

Paradox between Public Transport and Private Car as a Modal Choice in Policy Formulation

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Abstract

This paper presents the stance towards modal choice behavior between public transport and private car. To find out the probable solutions, this paper investigated the latent attitudes of the trip makers concerning modal choice between private car and public transport and the advantages and disadvantages of these two modes as a choice. It was also discussed in this paper that the public transport usage can be increased if the service of public transport is designed in a way that accommodates the level of services required by the customers. Even though, several factors, such as individual characteristics and lifestyle, the type of journey, length of trip, the apparent service performance etc. of each transport mode play the significant role for the modal choice in the transport sector. It was also focused in this paper that the influence of car usage should be targeted to reduce car usage.

Introduction

In the last decades the levels of mobility have increased substantially all over the world. Due to the growing mobility, car use has been increasing and ultimately, it has been a matter of great concern regarding its implications in terms of congestion and pollution. This is the time to consider the current and changing nature of society and lifestyle patterns which generate diversified travel needs in decision-making concerning transport. Most people are now highly dependent on car travel (Anable, 2005:65). There are some other motives beyond the instrumental functions such as feelings of sensation, power, freedom, status and superiority which play important roles for making trips by car (Steg, 2005:147). Moreover, the perceived benefits of cars depend on the lifestyle and social-special relations engaged in by the users (Hiscock et al., 2002:119). Some evidence has suggested that some people drive not only out of necessity but also by choice (Handy et al., 2005:183). However, it is necessary to develop policies that can reduce private transport dependency. Such policies might involve an improvement in the public transport service and promoting a shift to slower modes such as cycling or walking to discourage dependency on cars.

Yet the time has not come that the public transport system would be able to provide a quality level of service to attract a large number of car users to switch to public transport (Hensher, 1998:193). Policies which aim at increasing public transport usage should uphold its image, but simultaneously, the public transport system needs to become more competitive and attractive. It requires an improvement in service quality, which can be achieved by a clear understanding of travel behavior and passengers' needs and expectations. Thus, it becomes necessary to evaluate the level of service (LOS) to identify the probable strengths and weaknesses of public transport systems. This will provide an indication for public transport management so that it can be enhanced to satisfy the passengers and increase the market share as a whole. However, developing appropriate and valid measures of the service quality of a transport system is a complex task, since it deals with human behavior and attitude. Hence, it is important to measure what types of quality of services are expected by the passengers/consumers. If it can be known, then the LOS can be improved accordingly.

In essence, public transport and private car are the most important and remarkable transport modes to travel within the city. The private car has some advantages over public bus transport, whereas the public bus also has some advantages. At present, several car manufacturing companies are

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producing very attractive cars for the people. On the other hand, government sectors are taking initiatives to encourage the people to use public buses. Thus, it is controversial which transport mode should be promoted and encouraged through policy formulation.

Contemporary Debate on Public Transport and Private Car Usage

Nowadays, many factors are related to choosing a particular mode of transportation. As pointed out above, it is vital to understand the travel behavior and the reasons for choosing one mode of transport over another. However, travel behavior is complex and multidimensional. People consider the characteristics, advantages, disadvantages and costs of the different modes to make a trip. Moreover, the choice of one specific transport mode can vary over time, according to the type of journey and the nature of the destination. To meet the travel demand, many people use both public transport and personalized vehicles.

There is a relation between car use and both emission and congestion. Because of this, public transport uses should be increased to trim down the emission and traffic congestion. So, in order to reduce car use it is necessary to realize the underlying patterns of travel behavior of the people. In general, there is no doubt that the car is the most attractive transport mode for travel. Convenience, speed, comfort and individual freedom are well-known arguments in favor of car use (Anable, 2005:65; Hagman, 2003:1; Jensen, 1999:19). This means that public transport needs to adjust the service to the attributes required by consumers in order to become more attractive and influence a modal shift. Service quality, i.e. what the consumers' desire, is an important determinant for travel demand by the travelers.

Yet the measurement of service quality remains a field of important research area with practical implications for service providers (Hensher et al., 2003:499). Both the operators and concerned authorities of public transport need to understand how consumers evaluate the quality of the service so that they can upgrade their services to satisfy consumers' need. It is also not a simple task to develop a valid and accurate constructs of service quality. In fact, sometimes the components of service quality are abstract and intangible in nature, such as safety and comfort, which are not possible to measure easily.

From the service providers' point of view, it is essential to pay sincere attention to identifying the important attributes of LOS that are devised by existing and latent users. For instance, reliability (being on time) can be mentioned as an important decisive factor of LOS. If the bus does not arrive on time then uncertainty is occurred among the passengers, which discourages the people from using public transport. Similarly, attributes like frequency and comfort are also highly valued by consumers, being key elements of consumer satisfaction (Hensher et al., 2003:499). Other attributes found as having a major negative impact on consumer satisfaction are travel time and fare level (Hensher et al., 2003:499). Some aspects related to vehicle conditions (for example, cleanliness) are also significant to users. So these attributes should be brought into serious attention to promote public transport.

Based on previous research, it can be assumed that the level of service of the transport system influences travel behavior. This travel behavior sometimes is influenced by psychological factors such as perceptions, attitudes, and habits. So changing the psychological factors may also change the travel mode choice, even if the level of service remains the same. Hagman (2003:1) studied car users and explored how they perceived the advantages and disadvantages of personalized vehicles. The advantages and disadvantages were presented differently. He pointed out freedom, flexibility and saving time as advantages of car uses and at the same time he identified cost as a disadvantage of car uses. However, environmental pollution is also another very important factor to promote public transport. The main goal of this paper is a comparative evaluation between public transport and car use as private transport aiming to determine a way out for transport policy formulation.

Comparative Advantages and Disadvantages of Public Transport and Private Car

A study by Beirao and Cabral (2007:478) found some advantages and disadvantages of the uses of public transport and private cars. These advantages and disadvantages are presented in Table 1.

Table 1: Advantages and disadvantages of public transport and private car

Advantages	Disadvantages
<i>Public transport</i>	
Cost	Waste of time
Less stress	Too crowded
No need to drive	Lack of comfort
Be able to relax	Time uncertainty
Be able to rest or read	Lack of control
Travel time on bus lanes	Unreliability
Less pollution	Long waiting times
Talk to other persons on the vehicle	Need of transfers
	Traffic
	Lack of flexibility
	Long walking time
<i>Private car</i>	
Freedom/ independence	Cost
Ability to go where I want	Difficulty of parking
Convenience	Cost of parking
Rapidity	Stress of driving
Comfort	Traffic
Flexibility	Waste of time in rush-hour traffic
Know what I can expect	Pollution
Safety	Accidents
Having my own private space	Isolation
Listen to music	

Source: Beirao and Cabral, 2007: 478

From Table 1, it can be seen that it is a complex task to make it generalized for the improvement of the level of service in transport sector. It can be realized that although public transport has some advantages, at the same time it deals with some disadvantages also. Simultaneously, from point of view of private car, the opinion is the same. But it should be noted that the number of car usage advantages is higher than public transport usage advantages. On the other hand, car usage disadvantages are fewer than for public transport usage. It is a dilemma that world-wide transport policies encourage the use of public transport to reduce the environmental emission even though the advantages of public transport are less than for car usage. Again, people like to enjoy the car usage advantages. However, it is a two-sided urge. It means people should use public transport to minimize the vehicular pollution, and on the contrary, people like to use private car to enjoy a higher comfort in travel than public transport.

Table 2: Motivations and barriers to public transport use

Motivations	Barriers
Better service	Not having alternative to car
Be certain that the timetables are performed	Lack of direct transport
Direct transport from home to work	Lack of availability of buses
More information available and easy to understand	Long travel time
Save money	Buses' unreliability
Not having a parking space	Do not know what to expect
More comfort and air-conditioning on vehicles	Need for multiple journeys
Contribute to a better environment	Poor information
	Not frequent enough
	Bus stop too far
	Buses are smelly and crowded
	Feeling of personal insecurity
	Having to use more than one transport
	Bad waiting conditions
	Negative feeling towards public transport
	Habit of driving

Source: Beirao and Cabral, 2007:478

There are some significant barriers (Table 2) which discourage people from using public transport. These barriers convey the message that the quality of services needs to be improved and the barriers according to the peoples' needs has to be removed to attract the use of public transport. However, perhaps some other factors can influence the choice of mode, for example the type of journey. Most of the people prefer to use the least possible time for travel. So travel time is a decisive factor for choosing a transport mode for making trips. At the same time, if one has more time for a particular trip, like leisure trips, then travel time may not influence the choice of a particular transport mode.

As shown in Table 2, people have motivations to use public bus, and at the same time, they have some barriers that discourage its use. Some obstacles are treated as positive cause, for example, to take children to school, the people prefer to use car rather than public bus because of safety from crowd. This shows that although those individuals make the same travel choices, their attitudes, motivations and future intentions are significantly different (Beirao and Cabral, 2007:478). It represents some insight into influential factors those are active to decide whether to use public transport or car.

Possible Solutions

Bus as a Mode of Travel

From the above discussion, it can be concluded that people generally like cars better than buses because of a lack of quality of service by buses. So to compete with the car, the bus service must provide the quality of service expected by the consumers/passengers. Most of the people like to drive so it is necessary to identify the underlying causes for why they like to drive. Thus, it may be possible to find a way to make them switch over to public transport.

From the earlier discussion, it has been noticed that travel time and reliability are the key determinants of transport mode decisions, though the importance of travel time is dependent on the type of trip. On the other hand, it is true that whether trips are related to work or school time, is an important factor. Sometimes, the people do not like change though they have time to spend for change. People desire a comfortable and relaxed journey with having a seat on the vehicle, a nice atmosphere free from objectionable smells, an uncrowded space and a smooth journey. It is understandable that the travel by bus is cheaper than travel by car. Nevertheless, the people desire cars more than buses. This indicates that travel cost is less important as compared to the quality of

service. This implies that cost is perhaps less important than most surveys suggest (Guiver, 2007:233).

Information availability about the bus services is important. It is common that the passengers have not been informed if the bus routes are changed. In addition, when people talk about bus travel, they tend to focus on the worst performances, which may be more influential than average performances (Guiver, 2007:233). This has important implications for bus companies that they should consider how they are evaluated by the passengers so that they can modify themselves by improving the level of service. Providing greater access to service information and more interactive services (e.g., timetable information) may be ways to increase individuals' perceptions of control over public transport (Gardner and Abraham, 2007:187).

Light Rail as a Mode of Travel

It has been noticed that car users have positive attitude towards light rail (Beirao and Cabral, 2007:478). As reasons, the service is better than the bus and the light rail provides not only reliability and comfort but also transport status and a good atmosphere inside the vehicle. But lower income people do not have such an enthusiastic attitude towards light rail because of its higher cost as compared to the bus.

Travel by Bus and Car: Ideas about the Service

Generally, regular bus users have more positive attitudes about bus service than non-users and assume fewer barriers to using buses (Beale and Bonsall, 2007:271). In fact, the regular bus users have more optimistic feelings towards bus service than those who do not use buses. The people who never use buses or used them many years ago, have a very pessimistic image about the bus service. This may have happened due to lack of real knowledge or information regarding available bus service. Therefore, it is apparently necessary to change negative attitudes towards the bus, and at the same time the bus operators should take necessary actions to overcome the barriers for using the bus.

One concern is that for a car driver it is easy to take an alternative route to improve the travel time as compared to travel by bus; such flexibility is not possible by bus as public transport is operated through a specific route or lane. So there is no option to change its route if necessary, whereas a car driver can do it whenever he/she likes. Moreover, trip makers tend to have a questionable view of the public transport in terms of unreliability and wastage of time during the trip. This implies that public transport policies should incorporate the improvement of public transport reliability and travel time as a more positive realization (Gardner and Abraham, 2007:187).

Cost of fuel and parking can be the prominent influential factors to reduce car use. Parking is very important for those who drive a car as they need to park it close to their work place. Sometimes, it is difficult to park the cars close to the work place, and, at the same time, parking is also costly in the city center. So it is a hidden factor that they try to find a space to park which is not designated as a legal parking zone. This indicates that tightening parking controls could be a way to influence drivers to switch to public transport (Hine and Scott, 2000:217).

Enthusiasm for Car Use

Though a car has privacy and comfort, it is not good for social interaction, whereas it is possible during a journey by bus. Sometimes, car passengers feel anxious because they find driving is a very stressful job. On the other hand, some car drivers are very much attached to their car emotionally. Some of the car drivers are very sensitively attached to and dependent on their car and express their strong negative attitude towards public transport.

It has also been noted that some people drive their cars without any specific destination as they love driving. Perhaps because of this cause, most of the attempts to reduce car use have failed and it might explain the resistance to policies aimed at reducing car use (Steg, 2005:147). It appears that the amount of travel is closely influenced by drivers' attitudes and behavior towards travel. This implies that policy-makers should understand the role of subjective characteristics and consider not only the instrumental motives, but also the many symbolic and affective values of various modes of transport (Steg, 2005:147).

Reduction of car use should not be expected simply by requesting individuals to do it voluntarily (Tertoolen et al., 1998:171). Instead, it can be assumed that in order to reduce car dependence it is necessary to promote several measures, such as modifying the opportunities for travel by improving the availability of alternative modes and modifying the lifestyle patterns that generate obligations to travel by bus.

Environmental Importance

There is a significant consideration regarding environmental concerns, whether for travel by bus or travel by car. The pollution per capita produced by a bus is less than produced by a car. It is amply clear that among various modes of road based passenger transport, bus occupies less road space and causes less pollution per passenger-km than personalized modes. Therefore, a transport policy should specially emphasize and promote bus transport systems.

This is consistent with studies which suggest that although information about the negative environmental effects of car use raises some awareness, it is usually insufficient to change behavior (Anable, 2005:65; Hagman, 2003:1; Tertoolen et al., 1998:171). However, there is some evidence that the inclusion of environmental concern measures provides additional beliefs that can be targeted in order to change behavior (Anable, 2005:65). Advertising campaigns with the intent of increasing public transport usage should focus on the environmental benefits of using public transport by tailoring public transport as an environmental symbol, thus countering the car as a status symbol (Golob and Hensher, 1998:1).

Views for Policy Formulation

Evidence suggests that policies should be designed towards specific target groups (Anable, 2005:65; Jensen, 1999:19; Steg, 2005:147). Marketing campaigns should target individuals that are most motivated to experience public transport when they need it (Thogersen, 2006:621). Policies should target those people who are motivated to change and willing to minimize their car travel. In contrast, the car users who are emotionally attached to their cars will not shift their behavior. These negative beliefs of individuals with no desire to use a bus are very difficult to shift to favoring any other transport mode (Beale and Bonsall, 2007:271).

Recent studies have revealed that experience of public transport can reduce drivers' negative perceptions (Thogersen, 2006:621). Some incentives among car passengers should be offered to have experiences with the public bus. Fujii and Kitamura (2003:81) studied the influence of offering a one-month free bus ticket on car passengers' attitudes towards buses and it seemed to have had the potential to change habits, attitudes, and travel mode choice. Another study (Taniguchi and Fujii, 2007:37) found that the increase in bus use continued after the period of free bus tickets was over. These findings imply that a marketing technique such as offering free bus tickets may be able to promote persistent bus use. Therefore, in order to reduce car dependence, a clear understanding of the nature, extent and causes is needed.

Conclusion

This paper has tried to highlight some key aspects influencing modal choice between public transport and car usage. For public bus use, there are some specific and well-known barriers. To promote public transport use, it is necessary to resolve these barriers and it will help to develop a model concerning the modal choice process.

The main outcome of this paper indicates that in order to increase the public transport use the quality of level of service (LOS) has to be improved according to consumers' desire. It is not expected that all car users, in general, will switch from driving a car to public transport completely by improving the public transport system (Jensen, 1999:19). However, there are some negative impressions about public transport, such as unreliability, low frequency and lack of comfort; thus the people are attracted to private car usage rather than public transport usage. But if it might be possible to introduce public transport as reliable, high frequency and comfortable, then it can be assumed that a significant percentage of car users would switch to public transport.

Lastly, accurate information about the public transport needs to be available so that the people can avail themselves of the chance to use public transport. Sometimes, people use cars because they do

not have the true information about bus travel. This implies that providing detailed information not only among the public transport users but also among the car users can increase the public transport usage. In fact, the car users have negative perceptions of public transport. So public transport operators have to take the initiative to give car users experience with public transport and eventually, it may lead to an increase in the public bus users. At the same time, the barriers of public transport users should be minimized so that the people can be more attracted to the use of public transport.

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