ISSN 2278-3091
Volume 9, No.1.1, 2020
International Journal of Advanced Trends in Computer Science and Engineering
Available Online at http://www.warse.org/IJATCSE/static/pdf/file/ijatcse4391.12020.pdf
https://doi.org/10.30534/ijatcse/2020/4391.12020

Case Study: The Concept of Subsidising Public Transportation

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ABSTRACT

In these modern days, public transportation can be seen as an alternative way to move people from one place to another. There are multiple types of public transportation that have been used extensively in many countries around the world. However Malaysia is not one of those countries. One of the reasons public transportation is not being implemented extensively in Malaysia when compared to other developed countries such as Japan and the United Kingdom is the high operation costs faced by service providers which ultimately reduce usage among the population due to expensive fares. This case study will review past journals and textbooks related to public transportation and the concept of subsidies to explore feasibility of subsidising public transportation as a way to promote further development of the system in Malaysia.

Key words: Public Transportation, Local Authorities, Subsidies.

1. INTRODUCTION

Transportation is a mean to move either goods or people from one place to another. The faster goods or people can move to its destination, the more benefits can be seen throughout various aspects. The transportation sector plays a major role in different industries of a country [1]. A huge demand on transportation is created especially in cities and areas where there is a high population converging in one place. For example, employees need to go from their home to their work and goods need to be delivered supplement the commercials and industrial needs.

There are several modes of main transportations such as cars, trains, buses and others. These modes can be divided into two categories which are private used transportation or public used transportation. Private transportation is mainly cars, and are used to accommodate a small number of passengers, while public transportation is able to move higher numbers compared to private transportation. Although private transportation may provide better quality of driving experience and comforts, not everyone is able to afford buying a private car. Therefore, to cater to the demand of the population, public transportation will be the best option to sustain the smooth transportation network in cities.

2. RELATED ISSUES TO PUBLIC TRANSPORTATION

The increasing number of transportation used in cities will create various kinds of problems. One of the problems is CO2 emissions from the transportation sector increase proportionately based on the number of vehicles. The greenhouse emissions will affect the environment in various ways. Public transportation provides alternative methods for passengers to arrive at their destination rather than using their own private vehicles. Unfortunately, private vehicles usage remains popular among users.

Other than that, the rate of risks also increases with the number of vehicles on the road. In Malaysia, it is roughly estimated that the ratio of private vehicle to public transport is roughly about 80:20. The prices of private vehicles are relatively affordable among Malaysian. Plus, it is quite easy for Malaysians to obtain bank loans to buy it. With more and more private vehicle models developed by manufacturers around the world these days, it will take more effort to encourage more people to use public transportation.

The availability of public transport in Malaysia has become a recent issue. Most public transportation operators focus more on areas that has a high number of populations. For example, there are various types of public transportation available in Kuala Lumpur compared to other cities in Malaysia. One of the main causes of this situation is because of the high operation cost compared to the revenue. These operators mainly depend on their own capital thus they are unable to offer their services especially in less populated areas.

3. DISCUSSION

The public transportation environment is based on these factors; geographic, economic and political factors [2]. Geographic and climate factors will affect the number of

population in the area. For example, difficult terrain areas will increase the difficulties to construct roads while flat areas increase the flexibility to build various types and shapes of roads. The second factor is economic factor. For a country, this factor will determine the number of population it can support. A country that has good economic factors can support a higher number of population. With good economy, a country can provide various kinds of services that can increase the quality of life of the population. Other than that, political factors affect the public transport environment as all regulations will be enforced by highest management of either the state government or the federal government. Therefore, politicians have choices to focus on which transportation modes and services that can give benefits to certain shareholders.

3.1 Usage Rate of Public Transportation

Chiou et. al. [3] tested seven significant factors that affect the number of ridership in Taiwan. These seven factors are population number, public transportation route, population income, stations accessibility, traffic accessibility, car ownership and public transportation frequency. From their study, local governments or federal governments can do cost-benefit analysis based on these factors on places in Malaysia so that they can prioritise areas to give subsidy on public transportation.

Batarce et. al. [4] mentioned a few ways to increase the ridership. In their studies, the demand for public transportation will go up by increasing the public transportation frequency, maximum speed and capacity. The scope of their research involved studying the mixed usage between public and private vehicles on the road. By supporting these factors, it can reduce the number of private cars due to limited capacity on the road thus it leads to the reduction of road congestion.

Another study was made to evaluate the user willingness to shift from using private vehicles to public transportation [5]. The authors emphasized two factors in their paper, reduction in travel time and increment of parking cost. On average, private vehicle users are willing to use public transportation if it can reduce at least 45% of their transit time and if the parking cost is not increase to more than RM2. Local authorities can incorporate these facts in town planning especially in big cities. It can reduce road congestion and at the same time ease the movement of users and non users on the road.

Another factor that can affect the number of ridership is the price of petrol. Chao et. al. [6] concluded that the number of ridership will increase when the price is increased and vice versa. Currently, the Malaysian government has stopped the subsidies on petrol and the price changes every month. From this fact, public transportation operators should improve their transit capacity and service quality to accommodate the increase in number of ridership. The fact is not all operators can increase the transit capacity when the petrol price goes up. On the other hand, they may actually reduce the transit capacity to try to cut their operation costs. Therefore, local government can ease the burden of operators by providing subsidies on petrol to support their operations.

3.2 Feasibility of subsidising public transportation

Most public transportation service providers are having pressure with revenue over expenditure. These providers may opt to either increase fares or reduce the quality of their services. In order to solve this problem, there should be joint venture between the service providers and other agencies. In this case study, the other agencies can be referred to a state government or federal government. Mathur and Smith [7] proved that a joint venture between two different organisations will increase the revenue thus lessen the burdens of expenditure cost. They looked into five joint ventures that happened in USA, and the results of annual revenue yields were 1% to 7% return on investment. With the right arrangement and focus, service providers can gain revenue to sustain their business.

Some may argue the usage of taxpayers' money for subsidizing public transportation. Thakuriah et. al. [8] studied the cost and benefits of employment transportation for low-wage workers. In their research, they evaluated the impact of subsidizing public transportation towards three stakeholders; users, non-users and society. They found out that every dollar invested in public transportation will mainly give returns to all stakeholders. For public transportation users, they can save their money from buying private transportation and their job opportunity is widened. On the other hand, the non-users can reduce the cost of petrol as the number of private vehicles on the road is reduced. Last but not least, the society will receive benefits of lower pollution, lower accident risks and others.

3.3 Passengers' acceptance towards the increment of fares

As service providers face challenges to maintain their revenue, it is common for them to increase the fares. According to Joewono et. al. [9], they found that fare increments should be associated with three factors such as service importance, negative experience and dissatisfaction towards the public transportations services attributes. The services attributes mentioned in their research were on time performance, vehicle cleanliness, bus station cleanliness, vehicle safety and security, inconsistent fare and driving skills. In brief, if the operators improved their services attributes, customers will agree with the increase of fares thus increasing their revenue.

3.4 Benefits of Public Transportation towards Social Capital

Utsunomiya [10] made a study of the relationship between social capital and public transportation. He defined social capital as social networks and trust in neighbourhood. In his research, he looked on the effects caused by public transportation towards social capital. Utsunomiya [10] admitted that service providers located in low population areas will have difficulties to maintain their operation as they do not get enough revenue. However, since the earthquake off the Pacific Coast of Tohoku, Japan in 2011, society realised that the public transportation is one of the medium that 'connects' them. Based on his findings, the public transportation has a significant effect on changing the activities of the passengers such as going shopping more often, participating in more outdoor activities, driving less and others. By using his research, we can conclude that public transportation can give positive effects towards society.

Previous studies have been done to evaluate the co-benefits of public transportation [11]. Through subsidizing, the number of public transportation services can be increased. Rather than looking at the obvious benefits, Kwan & Hashim [12] gathered various studies about public transportation and focused on its co-benefits on health aspect. Based on their studies, they found 9 out of 153 articles about public transportation that mentioned about health benefits. With the increasing number of public transportation services, CO2 emissions and air pollution can be reduced. Thus, the population that lives especially in big cities can increase their health level. In addition to that, the number of private vehicles on the road can be reduced down and this will potentially reduce the number of traffic injuries.

4. CONCLUSION

While the situation in Malaysia indirectly encourages the population to use private vehicles, there is still a chance to overturn it. There are various factors that lead to such situation such as high operating cost for public transport operators, affordable private vehicles, service quality offered and accessibility of public transport, population acceptance and others. Though the ratio of private vehicles to public transportation seems unfair, there is still enough time to improve the sustainability on the road before it reaches saturation.

Education and encouragement to the people must be done since their early age. If the population accepts the idea of using public transportation, they will have more choices to move from one place to another. Having more choices is better than just depending on private vehicles. This can be seen more prominently in developed countries such as Japan. To conclude, the public transportation services should be well supported by local authorities either local or federal government. Certain parties may argue why taxpayers' money should be used for this purpose, but there are many benefits that can be gained in the long term. By reducing the burden of service operators, they can improve their service by providing frequent and higher capacity of transportation. If this trend continues, there is possibility of changing the norm of prioritising private vehicles to reach destinations to emphasizing the usage of public transportation for future sustainability in the transportation sector.

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