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RESIDENTIAL AND DAILY TRAVEL PREFERENCES OF SOUTH ASIAN INTERNATIONAL STUDENTS IN AUSTRALIA

Rahman Shafi*
Institute of Transport Studies
23 College Walk, Clayton Campus, Monash University, Victoria 3800, Australia
Tel: +61-3-9905 1851; Email: rahman.shafi@monash.edu

Dr. Alexa Delbosc
Institute of Transport Studies
23 College Walk, Clayton Campus, Monash University, Victoria 3800, Australia
Tel: +61-3-9905 5568; Email: alexa.delbosc@monash.edu

Professor Geoffrey Rose
Institute of Transport Studies
23 College Walk, Clayton Campus, Monash University, Victoria 3800, Australia
Tel: +61-3-9905 4959; Email: geoff.rose@monash.edu

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ABSTRACT
Australia’s population is growing primarily because of immigrants. Population growth is straining the country’s transportation system, yet little is known about the travel behaviors of immigrants, including Australia’s growing number of international students, many of whom hope to stay and make Australia their home. Prior Australian research has found travel habit differences between native-borns and immigrants. While researchers elsewhere, particularly from the United States, emphasize on socio-economic factors to explain these differences, such has been found to not be the case in Australia. The study focuses on international students in Australia; focus groups were undertaken amongst domestic and international, South Asian students attending Monash University. The script was semi-structured and open-ended, encouraging discussions and participants to share their stories. New insights into transit and car use were noted, including carpooling and carsharing. There were also differences in mobility choices between the groups. For South Asians, living with friends or family in an area reminding them of home was preferred; however, this often resulted in longer travel times and poorer transit connectivity. For Australians, trying to live near their daily destination or in an area with good transit was preferred. Despite the two groups having different mobility preferences, common concerns focused on present-day limitations of transit with a clear indication that may lead to them pursuing a car-dependent lifestyle in the future. International students have potential to be the agents of change towards less car-dependent lifestyles, and their behavior need to be better understood by policymakers and transport planners.

Keywords: international students, focus group, mobility choice, South Asia, qualitative, Australia
INTRODUCTION

Australia’s rapid population growth, accelerated by a large influx of immigrants, is placing enormous strains on the transportation system. Australia’s immigrants mostly consist of skilled or financially sound immigrants [1] and university students [2]. Recent trends show that many of the newer immigrants arriving are of South Asian origin [3].

However, there is very limited research on the travel of immigrants in Australia. Past research has found differences between immigrants and native-borns with respect to car ownership, household structure and mode choice [4], but we know very little about why these differences exist. Research conducted elsewhere, mostly about Hispanic immigrants to the United States, usually presents socio-demographic and economic factors to explain these differences [5, 6]. Yet preliminary research in Australia suggests that immigrants travel differently even when such factors are accounted for [7, 8]. It appears that something beyond traditional socio-economic factors is contributing to why immigrants travel differently to native-born Australians.

This paper aims to understand the factors that influence the mobility and travel choices of South Asian international students, and how this compares to native-born Australian university students. South Asian students were selected because they are one of the largest non-Western immigrant and student groups in Australia. This foundational research employed a qualitative research methodology to gain richer initial understanding. Focus groups were undertaken with university students attending Monash University, the largest Victorian university by enrolment. All participants recruited for this study lived and studied in suburban areas, which is typical of much of the Australian population.

The paper is structured as follows. First, a summary of relevant literature is presented. Next, the research approach and methodology are outlined and that is followed by the presentation of results. Lastly, the paper concludes by identifying key insights and study limitations, along with future research considerations.

LITERATURE REVIEW

Australia’s population has grown by 22% from 2006 to 2016 (the most recent census). Australia’s population has grown 22%. This has been accelerated by the arrival of immigrants – overseas-born residents in Australia grew by 40% [3] during the same time. Recent immigrants are also more likely to arrive from South Asia or China, whose contingent is ever-growing in Australia, particularly Victoria [9]. At the same time, the proportion of immigrants arriving as international students is growing [10]; as of 2018, 30% of all temporary visa holders were students [11]. Since South Asians are the largest, non-western immigrant group in Australia [3], and international students make up a large proportion of those migrants, they are the focus of this study.

Why focus on international students?

Australia is a popular destination for international students; in fact, the education sector is Australia’s largest service-based export [12] and fourth largest export overall [13]. Furthermore, most students want to settle in Australia upon completion of their studies [2, 14]. Even if these students don’t settle in Australia, new waves of students continue to arrive every year. These students could be the “agents of change” [15] that could help transition Australia away from a car-centric society.

Despite the size of the international student market, they are usually underrepresented in travel surveys. For example, in the 2013 VISTA (Victorian Integrated Survey of Travel and Activity) dataset, only 4.3% of the participants born in South Asian were students [16], whereas
Shafi, Delbosc and Rose

According to the 2016 Census, 25% of South Asians were students [3]. The underrepresentation of students and young adults has been raised as an issue for travel survey datasets in general [17, 18].

In global research, emphasis is mainly placed on international students’ tourism-related travel [19], and not their daily travel habits. International students’ numbers are rising every year in developed countries and they are a large source of skilled-immigrants. Given their growing importance and presence, this study focuses on them. Their daily travel habits are likely to shape transport patronage and overall travel behaviour, yet, they remain under-represented in travel surveys. In this study, we present findings on international students from South Asia and native-born Australian students. The study is limited to car-based travel and public transport as they are the two commonly used long-distance travel modes.

Why do immigrants travel differently?

There is very limited existing research on skilled or financially sound immigrants anywhere in the world, let alone Australia. Most travel research on immigrants is from the United States, where low-skilled and low-income immigrant groups, particularly Hispanic and other ethnic minority groups, are often the focus of the research [20, 21]. However, this research is not as relevant in an Australian context where the countries of origin are different, and the majority of immigrants are skilled workers or university students.

Prior research in Australia has found differences in travel behaviour between native-borns and immigrants [4]. For example, ethnic minorities including immigrants were found to own fewer cars and drive less [8], and the same was said about Chinese immigrants in New South Wales [7]. However, the reasons were not socio-demographic or economic, suggesting that something else, such as attitudes or past experiences, influences how immigrants are traveling in Australia.

A possible explanation could be past travel habits; immigrants may continue to behave the way they were used to in their countries of origin based on research of past travel habits [22, 23]. Unfortunately, very little is known about the past travel habits of immigrants in general, especially prior to their arrival in a new country. Furthermore, due to Australian immigration policies [2], we also know that the “average” South Asian is not coming to Australia – they have to meet some or all of the educational, financial or skill requirements to enter Australia. So it is likely that generalised studies of travel behaviour within South Asia are not directly relevant to the travel behaviour of South Asians who migrate to Australia. However, based on research elsewhere, there may be two main factors that might be influencing the travel behaviour of South Asians in Australia: perceptions of the transport system and household structure.

Perceptions of the transport system

The transport systems in Australia and South Asia are very different. These differences are likely to result in very different perceptions and attitudes toward components of the transport system, especially car-based travel. Car use is quite different in South Asia compared to Australia: the driving culture is chauffeur-oriented [24], while carpooling and carsharing are prominent [24]. This is a reflection on Australia’s car-ownership rates being much higher than South Asia’s. Carpooling and carsharing also extends to South Asians in Australia [4, 25] and even in the United States [26]. Commercial carsharing services (e.g. GoGet) are often studied in Australia [27], but how/why carsharing works within families and friendship networks is less well-studied. In South Asia those who cannot afford a car often buy motorbikes instead [28].

Due to transit being unsafe and uncomfortable in South Asia [24, 29], people using transit in South Asia are usually facing financial barriers, and stop using transit when they can afford not to [28, 30]. There is also evidence suggesting South Asians prefer door-to-door services [31].
There is a plethora of taxi-based services such as rickshaws and auto-rickshaws, which literature in South Asia refer to as “informal” public transport [32] that are often much more popular than fixed-route transit.

Household structure and location

Australians tend to live with family until financial independence, especially until the completion of their education and obtaining stable work [33]. Afterwards however, independent living is seen as a part of adult life, and residential location choice greatly depends on a combination of lifestyle, work and family factors [34]. In contrast, South Asian culture places great value on family bonds, and it is quite common for young adults to live with their families even after financial independence.

Most South Asians immigrants, including international students, are first generation immigrants, and may prefer to live closer to other members of their community. A clear example of this are the presence of cultural enclaves highlighted in research in the United States [35]; ethnic enclaves have local shops that cater to some immigrants, and those of similar ethnicity tend to live near each other for social connectivity [5, 21]. South Asians in Victoria concentrate in a selected few suburbs [3], and live in larger households while owning fewer cars even irrespective of socio-economics [4]. Similar cultural trends may be present amongst international students.

Gaps in literature

From the literature in Australia, there is still much that we do not know about the travel behaviour of international students, or immigrants in general. Some studies have confirmed that there is a difference in travel habits; in Australia, there is evidence from the Census [3] and travel surveys [16] showing higher transit use amongst South Asians compared to Australians, despite similar socio-economics. This paper presents research efforts comparing mode choice and residential preferences of these university students.

METHODOLOGY

This research is focused on understanding a broader spectrum of factors that influence travel behaviour and mobility choices amongst university students, and how they are similar or different between native-born students and international students from South Asia. A qualitative approach has the advantage of providing new insights in under-researched areas [36].

Focus groups allow participants to share their experiences in their own words and allow them to reflect on their experience in light of the experience of others. The discussions can generate many concepts and themes that were not previously explored in the literature review, which is the general advantage with qualitative research [37]. The research efforts (and findings) of this study is based Salomon and Ben-Akiva’s Hierarchical Choice Structure of Mobility and Travel framework [38], as presented in Figure 1. While this is a well-established model from literature, it has not been used in the context of immigrants in Australia. This paper focuses on the relationship between life-style choices and mobility choices (highlighted in red).

All participants were university students; therefore “life-style choice” presented as Level I in the model was consistent amongst participants. Level II, mobility choices, varied amongst participants and will be discussed further in the findings related to household location. Level III had both similarities and differences in mode perceptions between South Asians and Australians and how participants felt about different travel modes and their motivations about using said mode.
Recruitment and participant selection
Monash University was chosen because it is the largest university in Victoria by enrolment and by number of international students. 29 participants were recruited for the focus groups, all of whom studied at the Clayton Campus, Monash’s largest campus located in a suburban environment (bar one student, who studied at the nearby Monash Caulfield campus, also in a suburban environment).

Participants were also recruited from a previous study on university students’ travel behaviour. South Asian or Australian-born students who completed the survey and gave their permission to be contacted for further research, were invited to attend these focus groups. Initial invitations were met with low response rates, so further targeted recruitment was used through social media (student groups on Facebook) and snowballing techniques. The project was granted ethics approval by the Monash University Human Research Ethics Committee (MUHREC).

Data collection and analysis
Semi-structured scripts were prepared that covered a range of topics usually not covered in travel surveys. The script was modified between sessions as new themes emerged. Many of the themes were derived from the Theory of Planned Behaviour framework [39]. Some of the topics discussed included the following:

- Attitudes and mode perceptions
- Social (friends and family) perceptions on travel habits and its influence on participants
- Past travel habits, including early childhood and high school
- Present day travel habits, including mode choices
- Future plans, including work, residence location, preferred mode choice

All sessions were audio-recorded for analysis. The sessions lasted about an hour each and were conducted in a roundtable discussion format. Sessions were undertaken by groups pre-defined by the country of birth of participants (South Asians vs Australians). Four focus groups were run in

Figure 1 Hierarchical Choice Structure of Mobility and Travel (Salomon and Ben-Akiva, 1983).
total – two for South Asians and two for those born in Australia. South Asian participants were
born in Bangladesh (4), India (7), Pakistan (1) and Sri Lanka (4). A breakdown of participants by
different demographics has been presented in Table 1.

Enrolment was defined by coursework/research instead of undergraduate. It wasn’t the
level of education that was perceived to play a role amongst universities, it was the costs, with
coursework degrees (Bachelor’s and Master’s) costing hefty tuition fees, while research degree
students generally had scholarships. The Australians preferred to live with family, often further
away from university compared to the South Asian students. However, they were not supported
financially for their education unlike the South Asians in this study, with most on student loans.
Most of the South Asians in this study have stated they want to settle in Australia after their studies.

| Table 1 Participant Demographics |
|---------------------------------|-----------------|
|                                 | Australia       | South Asia     |
| Type of Enrolment               | Coursework Degree | 12            | 12             |
|                                 | Research Degree  | 1             | 4              |
| Primary Campus of Enrolment     | Clayton (Middle Melbourne) | 13            | 15             |
|                                 | Caulfield (Inner Melbourne) | -              | 1d             |
| Gender                          | Male            | 8             | 10             |
|                                 | Female          | 5             | 6              |
| Country of Birth of Parents     | Both in Australia | 8             | 0              |
|                                 | One/ both overseas | 5             | 16             |
| Years lived in Australia        | Less than 2 years | N/A           | 10             |
|                                 | 2 years or more  | 6              |                |
| Location of Residence           | On-campus       | 3             | 2              |
|                                 | Walking/ Cycling distance | 0             | 9              |
|                                 | Driving/ transit distance | 10            | 1              |
| Car access (for driving)        | Owns car        | 6             | 6              |
|                                 | Access to car(s) | 2             | 2              |
|                                 | No car access   | 4             | 8              |
| Financial Support from family   | Tuition Full    | 0             | 12             |
|                                 | Partial         | 0             | 0              |
|                                 | None/ Loan/ Scholarship | 13            | 4              |
| Living Costs                    | Full            | 0             | 3              |
|                                 | Partiala        | 12            | 6              |
|                                 | None/ Loan/ Scholarship | 1            | 7              |
| Work                            | Yesb            | 12            | 13             |
|                                 | No              | 1             | 3              |
| Driving Licence                 | Provisional/ Full Licencec | 10            | 16             |
|                                 | Learner’s permit | 2             | 0              |
|                                 | None            | 1             | 0              |
| Want to live in Australia after education | Yes | N/A | 12             |
|                                 | Not Sure        | 4             |                |
|                                 | No              | 0             |                |
| Total                           |                | 13            | 16             |

a. Partial also if participant lives with parents rent-free
b. Excludes scholarships covering living costs
c. Includes overseas license
d. Used to study at Clayton campus; still lived near Clayton Campus at time of focus group
Audio recordings were transcribed and underlying themes explaining differences in travel habits were explored. Thematic analysis was undertaken that helped highlight key patterns within the data [40]. The patterns were in line with the two broader factors highlighted at the end of the literature review and assessed similarities and differences within those factors between South Asian and Australian students.

In the quotes shown in this paper, males and females have been coded as “M” and “F” respectively, while Australian-born and South Asian students have been coded “AB” and “SA” respectively.

RESULTS
The focus in this paper was on non-university trips, emphasizing ‘mobility choices’ and ‘travel choices’ from Salomon and Ben-Akiva’s research [38]. Specifically, the findings focus on where participants choose to live and their perceptions about transit and cars. Active travel (walking and cycle) was not found to be a common travel mode and was only utilised by those living on/ near university and when going to class.

Gender was initially expected to play an important role in these travel decisions, especially amongst South Asian students. Yet during the focus groups, no gender-specific issues were raised in Australia by either group (South Asians females did, however, mention difficulties of being a female using transit in South Asia). Gender was generally regarded to be unimportant amongst university students’ travel and mobility preferences and was not analysed further in this discussion.
This section, presenting the results, is broadly divided into three sections:
- Housing preferences
- Car and transit use and perceptions
- Evolution of mode use and residence

Housing Preferences
A lot of travel decisions are based on where participants live. Australian students tended to live with their families until they find work or can live independently. Most Australians in this study lived with family or on-campus; they lived with family even if it was far away until they could find work or moving became a necessity because of travel times. Those who did move away from family while studying in university chose to live in on-campus accommodation; none chose to live with friends or near university. The only reason, as stated by the participants, was that home was “too far” (such as a three-hour drive away). Their philosophy was to more efficiently use their time and they would rather live where daily commuting becomes shorter.

“If I have to, then I will look for another place. But why would I want to pay rent? I live with my parents at the moment.” (M – AB)

South Asians had a more complex decision-making process involving friends, relatives and places of cultural significance. Most South Asians started by living on or near campus at the beginning because of unfamiliarity with their surroundings before they moved to a place of their liking. Some South Asians had friends or relatives living in Victoria prior to arriving; those participants chose to live with or near them. This is a result of knowing a suburb better, forming friendship and social ties, or in some cases, seeking lower rent. Even changes in circumstances, such as buying a car, change in study location or finding new work, did not seem to influence those students to change their residential location if they had friends nearby.
When asked about future residential preferences during the focus groups, not wanting to move was the common theme amongst South Asians. Those stating their intentions to move would do so because of friends or familiarity (mainly because of cultural interests).

“I would prefer to live in the Western Suburbs [1hr+ away from current location]. I have plenty of relatives, and many people of my background living there.” (M – SA)

South Asians’ reluctance to move away from friends and families often led to longer commute times and leads them to live in suburbs with poor transit connectivity, increasing car dependency. However, that doesn’t necessarily translate to car ownership, as discussed in the following section.

Mode choice and the decision-making process behind it

All participants complained about the transit system’s shortcomings in Melbourne. Melbourne’s train network is designed around the CBD, which is also home to an extensive tram network; as such, transit was considered “a more convenient choice” when going to and from the CBD by both groups. However, in a suburban setting like Monash University, transit had limitations, such as typically longer commuting times (compared to driving), long waits between transfers and infrequent services. Then there were service delays and cancellations. For students, this resulted in being late or missing classes or work. As a result, students preferred cars over transit, especially for suburban trips. Both groups however agreed that driving can be time-consuming, expensive and a “hassle” (M – SA; M - AB), and it is just better to use transit if possible.

“In Australia, I am dependant on the public transport and if it is late by 30 minutes, I am late. I don’t have a car now, but I am planning to buy one.” (M – SA)

Then there were issues raised exclusive to either group. South Asians felt public transport ‘back home’ was more frequent and operated later into night and had better connectivity, concerns which Australians raised in the context of weekend commuting only. South Asians were also able to rely upon the previously mentioned “informal” public transport modes, with door-to-door services that transit in Australia can probably never match. There are taxi services such as Uber, but it is only an “occasional (M – AB)” option, generally because of the high travel costs.

Australians felt public transport was often congested during peak hours, and transit facilities, or a lack of, make for uncomfortable journeys, especially during summer. In contrast, compared to their past experience South Asians thought “facilities in public transport in Australia is good (M – SA)”. Australians felt transit was not as safe as driving, whereas South Asians were impressed by the safety of transit, especially trains. Australians, however, did find some benefits in using public transport; including being productive during long commutes. Furthermore, those environmentally-aware were more comfortable using transit. Most Australians also considered public transport as the cheaper alternative.

“Looking objectively [at cars], it is bad for the environment, it’s really expensive ... for your car. I personally don’t see that many attractions in a car, (M – AB)

In contrast, South Asians felt it was more expensive to use transit over short distances compared to a car. In fact, non-car-owning South Asians felt using Uber with friends and splitting the fare is cheaper; this is an idea the Australians in this study did not explicitly express. Also, South Asians
did not raise environmental issues, which suggests they do not consider these as motivators for using public transport. However, despite all that, the negatives of transit directly encouraged shifting to other modes of travel, especially cars. It is here where the two groups demonstrated key differences in car-use.

**Multi-modal travel vs carpooling/carsharing**

Car-owners or not, all participants emphasised the utilitarian and “convenience” (M - AB) aspects of car use. Most Australians were given a car by their family or used their family’s car(s). For South Asians, a car was either paid for by working, from parental support or having access to friends’ car(s). For Australians however, car access did not necessarily result in increased car use. Most of them relied on multi-model travel (driving to a train station, taking the train etc.) for university classes. When a car is not necessary (e.g. living near work), some preferred to use public transport only. Those living on-campus owned cars as well, but mostly used them to visit family that lives far away.

South Asians, with or without car-access, were heavily car-dependant. They were seemingly less tolerant with the long travel times on transit compared to the Australians. If a South Asian lived on or very near campus they would walk to class, but otherwise, “everything is done by car” (M – SA). For most, carpooling is convenient, faster and cheaper than using public transport, especially over short distances and when costs are shared.

“I really don’t use public transport even though I don’t have a car. I use my friend’s car. We live in the same house.” (F – SA)

All the South Asians interviewed possessed a driver’s license, even those who rarely drove back in their home countries or here in Australia. They often relied on their friends driving them around or were equally comfortable driving their car when needed. In fact, South Asians stated they “prefer to have friends” (M – SA) with them when driving. This helped form a unique carsharing and carpooling culture amongst the South Asian students that didn’t appear to exist amongst Australians. In fact, car-owning Australians were generally not comfortable giving their car to someone else, and carshared or carpooled only with “family and select friends” (M – AB). Even non-car-owners with access to family cars rarely utilised that mode.

**Growing up: early childhood and high school**

Every Australian participant lived with their parents growing, and most still continue to do so. The same was the case for South Asians, with exceptions being undergraduate students who had to relocate for their university. Despite evidence of lower car-ownership rates [41] and low incomes [42] in South Asia compared to Australian, both groups’ early childhoods were heavily car-dependant; trips to school and family trips to shopping and events were almost always by car. Among the South Asians, this is likely reflective the immigration system which only allows entry to those meeting skill, financial or educational requirements.

However, travel behaviour differed once the two groups started attending high school (or equivalent). All participants (from both groups) in this study came from car-owning households; yet, most of the Australians did not have a car available for them during high school or did not have their parents drive them. As a result, Australians had to adapt and learn to use other modes of travel. Public transport was their main mode of independent travel over longer distances; this was naturally accompanied with increased active travel. None of the Australians experienced any
social stigma from using transit and were comfortable and familiar with transit from a relatively young age. For South Asians, they were still driven around.

**Door-to-door services**
From a very young age up through high school, and up until coming to Australia, South Asians were commuted predominantly using door-to-door travel modes, and often involved very little active travel. While most of the Australians were learning to travel with a car during their high school years, South Asians were still dependant on cars thanks to their chauffeur-driven culture as long as they lived with their parents, which was in most cases. Only exception was if they had to re-locate to attend university (not unlike some of the Australians in this study), where they were still supported by families by being provided with cars or bikes, or at least, allowances for travel. They were, in fact, encouraged to used cars and actively discouraged from taking transit, especially females. They even admitted to finding some cultural cues in Australia interesting

“**I have seen a lot of people [in Australia] using public transport going to work. Back in India, no.**” (*M* – *SA*)

However, when family cars were occupied, they chose taxis or similar taxi-based services as discussed in the literature review. When compared to peoples’ travel behaviour here, they found some cultural cues in Australia interesting. Although they are not influence by others’ thought, they admitted that such behaviour is rare back home.

**DISCUSSION AND FUTURE RESEARCH CONSIDERATIONS**
To summarize the responses from this study, South Asians prioritize living near friends compared to Australians, who prefer shorter commuters, preferably in a high-transit area. This, combined with the fact that these South Asians never really used public transport, mean that they are more likely to be car-dependent. These relationships are illustrated in-depth in **Figure 2**.

South Asians seemingly had a low tolerance level to the shortcomings of transit services. That’s because they did not see many benefits of transit or consider the disadvantages of car-use (environmental and cost for example). South Asians are introduced to car use in Australia even before owning one. They started with carpooling and/or carsharing, and eventually for some, car ownership. Some South Asian participants stated outright that they will own a car, regardless of other modes available. Some even said that their parents “**push**” (*F* – *SA*) them to buy a car.

“**Even if it was the best public transport in the world, I would keep a car.**” (*M* – *SA*)

This is neither because South Asians view cars as social symbols, nor because of the stigma surrounding transit (in Australia, at least). It’s simply a result of cars being the most convenient mode of travel, and the only mode practical over long distances that offers door-to-door services. This is what they were used to back in South Asia (as shown in **Figure 2**), and unsurprisingly, this is what they still preferred. While the Australians had the opportunity to use transit when they started travelling independently, South Asians always had cars with chauffeurs, or cheap, readily available ridesharing services (like rickshaws or auto-rickshaws) to use. They never needed to choose a mode of travel that involved walking or commuting alongside other passengers.
Figure 2. Evolution of travel habits and residential choices: Australians vs South Asians

Australians

**Early Childhood**
- Driven by car
  - Too young to travel independently; usually only travelled with parents

**High School**
- Independent travel
  - Parents often unable to drive them everywhere; first use of public transport and active travel independently.

**University**
- Transitioning into adulthood
  - Mode depended on utility – trains were preferred over long distances, cars were preferred if transport connectivity was poor and active travel where practical. Non-car owners strictly used alternative modes.

**Future?**
- Financial independence
  - Based on utility

South Asians

**Early Childhood**
- Driven by car
  - Too young to travel independently; usually only travelled with parents

**High School**
- Chauffeur-driven cars OR door-to-door transit
  - Buses/train in South Asia considered unsafe; most travelled in chauffeur-driven cars, or used rickshaws, taxis etc.

**University**
- Drive/ carpooling
  - Drive
  - Cars are faster, more comfortable, and often cheaper when cost is shared amongst friends, according to them. Non-car owners prefer carpooling, while car owners rarely use alternative modes to driving.

**Future?**
- Ethnic enclaves
  - Having rarely used transit (even non-car owners), they are expected to be car-inclined and likely car owners. Driving (or carpooling/carsharing) can be expected to be their favoured modes.

- Live with family
  - Live with family
    - Live with friends OR near university
      - Moved overseas for education and living away from family (for the first time in most cases). They lived near community members and friends, even if it resulted in long commuting times.

- Live with family
  - Based on utility

*a. Also includes those South Asians who undertook undergraduate courses in South Asia*
South Asians preferred to live near friends and families, near their favourite stores or simply in a
neighbourhood they like or are familiar with, even if it means sacrificing better transit and longer
journey times. They have always lived with family and chose to live with friends (or near them)
when they are in Australia as they didn’t have family. Australians lived or wish to live near their
everyday destination like work or university; while this may result in living further away from
family or friends in some instances, it is the more “convenient” day-to-day solution in terms of
commuting.

It should be reiterated that transit has serious shortcomings and has to improve if it were to
be a competitive alternative to car use among South Asians. As of now, the future, especially for
South Asian students, looks very car-dependant.

Findings relative to the literature
Some of the findings confirm prior research. South Asians usually wanted to live with friends and
relatives in a place they are familiar with. South Asians mostly wanted to move with or near to
friends and families; after finding a home that allows them to maintain good social bonds, they are
reluctant to move. That is how ethnic enclaves are formed, as found in previous research [5, 21,
35]. However, to-date, the implications of these housing patterns on the travel behaviour of
immigrants have not been explored in an Australian context.

The South Asians in this study denied any social status element defining their travel habits,
which literature suggested was important amongst South Asians in their hometowns [28] or even
amongst ethnic or immigrant communities in other countries [20]. Carpooling and carsharing,
however, was found to be very prominent amongst these students, and this is very similar to
research findings of low-income Latino immigrants in San Francisco [43]. South Asians rely on
carsharing and carpooling as a genuine mode similar to immigrant groups elsewhere, where
carpooling is preferred over transit, as Blumenberg and Smart’s research has shown [5]. The South
Asian students were very comfortable driving in Australia, both theirs and their friends’ car(s).
This is contradictory to what research in New Jersey, USA, has found, where Indian immigrants,
habitual drivers back home, were uncomfortable with driving in a new environment [6]. South
Asian transport systems were initially assumed to be very poor [29, 44], especially by Australia’s
standards; however, this is only partly true. For quality, comfort, information access, it is true, but
for service frequency and connectivity, South Asians were more comfortable back home. In
Australia, they are virtually left with one option – use a car.

We predict that if they all continue their present and past habits, the South Asians would
continue living nears friends and families (eventually forming ethnic enclaves) while becoming
more car-dependant over time as where they settle usually have poor transit services. This
phenomenon could possibly explain higher car use despite lower car ownership rates amongst
South Asians, as previously found through census and VISTA analysis [4].

Limitations
There are limitations to this research. The data is very rich, but only collected through a small
number of individuals – a shortcoming regularly flagged by other qualitative researchers in this
field [45]. Participants may also not tell the full story or hide the truth because of the presence of
others [36]. There are contextual limitations in this study as well; it is likely that the same research
undertaken amongst participants in a different area may lead to different results. The Central
Business District (CBD or city centre) has been mentioned by the participants as having good
transit, with a richer set of modes to choose from (including walking and cycling) to travel within
the CBD. Had the focus groups been undertaken in the city centre, the answers may have been different. However, at the same time, the CBD is not representative of Victoria in general as less than 150,000 Victorians (out of 4.4 million) [3] live in a region where transit is “good”.

Future research and policy implications
Many different cultural groups make up the immigrant community of Australia (and elsewhere). Further research from different cultural groups may find similar themes or identify key differences because of difference cultural experiences. Furthermore, factors that influence the travel of students may not all play out the same with other segments of the South Asian community. For example, the role of gender amongst South Asians, often a key factor in travel behaviour studies in South Asia, was not found to be a strong theme among the international students spoken to. However, it’s importance should not be overlooked as it may play a stronger role among family groups [24, 46].

While this study focused on how two group have different ideas and preferences while challenging the same problem, the shortcomings of transit must be addressed. South Asians are more likely to live in enclaves and aspire to the convenience of a car. Transit services has a hard task to meet their travel needs within their community because these enclaves often are suburban [3]. Therefore, we should look at how well transit serves the needs of those communities if we want to avoid a cycle of car-dependence. South Asians seem to have a lower tolerance level to such shortcomings and are more likely to shift to cars when the chance arises. If all immigrant groups were to think alike, then the future looks very car-dependant. This is unless, of course, there are strategic interventions, one that policy planners should pay attention to. Actively encouraging university students to use transit or designing policies around them that facilitate public transport use and discourage car use could be a way to set more people on a path of sustainable travel.

AUTHOR CONTRIBUTIONS
The authors confirm contribution to the paper as follows: study conception and design: R. Shafi, A. Delbosc; data collection: R. Shafi; analysis and interpretation of results: R. Shafi, A. Delbosc; draft manuscript preparation: R. Shafi, A. Delbosc, G. Rose. All authors reviewed the results and approved the final version of the manuscript.
REFERENCES


3. Australian Bureau of Statistics (ABS), Findings based on use of ABS TableBuilder Pro data, in Findings based on use of ABS TableBuilder Pro data, TableBuilder, Editor. 2016.


10. Gothe-Snape, J., Record number of international students sticking around on visas with full work rights. 2018, ABC News: Australia.


