

The Building Suitability and an Existing Facility on Bus Station in Northern Malaysia

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Abstract

Northern Malaysia is growing rapidly leads to an increased demand for public transport facilities. However, realizing that the public facility provided still lack in good condition and not convenient for all at the most public bus station in Northern Malaysia. Hence, this study analyses the priority of the characteristics of the facilities at the public bus station in Northern Malaysia to ensure the public facilities provided is meet the needs of all. The result shows that the need to make an improvement to transform the public bus station toward the integrated terminal. This research also proposed the right authority sets the standard rule for designing the public facilities to enhance the building based on the disabled friendly facility and design.

Keywords

public facility, public bus station, disabled facility

1. Introduction

Malaysia as a country is going forward to become a world-class economic region by the year 2025, to implement the Kordor Utara objective to accelerate the economic growths and elevate the income levels in northern Peninsular Malaysia in improving public transport in the medium term. The northern states of Perlis, Kedah, Pulau Pinang and northern Perak form the region, covering an area of 17,816 sq km.

Nowadays, bus stations as attractive neighborhood anchor announced a new chapter in urban mobility and the life (Kroll, 2007). However, public facilities vary between stations in the different cities and rely on factors such as the needs of users. Thus, a success of quality services depends largely on the users. It is because users' is the conclusive judge (Schiefelbusch & Dienel, 2009). Users' satisfaction should be customer-oriented and meet the users' needs and desires (Noor et al., 2014).

Basically, there is still a gap where the public facility provided at most bus station still lack in good condition and not convenient for all, especially to the disabled people including pregnant women, the elderly and children. Emphasizes the disabled facilities in the station is important. It is due to the built environment during the users in the bus station frequently creates barriers for disabled users' (Parker et al., 2013).

2. Disabled Facilities Scenario

Based on the past researcher, the Stratford bus station, and London Bridge bus station facing the serious problems related to the position, inclination and availability of ramps. Meanwhile, a moderately severe problem reported by London Bridge train related to the architectural barriers, such as gaps, steep inclines or curbs, and the absence of a wheelchair area (Parker et al., 2013).

Added In Bangkok, users' especially the elderly and the disabled feel dissatisfaction with the availability, convenience and the quality of access facilities. As an example, the Mo Chit Skytrain

station failed to provide the appropriate access facilities to the disabled users' and the Saphan Taksin Skytrain station doesn't provide the elevator to accommodate the needs of the disabled users' (Prasertsupakij & Nitivattananon, 2012).

Meanwhile, at the Kuala Lumpur Central and Klang Central station gather the lowest rate in the friendliness factor of disabled facilities. This two station was poorly designed for disabled group users' such as platform, ramps, steps and walkways. However the disabled group users are also satisfied with the waiting at spots, toilet and escalator (Soltani et al., 2012).

3. Objectives

These research objectives are as follows:

- 1) To determine the characteristics of facility at the public bus station.
- 2) To determine the priority of the characteristics of the facilities of the public bus station in Northern Malaysia meet the needs of users.
- 3) To suggest the improvement of public bus station facilities to the right authority.

4. Scopes of Analysis

This study gives attention to marketing strategy to attract users to use public facility that exists in bus station station in the Northern Malaysian states of Perlis, Kedah, Pulau Pinang and northern Perak (districts of Hulu Perak, Kerian, Kuala Kangsar and Larut Matang-Selama). The focus of this study towards an existing facility provided at the bus station.

5. Methodology

This study started by first determining the characteristics of facilities at the public bus station from past researcher. Next, defining the number of the population and the location of the study. There are six locations selected are in Perak (Hentian Raya Parit Buntar and Kamunting Raya Bus Terminal), in Kedah (Ukir Square Sungai Petani, Shahab Perdana Bus Station and Kulim Bus Station) and then in Penang (Sungai Nibong Bus Terminal). At the same time, designing an instrument a set of the questionnaire. This is for to gather the demographic data of the respondents and the required information on perception towards the building suitability and an existing facility at bus station in Northern Malaysia.

The total sample size for this study is 380 questionnaires. The questionnaires distributed randomly among people who in the bus station area. The explanation is given to the respondents before answering the questionnaire to clear the purpose of this study. After collecting all the data, the data being analysed by using a Statistical Package for Social Science (SPSS).

6. Results and Discussion

The Cronbach's alpha value was used to measure the reliability of the questionnaire. For this research, the Cronbach's alpha coefficient for the 51 items is 0.913 as shown in Table 1. This shows that the questionnaire is reliable to be used in this study and it is considered as excellent high stakes testing internal consistency and acceptable (Mohammad et al., 2014).

Table 1. Cronbach's Alpha Value

Number of respondents	Number of Items	Cronbach's Alpha
380	51	0.931

There is a total of 380 respondents in six locations which are Hentian Raya Parit Buntar (37 respondents), Sungai Nibong Bus Terminal (106 respondents), Ukit Square Sungai Petani (74 respondents), Shahab Perdana Bus Station (74 respondents), Kulim Bus Station (62 respondents) and Kamunting Raya Bus Terminal (27 respondents).

6.1 Demographic Characteristics

Demographic data were mainly designed in the questionnaire under Section A. The purpose of this section is to provide general information regarding the respondents in terms of their individual capability status, why and how many (frequency) they come to the bus station. Besides that, this part being analysed via the results of frequency analysis as shown in Table 2.

The respondents who used the public bus station aged between 17-65 years old. Many of respondents were male (51%). Based on the survey results, their trip purpose was mostly (32%) for education trip. The use of public transport is at least less than 1 time per month (38%).

Table 2. Summary of Demographic Data

General Information	Frequency	%
Gender	Male	194
	Female	186
Age (years old)	Less than 17	29
	18-24	154
	25-34	95
	35-44	39
	45-64	49
	>65	14
Trip purpose	Works	93
	Shopping	29
	Education	121
	Personal Business	25
	Official Business	31
	Social and Recreation	27
	Others	54
The frequency comes to the bus station	More than once a day	48
	1-3 times per week	34
	1 time per day	39
	1-3 times per month	84
	4-6 times per week	30
	Less than 1 time per month	145

6.2 Analytical Results on Existing Facility of the Bus Station

This finding indicates the an existing characteristic provided by the bus station and the priority of characteristic of the facilities at the public bus station in Malaysian North to meet the needs of users. This analytical by using ranking analysis. The analysis is measured using a from Likert scale; strongly disagree, disagree, neutral, agree and strongly agree. However, for this study, the perception of the respondents' level is found by counting the total frequency of agree respond. The analysis is classified into four parts as below:

- 1) Parking Area;
- 2) Waiting Area;
- 3) Interior Design Layout;
- 4) Transformation Towards an Intergrated Transportation Terminal.

Part 1: Parking Area

The ranking of the factors of the parking area was tabled as shown in Table 3 below. Based on the frequency value criterion, the first ranking seemed to capture the respondent's general perception that the parking area must be upgraded with a frequency value of 267. However, the rank is followed by a statement that the parking facility is appropriate where the frequency of 191. Statements such as a longer period are needed to park a vehicle having the third rank from respondents perspective view where the frequency is 171 and followed by the statement such as a longer period is needed to move out of the parking area with the frequency value of 133.

The rank indicated the factor of the parking area needs to be upgraded much higher (ranked at number 1). It might be lack with other features of street lighting, road marking and, etc. It should also be considered that congestion can occur during peak hours. As mentioned from previous researcher, when the parking space provided is not sufficient and it is due to waiting for the other driver to park the vehicle or during move out and out from the parking area (Sibagariang, 2014).

Table 3. Ranking of the Parking Area

Code	Factors	Frequency	Ranking
4	Parking area must be upgraded.	267	1
1	Parking facility is appropriate.	191	2
2	A longer period is needed to park a vehicle.	171	3
3	A longer period is needed to move out from the parking area.	133	4

Part 2: Waiting Area

As shown in Table 4, the top three factors ranked the highest frequency according to the respondent whose are agree are the waiting area of the public bus station is comfortable (190), safe (187) and clean (185). Next, bottom three factors ranked the lowest frequency are the waiting area is unsafe, the chart schedule provided is unclear and there is no signage on safety guideline displayed at the certain public bus station.

However, the higher frequency value only covered half (50%) of the total number of respondents agree with the statement of the waiting area is comfortable and the other half were not agreeing with it. As

well as, half of the respondents agree with the insufficient number of seats provided, the waiting area is not clean and half of them feeling unsafe at the bus station. Thus, the comfort factor is important as mentioned by Noor et al. (2014), where it is the largest contributor in the influences people's perception of being at the bus station.

Moreover, the results show most of the respondents still feeling unsafe and might be confusing with the unclear signage provided. Similarly with the study conducted by Dahalan et al. (2015) revealed the results that the percentage of disagreement among respondents regarding the safety assurance measures prevailing in the waiting area of the public transport station. On the other hand, the safety factor is also being mentioned by the researcher where congestion when boarding the bus affects the users safety (Noor et al., 2014). Next, there is no safety guideline to aware them of being at the bus station. In my observation, the congestion will happen due to the bus and private transport share with the same entrance and exit at the certain bus station. The evidence shows to keep and attract more passengers, public transport must have high service quality to meet and fulfil different customers' needs.

Table 4. Ranking of the Waiting Area

Code	Factors	Frequency	Ranking
6	Waiting area of the public bus station is comfortable.	190	1
8	Sufficiency of seats.	187	2
5	Waiting area of the public bus station is clean.	185	3
7	Waiting area of the public bus station is safe.	174	4
9	The chart schedule display is clear.	154	5
10	There are signage on safety guideline displayed at the public bus station.	144	6

Part 3: Interior Design Layout

The factor of ticket counter easy to access is the highest ranking with the value of the frequency is 239 and followed by ticket counter easy to access (frequency = 231), a public washroom near to the waiting area (frequency = 207) and finally a place of worship near to the waiting area (frequency = 190). The results show that the frequency scores range from a high of 239 to a low of 190. Subsequently, the value of the mean as can be seen in the Table show that the mean range from a high of 3.68 to a low of 3.38.

The Table 5 show most of the bus station in Northern Malaysia has been built with refreshment kiosk near to the waiting and be supported by the study conducted at Indian Railway as mention by Nandan (2010) revealed that the availability, quality and quantity of refreshment provided at the bus station as the most important for the satisfaction aspect for users being there.

Table 5. Ranking of the Interior Design Layout

Code	Factors	Frequency	Ranking
14	Refreshment Kiosk near to the waiting area.	239	1
11	Ticket counter easy to access.	231	2
12	Public washroom near to the waiting area.	207	3
13	A place of worship near to the waiting area.	190	4

Part 4: Transformation Towards an Intergrated Transportation Terminal

As shown in Table 6, the top 18 characters, which are being picked out of 37 characters which are arranged from the most to least transformation needs as indicated by the respondents survey results of their experience at the bus station. Results show that the frequency scores range from a high of 329 to a low of 296, it shows the respondents had a moderate perception of the needs of all the dimensions of the characteristics of transformation towards an integrated transportation terminal.

The top five character ranked the highest, according to the respondents are: the need of automatic bank teller machine (ATM) to withdraw a cash, a display system of the bus schedule should be on display to give ear to the passenger, plug in a boarding announcement from dedicated staff must be enforced to help passenger to be better disposed to take the bus, the need must be providing a disability-equipped bathroom and also a handicap-equipped walkway should be offered with a guide.

There are sixcharacteristics out of top 18 pointed out about accessibility for the disabled. Similarly, Soltani et al. (2012) is also stated in their past research in Kuala Lumpur about accessibility for the disabled in public transport terminal, noted that there are a lot of improvements needs to be done in Kuala Lumpur Terminal. This proved that the public transport terminal in Southern Malaysia is also needed to make an improvement about accessibility for disabled. Parker et al. (2013) also mentioned the need for accessible toilet facilities proves that 56.1% of wheelchair users were affected while using a public toilet.

Furthermore, the respondents agree to upgrade information system at the bus station. From the Table below show most of the respondents agree with the statement of “bus schedule display system should be on display to attend to the passenger” with a frequency of 327 respondents and “boarding announcement from dedicated staff must be implemented to help passenger to be better prepared to take the bus” with the frequency of 326 respondents. In the same way from past researcher also pointed out the information system the third most important to the determinant of satisfaction of users in India (Nandan, 2010).

Table 6. Ranking if the Transformation towards an Integrated Transportation Terminal

Code	Factors	Frequency	Ranking
36	Automatic bank teller machine (ATM) is needed.	329	1
26	The bus schedule display system should be on display to attentive to the passenger.	327	2

	Boarding announcements from dedicated staff must be implemented to help passenger to be better prepared to take the bus.	326	3
39	A handicap-equipped toilet is provided.	324	4
40	A handicap-equipped walkway is provided with a guide.	322	5
51	Police & SPAD (Land Public Transport Commission).	322	6
28	Public Information Display System (PIDS) is needed to provide lists of all the bus arrivals and departures in real time.	318	7
25	Departure hall shall be equipped with centralized air-conditioning and sufficiency of seats for passenger comfort.	317	8
38	A handicap-equipped, elevator is provided for access to the different floors.	317	9
41	Floor texture is suitable and safe for the elderly.	317	10
48	Parking lots for the disabled to be provided much closer to the elevators and public entrances.	316	11
37	Free Wifi is at certain levels of the terminal in order to reduce congestion and lack of public seats.	310	12
31	Prayer area for Muslims is equipped with air conditioning and wudhu' point.	309	13
42	Wheelchair ramps are safe.	309	14
30	Public toilets should provide dressing room and bathroom.	304	15
47	Storey car park to be built with there is plenty of parking lots.	304	16
49	Klinik 1 Malaysia.	301	17
34	Food Court serves a variety of local and international food.	296	18

7. Conclusion and Recommendation

In conclusion, physically the condition of the bus station in Northern Malaysian (Perak, Kedah, & Penang, n.d.) need to make an improvement to transform the public bus station toward the integrated terminal. Well known, the suitability of building structure and facility was provided at the bus station are the most important aspect of satisfaction for users while in the bus station area. Users look forward the safety, comfortability and availability of facilities provided.

As overall, this study suggested the right Local Authority (LA) sets the standard rule for designing the public facilities. So then everybody can get an equal accessibility. In designing, increase awareness of the disabled and the elderly facilities among designer and architects. Equally important to enhance the public building based on the disabled friendly facility and design.

Therefore, by upgrading the facilities characteristics of the bus station and it directly it can increase the use of public transport. Besides that, users feel leisure while being at the bus station. This is because the various of age who are comes to the bus station and priority given towards the disabled people and the elderly because they are also using the public transport.

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