

BUILDING THE SETS OF STANDARDS FOR MALAYSIA TAXI INTERIOR: A CRITICAL REVIEW

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Abstract: Taxi has become the most preferable public transportation here in Malaysia. However, the satisfaction from the user, feedbacks was not quite match the real situation. By referring to the several ministers, authorities and prime minister himself, we need to have our own taxi design here in Malaysia, the same thing that had been done by several countries in bringing their own image embedded into their taxis. At the same time, while building the image of the taxi, the other thing is to look into several enhancements towards the user experience. As been stated by the Malaysian previous prime minister and current prime minister themselves, the design taxi should look into the comfort or ergonomics of passengers, the safety issues, some technology appliances and accessibility issue for the disable person¹. The main purpose of this study is to first finding an appropriate interior arrangement of the taxi in Malaysia as the sets of standards. The interior design should well answer the criteria stated by the authorities, and the users². From the interior design, then the image (exterior design) of taxi can only be implemented after the segment of the car had been determined. In order to get the data, the study about what other countries have done must be carried out in order to solve the problems which are actually the same happening here in Malaysia. For the better user experience, several research methods had been conducted in order to get the real user perception towards their experience. The feedback then will be match with the findings from what other countries have done. In filling the gap, taxi used here in Malaysia currently using the existing design of the Proton cars. This is not suitable for the usage as the public transportation⁵. In this research, the appropriate design or arrangement for the interior of taxi will be determine first before the image of Malaysia can be imbedded into the design of exterior³.

Keywords: Interior, comfortable, ergonomics, safety, disable people.

INTRODUCTION

One of the first issues to emerge was that there was a lack of engagement by the base vehicle manufacturers with their potential customers⁴. In this case, we are referring to Malaysia national car manufacturer, Proton. In 25th June 2008, during the *Perhimpunan Agung Umno*, the cabinet had urged the national car manufacturer Proton to come out with a new model of car which will be used only for taxis here in Malaysia⁵. But what we can see here until 2013,

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although they recognize that their vehicles are being used for conversion into taxis, there was little understanding of what is needed to ensure that this task is made easier for the conversion company.

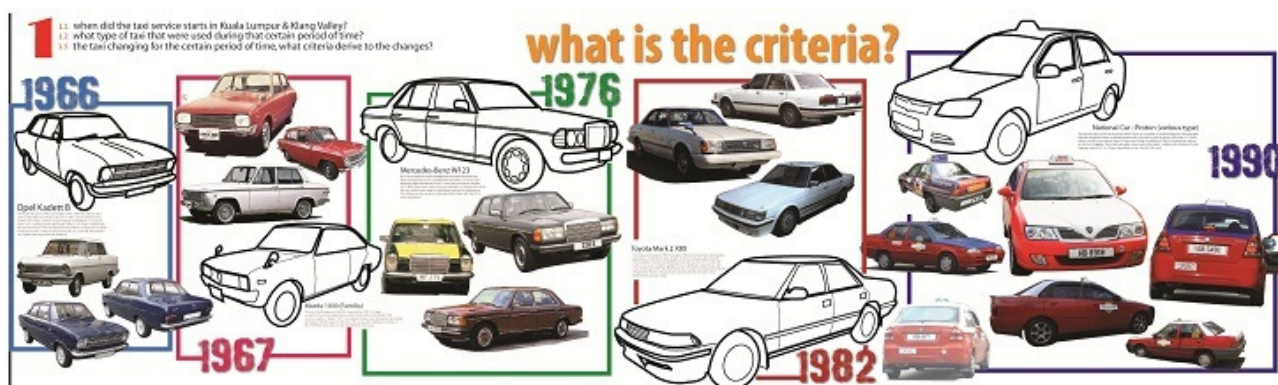


Plate 1: Timeline of taxi design here in Malaysia
(Source: Malaysian Peninsular Commercial Vehicle Licensing Board)

Taxis are generally based on mass market vehicles which are produced by multinational companies, and the proportion of these vehicles used as taxis is very small. Some countries have a tradition of purpose built vehicles which provide access for wheelchair users, or have made provision for special transport services for disabled people, but these are the minority⁶. And also, there is limited evidence of major manufacturers recognizing the needs of disabled people and responding to these with improved vehicle design. The results of a survey of countries participating in the final report of Task Force which was published in March 2007 showed that the dominant vehicle type used as a taxi is the saloon car, the exceptions being the UK and the Netherlands. In some cases the number of taxis (vehicles which can be hailed on the street or from a taxi rank) had reduced, but this was balanced by an increase in numbers of private hire vehicles (vehicles which must be pre-booked, usually by telephone).

Based on the user behavior (amount of passengers, amount of luggage carries) during ride for the case study area, the decision had been made by referring to the district focal point. This study is to determine the maximum usage of interior in taxi design.

2.0 Current Situations

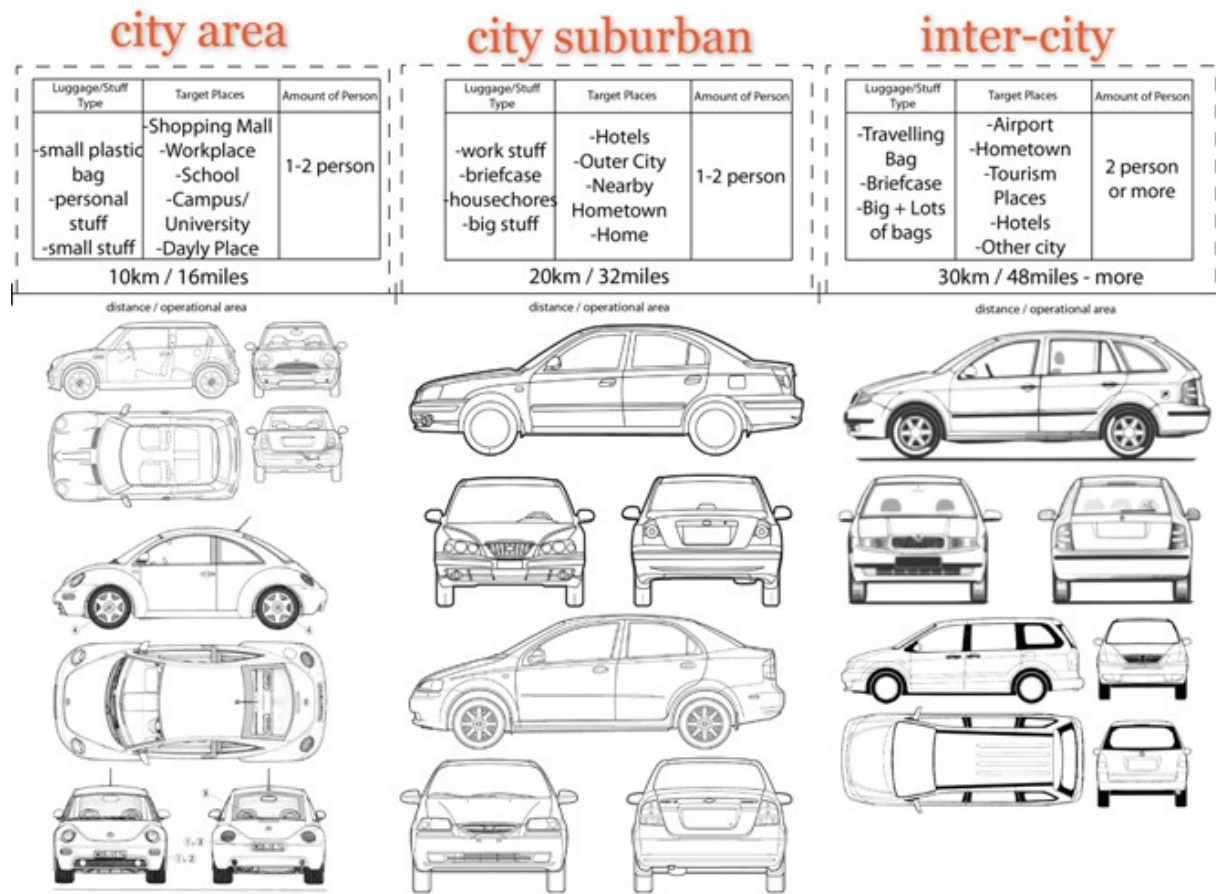


Plate 2: Segment of cars operated as taxis based on the District Focal Point

The case study area is Kuala Lumpur and Klang Valley, this two areas were the tourist attraction and where the taxis operating the most. According to Koldowski, the Pacific Asia Travel Association (2009), less than desirable taxi drivers have an outsize impact on a nation’s image. He again claims that the first contact a tourist gets with locals is often during airport transits to hotels and it creates a very, very strong first impression, either is good or bad. He also added more saying that authorities certainly need to do their jobs and act upon any complaints strongly, quickly and visibly to improve the services⁷.

Companies that doing the vehicle conversion and specialist taxi manufacturers are aware of the needs of users, but at the same time, they are facing constrain by the design of the base vehicle, or by the scale of economies. The potential market in one country is not usually sufficient to warrant significant investment in radical designs. Although they are able to make significant alterations to vehicles, they believe their designs are limited by the cost implications and the acceptability of the converted vehicle to taxi drivers and passengers⁸.

The questionnaires that have been given to the user said that, the major things to be considered were the comfortable and safety issues. It is huge for us to take this seriously because there were lots of countries have done a great job in solving the user satisfaction towards the taxi services.



Plate 3: Several proposals for interior layout plan

Based on the feedback from the users, this research managed to come out with several ideas of taxi interior layouts. This layout is to determine the maximum usage in order to create an intelligent taxi spaces. Based on research done by Ergonomics Division, Transport Canada (2001), stated that, several criteria in order to make it intelligent and maximizing the usage of it is, it must improve the safety, increase efficiency, improvement in comfort etc. By referring to that, this research have come out with the idea based on plate 3, and based on the user feedbacks, concept 5 had been selected.

After the layout has been done, the results from discussions have decided that we should look into the accessibility issue for the wheelchair user as from there, we will satisfy every user. It is difficult to add the accessibility for the disable person later because the size needed by

them is more than the normal user. Based on the ergonomic requirements for accessible taxis, disabled people do not vary in their needs from one transport mode to another, but the challenge in the case of taxis is that the vehicle is much smaller than for other public transport modes¹¹. The vehicle is generally a unitary construction type rather than building a body onto a chassis which is the preferred method for larger vehicles. This means that it is technically challenging to convert a vehicle after it has been manufactured, and consequently this is an expensive process.

The ergonomic requirements of passengers and accessibility issue for disable people are well documented in a 2004 study for the UK Department for Transport. The study suggests that in the case of steps by user, the maximum height varies depending on an individual's, but that a step which is 200mm high is acceptable to many people. Ramps for wheelchair user should have a maximum gradient of 8°, though shallower is better because of moving and handling issues, and the floor space needed to maneuver a wheelchair should be at least 1300mm wide by 1340mm long. To accommodate the needs of wheelchair users is challenging because of the overall space requirement which must include room to maneuver a wheelchair has been stated before into a vehicle and into the safe position for travel. A review of 1356 occupied wheelchairs carried out in the UK in 2006 provides information on the size and weight of occupied wheelchairs. This study compares information collected in 2005 with previous surveys in 1991 and 1999. Generally occupied wheelchairs are getting longer, taller, heavier and slightly narrower based on the up-to-date design.

3.0 Conclusion and Discussion

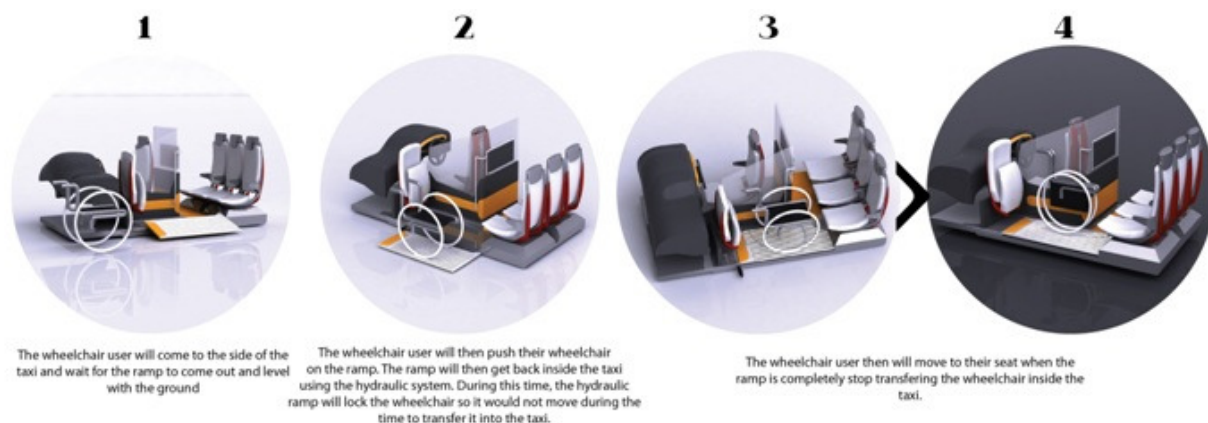


Plate 4: Flow of the process in bringing in the wheelchair based on the selected concept

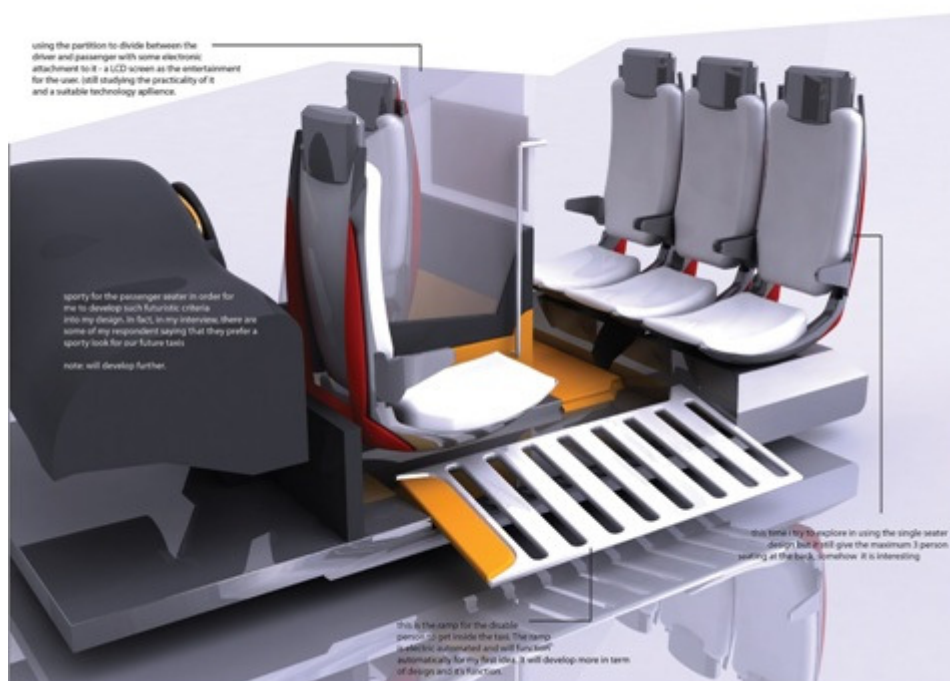


Plate 5: Review of the ‘Sets of Standard’ interior taxi layout proposals.

The outcome from the research is also based on the criteria stated by the authorities and the prime minister whereby we need to have a comfort, safe, and accessible for the wheelchair user taxis. As been stated before, this research is filling the gap of finding the suitable image for the taxi in Malaysia, specifically in Kuala Lumpur and Klang Valley. That gap is the issue of comfort, safety and accessibility issues for the wheelchair user. The exterior design of the taxi can be built after all of this issue had been solved.

There are currently 2.8 million disabled people here in Malaysia, 313’685 are registered⁹. The demographic trends indicate that this number will increase in the coming years. Taxis are an ideal form of local transport for many people, not just the disable and older people, because they provide a door to door, on demand service. However, the design of vehicles most commonly used as taxis in Malaysia is difficult or impossible for many disable people to use, because they convert the existing manufactured car into taxis and it applies to all big cities in Malaysia. Right now, numbers of countries have moving forward in introducing legislation to ensure that local public transport is accessible to disable people¹⁰, and Malaysia should look into it. We must know that taxis are not generally recognized as local public transportation but nonetheless for an integral part of the mobility chain.

References

- [1] TV3. (2011, October Saturday). Headline.
- [2] Utusan Malaysia. (2009, January 22nd). Proton diminta keluarkan teksi ala Malaysia. Kuala Lumpur, Malaysia.
- [3] jaimon, N.B. (2011, October Tuesday). Current image of taxi in Malaysia. (A. Fahmi, Interviewer)
- [4] Register, T.T. (2010). *The Taxi Register*. Retrieved 2010, from <http://www.taxiregister.com/history.php>
- [5] Utusan Online, Perhimpunan Agong Umno. (2008, June 26th). Laksanakan Kehendak Rakyat. Kuala Lumpur.
- [6] The History of the London Black Taxi Trade. (2010). *h2g2*. Retrieved from The History of the London Black Taxi Trade: <http://h2g2.com/dna/h2g2/A744888>
- [7] John Koldowski, Pacific Asia Travel Association. (2009). Tourist Impression towards Public Transportation Services.
- [8] Li, Y., Miller, M., & Cassidy, M. (2009). Improving Mobility through Enhanced Transit Services : Transit Taxi Service for Areas with Low Passenger Demand Density UCB-ITS-PRR-2009-18, (February).
- [9] LPKP. (2008). *Kepenggunaan Pengangkutan Awam sekitar Lembah Klang*. Klang Valley.
- [10] Márquez, M.A., Garcia, J. M., Nacional, U., & Unet, T. (n.d.). ERGONOMICS OF URBAN PUBLIC PASSANGERS TRANSPORTATION.
- [11] Ergonomic requirements for accessible taxis. (n.d.).