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# **CD PROCEEDING**

## **ACCON 08**

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**Ainol Hasanal bin Jalaluddin**

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### 1. Proceeding

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# Managing Public Transport Service Operation in Reducing Travel Fear Factor

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**Abstract:** The need of a woman for a safe public transport is critical especially when urban area is concerned. To be able to travel safely from point of origin to the point of destination has become a top priority for many urban woman dwellers. However, due to little research being conducted in this matter, this research attempts to fill the gap. Data were collected through bus passenger survey in three major urban areas in Penang Island. The passengers were asked to rate their safety level given the following bus service characteristics namely punctuality, comfortability, security, information and infrastructure design that are currently provided in their areas. Results from the analysis show that most women feel insecure or feel unsafe waiting too long at the bus stop if the bus is not punctual, when they are not comfortable with the level of services being provided, when there is no indication of any security measures along the journey by bus and when they receive no information of the bus services.

**Key Words:** Bus Service Characteristics, Punctuality, Comfortability, Security, Information, Infrastructure Design and Women Travel Safety.

## 1. BACKGROUND OF STUDY

Within most urban areas in Malaysia, particularly an Island like Penang, the most sought after mass public transport is more likely to be a public bus system. The public bus can be considered as the lifeblood of the state economy as most urban dwellers especially women depend on it to commute, for various purposes. Problems arise when poor public transport supply like bus service and its infrastructure are not well taken care of. Bad infrastructure especially walkways to and from the stop, poor design and maintenance of bus top and busses, poor security measures throughout the entire journey have further put women's life into the risk of crime victimization. The issues have grown in importance in the light of recent high involvement of women in employment sector in which they might have to depend more on public bus which might not be safe for them.

A recent study by Rohana, Mashita and Suhana (2011) reported most women feel insecure or feel unsafe while walking to and from the bus stop and waiting at the bus stop. The same scenario happens in Penang urban area where most crime happens while walking to and from bus stop and while waiting at bus stop. So far, there is no sufficient information regarding this type of problem faced by woman travellers in Penang Island. Therefore, this research is intended to examine critically the real factors that contributed to woman travelling safety issues while travelling on public transport in Penang Island.

## 2. RESEARCH QUESTIONS

- Does punctuality of public transport service affect travel fear factor?
- Does comfortability of public transport service affect travel fear factor?
- Does security of public transport service affect travel fear factor?
- Does information of public transport service affect travel fear factor?
- Does infrastructure of public transport service affect travel fear factor?

## 3. REVIEW OF RELATED LITERATURE

Over the years, progress has been made to identify the factors affecting women travelling safety because women are considered as a group of people who will face the highest risk of victimization. As a result, Hanlon (1995) contended that their access to safe and good public transport resources is critical especially to those living in an urban area.

The first serious discussions and analyses of safety issues and the extent of crime within the bus services emerged in the 1970's. A study done by Thrasher and Schnell (1974), it is the earliest study in 37 United States and four Canadian transport systems. The study revealed that the risk of being involved in a criminal incident is at least two times greater when riding in most major transit system than in using other means of private transportation. Being considered as the earliest study measuring the number of crimes within public transit, Thrasher and Schnell (1974) indicated that personal security is an important factor in the decision making for people choosing to utilize public transportation and transit users will be deterred if the system seems to be unsafe.

In one of the few studies that did focus on crime at bus stop location, Levine and Wachs (1986) examined three bus stop locations where the largest number of crime had occurred. Their findings on a survey in West Central Los Angeles indicated that the factors contributing to crime differed for each bus stop location, suggesting that a specific site analysis is required to determine the individualized security problem. The researchers suggested that each location should be examined separately to determine the root cause of the problem so that individualistic or unique countermeasures can be implemented to correct the situation. Not only that, they also revealed that the police statistics greatly undercounted the number of crime actually related to bus use. A majority of the crime occurred not on bus but while the victim was waiting at the bus stop or was walking to and from the stop. They also pointed out that a high percentage of crimes were not reported to police. Furthermore, they agreed that a sizeable proportion of the crime occurred at a limited number of locations where environmental factors contributed to the problem.

Heal and Laycock (1986) further supported the statement by highlighting the need to manage the environment surrounding bus stop location as they contended that, it is not sufficient to only ensure that people are transported from A to B, but it is also important (and part of service) that they are not assaulted on the way. They further added that the risk of being a crime victim normally started from the point of origin (or starting point of every journey).

Recent evidence has attempted to explain the cases of gropers within the bus services. According to Aloysius (2006) men groping women or rubbing against them while travelling in an overcrowded bus or a metro car is not rare these days in a city. She also reported that up to 70% of all female residents of megalopolises fall victims to the public transport perverts at least once in a lifetime. Unfortunately, a Russia-based frotteur (gropers) -can be brought to justice only in theory. As a rule, a lecher acts discreetly, and therefore he does not stand out in a crowd. Therefore, women in Russia who ride the public transport like buses must cope with the problem themselves. Unlike in Tokyo city, the authorities had to allocate a few cars for women only to tackle the problem of frottage (gropers).

It has conclusively been shown that the safety issues surrounding the bus services are critical issues that need urgent attention especially when services in urban area are concerned. This is because Grieco, Pickup and Whipp (1989) contended that besides having to cope with a higher crime rate in an urban area, it is believed that for a public transport to remain competitive in the transport industry, the needs of the passengers especially the dominant users like women must first be addressed.

One of the most significant discussions by Focas (1989) in transportation and safety is that if a woman is to travel safely, then the public transport system must first be geared towards their travel needs. Although much work has been done previously to look at the overall issues, more studies need to be conducted to examine critically the real factors that contribute towards woman travel safety issues in an urban area particularly on the commuters' satisfaction level.

Over the past century in Penang Island itself, there has been a dramatic increase in the statistics of crime being recorded. Although the reporting of crime in Penang Island does not reflect that it is a crime related to transport and women travelling by bus services, a report from the Criminal Department Unit (2005) confirmed that most of the crime happened to be at the boundary of public transport facilities provision such as along the main road, and while walking and waiting at the bus stop. Even though the reporting of crime in bus was never given any attention, the occurrence is believed to be quite high especially during peak hours of the bus usage.

Among the identified factors that were discussed through the literature review pertaining to the service characteristics and level of safety are factors like punctuality, comfortability, security, information and



infrastructure design. Even though a considerable amount of literature on each attribute of service characteristics and the level of safety for women travellers has been published, not all evidence was supported.

Several environmental criminologist theories have been adopted in order to proceed with this study. Theories like of Routine Activity by Cohen and Felson (1979), Crime Pattern Theory by Brantingham and Brantingham (1981), and Crime Prevention through Environmental Design by Jeffrey (1990) were considered in this study to further tap on the safety issues. The rationale for adopting such theories is to see whether the current scenario faced by most Penang dwellers further supported the theory or vice versa.

This study borrowed the definition of travel safety from White and Atkins. White (1986) defined travel safety as a state of users feeling safe to be on transport and terminal or stop without fear or injury or harassment. As for Atkins (1989), travel safety referred to the women's travelling with a defensive space with a minimal volume of crime occurrence or fear. Thus, this study proceeded to measure the travel safety through feeling of safe or fear of crime based on extended causal model by Skogan and Klecka (1977) that focuses on the personal attribute and city of residence to analyse the opinion and perception on fear of crime.

The following section gives overall discussion on data collection method, analysis of the findings, conclusion and recommendations.

### **3. METHODOLOGY**

Data collection was conducted in three major urban areas in Penang Island itself namely Pulau Tikus, Jelutong and Ayer Itam. A personally administered questionnaire was used in this study because through this technique, doubt can be clarified at that particular point. Moreover, it is also considered as the cheapest and quickest source of data collection as the questionnaire could be collected immediately after they complete. Only women who travel by public bus to commute to work were being surveyed. The respondents were mainly asked to rate their current public bus services characteristics in their area which consist of -punctuality, comfortability, security, information and infrastructure design. Then, they were also asked to rate their feelings of safe travelling in current condition of transport service and infrastructure provision. A correlation and means score analysis were used to analyse the data obtained to look at the relationship between all public transport service factors towards travel fears.

During the bus passenger survey, surveyors were located at the bus stops at respective housing areas (Pulau Tikus, Jelutong and Ayer Itam) in order to get the real respondents who travel by public bus. These activities lasted for 5 hours starting from early morning at 6.00am to 11am for 5 days (Monday to Friday). Saturday and Sunday are excluded because they are considered as a weekend travelling, other than it is rather difficult to catch those going to work on Saturday and Sunday. The main constrain of using this method is merely because of the time of answering the questions. Some of the questions could not be finished by the respondent due to the bus arrivals. To overcome that, surveyors were asked to go on board with the respondent in case the questionnaire is not complete.

### **4. FINDINGS**

The study found that, punctuality and security are the two most important attributes indicated by most woman commuters in Penang urban areas as factors that affect their level of safety if the attributes are considered failed to satisfy them. Results of the mean score analysis are presented in table 1.

**Table 1: Mean score for factors that affect level of safety**

**\*1-Most important  
5-Least important**

Major implication from the result suggest that there is an urgent need to control the public transport operation system especially the basic service operation like punctuality, security, information, comfortability and infrastructure provision.

	Mean score (1-5)*	Mode
<b>Service attribute:</b>		
• Punctuality	2.66	1
• Comfortability	3.67	5
• Security	2.38	1
• Information	2.40	2
• Infrastructure	3.51	4

**Table 2: Mean score on level of safety while travelling on public transport**

Service characteristics	Mean Score (1-7)*
<b>Service attribute:</b>	
• Waiting too long at the bus stop	2.12
• The bus fail to come on time	1.72
• While in the bus	3.94
• Travelling with ample information	5.22
• Travelling with current facilities	2.36

**\*1- Very unsafe  
7- Very safe**

Table 2 presents the mean score analysis for safety level indication while travelling using public transport. Results show that women commuters had indicated higher level of fear when the bus fail to come on time (1.72) and when waiting too long at the bus stop (2.12). However, the response of feeling of safe differ while they were 'in the bus' (3.94) and 'travelling with ample information' (5.22) which indicates that they feel much safer while being in the bus and even more 'safe' when they can access ample information about the services before hand. When the respondents were asked to rate their level of safety travelling with current facilities or infrastructure design, most of them had indicated higher feeling of unsafe (2.36).

To further understand the scenario, a correlation analysis was carried out among the transport service attribute and level of safety was tap. The following results were obtained:

Table 3: Correlation Analysis on Service Attribute

	Correlation coefficient values (r )	Spearman p values
<b>Service attribute:</b>		
• Punctuality	.02	.001**
• Comfortability	.17	.003*
• Security	.04	.000**
• Information	.14	.012*

\*\*Correlation is significant at the 0.01 level  
\* Correlation is significant at the 0.05 level

Table 3 summarizes the correlation analysis of each of the service attributes and level of safety. The results show that all service attributes which has significantly affects women’s level of safety. The most attribute are punctuality and security. An implication of this result indicates that the control for standard operation of the bus especially on the management side or known as supply side is urgently needed as failure to perform this factor

can cause a greater fear among the woman travellers especially those living in urban area that commute to work on daily basis.

### Benefits to the Society

- 1) Improvement on the transport supply -will not only benefit women, but it will also benefit the society as a whole since, women perceived that the transport is safe, and so will the rest of the society. Considering the environment is now safe for everyone, women will definitely feel safer to travel.
- 2) The perception of safe public transport especially buses in urban area will attract more people especially non-user to consider public transport when commuting into city centre is concerned. Indirectly, when people are attracted to a safe public transport especially buses; they will shift from using private car to public transport. This in turn will reduce the congestion level that is currently faced by many urban areas.
- 3) Moreover, to be able to control the standard operation of bus services in an urban area could make a difference in actual and perceived feeling of safe.

## 5. CONCLUSIONS AND RECOMENDATION

### 5.1 Conclusion

The main contribution of this research is the analysis of the relationship between public transport supply and woman personal travel pattern towards the travelling safety issues in an urban area. The results show that control for public transport supply is essential in understanding the fear of crime among women travellers who possess a unique personal travel pattern. In this investigation, the aim was to determine the factors that affect the level of safety of women who travel by bus in urban areas.

The findings in this research project suggest that in general, there are a high number of women who will experience greater fear while travelling, if public transport supply including the infrastructure design is not being allocated accordingly to secure their journey.

### 5.2 Recommendation

- 1) Tighter regulation pertaining to the operation issues of bus services in an urban areas.
- 2) Setting up guidelines for standard operating of bus services in urban areas so that the amount of fear while travelling could be reduced to minimum level.
- 3) Proper planning of transport infrastructure that takes into account the travelling needs of women especially on the safe environment especially their safety while walking to and from the waiting area.

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