

Why Women Walk? : A Case Study of Women Travelling in Klang Valley, Malaysia

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Abstract: Nowadays, women are no more confined to the four wall space at home. The involvement of women in the formal and informal working sector has tremendously changed for the past 60 years. The dramatic changes and the participation of many women outside from their home depict many needs for women to travel. Hence, there is an urge of understanding the reason and issues interrelated to women. What encourages women to walk? This paper finds reasons behind women walking to LRT stations in Klang Valley, Malaysia. We have found that women from different age and marital status have different needs to walk. The evidence suggests that there are a certain age and marital status influence into decision making if they decide they want to walk or not? (max: 150 words)

Keywords: Women Transport, Malaysia, Mobility, Safety, Walkability (max: 6 keywords)

1. INTRODUCTION

The trend of rapid motorization in Asia has proven the growth in vehicle ownership, and many have shared concerns towards the direction of future sustainable development in Asian cities (Kitamura, & Mohamad, 2009, Wenhua, 2005). People in Asia travel for many reasons every day and along with the development of transportation technologies around the world, the paradigm of transportation changes. According to an article written by Litman (2012), the new transportation paradigm is more diverse as it considers more range of modes, objectives, impacts and improvements. Thus, when we talk about women needs in transportation, it certainly does not confine in between providing women special cabin, or women special dedicated lanes but also in the needs of safety, security and accessibility for women in transportation. Why is this issue deserves a highlight in this paper? Women today is more than a just homemaker. Whether in the formal or informal sector, women involve in different kind of job outside their home. This means that women travel more than what they used to just 60 to 70 years ago. Having said that, it doesn't mean that women leave their permanent role at home as homemaker, mother and a wife. Juggling all role in one shoulder, women immensely facing challenges in their daily life and certainly holds a different kind of way to travel. According to an article published by European Charter for Equality of Women and Men in Local Life, women's and men's travelling behaviour are different and that many men found to travel more with cars. So, what category of women walks? This issue is still widely discuss, and there are many points of views when we compare the ability, willingness, reasons and even necessity to walk even between man and women. Nonetheless, we are not trying to compare between the two gender, however, attempt to understand better about women in travelling as more women move outside from their home. This paper tries to seek for the characteristic of walking among women and issues interrelated to walkability.

In a nutshell, walkability is an important part of transportation planning but always taken in lightly. This included in the planning of walking route between residential areas which often been cut out by highways or buildings. In the context of women travelling, walking is one the ways for women to travel to transit stations, bus stops and any other walkable destinations intend by them, but most walking pathways failed to highlight the issue of safety and security for women due to the awareness in providing more convenience for women user. In another hand, Leslie et. al (2005) recommends elements that correlated with walkability as shown in table 1.0.

Table 1.1: Environmental elements in walkability

Environmental elements	Correlation with walkability
Residential density	<ul style="list-style-type: none"> • High-density encourages mixed-use development • Associated with increase in retail/services variety (result in shorter more walkable distance between interest)
Street connectivity	<ul style="list-style-type: none"> • High intersection densities provide more potential routes for walking and greater accessibility • More Excellent walkable, connectivity, shorter distances to destinations
Public transit density	<ul style="list-style-type: none"> • High public transit density provides quicker, more walkable distances to alternate modes of transportation • Use of more accessible bus stops encourages walking between leisure, work, and home
Crime Density	<ul style="list-style-type: none"> • High-density crime discourages women walkability • Sense of lack pedestrian safety supports more protected automobile use and alternate transportation methods
Land use mix	<ul style="list-style-type: none"> • Multiple and diverse retail/services opportunities encourage more specialised, frequent, and shorter shopping trips • More land use mix means more varied and exciting built environment, creating a good conducive to walking

Source: Leslie et al. (2005) cited in Pentella (2009)

Gender planning relatively not new in develop countries but are not explicitly given special treatment in most developing countries. Gender planning roots from the awareness of the social organisation and also the culture of a particular country towards women movement (Turner & Grieco, 2006). Women responsibility, culture and status play a significant characteristic, and individual developing countries still have a lower percentage of women involved in the working field. Women participation in the society affects the way women travel hence the needs of understanding towards gender planning is necessary and significant to study. The new transportation paradigm is not just about connectivity but emphasising on the gender travelling equality, connecting, accessible, mobile and fair to all level of society. Agreeing to Litman (2012) he has discovered the changes in transport planning paradigm wherein the new model; the highlight is given concerning people's overall ability to reach the services and activities compared to the old standard which focuses more on physical travel. He also stresses on the impacts of old transport planning paradigm in travel speeds and congestions delay, vehicle operating cost and fares, and crash and emission rates. Developing countries like Malaysia and any other have several mutual reasons that contributed to the severity of its transportation paradigm. Increasing urbanisation which led to rapid growth of

cities, and also the lacking of transportation supply and the overwhelmed of demand as result of the population. According to Leinbach (1995), road development has increased penetration of local markets in India and the improvement program in Indonesia that are affected by the upgraded roads and transportation services. Also, India public transportation still faces the issue of equality in gender planning due to the figure of cases in traffic safety among women. The problem of security among women while using public transportation is not exactly new in India or any other countries as either; these cases are kept isolated and unreported. The issue of safety of women when using public transportation is still lingering and will continue to hang around for quite some time. So, how does this all affects women travelling? According to Adeel et. al (2016), Pakistan also aspects wide gaps in mobility among women which explains the hindrance of women to travel due to the social and cultural context of the country. This is added to demographic factors such as the age, the household income and also the women marital status. In India, the predicament in travel pattern has a greater impact on women as seen among lowest income group of women. Women are forced to walk and seems to have no option due to the level of revenue (Mahadevia & Advani, 2016).

2. METHODOLOGY

A survey was conducted in December 2016 towards nine light railway transit (LRT) Kelana Jaya line located in the Klang Valley. In comparison to others modes, currently, Kelana Jaya Line has 37 stations with the distance of the track stretch about 46.4 km in length. The LRT is one of the primary transport mode used by the urban dwellers in the Klang Valley including man and women of all status, income and age. According to Prasarana report, the number of users rises since 1998 until 2016 approximately 1,051,153,338 riders. The objective of this survey is to understand the characteristic of women walking to LRT stations. The understanding of this matter will allow a better understanding of Malaysia's women LRT users in particular in the region of Klang Valley as the percentage of female users grew significantly. The sampling is conducted nearby nine (9) LRT stations. The survey was conducted from 7 am to 11 pm for one month during weekdays and weekends and aimed women walking nearby and using the LRT as average public transportation users that understand the system of public transportation and the problems related to public transports. Stratified random sampling is used to select respondents from women gender as samples at all stations with different land use scenarios to avoid bias.

From the sample, we have found that the demography of women LRT users can be defined by a particular intangible characteristic that are marriage status, income status and also the age that is influenced very much by physical characteristics like pathway routes and distance of walking. Through the interview, we have found that the status, income and age plays a major role in travelling decision making as well as choosing a mode to go. For example, the marital status of women would affect the decision of women to use motorcycle, car or even public transportation based on their responsibility at home and working place. If a particular woman has more kids to handle in the morning for example to kindergarten or school, they would likely to prefer to use a private vehicle as the car to travel. Instead, we found through the interviews that single women have more freedom in choosing their best travel mode as they have fewer responsibilities at home. This important background study tells us much about the behaviour of the respondents.

3. FINDINGS

According to our survey, married women likely to travel shorter for mainly purposed such as work. In contrast, single women tend to move by using public transportation. Reflecting the evolution of different status in their background, single women make more journey frequencies or trips per week in accessing the public transport. Refer 3.1 below, a total of 562 accepted samples, the age of female respondents in this survey are mostly between 18-24 years that is approximately 33.1%. Following the age group is 25-31 years which is equal to 30.1%. While the 50 years old and above of women respondents is just at 11.4%. Meanwhile, age less than 18 years old reported the lowest age and percentage of the value which is 9.8%.

Table 3.1: Result of frequency age

Age	Frequency	Travel to LRT station
		By Walking
<18	55	9.8%
18-24	186	33.1%
25-31	169	30.1%
32-40	88	15.7%
>50	64	11.4%
Total	n= 562	100%

From the samples, it can be suggested that majority of respondents in this survey representing the age between 18-24 years old are more prevailing compared to other age classes. Women between this age are more free and easy to walk, and some of them do not have private vehicles to use for the other such as work, entertainment or social activities and household errands. Based on these survey findings, it is anticipated that walkability among women gender is very much affected by this three characteristic. Further analysis is conducted to understand the relationship between walking and also the three characters that are income, age and also marriage status. Walking frequency is an analysis using cross tabulation where the question on walking frequency is cross-tabulate with a question related to age, income and marital status. Cross tabulation is used in other research such as social science and market research industry because it is an analytical tool to describe variable frequency analysis and categorical data. In this paper, walking frequency is tested as to understand the favorability of women chooses to walk as to understand women behaviour in transportation. This is also to figure out if the paradigm of transportation in the Klang Valley among women gender. The question on walking frequency seeks respondents to indicated how many respondents walk. The walking frequency scale is divided into three (3) level consists of (2 days), (3-5 days) and every day. Table 3.2 shows the analysis divided the respondents into five groups on marital status that consists of below than 18, 18-24, 25-31, 32-40 and more than 50 years old. Respondents who prefer to walk tends to seek for improved community facilities and public transportation quality.

Table 3.2: Travel frequency by walking based on respondents age

Age	Frequency by walking			
	< 2 days	3-5 days	Everyday	Total
<18	12.3%	7.9%	8.5%	9.8%
18-24	37.4%	30.7%	29.8%	33.1%
25-31	26.5%	33.2%	31.2%	30.1%
32-40	12.8%	17.8%	17.0%	15.7%
>50	11.0%	10.4%	13.5%	11.4%
Total : (n:562)				100%

According to the table and figure 3.3 below, the researcher can see the walking rate and result shows of 33.1% are the highest value of frequency women walkability below than 18 years old. Follows by 30.1% for the 25-31 years old group. The majority of the respondents are single women with (61.2%), whereas married (37.9%) and the rest is divorced (0.9%).

Table 3.3: Result of marital status by walking

Marital status	Frequency	Travel by Walking
Single	344	61.2%
Married	213	37.9%
Divorce	5	0.9%
Total	562	100%

Income status is closely linked with women travel as it affects mode choice which can impact the frequency of walking. The table 3.4 below illustrated an average income of the respondents in the case study areas. The majority of the respondents shows the highest income between the Ringgit Malaysia (RM)1001-2999 with the percentage of 63.7%. This indicated that majority of the respondents in the area have enough good level of income. Moreover, second highest of income reported that below than RM1000 equal to 25.8%. Thus the range of revenue between the RM3000-4999 recorded that 10.1% and the lowest income is more than RM5000 indicated only 0.4%. It is understood from the result, respondents who have the most moderate income tend to use public transportation because it is more affordable and cheapest than other modes. Secondly, it is seen that respondents with higher income have more tendency to use their private vehicle and less to use public transportation. This can be postulated that the level of revenue influences women walkability is commuting in Klang Valley. Lower income confines the accessibility to option for alternatives transport modes. Conversely, less accessibility to better transport modes reduces the availability of resources and access to jobs with better income as stated by other researchers (Rao, 2001; Fernando, 1999; Cressell & Uteng, 2008; Dobbs, 2005).

Table 3.4: Result of monthly income between travel mode

Monthly income	Travel mode					
	Walking	Private vehicle	Cycling	Bus	Taxi	Total
<1000	47.7%	15.6%	53.8%	25.5%	46.4%	25.8%
1001-2999	38.5%	66.7%	46.2%	71.0%	46.4%	63.7%
3000-4999	12.3%	17.3%	0.0%	3.5%	7.1%	10.1%
>5000	1.5%	0.4%	0.0%	0.0%	0.0%	0.4%
Total : (n:562)						100%

A one-way between groups analysis of variance was conducted to explore the impact of age on travel average. Respondents were divided into five groups according to their age (Group 1: less than 18, Group 2: 18-24, Group 3: 25-31, and Group 4: 32-40, Group 5: more than 40 and above. According to the homogeneity of variances test in one-way ANOVA, the result shows that there was a statistically significant difference for the five age groups: $F(4, 557) = .000$ which is the p -value less than 0.05.

Table 3.5: Result on travel average between respondents age

Age	n	Mean	Sig.	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
<18	55	1.18	.999	.512	.069	1.04	1.32
18-24	186	1.20	.047	.489	.036	1.13	1.28
25-31	169	1.20	.040	.454	.035	1.13	1.26
32-40	88	1.25	.260	.485	.052	1.15	1.35
>50	64	1.47	.040	1.436	.180	1.11	1.83
Total: 562							

Test of Homogeneity of Variances

Travel average

Levene Statistic	df1	df2	Sig.
5.851	4	557	.000

Despite reaching statistical significance, the actual difference in mean scores between the groups was quite small. Regarding the Post-hoc result to show exactly where the differences among the groups occur using the Tukey HSD test indicated that the mean score for Group 1 (M=1.18, SD = .512), Group 2 (M = 1.20, SD = .489), Group 3 (M = 1.20, SD = .454), Group 4 (M=1.25, SD = .485) and Group 5 (M= 1.47, SD =1.43). Based on the result above, the highest of mean in age more than 50 years old and the lowest of mean is below than 18 years old. According to the table above, the researcher also found the result on multiple comparisons between the age and travel average. The result shows that most of the

values are greater than .05. However, two values are .040. These values correspond with the comparison between the 25-31 and more than 50 and more than 50 with the 25-31. From that result, the researcher can conclude that it is statistically significant in term of the relationship between on age.

4.0 CONCLUSION

Women from different age and marital status have different needs to walk. First of all, it is found that almost 60% of women that we interviewed are between 18 to 31 years old. From this findings, we also find about 61% of them are still single. The evidence suggests that there are a certain age and marital status influence into decision making if they decide they want to walk or not? In addition to the findings, we also discover that 64% of our women respondents come from middle and lower income background. Although the findings couldn't suggest the significant result between walking and women, it shows that once the status of women has changed, it will also affect their decision to walk. In addition to that, there is a need of securing women safety walking as most of them walk alone without partner or spouse. The income status also affects women travel mode choice thus explain to us the kind of land use planning that should provide excellent planning for females' mobility in particular connecting pathways from residential areas to the LRT station.

Now that we have established different category of women walks to the LRT, there is an opportunity for future research. One of the important recommendation for future research is to find choices made by women in different transportation modes such as comparing train over a taxi or private vehicles. As there is a need to reduce the number of vehicles on the road, there is a necessity to make a further research on single women drivers and shift their modes from a private car driving to sharing or even using the public transportation.

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