Urban transport
Sustainability in cities: greater responsibility and efficiency

Elisabetta Venezia
Researcher in Transport Economics
University of Bari “Aldo Moro”
Department of Economics and Mathematics
Via Camillo Rosalba, 53
70124 - Bari - Italy
Phone: +39 080 5049323
Mobile: +39 347 2262784
Fax: +39 080 5049149
e-mail: e.venezia@dse.uniba.it

Introduction

Clear changes in terms of urban transport policies could help the city to be more sustainable. The key solution is to take on a greater responsibility by:

✓ a drastic introduction of a tool set which modifies travel behaviour and modal choice
✓ the development of sustainable transport systems through a revolutionary change in the transport services supply.

To do so, it is important to understand needs and desires of people who have different motivations affected by different factors. Besides, it is meaningful to have a knowledge not only of frequent users of public transport services, but also have a clear profile of those who are non-users. This can help authorities and operators to remove obstacles to the access of public transport supply, which does not necessarily mean the removal of physical barriers, but rather of psychological ones. There is a general idea among non-users that public services are badly organised and not adequate to their needs. In fact, it may be that public transport is better than what they think, but simply they don’t know anything about it or they have a distorted idea of it. Therefore, as suggested by Beirão and Sarsfield, one simple strategy on which service providers can work is to improve public transport image and provide more information about the transport supply to those who have a higher switching potential.

Policy makers should make public transport facilities more attractive by increasing their potential and by targeting the different needs of various population group. The result will be private and social benefits, with a tangible impact on the urban environment in terms of sustainability¹.

Literature on the topic

Literature has made clear that among the most important factors affecting mode choice for short-distance trips, or trips conducted within daily urban system, are travellers’ socio-economic characteristics², which vary across trip purposes.

Aspects affecting attitudes are usually classified as: behavioral, affective and cognitive³. Considering these aspects in the analysis can surely increase the predictive ability of a model by a clearer specification of the relationship between attitudes and behavior. This relation, improved by some social elements, gave way to the theory of planned behavior elaborated by Ajzen in 1991 and has been subsequently applied to transport research especially with regard to environmental problems⁴. These studies drew the conclusion that the

¹ The concept of sustainability as well as its measures are explained in depth and also “refreshed” in the report by the Commission on the Measurement of Economic Performance and Social Progress (2009) composed by Joseph E. Stiglitz, Amartya Sen, and Jean-Paul Fitoussi.
choice of transport modes is largely a reasoned decision related particularly to attitudes. Other authors, on the other side, suggest to include independent measures of habit to further improve the predictive capability of attitude-behavior studies. In addition, the intention to behave in an environmentally responsible way (as for example acceptance of traffic restriction) to a considerable degree may depend on attitudes related to the environment, the car and to the hazards of traffic. In accordance with Nilsson and Küller, during the last years there has been a considerable increase in the application of psychological theories in the study of choice of transport means. Nevertheless (and unfortunately), car users will never autonomously decide to switch to public facilities only to protect the environment or to behave in a sustainable way. At least in the beginning, people should be addressed to adopt such a behaviour and, for this reason, the urban context in which people live/work and within moves is crucial. If there are a few, rigid and simple rules which make compliance easier, people behave in a rational way. What I am talking about is the assumption of a sustainable city policy. In accordance with Camagni et all., it is important that a multi-faceted strategy is considered, in which socio-economic interests are brought in harmony with environmental and cultural interests. In accordance with these authors, the short-term horizon interprets policy goals as the selection of the production factor combinations, transport modes and behavioural patterns oriented towards a more careful control on urban environment. Therefore, in the short term, the aim of urban sustainability policies requires a change in mobility patterns and modal choice. A different modal split in favour of public services can be achieved by using regulatory tools (such as traffic restrictions in congested area) or through economic tools (such as road and parking pricing).

In the long term, mobility patterns can change only if there is a change in urban locations and in land use patterns. An effort is required to include these aspects in regional and urban development planning. The planning should aim at maximizing the urban transport system efficiency for the environmental and city resource constrains. In line with Qureshi and Huapu, specific literature on sustainable transport shows a growing interest in developing a sustainable transportation system, as well as policy-oriented studies to address transportation related negative externalities such as air and noise pollution, accidents, congestion and social exclusion, and to meet current and future mobility and accessibility needs without creating excessive negative externalities. Current literature also converges on the fact that sustainable transportation systems require a dynamic balance between all the components of sustainable development, that is environmental protection, social equity and economic efficiency for current and future generations.

Besides, it should be considered that the relationship between the transport sector and sustainability cannot be summarised by a positive link, due to the fact that the presence of positive effects on the quality of daily life economic efficiency is strongly affected in negative terms. Generally, the efficiency problem is linked to Pareto-efficiency with the Kaldor-Hicks criterion; nevertheless, this approach hides distributional differences among population and, in addition, normally no compensation is recorded. As implied by the definition of externality, people who cause environmental effects are usually not those most affected. Normally, high-income households own more cars and make more and longer trips and so use more energy and generate more greenhouse gas emissions than low-income households. They also tend to live in quite suburbs with clean air, whereas low-income households frequently live along noisy and polluted thoroughfares, yet without compensation from suburban commuters who use these highways. The current situation is still characterised by a high presence of transport externalities and transport policy, presently, are simply enlarging the gap among income groups and, thus, cause an unfair distribution of life quality.

To conclude this part, I can say that this short review of literature shows that dealing with people behaviour with regard to transport modal choice and sustainable transport is not an easy task. People need to be appropriately addressed, because changes in attitudes and habits need the presence of compulsory and clear strategies and policies.

**Suggested strategies**

To increase public transport usage, service should be designed in order to consider the levels of services required by users and to accommodate the requests of potential users. But, what we need is a policy which avoids discriminations and social exclusion, particularly with regards to the young and the elderly. Therefore, a balance between modes and means of transport is necessary, so that those who give up the use of private car have available alternatives of good quality, without any discrimination.

The declared intention to switch from private means of transport to public ones signals that, by simply improving the image and the level of services, the gap among different modes in favor of public ones can be modified.

With regards to public transport facilities, both operators and authorities need to understand how users and potential users evaluate the qualitative aspects of services. Consumers evaluation of these intangible elements is an abstract and elusive concept to measure, which complicates the development of valid and accurate constructs of service quality. Furthermore, it is important to understand the relevant attributes which affect users’ satisfaction. In accordance with Beirão et al., reliability, comfort and frequency are decisive factors. Nonetheless, also clear and simple information, as well as vehicle conditions, are meaningful to users.

More generally, Recker and Golob in their paper found that attitudinal data may be better predictors of modal choice than the traditional objective measures, such as travel time and cost. With regards to this approach, Recker and Stevens considered some attributes of relevance for shopping activities. Some of this attributes are still valid although some elements have a different weight in the modal choice of bus service, in comparison with alternative modes.

It could be argued that many public transport improvement policies have been too piecemeal: this means that introducing a park and ride scheme on itself is too small a measure to have any effect on mode choice. It may be that public transport provision as a whole needs to reach a threshold level, above which not having or using a car may become more viable. If public transport is comprehensive, frequent, integrated and cheap enough, then maybe this will encourage people to use it. In addition, the use of cordon pricing, congestion pricing, high parking fees help to mitigate traffic congestion and pollution, enhance quality of life, restrict the over use of cars and have positive effects on the use of public transit.

Policy makers and transport operators should consider at least the profiles of two demand components (systematic and erratic) to intervene in the urban system to achieve some positive results in terms of sustainability. The possibility of using buses is greatly affected by the age structure of respondents, by the reason why people use buses instead of private means and by the occupational profile. Considering these elements may fill the gap existing between the demand and supply of bus services in an urban context, and consequently may shift car users to buses. Therefore, in accordance with White, it is advisable to have:

- greater affordable and stable services
- comprehensive information for users.

**References**


Recker, W.-Stevens, R. (1976), “Attitudinal models of modal choice; the multinomial case for selected non work trips”, Transportation, no. 3.