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An Assessment of Commuters' Perceptions of Safety and Comfort Levels of 'Women-Only Coach': The Case Study of KTM Komuter Malaysia

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Abstract

Ideally, cities of developing countries and their public transportation services need to be sensitive to the quality of services rendered. In this context, this study assessed the commuters' perceptions towards Women-Only Coach services by the KTM Komuter. KTM Komuter, is a suburban heavy rail service provided by the company Keretapi Tanah Melayu Berhad (KTMB) in Klang Valley, Malaysia. This research centers around the experiences of users of Women-Only Coach, a segmented sub-service especially provided for the safety and comfort of female riders. An on-board survey was conducted among the commuters of Women Only Coach who regularly used the women coach only for travelling. A systematic cluster sample of 550 respondents was taken for data collection, 513 of which were analyzed following a data cleaning process. Descriptive and inferential analyses have been applied to the data. Based on the analyses, it was found that majority of the female commuters were aware about the provision of Women-Only Coach. Moreover, a significant number of respondents claimed that there was an absence of security personnel at Women-Only Coach to monitor the safety of the coach and the majority of these respondents also felt insecure in the presence of male passengers on-board Women-Only Coach. Findings also suggested that a significant number of respondents were not satisfied with the current capacity of Women-Only Coach. The research undertaken had also confirmed the persistence of three major problems related to Women-Only Coach which were (i) the lack of enforcement in Women-Only Coach, (ii) the insufficient capacity to accommodate increasing demand and (iii) the poor visual quality of the signs indicating and distinguishing Women-Only Coach from the other rail-cars. The research also recommended strategic and immediate areas warranting improvements on board Women-Only Coach so as to enhance the current safety and comfort levels during journey makings among the existing users.

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1. Introduction

In developing countries, the requirement to provide accessibility and mobility with sufficient capacity is a higher priority of public transport services compared to increasing the existing levels of passengers' comfort and safety. Most contemporary research on public transport or transit is viewed from the perspective of technical performances and is conducted using data from developed countries [1,2]. Research on women users has been particularly limited, especially in this part of the globe. Effectiveness practices of gender segregated services in Tokyo, Seoul, Jakarta and India have received little or no attention in the literature, warranting a research such as this study to be conducted. In Tokyo and Seoul, special coaches of the multiple rail-car sets have been initiated since the last decade. Meanwhile, segmented sections on public buses vehicles in Jakarta's bus-way and India's bus services although have been in implementation since the last few years, have yet to be evaluated. It is therefore, essential to assess the impacts of such pro-active implementation in order to highlight and propagate the benefits of these segmented and specialized services, in light of passengers' safety and comfort levels.

Integrasi Rangkaian Transit Kuala Lumpur Integrated Transit Network of Kuala Lumpur

شبكة قطار كوالالمبور المتكامل



Fig. 1 Rail-Based Public Transport Network In Klang Valley (2009), Malaysia

There are currently five major rail operators managing seven networks (Figure 1). RAPIDKL is a conglomerate overseeing the Kelana Jaya (green) line, Sri Petaling (yellow) line and Ampang (orange) line. Another company operates the MONORAIL (red) line. ERL Sdn. Bhd. manages the high-speed train services to the airport or KLIA

Previous research undertaken shows that one out of four women who commute using public transportation has experienced sexual harassment [3]. In Malaysia, responding to such issues, the government agreed upon the needs for counter measures increased number of harassment during public transport journeys, with the introduction of Women-Only Coach, the first of its kind implemented on KTM Komuter services. Women-Only Coach was introduced in 2010 as an option and added value for female passengers who patron KTM Komuter services. This research deals with an assessment of user perceptions on Women-Only Coach services in the Kuala Lumpur region so as to improve the safety and comfort levels of women while travelling on public transport vehicles.

Klang Valley region consists of four districts of Selangor, Federal Territory Kuala Lumpur and one district in Negeri Sembilan. The four districts are Petaling, Klang, Ulu Langat and Gombak. The districts can be further divided into transportation zones of Kajang, Bangi, Serdang, Cheras, Petaling Jaya, Subang Jaya, Shah Alam, Klang, Kepong, Puchong, Damansara, Ampang, Hulu Klang, Pandan, Rawang, and Pelabuhan Klang. Seremban is a district in Negeri Sembilan. The total population of the Study Area was 5,930,384 in 2010. Kuala Lumpur, the capital has a population of about 1.5 million.

It is proposed that for major urban centers, a modal split ratio of 50:50 between private and public transport shall be adopted as the city's mission. Kuala Lumpur presently has a modal split ratio of 80:20 in favour of private transport. To achieve this balanced split, a fully integrated system and network will require the creation of one single multimodal/multifunction transportation authority to oversee public transport which will rail systems, bus routing and other para-transit modes.

Ekspres and Transit (purple) line. KTM Komuter (KTM) is the heavy-rail operator of Rawang (dark blue) line and Sentul (light blue) line.

KTM Komuter was started in 1989 with initial cost estimated of RM1.4 million [4]. It has total route length of 153 km (2006), plying north-south (Tanjung Malim – Sungai Gadut route) and east-west (Batu Caves – Port Klang route) of the Kuala Lumpur conurbation. The current 53 stations routes will have more additions in the pipeline as the double tracking of rail tracks programmes continues on during the 10th Malaysia Plan period (2011-2015). Electric Multiple Units (EMUs) power is sourced from the National Electricity Company Ltd (TNB) national grid. The 132kV (3 phase) power from the grid is stepped down to 25kV (single phase) at feeder stations located at Rawang, Salak South, Batang Benar and Subang Jaya [4]. The existing 36 sets of 3-car EMUs are also being further supported by the introduction of 18 units of 6-car sets during the 10th Malaysia Plan period.

Users of KTM Komuter, generally, were made up of 60 percent commuters mostly to educational centres and workplaces, with about 57 percent being female riders [4]. About 38 percent were captive riders, while choice riders owned or have access to an alternative mode, in the least a motorcycle. This suburban commuter rail service is patronized by approximately 110,000 passengers on a daily basis, with more than 35 percent egressing and accessing popular stations such as Kuala Lumpur Sentral, Kuala Lumpur, Putra, Bank Negara., Klang, Port Klang, Rawang, Mid Valley, Bandar Tasek Selatan and Seremban. Discussion with the board of management indicated that reported crimes or harassments towards female riders have been at minimal rate of two cases on a monthly basis, but more concerns should be considered for the unreported cases that could be amounting to fourfold of the reported ones. While undertaking the research however, the research team could not ascertain the actual number of crimes or harassments during or after the study period for several technical and confidentiality reasons.

The Government Transformation Programmes (GTP) recently initiated also targeted the achievement of several national Key Results Areas (NKRAs) including 13 listed for public transportation. One of these 13 areas have been the improvement of rail-based public transportation in Klang Valley, among which the increased overall capacity, increased fleet quantity and improved quality services delivery of KTM Komuter have also been highlighted. The study has chosen KTM Komuter as a case study due to the services duration, distances and route coverage which were more comparable with various suburban heavy rail systems around the globe. There were also interchanges facilities accommodating transfers from various transportation modes, making KTM Komuter services very accessible to the majority of the Klang Valley's population. Apart from this, the selection of KTM Komuter has also been based on the specialized services it offered for the increased in comfort and safety levels of female users, not typical of the other rails system in the city region of Kuala Lumpur.

The 'Women-Only Coach' started operating on 28th April 2010 and initially it was only available on the Sentul – Port Klang – Sentul routes. Apart from being located in the middle of each train, the pink colour displays on-board the vehicles played an important part in the identification and distinguishing of the Women-Only Coach. Special stickers in pink were found on windows and doors inside the train and certain areas of the exterior. There is also provision of waiting areas in the platform for women passengers. Since the Women-Only Coach had been introduced, there were still complaints made by the female commuters regarding the safety and comfort in KTM Komuter Services [6]. Hence, this study assessing the perception of public on Women-Only Coach services at KTM Komuter will contribute to improving the safety of the female commuters.

1.1. Study objectives

The objectives of this study are as follow:

- To determine the influence of enforcement presence's on board Women-Only Coach on preventing male riders from encroaching Women-Only Coach.
- To assess the users' perception towards Women-Only Coach, in light of safety and comfort levels
- To recommend improvements for the Women-Only Coach to achieve high security and safety for women.

2. Issues of Women-Only Coach on KTM-Komuter

Literature review undertaken shows even though the Women-Only Coach had been introduced in the KTM Komuters Service, the service has been lacking in the performance. The problem arising was that the services of Women-Only Coach had not been exclusive for women or in other words it lacks in security and enforcement. Even though there were stickers and posters everywhere on the platform and in the train that loudly proclaimed "Ladies Only", there were still some male riders sitting inside the Women-Only Coach train [1,7,8].

The stickers and signboard attached to the interior and exterior on the Women-Only Coach seems to be ineffective to represent that the coach is for female passengers only. Based on the observation during site survey, some of the male passengers particularly in reference to the foreigners do not understand the indication of Women-Only Coach; some of the stickers are using Bahasa Melayu language as a medium of indication [4,5].

Another issue regarding the service of Women-Only Coach was the limited capacity of the coach. Based on the discussion with the KTM Komuter management officers on April 2012, the current capacity of one unit of EMUs (coach) was 450 persons per unit and for the new coaches (EMUs) of KTM Komuter the capacity being 1,100 person per unit. Based on the survey which was conducted at the old EMUs, some of the passengers claimed that the capacity was inadequate to cater the total number of passengers during peak hours since the new 6-car train sets were not yet operational during the survey period. This problem worsened as ignorant and adamant male passengers also aboard Women-Only Coach which eventually contributed to the increasing number of passengers during peak hours and leading to sexual harassment cases.

Women-Only Coach seemed to provide more comfort and safe journey for the female passengers. Such a good move should be followed by proper gender awareness and improved public education particularly with regards to women rights. As a basis, in order to address the issues related to Women-Only Coach at KTM Komuter, the assessment of user perception towards the Women-Only Coach is required especially on the performance of the services and the general users' expectation towards Women-Only Coach at KTM Komuter.

2.1. Women-Only Coach in other part of the world

Many public transport operators in various parts of the world do offer women-only-coach as an option for the safety of their female passengers. According to review, Women-Only Coach exists also in Japan, India, Indonesia, South Korea, Belarus, Brazil, England, Egypt, Mexico, Taiwan, Philippines, and the United Arab Emirates. [7,8,12,13]

Lee [8] asserted that the Women-Only Coach on Saikyo Line, Japan had only operated during peak hours. However, Lee [8] also reported that the groping incidents had increased from 778 cases in 1996 to 2201 in 2004. Therefore, Japan railway system had pointed out a counter measure by providing security personnel at every Women-Only Coach in Japan. The security personnel on Women-Only Coach was a good change because it significantly reduces insecurities of the female travelers and they are free to stand and hold on to the straps without being victimized by the male passenger.

In India, the authority had decided that men travelling in the women's only coach will be fined Rs.200. A fine of Rs.200 for every violation can be imposed if any male passenger is found travelling in the reserved ladies coach and every mobile squad will consist of four to five persons including security personnel. While in Indonesia, according to Makmur Saheran [8], the corporate secretary for PT Keretaapi, one female officer will guard each carriage in order to protect women from becoming victims of sexual harassment. In terms of enforcement, a fine Rp30, 000 will be imposed for male passengers who boarded in Women-Only Coach at PT Keretaapi Indonesia [8]. Based on the review undertaken on the implementation of Women-Only Coach in Japan, India and Indonesia, some of good points had been highlighted; hence they can be included in some of the recommendations on Women-Only Coach in KTM Komuter in Malaysia.

3. Methodology

The primary data are collected from fieldwork survey such as questionnaire survey, observations and interviews with Management Officer of KTM Malaysia Berhad. In this research, the sample calculation was referred to the formula suggested by Barbie [9] and Israel [10] and previous research by Joewono and Kubota [11] with the population of passengers per day amounting to 90000, the sample size is 400. Since this sample size reflected obtained responses, this number was increased to 600 questionnaires to compensate for non-responses.

The dependent variables were the perceptions of users on the safety and comfort levels of the Women-Only-Coach (WOC). The independent variables were those relating to socio-demographic characteristics of the users, the characteristics of trip making, the awareness levels and sources of information acquired relating to WOC, the experiences related to crime and harassment while undertaking journeys on-board KTM Komuter's coaches, other related issues and problems pertinent to WOC and ideal characteristics of the anticipated improvement of WOC. These variables' or constructs' reliability and validity to ascertain the required responses from the sampled users were tested using the pilot survey method. These variables were selected to represent the measurements of perceived safety and

comfort levels as experienced by the female users of WOC. Included for hypotheses testing were variables such as security personnel's presence around the station and on-board the train, male riders presence in the WOC, crowd levels, current capacity, adequacy and appropriateness of signage and monitoring of WOC.

A week of pilot test was undertaken during early November 2011, involving ten familiar users of KTM Komuter. The questionnaire consisted of four main sections: socio-demographic characteristics, trip characteristics, use of WOC, perception of safety and comfort on WOC and suggestion for improvement of WOC. The first section of the questionnaire designed consisted of data capture on age, gender, income levels, trip origin, trip destination, travel time and access and egress modes to and from the stations. Section two included questions on the satisfaction levels with the current provision of female coaches, under the elements of seats, doors, patrolling of the platforms and the railcars. The third section dealt with the stated preference questions on the comfort, convenient and safety levels under three different scenarios, for example, the encroachment of male riders and excess capacity rail coaches designated for female users. Section four highlighted the improvements aspired by the female users on what the future coaches should be provided.

After revision of some questions and possible responses, the questionnaire forms were distributed during the comprehensive using systematic cluster to passengers on-board the 'Women-Only Coach' on various survey days and time period from November 2011 until March 2012. Samples were also clustered based on the access and egress stations plying through the two north-south and east-west routes. From the total 550 sample, data cleaning has identified that some 513 forms returned were useful and meaningful for further analysis.

The selections of respondents are based on a systematic clustered sampling and identification of origin and destinations of these passengers. Enumerators were employed for morning and afternoon sessions of the survey periods. A minimum of two enumerators were stationed at each door of the coach. Using 5th interval of respondents, users were selected, approached and handed the questionnaire to be completed. Face-to-face on-board intercept survey method was employed based on the advantages it offered in ascertaining the highest response rates and assurance of reliability and validity of responses for this type of research. It was deemed faster and more effective for the surveys to be guided and forms to be completed by the enumerators who conducted the surveys as an informal trips narration with the respondents. As the aim of this study was to assess the user perception on Women-Only Coach, therefore the passengers travelling on-board the Women-Only Coach were deemed to be most suitable for the sample. All the collected data and information were recorded in SPSS for further statistical analysis. Several other analysis techniques were implemented during this stage which include both qualitative and quantitative analyses. Quantitative analyses techniques implemented were univariate and bivariate statistical analyses. Consequently, findings were generated from the detailed and thorough analysis. The analysis and evaluation processes discovered that majority of the findings highlighted on costumer's satisfaction in terms of safety and comfort elements of KTM Komuter.

4. Discussion

The majority of the 513 female passengers who were using KTM Komuter had opted to travel on-board Women-Only Coach, while three out of twenty of the total female passengers were found to be non-users of Women-Only Coach at KTM Komuter. Therefore, it shows that majority of the KTM Komuter passengers were aware about the provision of Women-Only Coach at KTM Komuter. Based on the survey, the mean of respondent's age was 28.5 years old with a standard deviation of 12.627.

In terms of the safety in Women-Only Coach in KTM Komuter, it was found that approximately (i) one in 30 respondents (3%) had experienced snatch theft, (ii) one in 30 respondents (3%) had experienced others incidents such as fighting, falling, (iii) one in 10 respondents (10%) had experienced sexual harassment, and (iv) almost the majority respondents (84%) from the total female passengers had no experience of encountering any of the mentioned incidents while travelling on KTM Komuter. The majority of respondents agreed that Women-Only Coach was reliable in terms of ensuring their safety and comfort. Therefore, the safety and comfort level should be enhanced to retain the passengers in using KTM Komuter services.

In terms of the source of information on Women-Only Coach in KTM Komuter, it was found that approximately (i) four in five respondents (80%) were informed of Women-Only Coach by their friends and family, (ii) one in 10 respondents (10%) were informed of Women-Only Coach through electronic media, (iii) one in eleven respondents (9%) were informed of Women-Only Coach through print media such as newspaper and magazine, and (iv) the remaining respondents (1%) were informed of Women-Only Coach by travel agents. Therefore, the advertisements

through mass media including electronic and print media should be enhanced to educate the public on the provision of Women-Only Coach at KTM Komuter.

In terms of security of Women-Only Coach in KTM Komuter, it was found that approximately (i) one in three respondents (30%) suggested that security guards should be monitoring in the Women-Only Coach in order to prevent male passengers from boarding the Women-Only Coach, (ii) a quarter of the respondents (25%) suggested to add more Women-Only Coaches to expand the capacity as the demand was high, (iii) almost a quarter of the respondents (22%) suggested that the 'Ladies Only' signage should be improved. It was also claimed by the respondents that the existing indication was ineffective to users who did not understand the language used in the signage which resulted in the presence of male passengers in the Women-Only Coach (WOC).

Findings also highlighted that (iv) about one in five respondents (21%) suggested a fine or a penalty to be imposed for male passengers who boarded the Women-Only Coach and (v) one in fifty respondents (2%) suggested more seats to be provided in the coach to increase the comfort level for the passengers. Table 1 summarizes the descriptive analysis of the samples collected.

Table 1. Descriptive Analysis of WOC Users of KTM Komuter

	Percentage/ Distribution
Age	Mean = 28.5 years
Awareness about WOC	15% respondents were aware of WOC
Use WOC in the last two years	68%
Experienced crime/harassment in the last two years	3% to 10%
Absence of security guards on board WOC	30%
Need to increase WOC capacity	25%
Signage insufficient to distinguish WOC	22%

Source: [5]

3.2. Inferential analysis and findings

This section deals with the interpretation of data using inferential analysis. It involved an identification of relationships between the variables. Hypotheses were developed in order to analyze the relationship between the variables. The research hypotheses are as follow and their acceptance/rejection was based on Chi Square test:

- The safety level of Women-Only Coach was influenced by the degree of enforcement.
- The comfort level in Women-Only Coach depended on the capacity of the coach.
- The safety factor in regular coaches influenced the preferences of users to use Women-Only Coach in crowded conditions

Table 2. Table of Chi Square Test

An example of a column heading	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	71.981 ^a	1	.000		
Continuity Correction ^b	69.800	1	.000		
Likelihood Ratio	70.085	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	71.841	1	.000		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.26.

Hypothesis 1: The perceived safety level of the respondents was influenced by the degree of enforcement in Women-Only Coach

From the Table 2 it can be seen that calculated chi-square was 71.98 which was higher than critical chi-square at one degree of freedom which was 7.88. In addition, the p-value was 0.00 ($p < 0.001$) which was less than 0.05. All four indicators showed that the null hypothesis was rejected and that the safety level depended on the degree of enforcement in Women-Only Coach. It can therefore be concluded that there was a relationship between the perceived safety level and the degree of enforcement in Women-Only Coach. This analysis showed that allocating more security officers on-board the coaches would reduce the insecurity of the female passengers as it lessened the tendency of the male passengers to board the Women-Only Coach.

Table 3. Table of Chi Square Test

An example of a column heading	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	208.214 ^a	1	.000		
Continuity Correction ^b	205.593	1	.000		
Likelihood Ratio	223.888	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	207.809	1	.000		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 88.83.

Table 4. Table of Chi Square Test

An example of a column heading	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	51.787 ^a	2	.000
Likelihood Ratio	56.145	2	.000
Linear-by-Linear Association	28.007	1	.000
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.51.

Hypothesis II: The comfort level in Women-Only Coach depended on the capacity of the coach

Chi square has also tested the relationship between the perceived comfort level and the capacity of Women-Only Coach. Table 3 shows the results of the test. From Table 3, the calculated chi-square was 208.214 at one degree of freedom. In addition, the p-value was 0.00 ($p < 0.001$) less than the alpha level of significance of 0.05. The null hypothesis that the perceived comfort level has no relationship with the capacity of the coach was rejected and the study concluded that there was a relationship between the perceived comfort level and the perceived capacity of Women Only. As both Phi and Cramer's V correlation value was 0.637, the strength was considered strong between the two variables. For this reason, it can be concluded that there was a strong relationship between the capacity and the perceived comfort level of Women-Only Coach. Similarly, this suggested that comfort level can be improved with greater capacity provided on the WOC.

Hypothesis III: The perceived safety level at normal coach influenced the preferences of users to use Women-Only Coach during crowded condition

Chi square analysis has also been carried to test the relationship between the perceived safety level in regular coaches and the respondents' preferences to use Women-Only Coach when the coach was fully occupied by passengers. The Table 4 above shows the results of the test. From the Table, the calculated chi-square was 51.78 at two degree of freedom. In addition, the p-value was 0.00 ($p < 0.001$) less than or equal to the alpha level of significance of 0.05. The null hypothesis that the perceived safety level in regular coaches was independent of the preferences of users to use Women-Only Coach in crowded situation was rejected. It can, hence, be concluded that the preference of users to use Women-Only Coach during crowded condition has a significant relationship with the perceived safety level on regular coaches. Thus, this analysis showed that safety was a major contribution to the usage of Women-Only Coach at KTM Komuter. If the passenger felt insecure to use regular coaches, the users will opt for Women-Only Coach. As both Phi and Cramer's V value were 0.318, the two variables were moderately associated.

All three hypotheses had been formulated based on the objectives. The first hypothesis was designed to achieve

the objective number one and two which were the determination of factors influencing the perceived levels of safety and comfort on board Women-Only Coach. Descriptive analysis has shown that a significant number of respondents claimed that there was no security officer patrolling during their journey with KTM Komuter. Therefore, the majority of the respondents felt insecure when male passengers boarded the Women-Only Coach as there was no security officer to monitor this situation. Based on the inferential analysis and site observation, it was found that the enforcement in Women-Only Coach was still lacking to avoid undesirable situations regardless of the fact that the aim of Women-Only Coach was to provide a safe and comfortable journey to the female passengers. The descriptive analysis and the site observation have both confirmed the lack of such enforcement, while the chi-square test has further suggested that the safety level was compromised when there was a lack of enforcement, especially when male riders encroached the WOC.

The second hypothesis was formulated to achieve objective number two which was that comfort level in Women-Only Coach depended on the capacity of the coach. Based on the analysis, 62% of respondents were not satisfied with the capacity of the Women-Only Coach especially during peak hours. As a result, the comfort level of Women-Only Coach users had been affected by the capacity of the coach. Hence, 284 respondents from the total of 513 respondents feel uncomfortable due to the inadequate capacity of Women-Only Coach. Based on the inferential analysis and site observation, the capacity of Women-Only Coach was still inadequate to cater the number of increasing female passengers. The capacity needs to be improved in order to provide a better and comfortable journey for the women passengers.

In terms of the third hypothesis, the perceived safety level at normal coach was tested against the preferences of users to use Women-Only Coach in crowded condition. In this situation, although the users had a choice to use regular coaches if the Women-Only Coach was crowded, the respondents were still reluctant to use the regular coaches as they perceived that Women-Only Coach was safer compared to the regular coaches. From this analysis, the demand of users towards Women-Only Coach was due the preferences of women users to use Women-Only Coach even in cramped condition. Based on the analysis, it was found that a significant number of respondents felt insecure when they travelled on board regular coaches of KTM Komuter. As a result, 194 respondents were willing to wait for the next train if the Women-Only Coach was full, instead of boarding the regular coaches. From this analysis, it can be concluded that the demand of users towards Women-Only Coach was high as the respondents believed that the Women-Only Coach was more reliable, comfortable and safe compared to the regular coaches.

5. Recommendations

The recommendations were drawn based on literature review and findings from the study. Based on findings, some of the suggestions made by the respondents were to provide security personnel at Women-Only Coach, imposing fine for male passengers who board the Women-Only Coach, improving exterior and the signage, and to add more coaches and seats.

5.1. Providing security personnel at Women-Only Coach

Based on the findings, one in seven respondents suggested providing security officer at Women-Only Coach. According to the observation made during data collection, there was a KTM officer who guarded the KTM station but there was no specific officer who was assigned to supervise and monitor the passengers in Women-Only Coach. Thus, this study proposed that KTM Komuter to assign security officer not only to guard the entrance of Women-Only Coach at the platforms but also to be stationed on board the Women-Only Coach. Based on literature review, this patrolling system had been applied in Japan, Indonesia, and India as the incidents like sexual harassment are frequent in their transit system.

5.2. Impose fine on male passengers who board Women-Only Coach

Based on findings, one in five of respondents suggested imposing a fine or a penalty for males users who boarded Women-Only Coach. Currently, there was no enforcement regarding Women-Only Coach. Based on literature review, in India, the authority imposed a fine of Rs.200 to male passengers who boarded Women-Only Coach. As such, it was suggested that KTM Komuter impose a fine to male passengers who boarded in Women-Only Coach as applied in India. By penalizing the male passengers who boarded in Women-Only Coach, the exclusiveness of Women-Only Coach can be maintained.

5.3. Improve the exterior of Women-Only Coach

Based on findings, one in five of respondents suggested the exterior of Women-Only Coach of KTM Komuter could be improved. The respondents claimed that the exterior and the signage which proclaimed Women-Only Coach

were not effective for the users to distinguish between the normal coaches and the Women-Only Coach. In Japan, the exterior of Women-Only Coach had been colored with pink in order to distinguish between the Women-Only Coach and the normal coach. In India, the exterior of Women-Only Coach had been painted in red and blue color and the interior was in bright yellow color. Therefore, it is quite easy for the users to distinguish between these coaches. In Jakarta's bus-ways vehicles, the female sections have been identified with bright pink signage and enforcement officers on-board would ensure that no male passengers encroach the spaces in front of the buses by providing physical barriers when users boarded the vehicles. Based on the findings and best practices highlighted by the literature, a significant number of respondents have suggested on improving the exterior of Women-Only Coach as being applied in Japan, India and Jakarta Transit System. By designing the exterior of Women-Only Coach differently than normal coaches, it will distinguish the coaches and will make the passengers to be more aware, alert and conscious about this coach.

6. Conclusions

Descriptive analysis has shown that a significant number of respondents claimed that there was no security officer patrolling during their journey with KTM Komuter. Based on the study it was found that majority of the respondents felt insecure when male passengers boarded the Women-Only Coach as there was no security officer to monitor this situation. Based on the inferential analysis and site observation, it was confirmed that the safety level was compromised due to the lack of enforcement especially when male riders encroached the WOC.

The second hypothesis was formulated to achieve objective number two which was that comfort level in Women-Only Coach depended on the capacity of the coach. Based on the analysis and site observation, the capacity of Women-Only Coach was still inadequate to cater the number of increasing female passengers. The capacity needs to be improved in order to provide a better and comfortable journey for the women passengers. In terms of the third hypothesis, the perceived safety level at normal coach was tested against the preferences of users to use Women-Only Coach in crowded condition. From this analysis, it was found that the demand of users towards Women-Only Coach was high as the respondents believed that the Women-Only Coach was more reliable, comfortable and safe compared to the regular coaches.

In conclusion, the Women-Only Coach is an effective effort made by KTM Berhad to increase the patronage of public transport in Kuala Lumpur. The coach also provides a safe and comfortable journey to the passengers which are also aligned with the National Key Result Areas (NKRA) in achieving model split of 25% in the country by the year 2015. This effort should be followed by a systematic operation and effective management to achieve the goal of the public transportation itself. As KTM Komuter reflects the image of the public transportation in Malaysia, therefore the service should cater to all Malaysian by providing maximum safety and comfort. This study suggested KTM Komuter to improve the performance of Women-Only Coach in terms of the security, capacity, and the exterior visual of Women-Only Coach. Finally, it is hoped that this study would help in improving the overall service of public transportation in Malaysia.

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