
World Transit Research

1-1-2010

Perceptions and Realities of Personal Safety on Public Transport for Young People in Melbourne

Graham Currie

Alexa Delbosc

Sarah Mahmoud

Follow this and additional works at: <http://www.worldtransitresearch.info/research>

Recommended Citation

Currie, G., Delbosc, A., & Mahmoud, S. (2010). Perceptions and Realities of Personal Safety on Public Transport for Young People in Melbourne. Paper delivered at the 33rd Australasian Transport Research Forum Conference held in Canberra, on 29 September - 1 October, 2010.

This Conference Paper is brought to you for free and open access by World Transit Research. It has been accepted for inclusion in World Transit Research by an authorized administrator of World Transit Research. For more information, please contact pauline.forbes@eng.monash.edu.au.

Perceptions and Realities of Personal Safety on Public Transport for Young People in Melbourne

Graham Currie*¹, Alexa Delbosc² and Sarah Mahmoud³

¹Graham Currie

Professor, Chair in Public Transport, Institute of Transport Studies, Department of Civil Engineering, Building 60, Monash University, Clayton, Victoria 3800, AUSTRALIA and Senior Associate, Booz & Company Phone: +61 3 9905 5574, Fax: +61 3 9905 4944, Email: graham.currie@eng.monash.edu.au

²Alexa Delbosc,

Research Fellow, Institute of Transport Studies, Department of Civil Engineering, Building 60, Monash University, Clayton, Victoria 3800, AUSTRALIA

³Sarah Mahmoud,

Research Student, Institute of Transport Studies, Department of Civil Engineering, Building 60, Monash University, Clayton, Victoria 3800, AUSTRALIA

Consultant, Booz & Company, Lv 53 South Tower, Rialto, 525 Collins St, Melbourne VICTORIA 3000, Australia

*Corresponding author

Abstract

This paper aims to explore how perceptions of safety relate to actual experience in the context of urban public transport. It presents the results of an empirical analysis of links between perceptions of personal safety on public transport and compares these with actual experience of travellers. The focus of the work is a survey of young people using public transport in Melbourne Australia.

The research literature demonstrates contrasting views with regard to perceptions of personal safety and actual risks. Positive links have been found in some contexts while others have found fears to be unrelated to risk. Some crime surveys and empirical studies suggest perceptions of personal safety are not justified by crime rates. However a series of surveys have shown that those with direct experience of safety incidents have greater concerns with safety. Other research suggests that feelings of anxiety and psychological factors act to make some people feel uncomfortable on public transport and that this acts to increase perceptions of poor personal safety. The paper aims to explore which factors are more important in explaining perceptions of safety.

The analysis has identified a series of three statistically significant models which predict personal feelings of safety on public transport using different measures of safety perceptions. In each model psychological influences i.e. 'feeling comfortable with people you don't know' had the biggest individual influence on perceptions of safety with a medium effect size. Gender and the actual experience of a personal safety incident were also found to influence perceptions of personal safety but these variables only had a small effect on perceptions of safety.

The paper discusses policy and research implications of the findings including suggestions for future research.

1 Introduction

Fear of crime is now widely recognised as a barrier to public transport use (Crime Concern 2002; Booz Allen Hamilton 2007). For example research in the UK has identified that an additional 10.5% of rail trips would be generated if people felt more secure when travelling and waiting at stations (Crime Concern 2002). A majority of car drivers in inner Los Angeles claimed they would use transit if public buses were perceived as safe and clean (Loukaitou-Sideris 1999).

Concerns about personal safety on public transport are frequently mirrored in media coverage (e.g. Sexton 2009; van den Berg 2009). More recently the safety of overseas (mainly Indian) students using public transport in Melbourne has been the focus of much domestic and international concern (Millar 2009).

Despite media coverage and research evidence, there is actually much debate about the effects of crime on public transport and how this relates to the beliefs held by passengers and potential passengers. Reported government statistics suggest falling crime rates on public transport whereas media and political commentary suggests the opposite (Gardiner 2009). A recent study in Australia found that concern for personal safety was one of the least-cited barriers to taking public transport to work (lack of service and inconvenience were far more important factors, Australian Bureau of Statistics 2009). A survey of customer satisfaction in Sydney suggests that 90% of bus and train passengers are satisfied with their level of safety (Transport Data Centre 2009).

A similar debate is being held within academic circles concerning the impact of actual crime on perceptions of safety on public transport. It has been suggested that media coverage itself is acting to influence perceptions (Crime Concern 2002). Some researchers suggest perceptions are not related to actual experience (Box et al. 1988) and others that psychological factors play a role in negative perceptions of safety (Thomas 2009).

This paper aims to explore how perceptions of safety relate to actual experience in the context of urban public transport. It presents the results of an empirical analysis of links between perceptions of personal safety on public transport and compares these with actual experience of travellers. The focus of the work is a survey of young people using public transport in Melbourne Australia.

The paper starts with a review of the research literature in this field. This is followed by a review of the methodology adopted to collate and analyse survey evidence. The results are then described. The paper concludes by summarising key findings and a discussion of their implications for research and policy.

2 Research context

There is some degree of disagreement within the research literature regarding links between the fear of crime and actual risk of crime. Positive links have been found in some contexts (Mawby and Gill 1987) while others have found fears to be unrelated to risk (Box et al. 1988). For example a US study concluded that:

“Many people’s fear of crime is exaggerated and disproportionate to the amount of crime in their area, the people least in danger are most afraid”

(Furtenberf 1972; Crime Concern 2002)

Crime surveys and empirical studies suggest that fear of crime and victimisation is not well justified when compared to crime rates that show low rates of reported crime against groups such as women in public spaces (Loukaitou-Sideris et al. 2009). However the same source notes that much crime is under-reported. In 2001/02 the British Crime Survey showed that only 25% of incidents involving common assault were reported (Crime Concern 2004).

There does seem to be some evidence that those who have direct experience of crime (as a victim or as an observer) have reduced perceptions of safety. The 1997 and 2002 UK national crime survey demonstrated that if people had experienced or observed crime on public transport they were more likely to rate their personal safety as poor or very poor (Crime Concern 2002; Crime Concern 2004).

However research also shows that many people who have concerns about personal safety on public transport have not experienced or witnessed actual attacks. Psychological factors have been suggested as having an influence on these concerns.

Psychological research suggests that fear is related to unpredictability and lack of control of exposure to potential crime. Lack of knowledge of people you are travelling with involves uncertainty which is exacerbated by lack of reassurance from transit staff (Brantingham et al. 1991).

Background factors also affect people's feelings of insecurity, for example anxiety in older people regarding security has been related to social isolation (Crime Concern 2004). Women and persons born overseas also demonstrate higher than average concerns for personal safety on public transport and this has also been related anxiety and psychological factors (Crime Concern 2002; Loukaitou-Sideris et al. 2009).

The invasion of personal space when travelling on public transport vehicles has also been linked to general feelings of anxiety (Thomas 2009). Humans generally prefer to limit access to personal space but travelling on public transport forces strangers into intimate social distances which are commonly reserved for those with stronger personal relationships (Hall 1966). The invasion of personal space in general has been shown to lead to greater self-reported anxiety (Greenberg and Firestone 1977) and physiological stress (Nicosia et al. 1979). Surveys of public transport travel in New Zealand found evidence of psychological and social discomfort in passengers. Passengers respond by using defensive adaptations such as reading or listening to music to avoid interactions with strangers (Thomas 2009). The same study found that this behaviour can result in lack of social politeness and self isolation which is likely to reinforce negative stereotypes of other passengers including feelings of insecurity and anti-social behaviour.

Overall the research suggests a need to explore the influence of actual experience of crime on public transport and how it influences perceptions of safety including considerations of psychological influences.

3 Methodology

Analysis is based on a survey of young people in Melbourne undertaken in May 2009. The survey targeted young people aged between 18-25 and was promoted through a local university newsletter (Monash Memo), Facebook and also through word of mouth promotion within a range of transport planning and support groups in Melbourne. An online survey approach was adopted with a 5 minute questionnaire. The survey was designed to understand general usage characteristics of public transport and to assess

personal safety factors and respondent views on improvements to personal safety. It is reported in full in a separate paper (Mahmoud and Currie 2010). This analysis concerns the survey results in relation to personal safety perceptions and actual experience of personal safety issues. Particular questions which were the focus of this analysis included:

- Perceptions of Personal Safety – respondents were asked to rate how easy or difficult they found feeling safe on public transport (in general), feeling safe on public transport at night and feeling safe on public transport during the day. Responses were categorised into 5 groups; very easy, easy, neutral, difficult and very difficult.

A separate more direct question asked “how safe do you feel using public transport” in various contexts such as at night, during the day, waiting at a bus stop or walking to a train station. Again there were five response categories including very unsafe, unsafe, neutral, safe and very safe.

- Public Transport Safety Experience – Respondents were asked if (on public transport) they had ever been attacked, threatened, observed an attack, observed someone being threatened or felt threatened.

The analysis explored the results of the above variables but also sought to understand links between them and a series of dependent or explanatory variables including:

- Frequency of public transport use - Increased familiarity with public transport may increase or even decrease feelings of safety.
- Gender – A range of previous research demonstrates that young women tend to feel more unsafe on public transport than young men (e.g. Loukaitou-Sideris et al. 2009).
- Country of birth – Previous research and more recent media coverage suggests that overseas students and immigrants may have worse perceptions and more experience of safety issues on public transport (Crime Concern 2002; Booz Allen Hamilton 2007).
- Feeling comfortable with people you don't know on public transport – This is essentially a psychological personality variable; people who aren't comfortable around strangers may feel unsafe in a shared environment like public transport. Inclusion of this variable tested the influence of psychological factors in feelings of safety about public transport.

Because this analysis involves several dependent variables, a Multivariate Analysis of Variance (MANOVA) was chosen as the analysis method.

4 Analysis and results

4.1 General Sample Demographics

Overall some 239 respondents undertook the survey. Table 1 shows some key summary statistics regarding the survey sample. The majority of the sample were women (71%) and most were students (76%). Some 80% were born in Australia, 13% were migrants and 7% were classified as overseas students because they migrated to Australia one or two years before and gave “student” as their main occupation. The average age of the sample was 21. Around half of the sample owned a car.

Table 1: Sample Demographics

Gender	Male	29%
	Female	71%
Employment	Study	76%
	Employed full-time	10%
	Employed part-time or casual	8%
	Other	5%
	Unemployed	1%
Country of birth	Australian	80%
	Migrant	13%
	Overseas student	7%
Age	18	15%
	19	13%
	20	16%
	21	13%
	22	10%
	23	11%
	24	9%
	25	9%
	no age given	5%
	Average age	21
Do you own a car?	yes	54%
	no	46%

4.2 Perceptions of safety on public transport

Figure 1 shows the responses to the question; “how easy or difficult do you find feeling safe travelling on public transport at night”, “in general” and “during the day”. It also considers the response to the question “how easy or difficult do you find feeling comfortable travelling with people you don’t know?”

Nearly 40% of the sample found it difficult or very difficult to feel safe travelling on public transport at night. This compares to 14% during the day and 12% in general. Some 14% said they found “Feeling comfortable with people you don’t know on public transport” to be difficult or very difficult.

Figure 1: How easy or difficult do you find ...

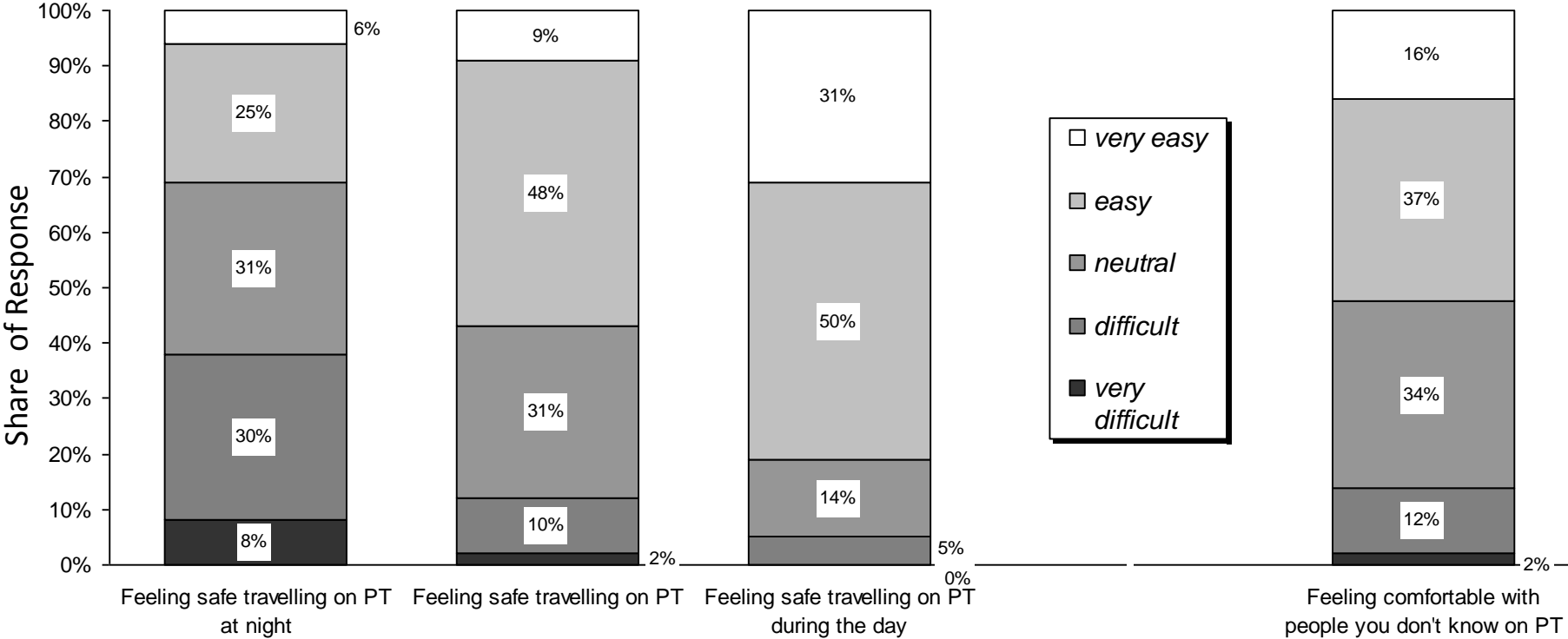
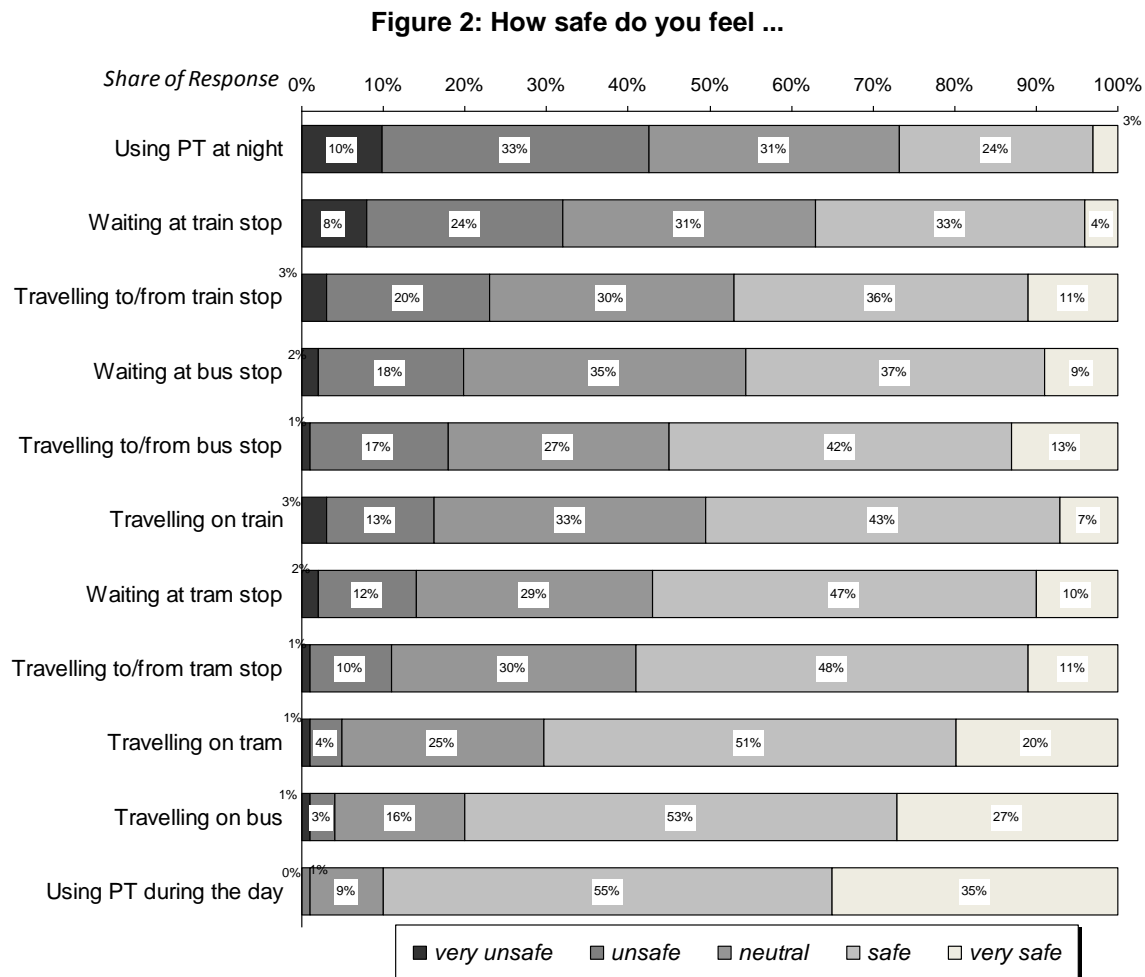


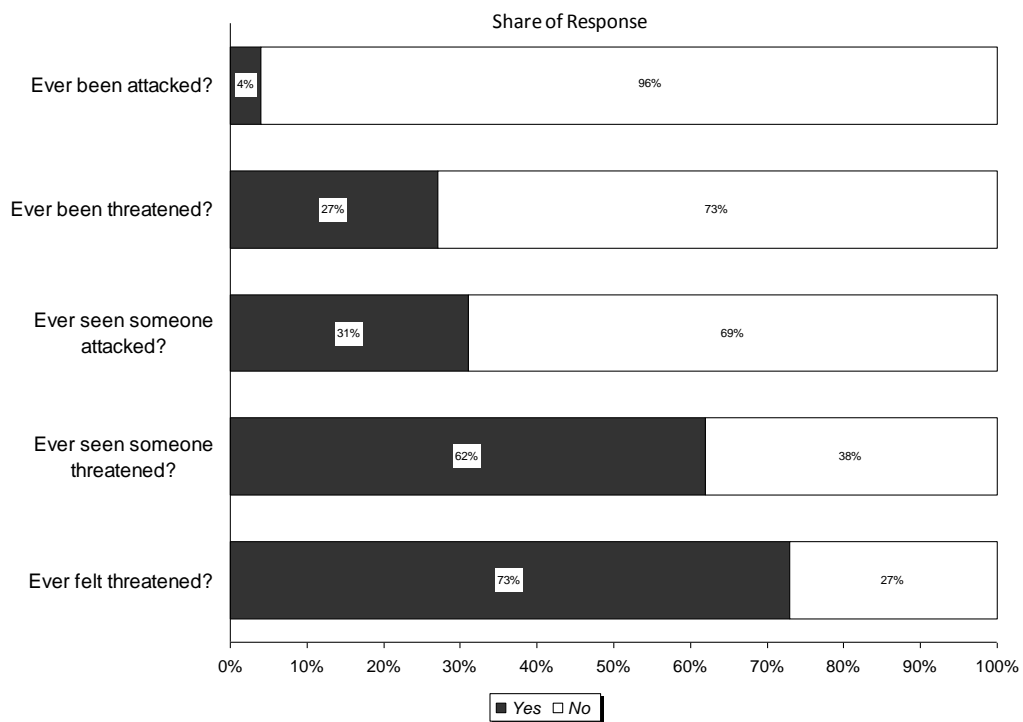
Figure 2 shows responses to the more direct safety question “how safe do you feel?” in various contexts of public transport usage. This suggests that over 40% of young people felt unsafe or very unsafe using public transport at night. Waiting at or travelling to/from train stops were the next most common concerns, followed by waiting at bus stops. Using public transport during the day was the least common concern with 90% of respondents feeling safe or very safe.



4.3 Experience of Unsafe Circumstances on Public transport

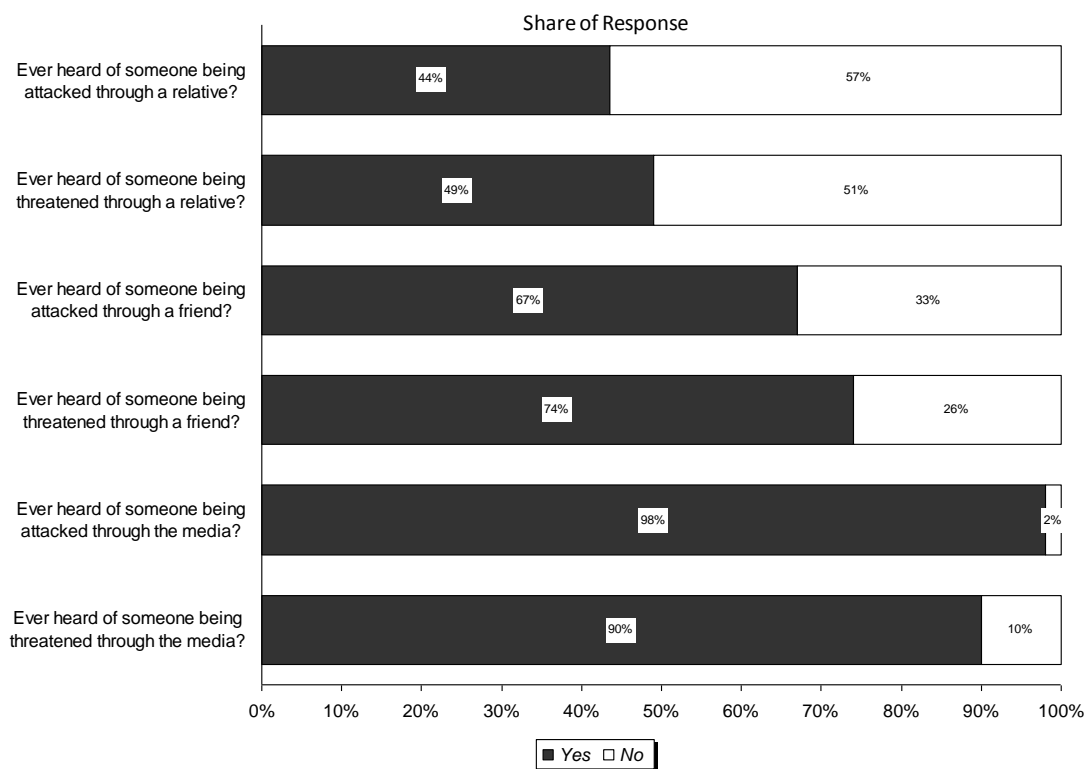
Figure 3 shows the responses concerning actual experiences of safety events on public transport. Very few young people in the sample have ever experienced a direct attack on themselves (4% or 9 people) although over a quarter said they had been directly threatened at some point. Over 30% had seen someone attacked and over 60% had seen someone threatened. Although experiencing an actual attack was rare over 70% said they had *felt* threatened at some time.

Figure 3: Experience of unsafe conditions on public transport



Direct experience is not the only way people learn about safety on public transport. The survey also explored how respondents had found out about safety issues (Figure 4). Some 98% of respondents had heard about attacks on public transport through the media. This was the most common source of information about personal safety issues.

Figure 4 : Hearing about unsafe conditions on public transport



5.5 The relationship between feelings and experience

5.5.1 *Dependent variables: Feelings of safety on public transport*

Five variables from two different sets of questions directly measured feelings of safety on public transport:

- A. How easy or difficult you find...
 1. Feeling safe travelling on public transport
 2. Feeling safe travelling on public transport at night
 3. Feeling safe travelling on public transport during the day
- B. How safe you feel ...
 4. Using public transport at night
 5. Using public transport during the day

There are a further nine questions measuring feelings of safety on specific modes and locations, but these five questions measure feelings of safety on public transport more generally.

Because this analysis involves several dependent variables, a Multivariate Analysis of Variance (MANOVA) was chosen as the analysis method.

Initial modelling of these variables quickly revealed that two variables (“feeling safe travelling on public transport” and “feeling safe travelling on public transport during the day”) violated a basic assumption of statistical analysis: the error variance between groups was not equal (shown in Levene’s Test of Equality of Error Variance). That is, for these two variables, the random variance of responses was much greater in some groups than others.

There are very few options available to MANOVA when this assumption is not met. Because there were five variables to choose from, it was decided that these two variables would be excluded from analyses.

5.5.2 *Independent variables: Predictors of feelings of safety*

The survey contains a range of questions that may influence feelings of safety. The primary explanatory variables of interest are the five variables measuring actual experience of safety issues on public transport. For the sake of parsimony, two variables were combined into a measure of whether they had been attacked or threatened. Similarly, another two were combined into whether they had seen someone attacked or threatened. The final explanatory variable set examining the issue of actual experience were:

1. Ever been attacked or threatened?
2. Ever seen someone attacked or threatened?
3. Ever felt threatened?

In addition to these variables, the following explanatory variables were also considered:

- Frequency of public transport use
- Gender
- Country of birth
- Feeling comfortable with people you don’t know on public transport

Table 2 shows the average ratings of feelings of safety on public transport crosstabulated with different categories of the dependent variables. The score of each safety variable can range between 1 to 5 with a 5 being high and 1 being a low score. Feelings of safety are considerably higher when people travel during the day (average rating 4.2) than when they travel at night (average rating 2.9 and 2.8).

Table 2: Feelings of safety by dependent variables

		Easy/ Difficult -	How Safe You Feel -	
		Feeling safe on PT at night	Using PT at night	Using PT during the day
OVERALL AVERAGE RATING		2.9	2.8	4.2
Ever been threatened / attacked?	Yes	2.7	2.5	4.1
	No	3.0	2.9	4.3
Ever seen someone threatened / attacked?	Yes	2.7	2.7	4.2
	No	3.2	2.9	4.4
Ever felt threatened?	Yes	2.7	2.6	4.2
	No	3.4	3.2	4.5
PT trips in last 3 days (average = 3.6)	Below av.	2.9	2.8	4.2
	Above av.	3.0	2.8	4.2
Frequency of PT use	< weekly	2.9	2.8	4.2
	> weekly	2.9	2.8	4.2
Gender	Female	2.8	2.7	4.2
	Male	3.3	3.0	4.4
Country of birth	Australia	2.9	2.7	4.3
	Overseas	2.9	2.9	4.2
Comfortable with people you don't know on PT (average = 3.5)	Below av.	2.5	2.4	4.0
	Above av.	3.3	3.1	4.5

From this simple table several patterns are already clear. Feelings of safety are slightly lower amongst those who have experienced unsafe behaviours although the MANOVA analysis will show if these differences are significant. Gender and being comfortable with people you don't know also appear to have an influence on feelings of safety with the latter having the larger effect. Interestingly another variable that may have an effect is 'ever *felt* threatened?' This is a related psychological influence variable since it considers the respondents feelings', not their direct experience of events.

Use of public transport does not appear to have any effect on feelings of safety. For this reason and for the sake of parsimony, public transport use was not included in the MANOVA.

Interestingly country of birth did not appear to have an effect on feelings of safety. This contrasts considerably with the findings of previous research and the view suggested by media reports. Due to the sample size it would be impractical to include both country of birth and gender into a single analysis. For example, there were only 9 participants who were male and born overseas and of those, only one or two had ever experienced, witnessed or felt threatened or attacked. In this context, country of birth was also excluded from MANOVA analysis.

This analysis also demonstrated fairly consistent findings across the explanatory variables for each of the 3 dependent variables. Feeling safe on public transport during the day had higher ratings of safety compared to the others but the relative ratings of individual explanatory variables was fairly consistent between the two safety at night factors.

5.5.3 The final models: What predicts feelings of safety?

Based on initial explorations in the previous sections, three MANOVA models were run (Table 3). All three models had the same three dependent variables and the independent variables 'gender' and 'feeling comfortable with strangers'. But each model contained only one of the following independent variables:

- Ever been attacked or threatened,
- Ever seen someone attacked or threatened or
- Ever felt threatened
-

Table 3: Variables included in the three MANOVA analyses models

		Model 1	Model 2	Model 3
Independent Variables	Ever been attacked or threatened	*		
	Ever seen someone attacked or threatened		*	
	Ever felt threatened			*
	Gender	*	*	*
	Feel comfortable around people you don't know on PT [†]	*	*	*
Dependent Variables	Feeling safe while travelling on public transport at night	*	*	*
	[How safe you feel] using public transport at night	*	*	*
	[How safe you feel] using public transport during the day	*	*	*

[†]As a continuous variable, this was included as a covariate

All three models met Box's Test of Equality of Covariance Matrices and Levene's Test of Equality of Error Variances.

Table 4 shows the results from the multivariate tests, that is, when the three dependent variables are considered together. It shows that in all three models, gender, feeling comfortable with people you don't know, and experiences of unsafe behaviour all contribute to feelings of safety. However there was no interaction effect between gender and experiences of unsafe behaviour.

The partial η^2 shows the size of the effect of each variable on feeling unsafe. As with other measures of effect size, values below .3 are considered "small", values between .3 and .5 are "medium" and over .5 are generally considered "large" effects.

Overall these results suggest that the psychological variable "feeling comfortable with people you don't know" was of medium size across all three models. It is by far the largest influence on feelings of safety on public transport: the more comfortable people felt being with strangers, the safer they felt on public transport. By comparison, gender and experiences of unsafe behaviour only had small effects on feelings of safety on public transport (all less than .10).

Table 4: Multivariate MANOVA tests

	Model 1		Model 2		Model 3	
	F	Partial η^2	F	Partial η^2	F	Partial η^2
Multivariate tests (df = 3, 210)						
Intercept	148.3		152.2		153.5	
Ever attacked/threatened	3.4 ^b	.04	-	-	-	-
Ever witness attack/threat	-	-	5.0 ^a	.06		--
Ever felt threatened	-	-	-	-	4.0 ^a	.05
Gender	3.5 ^b	.05	4.9 ^a	.06	7.0 ^a	.09
Gender*attack/threat interaction	0.7 ^c	n/a	0.8 ^c	n/a	0.9 ^c	n/a
Comfortable with people you don't know	36.7 ^a	.33	34.7 ^a	.32	35.4 ^a	.33

^aSignificant at $p < .01$

^bSignificant at $p < .05$

^cNot significant

5 Discussion and Conclusions

This paper aims to explore how perceptions of safety relate to actual experience in the context of urban public transport. The research literature demonstrates contrasting views with regard to perceptions of personal safety and actual risks. Positive links have been found in some contexts (Mawby and Gill 1987) while others have found fears to be unrelated to risk (Box et al. 1988). Some crime surveys and empirical studies suggest perceptions of personal safety are not justified by crime rates. However a series of surveys have shown that those with direct experience of safety incidents have greater concerns with safety. Other research suggests that feelings of anxiety and psychological factors act to make some people feel uncomfortable on public transport and that this discomfort increases perceptions of safety risks. The paper aims to explore which factors are more important influences on perceptions of safety.

The analysis has identified a series of three statistically significant models which predict personal feelings of safety on public transport using different measures of safety perceptions. In each model psychological influences, i.e. 'feeling comfortable with people you don't know,' had the largest individual influence on perceptions of safety (partial η^2 were over .30, representing a medium-sized effect). Gender and actual experiences of a personal safety incident also influenced perceptions of personal safety. However the size of these effects were small relative to the influence of feeling comfortable with people you don't know (partial η^2 were under .10, representing a small effect size).

Overall the research suggests that feelings of anxiety and discomfort associated with travelling in a relatively confined uncontrolled space with people you don't know is the most influential factor driving negative feelings of personal safety on public transport. Actual experience of safety incidents were not as important as might be suggested from contemporary media reports associated with safety. And interestingly, the effect of being attacked or threatened on feelings of safety was quite small (partial $\eta^2 = .04$) and no larger than the effect of witnessing an attack/threat or feeling threatened.

Interestingly the analysis found no significant differences in safety perception ratings between those born overseas and domestic travellers which again contrasts with the strong media reports in contemporary Australia. It is also interesting that almost all respondents suggested the most common source of information about safety incidents was from media sources.

Frequency of use of public transport was also found to have no link to perceptions of personal safety. However it is worth noting that the survey sample in general had a

great deal of experience using public transport; every participant had used public transport at least once in the last 6 months. This variable may have had a greater impact if more non-users of public transport had been included in the sample.

An important implication of these findings from a policy perspective is the need to consider psychological factors in addressing safety concerns amongst existing and potential public transport users. Although only around 14% of the survey sample had difficulties feeling comfortable travelling with other people on public transport these feelings appear to be important in influencing safety barriers to travel. Research needs to explore factors influencing psychological perceptions such that information and design measures might be used to positively influence these perceptions. Design measures to engender feelings of space on public transport vehicles and measures to promote more positive social interaction and understanding about other passengers should have a positive impact on feeling comfortable with others and thus perceptions of safety. It seems likely the targeting of these measures to young women would be worthwhile as they are slightly more likely to feel unsafe on public transport.

There is also a role for additional research exploring the links between perceptions and experience of personal safety concerns in greater depth. This research was based on a modest sample of young people and hence could not explore influences at a high degree of disaggregation. A large sample in future research may remove this barrier.

While the study has identified psychological factors as a major priority, this should not discourage efforts to reduce or discourage crime since the research has also identified important links between experience and perceptions of personal safety issues. However the more common experiences captured in the survey emphasise 'feeling' of threats and observing people being threatened.

Furthermore it may be that negative psychological feelings, feelings of anxiety and stress will also influence interpretation of events that are observed. There is much scope for misinterpretation of events when these contexts are mixed with an individual's personal beliefs, mores and social standards and how these contrast with those of other races, ages and sexes. Measures to enhance understanding and consideration of others who are different are needed to improve perceptions and experiences in these conditions. There is much room to explore these concepts further through an expansion of research considering psychological influences on the perceptions of public transport users.

6 References

- Australian Bureau of Statistics (2009). Environmental issues: Waste management and transport use. Report 4602.0.55.002.
- Booz Allen Hamilton (2007). Personal Security in Public Transport Travel – Problems Issues and Solution, Land Transport New Zealand Research Report. ISBN 0-478-12345-X.
- Box, S., C. Hale and G. Andrews (1988). "Explaining Fear of Crime." British Journal of Criminology **Vol 28, 1988**.
- 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, Department for Transport,.
- Crime Concern (2004). People Perceptions of Personal Security and Their Concerns about Crime on Public Transport: Research Findings, Department for Transport,.

- Furtenberf, F. (1972). "Public Reaction to Crime on the Streets." The American Scholar **Vol 40**.
- Gardiner, A. (2009). Public transport attacks soar in Victoria Herald Sun. Melbourne, Australia. **September 09, 2009**.
- Greenberg, C. and I. Firestone (1977). "Compensatory responses to crowding: Effects of personal space intrusion and privacy reduction." Journal of Personality and Social Psychology **35 (9)**: 637-644.
- Hall, E. (1966). The Hidden Dimension. New York, Doubleday.
- Loukaitou-Sideris, A. (1999). "Inner City Commercial Strips: Evolution Decay or Retrofit?" Town Planning Review **MTI Report 09-01**(68, 1 (1997)): 1-29.
- Loukaitou-Sideris, A., A. Bornstein, C. Fink, L. Samuels and S. Germai (2009). How to Ease Womens Fear of Transportation Environments: Case Studies and Best Practices, Mineta Transportation Institute.
- Mahmoud, S. and G. Currie (2010). The Relative Priority of Personal Safety Concerns for Young People on Public Transport - Nature of Concerns and User Priorities for Action. Australasian Transport Research Forum. Canberra, Australia.
- Mawby, R. and M. Gill (1987). Crime Victims: Needs, Services and the Voluntary Sector. London UK, Routledge Kegan & Paul (November 1987).
- Millar, P. (2009). Train gang bashes Indian student. The Age. Melbourne, Australia.
- Nicosia, G., D. Hyman, R. Karlin, Y. Epstein and R. Aiello (1979). "Effects of boly contact on reactions to crowding." Journal of Applied Social Psychology **9 (6)**: 508-523.
- Sexton, R. (2009). Scary Night Trains Rated Network's Biggest Problem. The Age. Melbourne, Australia.
- Thomas, J. (2009). The Social Environment of Public Transport. Wellington NZ, University of Wellington, New Zealand. **Doctor of Phiosophy in Psychology**.
- Transport Data Centre (2009). 2007 household travel survey summary report, NSW Ministry of Transport.
- van den Berg, L. (2009). Young fear attack on late-night trains. Herald Sun. Melbourne, Australia.