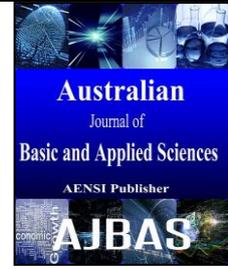




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Preliminary Study on the Effectiveness of the Disabled Facilities Provided for Safety Purposes in the Public University

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ABSTRACT

This paper aims to focus on evaluating the effectiveness of disabled facilities provided for safety purpose in public university. There exist some loopholes in guaranteeing that the facilities for People with Disabilities (PwDs) are provided and built according to the specification as stated in Malaysia Standards for Disabled Person [1] and although the access and facilities being built according to the Standard Code of Practice, some still feel that it does not fulfill the needs of PwDs [2-4]. As a preliminary study, the survey was conducted in the main campus of University Sains Malaysia (USM) and analysed using descriptive statistics. There are 30 PwD students currently studying in the USM Main Campus from different categories of disability. 30 sets of questionnaires were distributed to the targeted respondents. The solutions may increase the awareness and practice of the safety standards and guidelines of disabled facilities among the construction professionals in construction industry. The research hopes to provide useful information about the safety requirements and specifications of the disabled facilities so that they will consider the PwDs needs as priority criteria during the design stage in the future.

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INTRODUCTION

According to the statistics from the Department of Social Welfare of Malaysia, there are 405,441 out of 28.8 million Malaysians who are registered as a PWD by May 2012. However, this number did not include the elderly due to their old age and illness. The increase in the population of PwDs in Malaysia has resulted in great demand of the provision of access and facilities inside and outside the building, especially in government institutions (Shalini, S., T.W. Seow, 2011). There are only a few education institutions in Malaysia providing disabled-friendly facilities. Many buildings are not equipped with the same facilities. There have been complaints from PwDs that the allocated parking lots are not located right next to the entrance of the building, and security personnel are seldom around to assist them. To top it off, they are being charged for parking. Although facilities are provided for PwDs, problem still arise on the quality of the disabled facilities. Some of them are worried about the actual function of the facilities, which the objectives are to help and ease the PwDs to access the places. Furthermore, questions about the practicality and safety of the facilities provided for PwDs especially during the

emergencies also arise. Therefore, there is an urgent need to identify whether the facilities provided are effective (Peter, T., 2005). Thus, it is important to have the knowledge and understanding about PwDs' needs and requirements in order to provide services and facilities of better quality to them.

Data and Methodology:

For this study, a detailed literature review has been conducted through readings and several references, such as journals, newspaper's articles, dissertations, theses, journal articles, and relevant books about the PwDs facilities and the safety purpose to identify the research question and objectives. Secondary sources published by various publishers obtained in order to strengthen the researcher's knowledge in particular field of this research. Investigations on the data collection were made due to the applicable usage of obtained data for this research. Subsequently, data was collected through questionnaire surveys. The study area for this research was held within the USM Main Campus, Penang Island, Malaysia and the targeted respondents are students with disabilities. As a part of Higher Education Institution and a well known local university in the country, USM has provided a

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good platform for all people with different backgrounds including those with different abilities to continue and pursue their tertiary studies. There are 30 PwD students currently studying in the USM Main Campus. 30 sets of questionnaires were distributed to the targeted respondents and 24 (80%) questionnaires were completed and returned. 6 respondents (20%) did not return the questionnaires. This response rate exceeds the minimum acceptable response rate of 10 per cent (Sekaran, U., 1992).

RESULTS AND DISCUSSION

For this research, it is important to determine the need of respondents from different categories of disability. There are 3 (12%) respondents who use wheelchairs and 10 (42%) respondents are having normal disability, which are vision disability and hearing disability. There are also different levels of disability in sensory disability. 11 (46%) respondents

with physical disability are the largest group of disability among all. The physical disabilities may include the disability of physical body such as hands, legs, etc, which requires the use of aids such as crutches, cane, walking frame, or prosthetics of different body parts, to name a few.

In terms of mobility classification, most of the respondents are classified as ambulant PwDs, at 62.50%. Most of them can walk (with or without help) in the building, around the building and without the aids of wheelchair or crutches. 6 (25%) of them are semi-ambulant. They seldom use or always use wheelchair to move and walk with the crutches. 8.33% of the respondents are independent chair-bound which cannot walk but can use wheelchair without the help at the flat area, inside or around of the building and the facilities provided. Only 1 (4.17%) respondent is dependent chair-bound which cannot walk and need the help all the time when in the building or around the building.

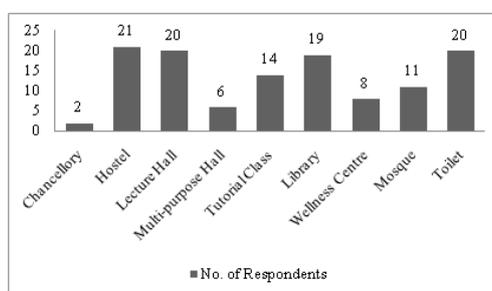


Fig. 1: Buildings used in USM Main Campus.

Hostel is among the highest usage of the building and facilities by the respondents, 21 respondents use it. As students in USM, most of the respondents are staying in hostel. This is followed by lecture theatre and toilet, where 20 respondents use them as classes are conducted in lecture theatre. The least usage among all of the building and facilities provided. This is due to the least activities that need the respondents to go there (see Figure 1). Most of the respondents use stairs as their major facility to move from one storey to another storey. This is due to the fact that stairs are the most provided facilities on campus in comparison to ramp and lift. Therefore the PwDs respondents use stairs as the main facilities.

Table 1 shows the opinion of the respondents towards the safety of the pathway inside the building. 1 respondent (wheelchair user) does not use the same pathway because there is no wheelchair access pathway for the respondent and it is very hard for the respondent to move around. Three quarters of the total respondents felt comfortable and safe when using the pathway without bothering other users while the rest of one quarter of the respondents do not think so. This is due to the unpleasant feeling felt as the 'special group' and they are bound to use the particular facilities which segregate them from the

others. Due to their inconvenient mobility, they felt uncomfortable as sometimes they will block other people's way. In the USM Main Campus, there is no special pathway for blind people to use while such facilities are well provided in other place in Malaysia, such as Kuala Lumpur. 5 (20.83%) respondents agreed that the finishes of the pathway gives them effects while the rest of the respondents (79.17%) say no. The reasons for the 5 (20.83%) respondents are as follows:

- i. Smooth surface of the building finishes such as floor tiles will reduce the friction between the floor and the users feet or wheelchairs' tyres. When there is water on the surface, it is dangerous to the PwDs users and accidents will occur such as falling down.
- ii. The curbs will delay the movement of the users especially the wheelchair users.
- iii. Uneven floor surface will result in the wheelchair users having a difficult time when they moving around with their wheelchair.
- iv. Also, the majority of the respondents (91.67%) stated that the space (width) of the doors is wide enough for them to pass through whereas the remaining 8.33% disagreed with them. However, the percentage of the respondents who agreed dropped slightly when it comes to the safety of the users when using the doors. 87.50% of the respondents felt safe

when using the door to access to other places while 12.50% of the respondents felt otherwise. They felt that it is too hard to pull or push the doors. Besides that the swing door with the door closer makes the

PwDs users very difficult when opening the door by pushing it especially to those who are using crutches. The doors were found to be unsafe for the wheelchair users.

Table 1: The opinion of the respondents on safety of the facilities provided inside the building.

A	Pathway	No. of Respondents	Percentage (%)
1	Do you use the same pathway as other people?		
	Yes	23	95.83
	No	1	4.17
2	Opinion about the facilities provided		
	Easy	5	20.83
	Normal	13	54.17
	Difficult	6	25.00
3	Do you feel comfortable and safe when using the facilities provided without bothering other users?		
	Yes	18	75.00
	No	6	25.00
4	Do the finishes of the facilities give you any effects?		
	Yes	5	20.83
	No	19	79.17
B	Doors	No. of Respondents	Percentage (%)
1	Do you feel the space of the door is wide enough for you to pass through?		
	Yes	22	91.67
	No	2	8.33
2	Do you feel safe when using the door to access to other place?		
	Yes	21	87.50
	No	3	12.50
C	Toilet	No. of Respondents	Percentage (%)
1	Opinion about the entrance to the toilet		
	Easy	17	70.83
	Difficult	7	29.17
2	Do you feel safe when using the toilet?		
	Yes	20	83.33
	No	4	16.67
3	Availability of sign that indicate the direction of PwDs toilet		
	Yes	14	58.33
	No	10	41.67

Table 2: The opinion of the respondents on safety of the facilities provided outside the building.

A	Parking Area	Yes	Percentage (%)	No	Percentage (%)
1	Availability of Parking Area	20	83.33	4	16.67
2	Availability of signboard indicating PwDs parking area	17	70.83	7	29.17
3	Feel safe when using the facilities provided	18	75.00	6	25.00
B	Walking Pathway	Yes	Percentage (%)	No	Percentage (%)
1	Do you use the walking pathway provided?	19	79.17	5	20.83
2	Feel safe when crossing the road by using the walking pathway provided?	14	58.33	10	41.67
3	Do the building materials of the walking pathway give you any effects?	21	87.50	3	12.50
4	The suitability of the ramp and step ramp	16	66.67	8	33.33
C	Entrance of the Building	Yes	Percentage (%)	No	Percentage (%)
1	Any facilities that help you enter the building?	24	100.00	0	0.00
2	Are the facilities practical and safe to be use?	18	75.00	6	25.00

Meanwhile, 17 respondents (70.83%) felt that it is easy for them to gain access to the toilet through the entrance. However, the rest of the respondents (29.17%) felt that it is difficult for them to enter the toilet as the entrance of the toilet is not wide enough for them to utilise especially wheelchair users. 83.33% of the total respondents felt safe when using the toilet while the rest of 16.67% respondents do not

think so. It is because the floor in the toilet is slippery and sometimes the light does not function well which makes them difficult to see around in the toilet and this will cause accident if they are not careful. 14 (58.33%) respondents stated that the sign for PwDs toilet available in the campus to indicate the direction of the toilet. However, there is 10

respondents (41.67%) cannot find the PwDs toilet indicating sign.

Table 2 shows the opinion of the respondents on safety of the facilities provided outside the building. In this section, the safety of the facilities provided at outside of the buildings was concerned. The respondents were asked whether they felt safe when using the facilities provided or not. This also identifies whether the facilities provided were meet the safety and design requirement or not. Overall, 18 (75%) of the respondents felt safe when using the parking area. However, the remaining 6 (25%) of the respondents disagreed to this. This is because they felt that not all facilities provided for them can be use safely. Some of the respondents are not sturdy enough to move themselves from the parking area to the building as the height of the step ramp is quite high. They felt dangerous when using the facilities. The factors that support 6 (25%) of respondents who do not feel safe when using the facilities are as follows:

- i. The pathway from the parking area to the building is not straight forward. The width of the pathway is also quite narrow. These make them feel unsafe and inconvenient to use the facilities.
- ii. The pathway without roof cover worsens the condition of the pathway when it rains, as the water will make the surface of the pathway slippery and it is not safe for the PwDs user.
- iii. There are few parking areas that are allocated for PwDs and most of the time they are misused by other normal users.

From Table 2, 5 (20.83%) respondents do not use the walking pathway as there is no special pathway that is built specially for the wheelchair users and the blinds. They have to use stairs more often. Poor vision PwDs hardly use their eyes to see clearly when they use the pathway. More than half of the total respondents (58.33%) felt safe when crossing the road by using the provided walking pathway whereas the rest of them (41.67%) do not think so. This is due to the uneven floor surface, no railings provided, no special pedestrian cross special for PwDs, and etc. Wheelchair users felt that they cannot use the facilities provided because of the intolerant drivers to give a pass when they want to cross the road whereas some of the respondents found that the signal light do not have sound installed in that device to indicate when to cross the road.

3 (12.50%) of the respondents have problems with the building material, such as concrete floor surface of the walking path ways as they faced problems such as the rough surface of the pathway makes the wheelchair caster stuck easily, especially for wheelchair users. They found that the surface of the pathway is slippery and sloppy which is not designed universally. For the PwDs with crutches aids, they felt not stable enough and they could fall due to the uneven pathway surface. One-third of the respondents felt that the ramp and step ramp are not

suitable because they felt that the ramp and step are too steep and slippery. Some of the ramps are not provided with handrails, and this make them feel difficult to use the facilities, which are not applicable, especially to the wheelchair users. 6 (25%) of the respondents do not agree that the facilities provided are practical and safe. This is because the facilities are not much provided in the campus and only certain buildings in the campus were equipped with the facilities. Besides, they also voiced out that the ramp is quite steep to be used which makes them uncomfortable when using it.

Conclusion:

To sum up, the overall result of the study showed that the respondents still felt that the safety of the facilities provided is not in a satisfactory level. Although the facilities were provided, there are many spaces of improvements in term of the safety and the specifications of the facilities. Not all of the facilities provided followed the specifications in the standards and guideline provided. The main reasons for the developers or construction professionals to ignore or neglect the standards and guidelines are the limited land usage, cost constraints, restricted period and lack of awareness. It is important to implement and enforce the safety awareness by following the standards and guidelines for PwDs facilities to ensure the safety of the users.

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