present brief backgrounds of the both cities, with selected comparisons summarised in Table 1.

1.1.1. Background of London

London[1] is the capital city of England and the most populous city within the European Union with a population of 8.67 million living within an area of 1572 km^2 in 2016 with a population density of 5510 per square kilometre (Greater London Authority, 2016). In 2015, 2.64 million cars were owned by residents, i.e., 30 cars per 100 persons (Department for Transport, 2016). To manage congestion and encourage alternative modes of transport in Central London during working hours, Congestion Charging, using a £11.50 daily tariff, was introduced in February 2003 for entry into specified zones (Fig. 1 and Fig. 2 illustrates the location of the Congestion Charging zone; Transport for London, 2018). The public transport system network managed by Transport for London consists of buses, the London Underground (Tube), Docklands Light Railway, London Trams, London Overground, Emirates Air Line, River Services and Cycle Hire (more information is found on www.tfl.gov.uk).

1.1.2. Background of Singapore

Singapore, an island city-state in Southeast Asia, has a population of 5.61 million in 2016 in an area of 719.1 km^2, has a population density of 7797 per square kilometre (Deparment of Statistics, 2016). In tandem with its rapid economic and population growth after independence in 1965, its vehicle population rapidly increased in the 1970s leading to traffic congestion that was exacerbated by its limited land space and high population density (Lew and Leong, 2009). The following three major traffic demand control policies that were adopted and still implemented today are presented below.

1.1.2.1. Electronic Road Pricing scheme.
The first traffic congestion management strategy was the Area Licensing Scheme introduced in 1975 which required vehicles entering or leaving the central business district vicinity during peak period to purchase and display an area licence (Menon and Loh, 2015). This scheme has since been superseded by the fully automated Electronic Road Pricing (ERP) system that deducts charges electronically whenever vehicles pass through a gantry (refer to Fig. 3 for the locations of the gantries).

1.1.2.2. High additional registration fee for vehicles.
In 1975, a high tax, the Additional Registration Fee (ARF), was also imposed upon the registration of a vehicle (Meng et al., 2015). The ARF is calculated based on a percentage of the vehicle's open market value. In the mid-1990, a car with an open market value of S$10,000 would have been subjected to a 45% custom duty and an ARF of 175%, resulting in a new car price of S$32,000. However, this price was net of the car distributer's margin. Thus, a Toyota Starlet XL with an open market value of S$11,351 in May 1990 would eventually retail at S$42,630. According to the LTA's current policy, a car with an open market value of S$30,000 today will have an ARF of 140% (S$42,000).

Despite the ARF and ERP scheme from 1975, the vehicle population continued rising rapidly and almost doubled in 1989 with 257,371 vehicles. Land scarcity made it impossible to continually increase road supply to meet the growing demand, except at high marginal cost. The LTA then adopted a more direct approach towards regulating the car population (Menon and Loh, 2015).

1.1.2.3. Vehicle Quota System and the Certificate of Entitlement.
The Vehicle Quota System (VQS) was introduced in 1990 to control the vehicle population by limiting new vehicle purchases (Lew and Leong, 2009). Potential buyers must now obtain a Certificate of Entitlement (COE) prior to purchasing a new vehicle. Vehicles due to be purchased are grouped into 5 categories depending on the engine size and nature of the purchase. Private vehicles, the focus of the study here, are purchased across three categories (Category A, B and C). A set quota of COEs will be issued monthly for potential buyers to bid and the final price of a COE for that bidding round is set at the lowest accepted bid. The LTA determines the quota of COEs issued based on a prescribed rate of vehicle population growth has been revised down from 3% in 2008 to 0.25% in 2016 and most recently to 0% per annum currently (LTA, 2017a; LTA, 2017b).

With these policies, Singapore's car population in 2016 stood at 602,311 (11 cars per 100 persons; LTA, 2016). The public transport system network managed by LTA consists of buses, the Mass Rapid Transit (MRT) and Light Rapid Transit (LRT; more information is found on www.lta.gov.sg). Further information about Singapore's transport policies is provided in Appendix A.

2. Method

2.1. Participants

Recruitment was carried out via a research participation call inviting for participants for a study that is exploring their experiences and thoughts about transportation in their city. Participants had the option to have the interview conducted face-to-face or over the telephone in their city of residence (London or Singapore). All participants consented to their interviews being audio-recorded and transcribed verbatim with identifiable information removed for confidentiality.

All participants adults who were residing in either London or Singapore at the time of the study and interviews were collected until data saturation was reached, when no new themes or insights emerged. No incentives were given for the participation in the study and ethical approval was granted prior to data collection and procedures followed the approved protocol.

For the London portion of the study there were 17 participants (9 men and 8 women, mean age 45.7 years, with a range of 24–65 years) were interviewed (mean interview length: 30 min 26 s). Among them, 13 (76%) possessed a car driving licence. For the Singapore portion of the study there were 16 participants (10 men and 6 women, mean age 36.1 years, with a range of 23–63 years) interviewed (mean interview length: 32 min 41 s). Among them, 13 (81%) participants possessed a car driving licence. Detailed demographics of the participants are provided in Table 2.

2.2. Procedure

Semi-structured interviews were conducted in two parts. First, participants were encouraged to reflect on and discuss their experiences of travelling within their city and identify factors important to them when choosing transport modes. Second, participants' opinions of transport policies were

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[1] London comprises of 32 boroughs, of which 12 boroughs form inner London and 20 boroughs constitute outer London. Collectively, these London regions are known as Greater London and are the focus of the current study.
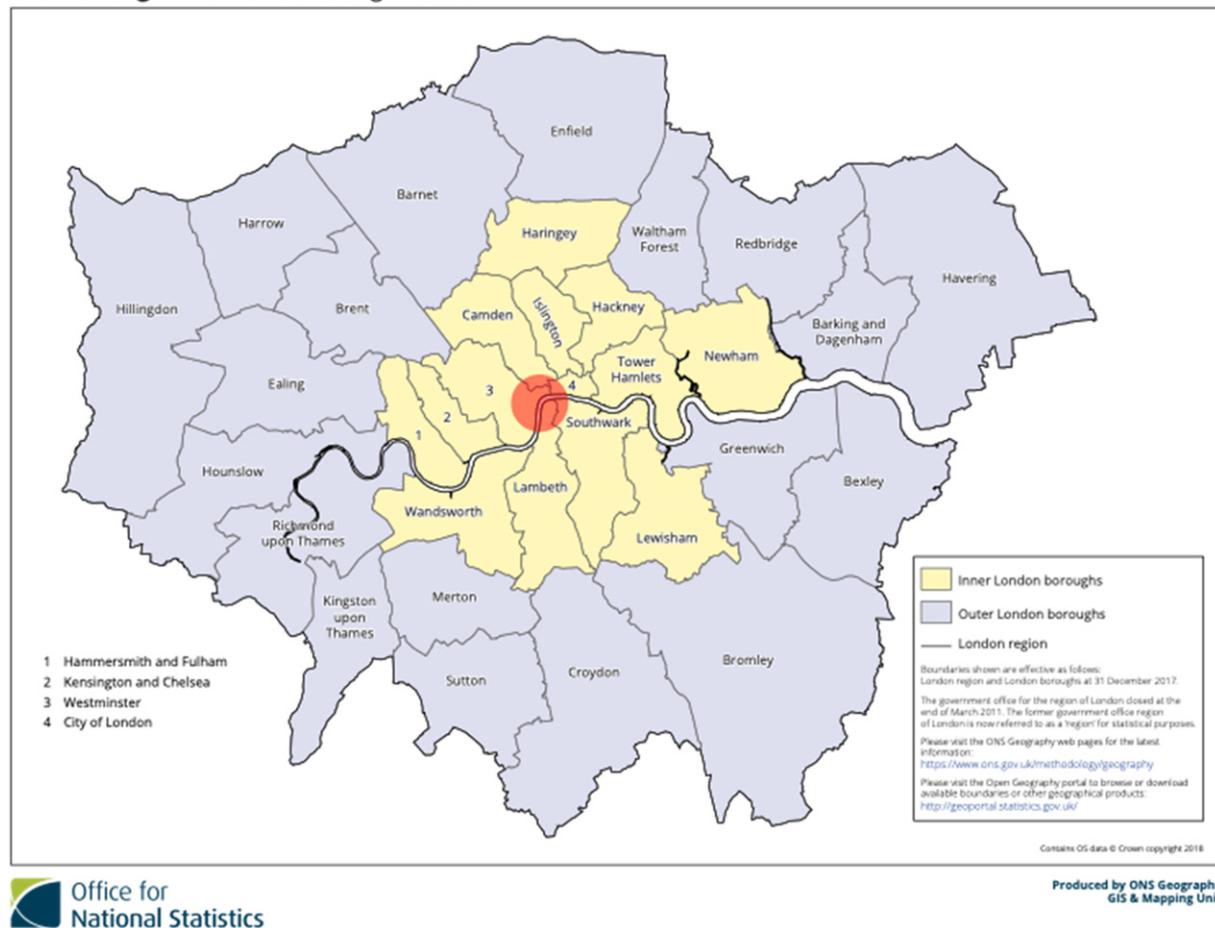
Fig. 1. Map of London boroughs by the Office of National Statistics (2018). The red dot in the middle of the diagram indicates the Congestion Charge area in central London, refer to Fig. 2 for the precise boundary.

elicited. Londoners were initially invited to appraise London transportation policies and were then introduced to transportation policies in Singapore – and vice versa for Singaporeans. The interviews were relatively open but structured by a topic guide presented in Appendix B to ensure all relevant issues were addressed. Where necessary, participants were asked to elaborate or clarify answers.

2.3. Thematic analysis

We were interested in experiences and motivations described by participant, rather than seeking to discover unspoken or hidden discourses. Consequently, interview transcripts were analysed using thematic analysis (Braun and Clarke, 2006). Transcripts were read several times for thorough comprehension and patterns within the data noted to form initial categories. Pertinent quotations were then assigned to preliminary categories that were further refined as coding progressed and new insights emerged. This iterative method identifies quotations belonging to the same conceptual labels. This process was undertaken independently by the first and second authors followed by discussions and agreement on a set of higher-level categories encompassing the initial coding results.

3. Results

Approximately 67% of all text in transcripts was categorised into themes and five key themes surrounding transport decision-making and travel experiences common among London and Singapore interviewees were identified. Each theme consists of sub-themes illustrating its different aspects. These are presented in a theme map found in Table 3.

For brevity, the results presented here will focus on the final theme, which explores thoughts about transport policies among interviewees. This is done because themes one to four largely represent established findings from previous exploring transport decisions (e.g., Berg et al., 2015; Gardner and Abraham, 2007; Heinen et al., 2010; Tyrinopoulos and Antoniou, 2013). Nonetheless, we will present selected areas within the first four themes where cross-cultural differences were observed or are directly related to contextualising the observations in the final theme.

The presentation of results below will integrate illustrative quotes within our explanations, with 'LDN' indicating interviewees from London and 'SGP' indicating interviewees from Singapore. The full presentation of themes and the complete set of quotes are available in Appendix C and D respectively.

3.1. Theme 2: Transport access and feasibility

3.1.1. Financial cost
The financial cost of the journey is a consideration for most, particularly when they compare between transport modes, and even between different public transport options. This financial consideration also gets noticeably important in the decision making as the travel distances increase and the differences between different transport modes grows.

…it's also cheaper to drive as well, except the Tube. The train is just so expensive…I think it's overpriced…it's cheaper to fly to another city than taking the train.
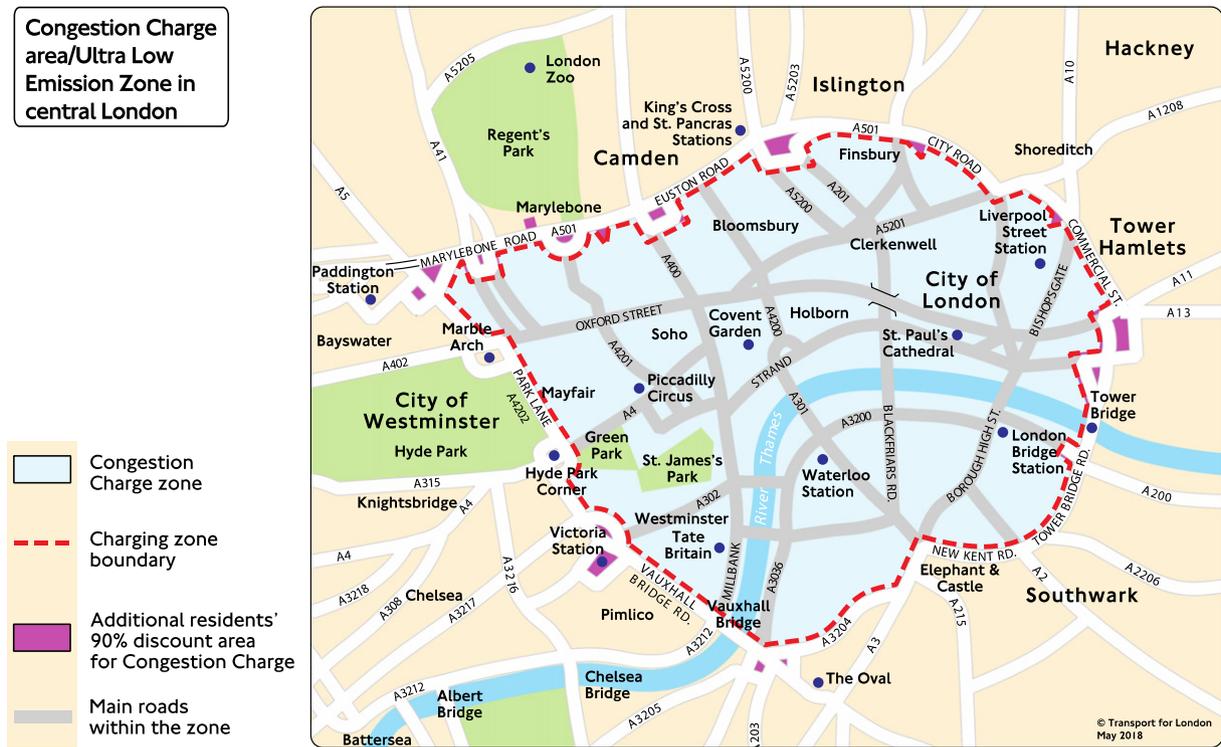
[LDN03_Female]

Fig. 2. Map of Congestion Charge zone in central London by Transport for London (2018).

SGP03 …but it's going to be more costly. INT So choosing the bus and train over the LRT then MRT is because of the cost? SGP03 Yeah, primarily because of the cost.

[SGP03_Male]

For those who were considering driving, there were additional considerations of the cost of parking their cars at the destination and the extra charges that they might incur when driving during the journey, in particular the Congestion Charge in London and the Electronic Road Pricing
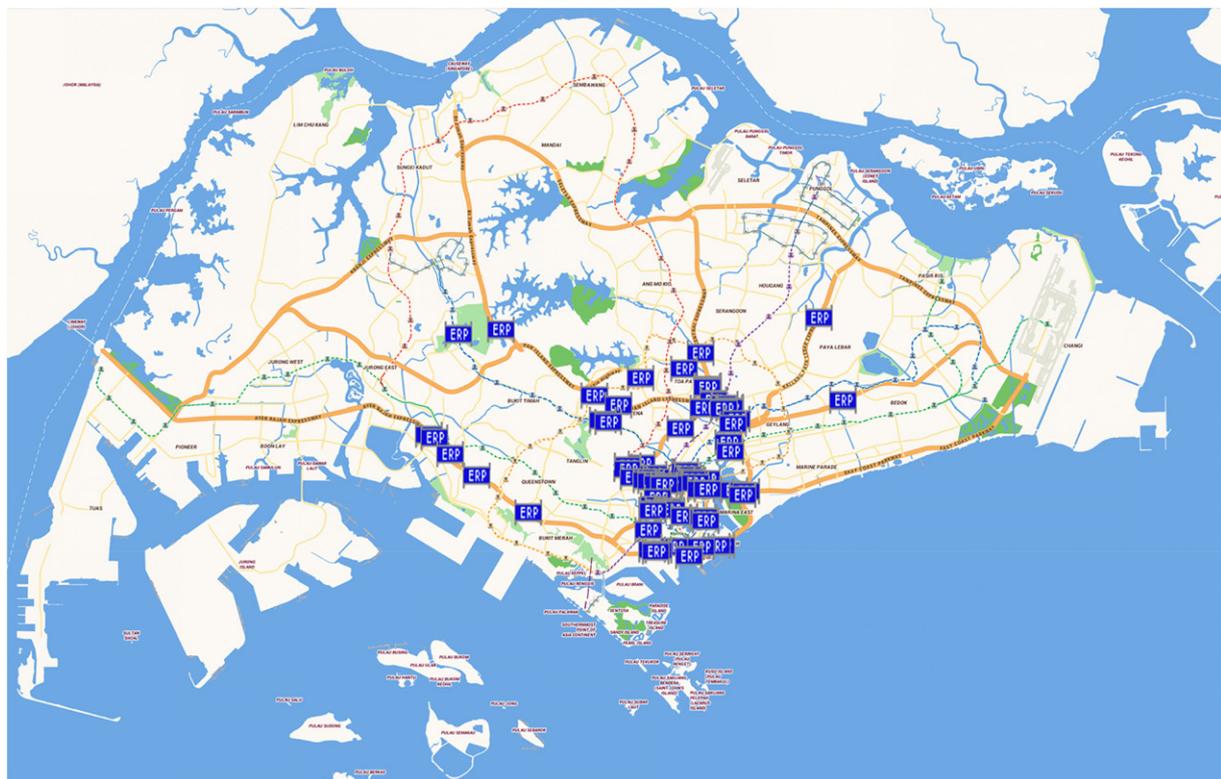

Fig. 3. Map of Singapore and its Electronic Road Pricing gantries for managing road congestion on roads leading to the Central Business District by the Land Transport Authority (2018).

Table 2
Detailed demographics of interview participants.

Participant ID	Gender	Age	Driving licence?	Highest education	Employment status	Annual income	Home location	Workplace location	Cars in household
London									
LDN01	Female	56	Yes	Masters and above	In employment	Under £10,000	Urban	Urban	0
LDN02	Male	25	No	Bachelors	In employment	£20,000 - £29,999	Urban	Urban	0
LDN03	Female	34	No	Masters and above	In employment	£20,000 - £29,999	Urban	Urban	1
LDN04	Male	25	No	Masters and above	In employment	£30,000 - £39,999	Rural	Urban	0
LDN05	Male	34	Yes	Masters and above	In employment	£40,000 - £49,999	Urban	Urban	1
LDN06	Female	31	No	Bachelors	In employment	£20,000 - £29,999	Urban	Urban	0
LDN07	Male	60	Yes	Bachelors	In employment	£50,000 - £74,999	Urban	Urban	1
LDN08	Female	24	Yes	Bachelors	In employment	£20,000 - £29,999	Urban	Urban	0
LDN09	Male	27	Yes	Bachelors	In employment	£20,000 - £29,999	Urban	Urban	0
LDN10	Female	50	Yes	A levels	In employment	£40,000 - £49,999	Rural	Urban	2
LDN11	Male	43	Yes	Bachelors	In employment	£30,000 - £39,999	Rural	Urban	2
LDN12	Male	65	Yes	Masters and above	In employment	£75,000 - £99,999	Urban	Urban	1
LDN13	Female	60	Yes	Bachelors	Retired	£20,000 - £29,999	Urban	NA	1
LDN14	Male	58	Yes	Professional Certificate	In employment	£20,000 - £29,999	Urban	Urban	1
LDN15	Male	61	Yes	Masters and above	Retired	£20,000 - £29,999	Urban	NA	1
LDN16	Female	62	Yes	Bachelors	Retired	£20,000 - £29,999	Urban	NA	1
LDN17	Female	62	Yes	Bachelors	Retired	£20,000 - £29,999	Urban	NA	1
Singapore									
SGP01	Female	55	Yes	GCSE O Levels	In employment	S$30,000 - S$39,999	Urban	Urban	1
SGP02	Female	55	No	GCSE O Levels	In employment	S$30,000 - S$39,999	Urban	Urban	0
SGP03	Male	29	Yes	Bachelors	In employment	S$40,000 - S$49,999	Urban	Urban	1
SGP04	Female	41	Yes	Bachelors	In employment	Above S$150,000	Urban	Urban	2
SGP05	Male	50	Yes	Bachelors	In employment	Above S$150,00	Urban	Urban	2
SGP06	Female	23	Yes	Bachelors	In employment	S$20,000 - S$29,999	Urban	Urban	2
SGP07	Male	63	Yes	Bachelors	Retired	S$100,000 - S$149,999	Urban	NA	0
SGP08	Female	27	Yes	Masters and above	In employment	S$30,000 - S$39,999	Urban	Urban	1
SGP09	Female	23	No	Bachelors	In employment	S$20,000 - S$29,999	Urban	Urban	0
SGP10	Male	28	No	Bachelors	In employment	S$30,000 - S$39,999	Urban	Urban	0
SGP11	Male	42	Yes	Bachelors	In employment	S$75,000 - S$99,999	Urban	Urban	1
SGP12	Male	38	Yes	Bachelors	In employment	S$100,000 - S$149,999	Urban	Urban	1
SGP13	Female	23	Yes	Masters and above	In employment	S$40,000 - S$49,999	Urban	Urban	0
SGP14	Male	24	Yes	Masters and above	In employment	S$40,000 - S$49,999	Urban	Urban	0
SGP15	Male	25	Yes	Diploma	In employment	S$20,000 - S$29,999	Urban	Urban	0
SGP16	Male	32	Yes	Bachelors	In employment	S$50,000 - S$74,999	Urban	Urban	1

charge in Singapore. However, this consideration is dependent on the time of travel and their intended destination.

> …one has to consider the congestion charges as well, it's a deterrent as well… and the cost of parking.
>
> [LDN07_Male]

> …if I want to drive I will decide if I have to pay for ERP and parking.
>
> [SGP06_Female]

There were a group of interviewees from London who qualified for a Freedom Pass[2] for travel in London and this provides them with free travel on public transport outside peak hours. The possession of such a pass made them more inclined to use public transport, particularly during off peak hours when they would benefit from the free travel. This had also resulted in them shifting and adapting their travel plans and behaviours.

> …with the freedom pass now, transport within London now is free so I can use whichever options…whereas before the cost of that would have to be considered.
> [LDN07_Male]

While a similar scheme like the Freedom Pass does not exist in Singapore, public transport travel was generally considered to be affordable by the interviewees in Singapore, especially with the concessions that are given to students and elderlies where the travel fares are capped at a discounted rate.

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[2] The Freedom Pass is a concessionary travel scheme that provides free travel on public transportation for residents of the Greater London region. To qualify for this pass, the residents have to be 60 years of age and over or have a disability. More information on this scheme can be found at https://www.londoncouncils.gov.uk/services/freedom-pass.

> Actually, it is very affordable. For students you have student prices, for the elderly they give discounts so it's very affordable. In fact, thinking of MRTs and buses they are really affordable
>
> [SGP08_Female]

> I think that Singapore's public transport is generally affordable compared to places like the UK. In the UK, a single bus trip can be £4 regardless of distance. So when I was in Singapore I averaged about S$100 a month on transport to my workplace and also to go on weekends. Singapore has concession plans for students and people who are not working so in that regard, it is quite affordable. If you're a working adult and you spend S$100 a month on public transport it's actually not that expensive.
>
> [SGP15_Male]

3.2. Theme 3: Perception and beliefs of different transport modes

3.2.1. Desire for car ownership

In particular, the perception of the importance of cars and consequently, the desire for car ownership emerged as a differentiation between London and Singapore samples. The desire to own a car and to be able to use one was strong and commonplace in Singapore, even if cars were relatively more expensive commodity with the introduction of the VQS.

> …by and large in Singapore, everyone wants to own a car…everybody will try every ways and means to own a car. Even if they can't own a car, they will drive their parents' cars.
>
> [SGP05_Male]

The scarcity and unattainability of cars that come as a result of the VQS in Singapore contributed to building and sustaining such car ownership

Table 3
Theme map.

Notes: These differences are described and explored within the text with further elaborations in the Appendix C and D.

[a] Denotes where *some* differences were found between interviewees in London and Singapore.

[b] Denotes *substantial* differences were found between interviewees in London and Singapore.

desires. In turn, these have led to car ownership and use being construed by individuals in Singapore, and perceived by others, to be symbols of success and social status over time. This is particularly imbued in the younger generations in Singapore who were born around or after the VQS was introduced.

> *…they would strive to own a car if they can afford it. I hate to use the word 'status symbol' but it's probably that, to tell people that 'I've made it'.*
>
> [*SGP12_Male*]

In contrast, a more utilitarian view of car ownership was observed among our interviewees in London. This is, in turn, closely tied to the perception of why there is a need for to own a car and how it is important for reasons of mobility (see the next section for further elaboration):

> *I had a really ancient car until three years ago and I used it for over twenty years…It takes me from A to B and that's all I'm interested in*
>
> [*LDN13_Female*]

3.2.2. Need for a car

The perception of the need for a car was noticeably different between both cities. It was widely acknowledged in Singapore that its small land area, and availability, access and affordability of public transport meant that having a car in order to travel around the city state is not necessary.

> *I think that in Singapore, if you can't drive, don't have a licence or don't have a car I don't think it's going to impact your life in a very large way because I think our public transport system is very efficient and taxis and Ubers are not exorbitant.*
>
> [*SGP09_Female*]

However, there was no general consensus about the need for cars in London. Different attitudes were expressed depending on accessibility of alternatives. The level of accessibility that interviewees had was, in turn, related to the location that they resided in. Those who lived more centrally and in areas with easy access to public transport shared a lower need for having a car. In contrast, those who lived further out reflected a higher need for a car.

> *…in some places you need a car because the public transport isn't good enough to get to wherever.*
>
> [*LDN09_Male*]

> *I lived in London for eight years and I've not really needed to drive…Public transport is a better choice than driving in London in my opinion.*
>
> [*LDN06_Female*]

Thus, in the case of cars (or other motorised private vehicles), it seems that the perception of need for a car is related to the availability of good non-car transport alternatives that perform as well, if not better, as cars in terms of its accessibility, availability and affordability. Dense conurbation areas, such as the cities of London and Singapore, are well placed to provide this non-car alternative to its citizens and this is also observed among our interviewees.

3.3. Theme 4: Anticipated travel experience

3.3.1. Autonomy

The anticipated travel experience is contributing factor in travel planning and transport mode choice. Having the autonomy to travel whenever and wherever is important part of this anticipated travel experience when deciding what transport mode to use and this is common to interviewees in both cities. In this context, cars provided this autonomy:

> *People like the freedom of having a car*
>
> [*LDN10_Female*]

> *Having a car would offer the individual freedom and convenience.*
>
> [*SGP01_Female*]

However, driving or using the car were not the only form of transport that provided this autonomy as some also felt that walking and cycling could provide similar autonomy over their journey.

> *I try to walk as much as possible…you don't have to worry about anything being late.*
>
> [*LDN08_Female*]

> *I would do it more for the convenience because I can just take the bike and go, and not have to wait for the bus.*
>
> [*SGP12_Male*]

3.4. Thoughts about transport policies

Interviewees' discussion of transport policies in their city and different policies in the comparison city generated four subthemes that reveal the commonalities and differences in how the interviewees experienced the transport policies in their cities.

3.4.1. The affordability of cars

The perception of the affordability of cars in London varied between London interviewees and this is perhaps due to the different financial background of the interviewees and the car models they aspire for.

It's expensive both to buy and maintain and insure. It's an indulgence really.
[LDN07_Male]

…there are some remarkably reasonable cars around…it is amazing what you get for your money these days.
[LDN12_Male]

It's just the congestion charge and the parking charges which are killing.
[LDN 02_Male]

By contrast, in Singapore, where cars are considerably more expensive than in London, there is a clear consensus on its affordability among interviewees. Cars were viewed as expensive purchases and this is closely attributed to the VQS that is put in place in Singapore. Aside from the capital cost of cars, parking costs also factored into decisions whether to drive or not among interviewees in Singapore, and this, to a certain extent, discouraged the driving despite car ownership.

…the cars in Singapore are expensive…too expensive. Imagine your COE can buy a car plus you've to pay for the car.
[SGP01_Male]

I've a car so I drive, but I do take the public transport if I'm going into the town area because parking is expensive there.
[SGP11_Male]

In both cities, the affordability of cars extended beyond car ownership to the cost of using the cars for their journeys (e.g., parking fees and congestion charges; see Appendices for a further discussion).

3.4.2. Vehicle Quota System in Singapore: a necessary evil

When Singapore's transport policies including the VQS and expensive car prices were shared with London interviewees, we observe a variety of reactions among them. Some thought that they were unreasonable:

Ridiculously expensive. The price of the car itself is already ridiculously expensive and the price to maintain and own a car is ridiculously expensive.
[LDN04_Male]

It's ridiculous isn't it, you tell me. I can buy a house here with the prices of the car.
[LDN16_Female]

However, when the background and rationale of these policies that have been progressively introduced within the context of the land scarcity and increasing density challenges faced by Singapore, some interviewees agreed with the implementation of such policies.

I think it's a great idea in terms of how it makes the city run because it's good to have less cars on the road and have everybody using the public transport. It is also much better for the environment.
[LDN08_Female]

They're trying to deter people from buying cars…I can understand it really because Singapore is a really small place…they should run without cars.
[LDN10_Female]

Singapore is only a small island you cannot have too many cars because of pollution and everything.
[LDN16_Female]

On the other hand, interviewees in Singapore generally recognised the land scarcity and increasing density challenge in Singapore and were unified in their view that the car population should be managed to ensure that the infrastructure

can adequately support the mobility needs within the city. Despite some disagreements in terms of how this car population and growing transport demand should be managed, most were supportive of the current policies.

Car pricing, it's good in the sense that we have less congested streets as not everybody will own a car because of the high prices. Even for me, because of the car price, I may just give up on the car. If it's too cheap then everybody will buy cars and the roads will be congested and you may be stuck for an hour or two in a traffic jam.
[SGP11_Male]

I think it is a necessary evil. Honestly, I think that there are too many cars in Singapore. Even with the COE there are still so many cars and there are traffic jams every single day…So while I think the COE is a bit irritating I think it is necessary for preventing people from buying cars.
[SGP13_Female]

I think it is a very good system to have…for a country like Singapore which is so small, a land scarce space, controlling the population of cars is very important and I think we have the best system in the world to control of the population of the car and that is the COE.
[SGP05_Male]

3.4.3. Unique transport policies for each city

Exploring whether Singapore's system would work in London and vice versa, interviewees from each city were of the opinion that transport policies should be tailored for each city's unique needs. On applying Singapore's system in London:

It might not work because I think people here, they value having a car, whereas in Singapore, the COE system was implemented very long ago when Singapore was still developing…So maybe implementing a COE system, it might only be here for London? But how do you control then, people who buy cars from elsewhere in the UK when you can still come into London?
[LDN02_Male]

Certain policies will work for certain countries. It certainly won't work here because you've got to remember that Singaporeans are more obedient as well…No, it won't work here. You can only encourage people.
[LDN16_Female]

and on implementing London's system in Singapore:

No. I believe in not having cheap cars in Singapore because I don't want Singapore to end up like Jakarta, Bangkok or KL where people spend two, three hours getting to work. When cars are cheap, people would just buy it and drive all the time.
[SGP12_Male]

I think that wouldn't work in Singapore…how a government should work is that you enforce a hard and fast rule even if they don't like it because over time they will grow to accept and adapt and live with it. So if you make cars cheaper I think people will just swap to cars and nobody will take public transport no matter how much you promote because people will always think that the car is more convenient.
[SGP13_Female]

These observations highlight the need for in-depth understanding of the city and its population in order to have tailor transport policies, especially with car population management, to meet the unique demands and characteristics of the city and its population.

3.4.4. Road usage charging is necessary

Finally, road usage charging is implemented in both cities and many understood its need and role in managing traffic and also felt that it has been

effective in reducing congestion and encouraging non-car alternatives. This seems to have, to some extent effected travel behaviour changes and improved the traffic conditions particularly during peak hours for commuters:

The reason they brought in the congestion charge was because the traffic jams were so often…they put this charge in place to force people to take the Tube or public transport…Definitely it has worked and that is why since about ten years ago nobody takes their car to work.

[LDN15_Male]

The ERP does help a little bit to ease the traffic a little because some people would try to avoid going into the ERP area or make a longer route to get in…the ERP system really did help to ease the traffic, especially in peak hour.

[SGP04_Female]

The subthemes here illustrate that though cities in general face transport and congestion challenges, the extent and characteristics of the challenge differ according to the unique characteristics and needs of the city, representing a challenge for transport policy makers when conceptualising and implementing new policies. Nonetheless, from the interviews it seemed that our interviewees were largely able to understand why specific transport policies are in place in their cities even if they might personally have differing opinions as to how the policies should be implemented.

4. Discussion

To our knowledge, this is the first interview study comparing transport perceptions, expectations, decisions and policy appraisals in London and Singapore. Our thematic analyses identified five themes with 26 subthemes. It is noteworthy how similar perceptions and considerations were between two samples representing very different locations, cultures and transport polices. Nonetheless, the distinct geographical constraints of the two cities resulted in quite different evaluations of transport policies. Generally, the purpose of the journey preceded assessments of availability of transport options. Access to affordable and reliable public transport was challenging for some in London and this indirectly encouraged car use. However, the smaller land area and high density of public transport meant this was less prevalent in Singapore.

Technology is changing transport behaviours. Journey-planning, smartphone applications using real-time travel information were commonly used to plan and optimise journeys (e.g., rerouting if congestions or disruptions are anticipated). This is encouraging for transport authorities as they further integrate technology and crowd-sourced real-time data to further improve urban transportation demand management (Intelligent Transport Systems Australia, 2017; Chin and Ong, 2015; Lyons and Davidson, 2016). Smartphone applications also provided a new platform for ridehailing services (e.g., Uber) expanding transport options and bringing about improvements in urban transport for users, from service quality to taxi fare restructuring (Çetin, 2017; Schechtner and Hanson, 2017). These ridehailing services were particularly popular in Singapore as it provides an alternative to expensive car ownership among the younger generation. There is emerging evidence of the potential of expanding ridehailing services and mobility-as-a-service concepts of transportation to operate using fleets of autonomous vehicles to address the growing transport demand in cities while reducing congestions in cities and replacing car ownership (Berger et al., 2017; Çetin, 2017; Chng and Cheah, 2019; Li et al., 2016).

The perceptions and values of cars were different across the two samples. Cars were perceived as luxury goods and social status symbols in Singapore but as affordable necessities for commuting or running errands in London. This reflected the different vehicle control approaches in the two cities. Singapore interviewees readily acknowledged that high car prices are necessary for managing its vehicle population. They recognised that cars are already perceived as luxury goods and removing their city's policies (i.e., moving to London's system) would exponentially increase car ownership and use, resulting in a city in gridlock. As one Singaporean put it, "…we'll end up with…a giant car park".

Even though Singapore has piloted these transport management policies with some success and support from the public, this has not been without criticism but now as more cities face increasing congestion, such once-rejected policies are being considered elsewhere. Menon and Loh (2015) note that, "it was often said that only Singapore with its draconian laws and stiff controls could implement such a scheme. That is no more true and many transport pundits are now proposing congestion pricing as inevitable in many cities" (p. 24). Thus, Singapore's geographical constraints may yet see it become a transport policy lead, both in communicating to the public about the need to manage car populations and in creating city transport infrastructure that meets demand with fewer cars. The revision of car growth rate in Singapore from 0.25% to 0% in October 2017 (LTA, 2017b) further suggests that this need might be more pressing than before.

Effectively communicating the impact of growing car populations in cities will be crucial for gaining the understanding and support of the public for more active management of car populations. Ensuring public understanding and managing public expectations were two important elements in Singapore's successful policy implementation (Menon and Loh, 2015). This was also observed among our interviewees as they were considering and discussing whether stricter regulations of the car population in their cities are necessary.

Could a VQS-type policy be introduced in London? Generally, interviewees understood the need to manage car populations, particularly in a city like London. Some thought that a VQS-type policy might encourage users to rethink their need for cars given the extensive public transport network in London. Thus, for them it seems to be a step towards car-lite societies. However, there were also others who voiced concern that about increasing car prices as there are other ways to manage the car population and use in London. Nevertheless, it is commonly concluded that because Londoners generally value their car access and having mobility options, further measures to manage car populations or reduce car use will be challenging to implement.

City authorities are also promoting public transport, cycling and walking (Rode et al., 2017; Rodrigue et al., 2017), which require sizeable infrastructure investments. Our findings suggest that how potential users perceive and experience these modes is crucial. Infrastructure is important in providing access and, especially for cyclists, safety. Nonetheless non-infrastructure-related factors were also important, for instance, choosing public transport over driving because of the associated 'spill-over' increase in physical activity, health benefits, and ability to engage in other activities while travelling (e.g., reading during train rides). Collectively, these positively reinforce public transport choices and emphasise the importance of choice, comfort and speed if public transport is to rival car use among those who own cars.

Cycling was not considered a viable transportation mode for many, even those who see its recreational benefits. Singapore's humid weather meant that cycling was often viewed as impractical especially with air-conditioned public transport was available. For some would-be London cyclists, it was regarded as too dangerous because of poor separation from motor vehicles. Consequently, we observed little discussion relating cycling to physical activity, health and lifestyle choices.

Methodological limitations merit caution when generalising these findings. Our samples comprised of diverse backgrounds in both cities but we cannot ascertain how representative their responses are of the general population. Nonetheless the findings here provide an insight and direction for future studies that seek to investigate our findings further with samples that represent the wider ethnography, though such undertaking will require considerably more resources. Future studies could adopt quantitative designs to further explore the themes and sub-themes identified here to understand the underlying mechanisms and factors leading to such experiences and perception among our interviewees. Generally, our interviewees understood the other city's transport system when introduced and they felt comfortable sharing their thoughts and evaluations. Nonetheless, we cannot infer that they were able to appreciate the nuances between the two cities. Thus, future studies could consider more immersive approaches when introducing different contexts (e.g., using virtual reality

technology; Wilson and Soranzo, 2015) to enable interviewees visualise the discussed environment and situate the discussion and responses based more realistic experiences. Finally, as transportation technologies are rapidly advancing, the study did not adequately explore new emerging technologies such as on-demand transport services, autonomous vehicles and mobility-as-a-service but these should be covered in future research as they will potentially change transportation behaviours and experiences.

5. Conclusion

This study presented a unique opportunity to explore the decision-making process and experiences of a diverse group of transport users in two cities with different transport policies. Expensive car prices in Singapore impose stricter car ownership regulation contributed to the perception of cars as luxury goods, rather than a necessity, as found in London. There was general acknowledgement and support for managing the car population and use in both cities, though how it should be done remains highly context-specific. Nevertheless, public engagement and effective communication are important components of interventions and policies that are being introduced to better manage the car population and use in cities.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.trip.2019.100030.

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