

11TH CONFERENCE ON COMPETITION AND OWNERSHIP IN LAND PASSENGER TRANSPORT

Delft University of Technology (The Netherlands)
20-25 September 2009

PUBLIC TRANSPORT FOR SHOPPING: AN ANALYSIS ON THE INTERACTION BETWEEN INTRINSIC AND DERIVED DEMAND

Yoshinori Takahashi

*Associate Professor, School of Business Administration, Kinki University
takahashi@bus.kindai.ac.jp*

ABSTRACT

In general, transport demand is derived from the intrinsic demand, that is, the purpose of the trip. For example, in Japanese rural areas, the main purposes of the use of public transport by elderly people are going to hospital and shopping. Thus, in order to analyse transport demand and promote the use of public transport, we should analyse its intrinsic demand and investigate why and to where people take trains or buses. In this paper we focus on the transport demand for shopping, because the analysis on shopping behaviour is expected to have implications for downtown revitalisation and social inclusion. First, we analyse the impact of stimulating intrinsic demand on the transport demand, by studying cases of private-sector railway companies in Japanese metropolitan areas. Next, we analyse in reverse, the impact of stimulating transport demand on the intrinsic demand, by studying cases of a “shopping bus” in Japanese small and medium-sized cities.

INTRODUCTION

As the textbooks on transport tell us, transport demand is generally derived from the intrinsic demand, that is, the purpose of the trip. Transport studies are based on this fact. For example, one of the origins of transport studies in Japan is commercial science or *Shogaku*. This discipline was born in the beginning of the 20th century, to educate young students to be professionals at trading companies. Commercial colleges were established in large cities such as Tokyo, Osaka and Kobe, following the *Institut Supérieur de Commerce d'Anvers* in Belgium. (Itani, 1974) The subjects taught in 1920s were marketing, international trade, business logistics, marine insurance, banking and accounting in contemporary terminology. Education in freight transport (by ship and train) and warehousing was already appreciated, because they were expected to support trades by distributing goods physically to customers. (Takahashi, 2009a) Commercial colleges sent their alumni not only to trading companies, but also to the

shipping, insurance and banking industries. Although transport studies in the context of commercial science have been extended to passenger transport and adopted economic methods, the course of transport still belongs to the Department of Commerce in many Japanese universities.

The interaction between intrinsic and derived demand is no less significant in passenger transport. In order to analyse transport demand and promote the use of public transport, we should analyse its intrinsic demand and investigate why and to where people take trains or buses. In Japanese rural areas, Tanabe (2005) suggests that the main destinations of transport by elderly people are the hospital and shops or supermarket. In this paper, we focus on the transport demand for shopping, because the analysis on shopping behaviour is expected to have implications for downtown revitalisation and social inclusion.

The structure of this paper is as follows. First, we analyse the impact of stimulating intrinsic demand on the transport demand, by looking back on the history of private-sector railway companies in Japanese metropolitan areas. They have diversified into retailing since 1920s. Next, we analyse in reverse, the impact of stimulating transport demand on the intrinsic demand, by studying cases of “shopping bus” services in Japanese small and medium-sized cities. In conclusion, we consider the implications for international comparison.

DIVERSIFICATION OF RAILWAY COMPANIES INTO RETAILING

In largest metropolitan areas in Japan, that is Tokyo, Kansai (Kyoto, Osaka and Kobe), Nagoya and Fukuoka, there are 15 major private-sector railway companies in all. One of the reasons why Japanese railway companies have kept commercial is their diversification. All of these major railway companies have diversified into retailing, real estate development and so on, around their railway network. Railway fares and profits are strictly regulated, but the side businesses are not subject to economic regulation. Their diversification strategy, especially into real estate development, is justified by economic modeling. (Kanemoto and Kiyono, 1993, 1995)

A History of Diversification Strategy

Hankyu Electric Railways, operating in Kansai metropolitan area, was the first to be engaged in diversification. The key person was Ichizo Kobayashi (1873-1957), its 3rd president. In 1906, the whole Japanese railway network was nationalized, except for local lines operated within each region. Kobayashi was then dispatched from a bank to one of these local private-sector railway companies. The company was planning to construct a new line from Osaka to its suburb, but he found that there would be little demand along the new line, because the area was not urbanised yet.

This is why he tried to create intrinsic demand to increase transport demand. As figure 1 depicts, he established a department store at the terminal station in the city center, and a theater and amusement park at the other terminal station in the suburb. He also developed residential areas along the line. These diversification strategies were started in 1920s and provided rationale for what we now call Transit-Oriented Development. Other local private-sector railway companies, especially in large metropolitan areas

followed his strategy and diversified into department stores, real estate development and amusement parks before World War II. As more people lived in the suburbs and commuted to the city center, more people used the stations between the termini. Small shops and markets agglomerated in front of these stations and began to form shopping streets or arcades called *Shotengai*.

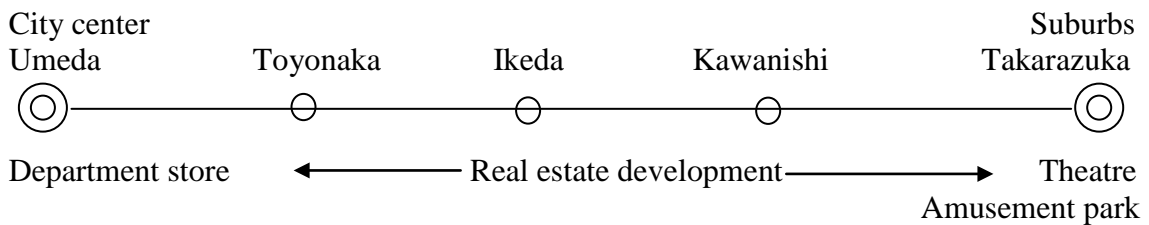


Figure 1: Hankyu's diversification along its Takarazuka Line

After World War II, especially from 1955 to 73, Japan experienced an era of high economic growth and urbanisation. This provided opportunities for private-sector railway companies to develop the suburbs along their lines. During the era, goods distribution and retailing also went through revolutionary changes. One of them is the emergence of supermarkets.

Private-sector railway companies, at that time, also diversified into supermarkets. They each have had supermarkets in front of their stations. These supermarkets are now expected to complement, not to be a rival to, conventional shops along the shopping street. Typically, a daily life near the station was supported by the private-railway company from the cradle to the grave, by housing (real estate), commuting (railway), shopping (supermarket and department store) and having fun (amusement park, theater and professional baseball team) as Figure 2 depicts.

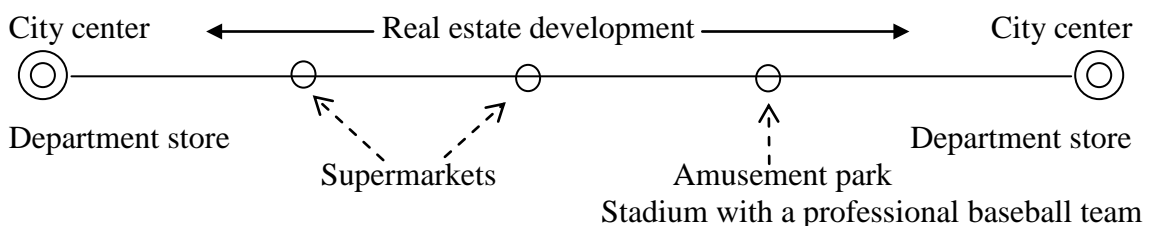


Figure 2: Typical diversification strategy of a major private-sector railway connecting two core cities in a metropolitan area

Privatisation and Diversification

As we referred, Japanese nation-wide railway network was nationalised in the beginning of the 20th century. After World War II, the network was delegated from the

government to Japan National Railways (JNR), a newly founded public corporation. JNR was supposed to follow the self-supporting principle, but suffered from a huge deficit. JNR also operated lines in large metropolitan areas, some of which competed with private-sector railways. (Takahashi, forthcoming) JNR hoped to imitate its rivals' diversification strategy, but was strictly regulated as a public corporation.

In 1987, JNR was divested into seven JR (Japan Railway) companies, that is six regional passenger railway companies and one national freight railway company, by separating operation from the infrastructure. Each subsidiary was corporatised at the same time, and achieved the freedom to diversify.

Now JR companies, especially those operating in large metropolitan areas are in earnest diversifying into retailing. For example, JR Central and West each set up a joint venture with a department store which is not related to private-sector railway companies. Subsidiaries of JR East are developing shops in the station buildings, called Ekinaka. Retailing is now expected to be a main business domain of JR companies.

Toward an International Comparison

This kind of diversification was seen before in European and American cities. For example, in London, the Metropolitan Railway diversified into real estate development before World War II. (Day, 1974, pp.96-97) But, all of the private-sector, urban transport companies were municipalised, because of fierce, cut-throat competition or budget deficit. These public enterprises were not allowed to diversify, or the side businesses were left in the private sector.

The same goes for the urban (city-center) transport in Japan. In general, urban transport services were provided privately, as well as local railway services, but were municipalised in many large cities. The public enterprises are not allowed to diversify. For example, the first underground system in Tokyo was constructed by a private-sector company in 1926 and the company diversified into retailing soon. But during World War II, it was converted into a public corporation, Teito Rapid Transit Authority. It was corporatised in 2003 and is going to be privatised now, so allowed to diversify. But there seems to be little space left around its network to diversify into real estate development. Note that the success of diversification mainly depends on the suburbs to develop.

Thus, although the diversification by Japanese private-sector railway companies has proven successful and gives us a tot of lessons, it also proves very difficult to adopt the same strategy in European, American and Japanese cities now. If we are to achieve similar effects, like promoting transit-oriented development, we need to promote the collaboration among plural partners, such as transport companies, local government, real estate agents, retailers and so on.

BENEFITS AND COSTS OF A "SHOPPING BUS"

The era of high economic growth was also the era of motorisation. As a result, retailers established a lot of shopping malls, attracting people having private cars. There has been a severe competition between shopping malls and downtown shopping streets in small and medium-sized cities in Japan.

Figure 3 shows a typical small and medium-sized city in Japan. The downtown was first developed along an old main route, in the era of pedestrian transport. Then the railway station opened a little, for example about 20minutes' walk, away from the old downtown. Soon another shopping street was formed in front of the station, attracting people coming from nearby towns. *Ekimae Shotengai* (shopping streets in front of the station) was a symbol of the railway era. Then came the motorization era, with real estate development and a bypass route in the suburbs. Shopping malls were developed alongside the new bypass. People are accustomed to driving for shopping. In the downtown, a lot of shops are closed and neglected. Shopping streets might be called "Shutters Streets."

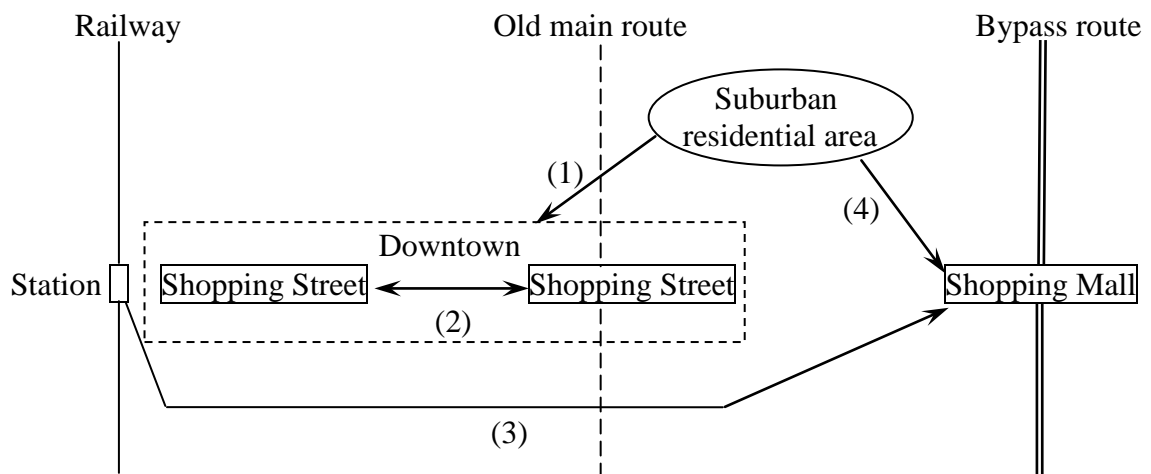


Figure 3: Access to shopping in Japanese small and medium-sized cities

- (1) From suburban residential area to downtown
- (2) Within downtown, between shopping streets
- (3) From railway station to shopping mall along the highway
- (4) From suburban residential area to shopping mall

Source: Takahashi (2009b) p.47

What is responsible for the decline of the downtown? Needless to say, the most serious problem lies in the decline of the intrinsic demand. In other words, there are less and less shops attracting people. And another problem is related to the derived demand. People without private cars or a driver's license, and elderly people who have given up driving, have difficulty in going shopping. Thus a "shopping bus" is expected to take them to the downtown. This aims at stimulating transport demand to increase the intrinsic demand.

Possible Routes for a Shopping Bus

As Figure 3 also depicts, there are four possible routes for a shopping bus. Routes (3) and (4) would be rarely planned by the suburban shopping mall, as it provides a parking area and does not depend on public transport.

Thus Routes (1) and (2) are expected to take people living in the suburbs to the downtown. Route (2) might be also effective at promoting urban tourism, if the downtown has sites which can attract tourists from outside the city.

Who Pays the Cost of the Shopping Bus?

But here the problem of the costs arises. Shopping bus services are often compared to the elevators in a building, helping people walk around inside. The tenants have got to pay for running the elevators. The problem is, who are the “tenants” for the shopping bus?

In Japan, the self-supporting principle has been also applied to bus transport. As the demand for bus transport has declined, however, most bus companies are suffering from deficit and abolishing non-commercial services in small and medium-sized cities. This is why many local governments are now in charge of the strategy and tactics for “community bus” services to complement the network constructed by private-sector bus companies. (Takahashi, 2007) Some community bus services play a role as shopping buses. But more and more municipalities are also suffering from financial deficit, and they are less and less willing to pay subsidies for community buses. And some other municipalities have had little attention to bus transport, as there is no division in charge of public transport policy.

In response to such a situation, in some cities, the association of shops, the Chamber of Commerce for example, is in charge of the strategy and tactics of shopping bus services. To keep the fare low, the association has got to pay most of the cost. The cost is eventually borne by the shops in the downtown, the members of the association. They expect that the shopping bus will be effective at downtown revitalisation (the association’s mutual benefits or the downtown’s public benefits) as well as at increasing their own sales (each shop’s private benefits.) Their interests would be focused on whether the shopping bus can produce these kinds of benefits at the same time and whether the benefits will exceed the cost they pay.

CONCLUDING REMARKS

Thus we have discussed the interaction between intrinsic and derived demand, by decomposing it into the impact of stimulating intrinsic demand on the transport demand, and the impact of stimulating transport demand on the intrinsic demand.

The similarity is that there is a subsidisation from the retailers to the transport. Japanese major private-sector railway companies have kept commercial, because the profits by diversification are poured into the railway services whose profits are regulated. Shopping bus services are supported by the association of shops, and each shop eventually shares the cost of the services. This collaboration between retailing and transport should be analysed in detail.

REFERENCES

- Day, J. R. (1974) *The Story of London's Underground*, London Transport, London.
- Itani, Z. (1974) Institut Supérieur de Commerce d'Anvers and Japan (Berugi Anverusu Shokadaigaku to Nihon) *Waseda Commercial Review (Waseda Shogaku)* No.241. (in Japanese)
- Kanemoto, Y. and K. Kiyono (1993) Investment, Pricing and Regulation and Urban Transportation and Spatial Development, In: H. Kohno and P. Nijkamp (eds.) *Potentials and Bottlenecks of Spatial Economics Development*, Springer-Verlag.
- Kanemoto, Y. and K. Kiyono (1995) Regulation of Commuter Railways and Spatial Development, *Regional Science and Urban Economics*, Vol.25, Issue 4.
- Saito, T. (1993) *Private-Sector Railway Industry (Shitetsu Sangyo)* Koyo Publishing, Kyoto. (in Japanese)
- Shoji, K. (2001) *Urban Public Transport Policy (Toshi Kokyo Kotsu Seisaku)* Chikura Publishing, Tokyo. (in Japanese)
- Mizutani, F. (1994) *Japanese Urban Railways*, Avebury, Aldershot.
- Takahashi, Y. (2007) Provision of Local Bus Services in Japan, Paper presented at the 10th Conference on Competition and Ownership in Land Passenger Transport, Hamilton Island, Australia.
- Takahashi, Y. (2009a) Genealogy of Logistics Research in the Context of Commercial Science (Shogaku ni okeru Butsuryu Kenkyu no Keifu) *Journal of Japan Logistics Society (Nihon Butsuryu Gakkaishi)*, No.17. (in Japanese)
- Takahashi, Y. (2009b) Support for Downtown Revitalisation by Transport Policy (Kotsu Shisaku ni yoru Shogyo Machizukuri no Shien) M. Mitani *et al* (eds.) *City and the Retailing Industry (Toshi to Shogyo)* Ch.3. Zeimukeiri Kyokai Publishing (in Japanese)
- Takahashi, Y. (forthcoming) Competition within the Railway Market within Kansai Metropolitan Area (Kinkiken Tetsudo Shijo ni okeru Kyoso no Tokushitsu) *Ikoma Journal of Economics (Ikoma Keizai Ronso)* Vol.7, No.1. (in Japanese)
- Tanabe, K. (2005) National Minimum Standard for the Public Transport in Rural Areas (Kasochiiki ni okeru Kokyokotsu no Nashonaruminimamu) *Kotsugaku Kenkyu 2004 (Annual Report on Transportation Economics 2004)* (in Japanese)