

# The Relative Priority of Personal Safety Concerns for Young People on Public Transport

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## Abstract

This paper presents the results of a survey of young people concerning personal safety and public transport. Previous research suggests concerns amongst public transport users in general with regarding personal safety issues. Young people are highly dependent on public transport and tend to travel at times (evenings) and locations (fringe areas) where personal safety issues are more prevalent. Research on young people shows that young women, migrant teenagers and homosexual youth have more concerns about personal safety than other groups. Concerns about use of rail and waiting at stations is also highlighted in the literature.

A web based survey of 239 young people aged 18-25 explored experience of personal safety issues on public transport in Melbourne, Australia. Analysis explored the relative priorities which young people have about personal safety compared to other public transport issues. Results suggest that personal safety issues are not as highly rated as concerns about service levels (frequency and availability). Nevertheless personal safety in general and personal safety at night in particular was considered to be very important to young people but to have only medium to high performance.

Using public transport at night and waiting at rail stations was considered to be the most dangerous aspects of public transport use amongst the sample. Interestingly travelling on train was not rated as a significantly high issue which contrasts somewhat with results from previous research. The survey also found high concerns about passengers influenced by alcohol. The highest ratings for measures to address personal safety concerns involved the presence of security guards on stations and trains. Emergency/panic buttons, better lighting and measures to ban intoxicated passengers were also highly rated.

## **1 Introduction**

A range of international research shows that personal safety concerns on public transport act to limit ridership and reduce the quality of travel for a wide range of groups of passengers (Brantingham et al., 1991, Crime Concern, 2002, Booz Allen Hamilton, 2007). In Australia recent media attention concerns attacks on overseas students when using public transport (e.g. Millar, 2009). This has focussed much national and indeed international attention on crime on public transport in Australia and its influence on young people. Unfortunately there is limited research on the topic in Australia. The most recent published project in the area (Symonds Travers Morgan, 1996) is over a decade out of date. However a recent National Youth Forum, conducted in Australia in February 2009 highlighted that fear of crime on public transport is a major concern of young people. In addition a range of research has demonstrated the critical role which public transport can have a means of access to life activities (Currie, 2007). For example a survey of East Gippsland youth found that 63 percent agreed a lack of transport was stopping them doing things they want to do; and improved public transport was the single most expressed solution (LGCTWG, 2007).

Clearly public transport is important to young people but it is unclear how personal safety issues affect their travel. There is clearly scope to undertake research in this field in Australia.

This paper presents the results of a survey of young people concerning personal safety and public transport. The project aims to identify;

- The relative priority of safety concerns relative to wider concerns which young people have about public transport
- Factors which influence personal safety concerns; and
- Priorities for action to improve personal safety issues.

The paper is structured as follows. The next section presents a summary of the relevant research literature associated with personal safety and public transport. This is followed by a description of the study survey. Survey results are then summarised including a review of the sample and results relative to each of the above survey aims. The paper concludes with a summary and discussion of key findings including suggestions for future research in this field.

## **2 Research Context**

A wide range of contemporary research highlights the general issues of personal safety on public transport (Crime Concern, 2002, Booz Allen Hamilton, 2007) however only selected elements of this research concerns young people. The following are a summary of key findings from previous research relevant to younger people:

Research on transport disadvantage in Western Sydney found refugee young people reported feeling victimized and afraid by the Transit Officers on public transport (Hurni, 2007). Young girls expressed concerns for personal safety when travelling, and this fear may restrict the decision to use public transport. This high fear of safety occurs even though young women have lower risk levels than other groups of being attacked (Bell, 1998, Tulloch, 2000, Department for Transport, 2006).

Research has also found that homosexual male teenagers have greater fears about personal safety on public transport than heterosexual male teenagers. The individuality of appearance of some homosexual teenagers can act to make them conspicuous targets for hostile groups (Tulloch, 2000).

A range of research suggests that safety concerns on public transport are almost always higher during the night than during the day (Crime Concern, 2004, Booz Allen Hamilton, 2007). Research on travel habits of younger people shows that travel is focused on nights and weekends since this is when they are available for social and recreational activities since they tend to be in education/work during the weekdays (Currie et al., 2005, Currie, 2007). Put together these two areas of research suggest safety issues are thus likely to be a major concern for young people since they travel at times when these concerns are highest.

Young people living on the urban fringe of major cities express more concerns about personal safety and public transport than young people living in the city (Youth Affairs Council of Victoria, 2005). This is because young people who live in the urban fringe have long wait times for public transport and long walks to access public transport (Winter, 1995).

Some research suggests that young people are more concerned about personal safety when travelling to a part time job, to sports and the library and least concerned about personal safety when travelling to social events and a club (Khong, 2003).

By public transport mode, young people share a concerns with all age groups about when using the train rather than the bus. The presence of the bus driver who could discourage crime is a possible explanation (Booz Allen Hamilton, 2007).

Overall the research evidence suggests associations between young people in general and times and locations when safety issues are more common. Some more vulnerable groups such as new migrants and women have been highlighted in the literature. These areas are explored further in the study research.

### **3 Survey Methodology**

The survey targeted young people aged 18-25 using public transport in Melbourne, Australia. To enhance the generalizability of the survey findings, a random unbiased sampling method was targeted. In particular it was hoped to avoid self selection bias for respondents with particular concerns associated with personal safety. Hence the survey was advertised as a general public transport survey rather than one which specifically targeted personal safety.

An online questionnaire survey approach was adopted for the survey largely to due to cost effectiveness. This approach may have biased sample populations to those who tend to use computers, however it was felt that for the young age group this was not a major sample bias concern since most young people tend to use computers.

Ethics approval was sought and granted by Monash University Standing Committee on Ethics in Research Involving Humans (approval number 2009000568) in May 2009. The online survey was promoted to 18-25 year olds through: a university newsletter (Monash Memo), face book and through word of mouth and email promotion amongst a series of transport and youth advocacy groups in Melbourne. The survey included a web link with the title 'Public Transport Survey Link (Aged 18-25)' which connected to a web page with an explanatory statement. Participants could decide to opt in or out of the survey based on this statement. The survey lasted around 5-minutes. All

participants remained anonymous. The survey was piloted using a sample of ten people to ensure that the survey could be completed easily and links were appropriate.

The survey questionnaire was divided into six main sections including:

- **Transport Usage.** One question identified the frequency of use of public transport modes.
- **Transport Type and Frequency.** Two questions determined the type of public transport utilised and trip purpose.
- **Public Transport Safety Factors.** Four questions analysed if participants believe personal safety is an issue when using public transport and factors which influence safety concerns.
- **Public Transport Safety Experience.** Two questions determined if participants have experienced a breach of security on public transport or heard of safety issues.
- **Public Transport Improvements.** Three questions identified recommendations to improve personal safety while waiting for and travelling on public transport.
- **Participants Details.** Six questions determined respondent age, gender, employment, car ownership, location of residence and country of birth.

## **4 Survey Results**

Survey results are presented including an overview of the study sample, results concerning the relative priorities of public transport attributes, factors which influence personal safety concerns and priorities for action to improve personal safety.

### **4.1 Sample**

Overall some 239 respondents completed the survey. This was considered a reasonable sample given the resources available however monitoring was clearly required to ensure statistical significance for disaggregate analysis of smaller sub-samples. Given the sampling approach and the size of the sample it was considered to be a reasonably representative sample to provide a generalizable basis for examining the results.

The respondents were asked various questions about themselves including: employment, age, car ownership, country of birth, gender and place of residence. A 'typical' respondent was: employed as student (73% of respondents), twenty years of age (17% of respondents), owned a car (54% of respondents), born in Australia (79% of respondents) and female (71% of respondents).

Participants were asked how often public transport is used involving a list of different options. Most young people have utilised some form of public transport at least once a year. More than half use public transport at least 3 days per week.

Participants were asked how many trips were made in the past three days involving a list of different public transport modes. The most common trips types involve: the bus only, the train only or the bus and train. Only a minority responded that they use the tram only or a combination of bus, tram and train.

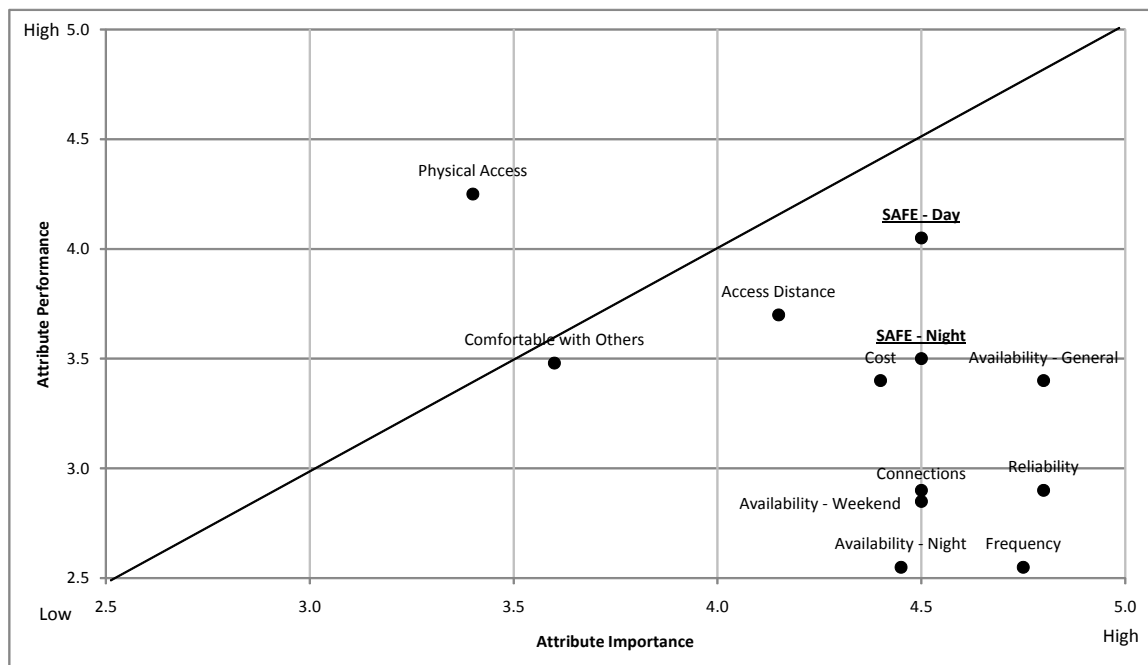
### **4.2 Relative Priority of Safety and Other Public Transport Issues**

One of the aims of the research was to establish how personal safety issues on public transport rated compared to other concerns about public transport. An analysis framework was developed to examine these issues such that the relative importance of particular concerns (or attributes) could also be seen within the context of public

transport performance in relation to each concern. This framework has been termed a 'quadrant analysis' (Kittleson & Associates, 2003) and asks respondents to rate a series of attributes in relation to their "importance" as well as also considering how "performance" of public transport rates in relation to these attributes. The resulting analysis provides a plot of "importance" against "performance" for each attribute and can identify priority concerns which have high "importance" but low "performance".

Figure 1 illustrates the results of the quadrant analysis for the survey sample as a whole. Attributes of public transport which were considered important but had poor performance were, in order; frequency of service, availability of services at night and reliability. Weekend availability of services, availability of connections and general availability of public transport were also second order important attributes with poor performance. Each of these attributes were rated more highly than any safety related issues. Of the two personal safety issues considered (safety during the night and safety during the day) both had very high importance ratings but mid to high performance. Of these safety at night had the lowest performance.

**Figure 1 : Relative Public Transport Attribute Importance and Performance**



*Key to Attributes*

Attribute	Code
Covering the Costs of Your Travel	Cost
Finding PT Options Available	Availability - General
Feeling SAFE on PT during the Day	SAFE - Day
Being Able to get Around Reliably on PT	Reliability
Being Able to Physically Get On/Off PT	Physical Access
PT Available at Night	Availability - Night
PT Available at Weekends	Availability - Weekend
Feeling Comfortable with People You Dont Know on PT	Comfortable with Others
PT Operating Frequently	Frequency
Feeling SAFE on PT at Night	SAFE - Night
Being able to Get To PT	Access Distance
Being Able to make PT Connections	Connections

These results suggest that personal safety issues are not as highly rated as concerns about service levels (frequency and availability).

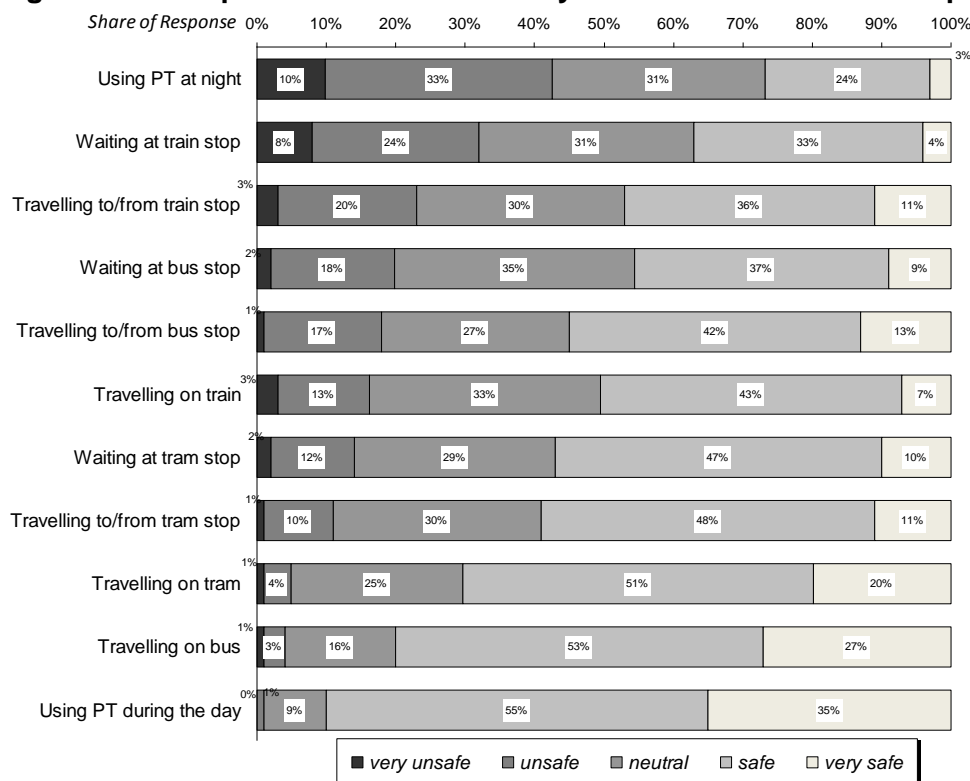
A separate analysis of this form was undertaken for a series of selected disaggregate groups from the survey. This established the following key patterns by different group:

- Migrant/Overseas Youth/Students** - In terms of attribute importance, reliability, frequency and connections were rated highest however safety at night was also a highly rated issue for this group. Compared to other groups examined (see below) this group rated importance of night safety higher than others. In terms of performance, safety at night had a poor score although availability of night public transport was also considered to have low performance.
- High/Low Frequency Public Transport Users** – In general, there was not a lot of difference in attribute importance ratings between those using public transport a lot or a little. Performance of each attribute was also similar however frequent public transport users were more likely to note problems with reliability and also with general safety while low frequency users noted more problems with information and being able to get to services.
- Gender** – The major gender differences in terms of importance were that women rated being safe in general, feeling comfortable with others, feeling safe on public transport at night and being able to physically get onto/off public transport more than men. In terms of performance there were not large gender differences apart from safety of public transport at night which was rated as a much bigger problem for women than men.

### 4.3 Factors Influencing Personal Safety

Respondents were asked to consider a range of scenarios for public transport use and to rate how safe they considered these to be on a rating scale. Figure 2 shows the results of this analysis.

**Figure 2 : Perceptions of Personal Safety Concerns on Public Transport**

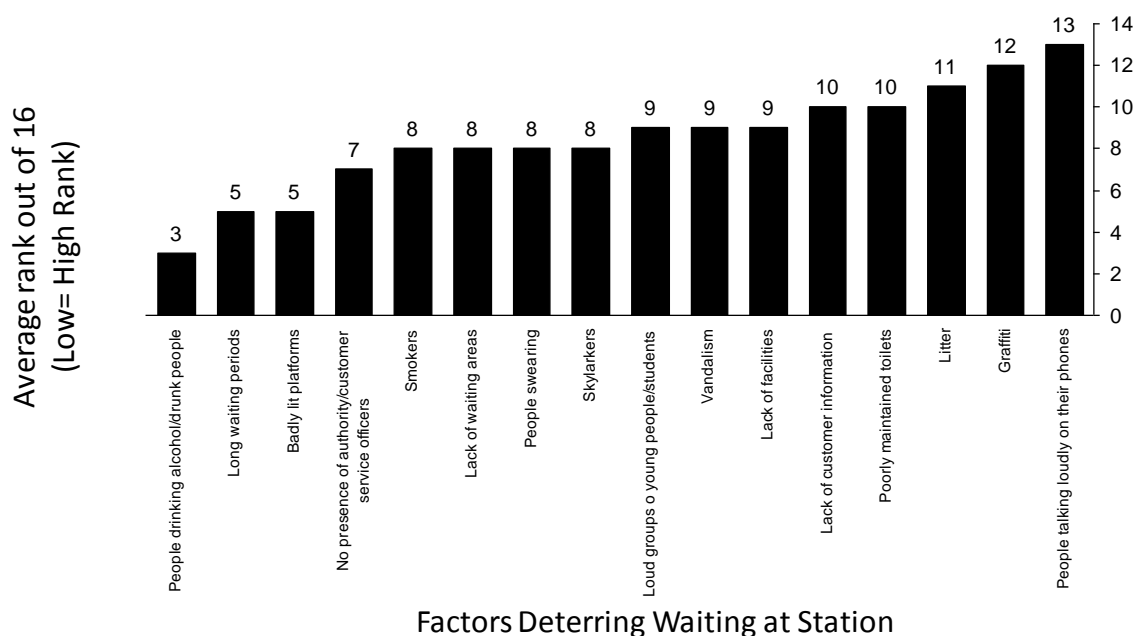


Using public transport at night and waiting at train stations was considered the most dangerous activities. Using public transport during the day and travelling by bus were considered the safest activities. There are many similarities with these findings and those from previous research. However travel on trains is not as highly rated compared to previous research (e.g. Booz Allen Hamilton, 2007).

In general responses on perceptions of safety were similar for disaggregate analysis of particular groups. The exception is females who rated almost all activities as more unsafe than men. Of these travelling at night, travel to/from stations/bus stops and waiting at bus stops were rated as very unsafe by women more than men.

Figure 3 shows the results for the question; which factors would deter you from waiting at train station. Others influenced by alcohol, long waiting times and badly lit platforms were the top three ranked concerns.

**Figure 3 : Average Rank – Factor Deterring Waiting at Rail Stations**



A disaggregate analysis of responses to this question for specific groups found that:

- **Overseas students.** Features ranked higher than the sample mean included : people drinking alcohol/drunken people, no presence of authority/customer service operators, badly lit platforms, people swearing, loud groups of young people/students followed by vandalism.
- **Employed part-time.** Features ranked higher than the sample mean were: long waiting periods, no presence of authority/customer service operators and badly lit platforms, lack of customer information followed by lack of facilities.
- **Multimodal public transport users.** Features ranked higher than the mean: long waiting periods, lack of waiting areas, poorly maintained toilets followed by litter.

- **Employed full time users.** Features ranked higher than the mean: long waiting periods, vandalism followed by graffiti.
- **Train only users.** Features ranked higher than the mean: long waiting periods, lack of waiting areas followed by poorly maintained toilets.
- **Males.** Features ranked higher than the mean: skylakers, vandalism followed by graffiti.
- **Tram only users.** Features ranked higher than the mean: long waiting periods followed by smokers.
- **Females.** Features ranked higher than the mean: long waiting periods followed by no presence of authority/customer service operators.

#### 4.4 Priorities to Address Personal Safety Issues

Respondents were asked to rate a series of measures to address personal safety issues when **waiting at a station**. A ranking scale between 1 to 4 (1=most preferred choice) was used. Figure 4 shows the share of all respondents ratings. The most highly rated measure (by just under a third of all respondents) was having a security guard present. Emergency alarms/buttons, random security guard patrols and better lighting were also highly ranked first. Emergency alarms and security cameras achieved the highest share of people ranking them in the top four choices.

In general these ranking followed a similar trend amongst the disaggregate groups considered.

Figure 5 shows the ranking (using a similar scale) for measures to address personal safety issues while **travelling on public transport vehicles**. The first ranked measures by share of respondents quoting them were roaming security guards, refusal of entry to intoxicated people and security cameras. Roaming security guards were rated as a first choice by over half of all respondents. This measure also had the highest share of respondents ranking it as a 1-4 rank. In general these ranking following a similar trend amongst the disaggregate groups examined.

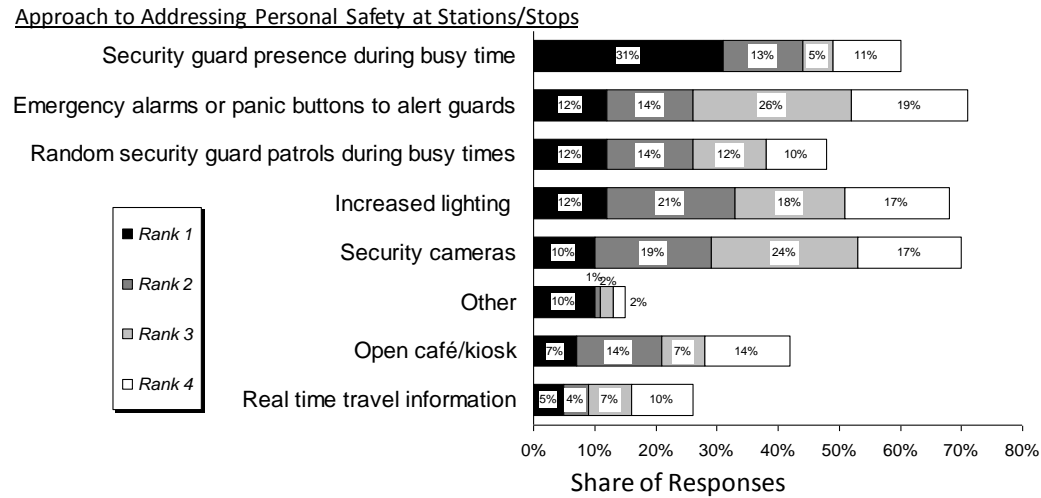
## 5 Conclusions

This paper presents the results of a survey of young people concerning personal safety and public transport.

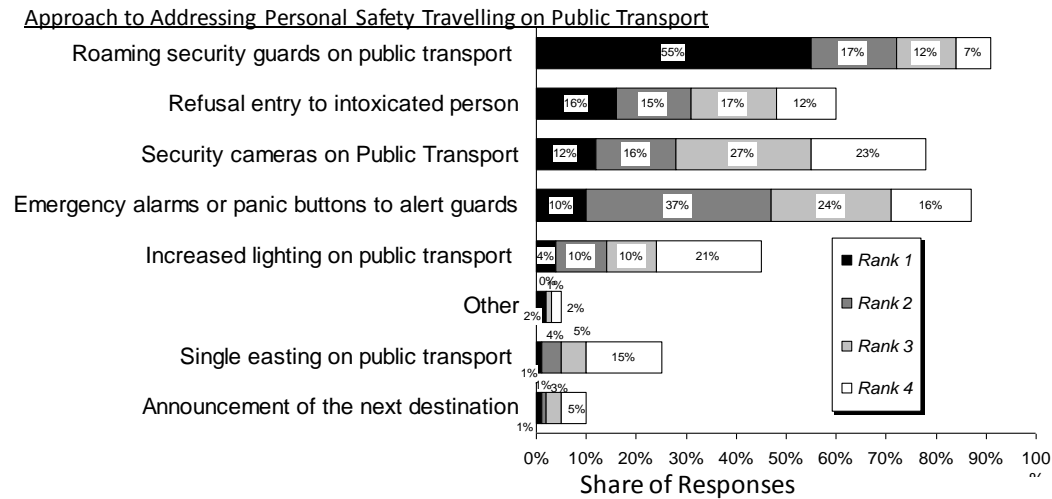
Previous research suggests concerns amongst public transport users in general with regarding personal safety issues. Young people are highly dependent on public transport and tend to travel at times (evenings) and locations (fringe areas) where personal safety issues are more prevalent. Research on young people shows that young women, migrant teenagers and homosexual youth have more concerns about personal safety than other groups. Concerns about use of rail and waiting at stations is also highlighted in the literature.



**Figure 4 : Ranking of Safety Measures - Waiting at Rail Stations/Stops**



**Figure 5 : Ranking of Safety Measures – Travelling of Public Transport**



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In general a disaggregate analysis of results by particular groups of passengers found similar findings. Even overseas born students/young people had higher concerns about service levels on public transport than safety issues. However ratings of safety problems were higher in this group than in others. Personal safety on public transport was also a greater concern for women relative to men which is consistent with previous research.

The finding that service level issues, notably low frequency and availability of night and weekend services, are more significant for young people than personal safety issues may suggest a link between the two issues. Long wait times at stations/stops was the second highest priority factor in terms of deterrence to waiting. Higher service levels and busier services may act to reduce personal safety concerns as a result of short wait times and greater surveillance.

The relationship between low service levels and personal safety concerns would be an interesting area to explore in future research. Contrasting safety concerns amongst those with high and low service levels might enable an informed view to emerge about the relative effect of service level on safety issues. Future research could also explore personal safety issues relative to disaggregate groups of young people. Some outline analysis of this type was presented in this paper however a large sample would be needed to explore this issue in more depth. Amongst the groups which could be investigated, a closer analysis of the view of overseas students would seem appropriate relative to recent media attention on this issue. Research also needs to better explore the drivers of personal safety perceptions since it is clear that some groups, notably women, have much stronger concerns in this area but are not highly represented in crime statistics (Tulloch, 2000).

## **6 References**

- Bell, W. (1998). Women and community safety. . Paper presented at the conference Safer Communities: Strategic Directions in Urban Planning. Melbourne, Australia, : September 10-11, 1998.
- Booz Allen Hamilton (2007). Personal Security in Public Transport Travel – Problems Issues and Solution, Land Transport New Zealand Research Report. **Land Transport Research Programme 2006-07 ref: 3/06/36.**

- Brantingham, P., P. Brantingham and P. Wong (1991). " How Public Transit Feeds Private Crime: Notes on the Vancouver "Skytrain" Experience. ." Security Journal, **2 (2)**, 91-95.
- Crime Concern (2002). People Perceptions of Personal Security and Their Concerns about Crime on Public Transport: Literature review. London, UK, Department for Transport,.
- Crime Concern (2004). People Perceptions of Personal Security and Their Concerns about Crime on Public Transport: Research Findings. London, UK, Department for Transport,.
- Currie, G. (2007). Young Australians: No way to go. No Way to Go: Transport and Social Disadvantage in Australian Communities. G. Currie, J. Stanley and J. Stanley. Melbourne, Monash University ePress.
- Currie, G., F. Gammie, G. Waingold, D. Paterson and D. Vandersar (2005). Rural and Regional Young People and Transport National Youth Affairs Research Program, Booz Allen Hamilton.
- Department for Transport (2006). Young People and Transport: Understanding their needs and requirements, UK Department for Transport Mobility and Inclusion Unit.
- Hurni, A. (2007). Marginalised groups in Western Sydney: The experience of sole parnets and unemployed young people. No way to go : Transport and social disadvantage in Australian communities. G. Currie, J. Stanley and J. Stanley, Monash University ePress.
- Khong, L. (2003). Transport Young People and the Bigger Picture - Research conducted as part of the Central Coast Youth Transport Project. Forum on Transport and Young People in Rural and Regional Australia.
- Kittleston & Associates, U., LKC Consulting Services Inc, MORPACE International Inc, Queensland University of Technology, Yuko Nakanishi, (2003). 'A Guidebook for Developing a Transit Performance-Measurement System' T. C. R. P. T. R. 88, Transportation Research Board Washington DC 2003. .
- LGCTWG (2007). The Challenge of Getting Around - Rural, Remote and isolated - Rural Youth Transport Survey 2005-2006 Wellington and East Gippsland. W. S. C. Let's GET Connected Transport Working Group (LGCTWG).
- Millar, P. (2009). Train gang bashes Indian student. The Age. Melbourne, Australia.
- Symonds Travers Morgan (1996). Fear of Crime Project - Final Report. Sydney, Australia, for CityRail NSW.
- Tulloch, M. (2000). "The Meaning of Age Difference in the Fear of Crime." British Journal of Criminology **40**: : 451-467. .
- Winter, I. (1995). Young people Living on the URBAN FRINGE, National Youth Affairs Research Scheme.
- Youth Affairs Council of Victoria (2005). Young people and service providers on the urban fringe of Melbourne. Melbourne:.. Youth Affairs Council of Victoria, 2005. Melbourne. Australia.