Why are you commuting such a long distance? A case of bullet train commuters in Tokyo

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Abstract

Generally, travel is considered a demand, derived from the desire to engage in activities at destinations. Therefore, travel time is also considered a wasteful or an unproductive time and shorter travel time is more preferred for our daily lives. However, people are engaging in a variety of "activities" while "travelling." Moreover, the rapid spread of information and communications technologies (ICTs) such as mobile phones and the Internet, and miniaturized electronic devices such as laptop computers and portable music players, have provided people with much activity opportunity while travelling. ICTs appear to weaken the bonds between human activities and the physical spaces specifically equipped to facilitate their conduct and "uncoupling of activities, places and times" has been occurring (Dijst et al. 2008). If people can engage in activities comfortably while travelling, travel disutility will be reduced and it will operate to reduce the value of travel time savings (Lyons and Urry 2005). With respect to valuation of travel time savings, some thirty years ago Hensher (1977) proposed that the productivity of work done while travelling relative to at the workplace should be considered.

Recently, some researchers argue the positive utility of travelling itself (Mokhtarian & Salomon 2001; Redmond & Mokhtarian, 2001). A study in Great Britain also showed that for over three quarters of rail passengers their use of time while travelling is not entirely wasted (Lyons et al. 2007). Providing a better environment on public transport, so that passengers can have many alternatives of activity engagement, could contribute to a modal shift from the private car to public transport and some types of activities are conducted best in a train than in other places (Lyons & Urry 2005). It can be hypothesized that the enjoyment of travelling (Ory & Mokhtarian 2005) increases when people can engage in multitasking while travelling, which might lead to larger travel distances (Dijst 2004).

Surprisingly, for example in Japan, there are people who live more than 100km from the workplace and commute by "Shinkansen" (a bullet train). They can have a seat (almost every time) and engage in some activities in the train. They might have made decisions comparing two alternatives: living not so far from the workplace, paying expensive housing loan and engaging in just seeing advertisement while commuting in the heavily crowded train; or living far from the workplace but paying low housing costs and engaging in activities comfortably while commuting by Shinkansen. Understanding travelers’ longer-term decisions is important for investigating integrated planning and policy of transportation and land use.

The objectives of this study are to investigate what activities commuters are engaging in while travelling by Shinkansen and how the possibility of the activities in the train affects short-term decisions about daily activity-travel behavior and long-term decisions about their lifestyle (where to live and work).

A questionnaire survey was conducted on March 4 to 6, 2008. Questionnaire sheets were distributed to passengers traveling by Shinkansen from Oyama, Utsunomiya, and Nasu-shiobara train stations to Tokyo. Distance and travel time by Shinkansen from the three stations to Tokyo station are 80km and 45min. (Oyama), 110km and 55min. (Utsunomiya), and 160km and 70min. (Nasu-shiobara), respectively. A total of 5,000 questionnaire sheets were distributed and 1,800 of them were returned by reply-paid mail. Information obtained was passengers' socioeconomic characteristics (age, sex, occupation,
household members, annual income, ICT devices ownership, etc.), activities while traveling by Shinkansen (in a train and at train stations), daily activity pattern and work situation (working days of the week, type of work hours, commuting allowance, etc.), and attribute of trips by Shinkansen (origin and destination stations, access/egress modes, etc.).

A total of 1,362 respondents were using Shinkansen for commuting trips (the rest were using for business trips). Approximately 90% of the respondents were males and 65% of them were in their 40s and 50s. The occupation was office-workers (50%) and employer/manager (30%). The average household annual income was about 10 million yen (about 100 thousand dollars), relatively higher than the average in Japanese households. The average one-way commute time from home to work place was 110 minutes, which is much longer than the average in Tokyo metropolitan area.

The following results were obtained regarding short-term decisions about activity engagement while on Shinkansen and daily activity-travel patterns. There was a difference in activities conducted while on Shinkansen between trips to work and to home. The main activities during trips to work were "sleeping" (72% of the respondents were engaging in), "reading books for leisure" (43%), whereas those during return trips to home, "reading books for leisure" (58%), "sleeping" (47%), and "e-mailing by mobile phone for leisure" (34%). We asked a question like "teleportation test" that "If travel time by Shinkansen be zero minute (that is you can teleport between train stations), what activities will you engage in for the saved time and where?" About half of respondents answered "sleep" at "home" for trips to work, whereas, for return trips to home, 20% answered "watch TV/video" at "home," and the rest 30% answered "spend the time with family members" at "home," "work" at "office," and "enjoy sports" at "other places." In case a respondent answered the same activity as that conducted while on Shinkansen, it is considered that the train environment is enough for conducting the activity and travel time by Shinkansen is not a wasteful time. However, in case the two activities were not the same, respondents might not be able to conduct the activity that they desired to do while on Shinkansen (it might be a wasteful time for them), or the activity conducted while on Shinkansen could not be conducted at other places.

On the other hand, several findings were obtained regarding long-term decisions about lifestyle. We asked timing of decisions of their living place, workplace, and commuting travel mode. The majority (40%) of the respondents had been living in the current place, and decided to work at the current workplace and to commute by Shinkansen. There was difference in the order of these decisions by respondents' living places. As for those living in Oyama, relatively more respondents changed commute mode to Shinkansen after making decisions about the living place and workplace, whereas those living in Nasu-shiobara, relatively more respondents moved their home to Nasu-shiobara and simultaneously started commuting by Shinkansen after making decisions about the workplace. We asked a hypothetical question that "If you will not be able to commute by Shinkansen for some reasons, how will you do?" The respondents who answered "I will commute by normal trains" (38%), "I will live alone near the workplace" (31%), "I and my family will move to the place close to the workplace" (6%) are considered to have strong constraints of their workplace. However, those who answered "I will change the workplace (or job) near my home" (16%) and "I will quit the current job" (13%) have strong constraints of living place rather than the workplace.