Workshop on Implementing Sustainable Urban Travel Policies in Japan and other Asia-Pacific countries

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Prospect for Mobility Management in Japan

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1. Mobility Management

Mobility Management (MM) is management that offers a viable, effective transportation measure, one that is expected to solve transportation and traffic problems including traffic congestion, air pollution and global environmental problem. MM tries to yield voluntary travel behavior change of target people from car use into sustainable travel modes including public transport, bicycle, and walk. There are two types of MM measures, one is travel feedback programs that target at individual travel behavior and the other is organizational travel plans that target at travel behavior in an organization such as commuting travel.

Travel feedback programs (TFPs) are interactive communication programs between target people and MM conductors. TFPs provide an opportunity to be aware of their ways to travel and try to change their travel behavior. In a typical program; at first, participants are asked to provide information about how they travel to MM conductors, and second, MM conductors provide personalized information how they can use sustainable travel mode with information to motivate to use them. Examples of TFPs individualized marketing (Brög, 1998), travel blending (Rose & Ampt, 2001), personalized travel plans (Department for Transport, UK, 2004), and other personalized communication, such as that implemented in Sapporo (Taniguchi et al., 2003).

Organizational travel plans (OTPs) targets at organizations such as offices and schools. OTPs provide organizations an opportunity to be aware of the ways how organizational members (e.g. office workers and students) travel and to try to change their travel behavior. In typical OTPs, each organization is asked by MM conductors to think how to change travel behavior in the organization. MM conductors provide information and/or advices how to change organizational member’s travel behavior. Provided information is related to 1) conducting TFPs targeting at organizational members, 2) installation of a system that supports sustainable travel mode commuters, 3) installation of a special transit service for commuters, 4) regulation of car parking, and so on. Even though a measures conducted in each organization may be regulative and cohesive, what each organization does are usually voluntary. Therefore, MM conductors usually implement persuasive communication toward each organization to implement OTPs. Such persuasive communication targeting at organizations would be more successful if there is administrative system that support organizations which participates in OTPs such as a system of tax benefits.

MM has just started in these few years in Japan although travel demand management (TDM) measures have been implemented for these decades in many cities in Japan. TDM measures include park and ride system, compress work week, straggled office hours, and other management measures to decrease travel demand of car or its peak. Effectiveness of MM would increase if MM is implemented with the other measures such as TDM measures that are not communicative measures with people or organization but economic or hard measures. Although TDM measures are not main measures in MM, additional measures to increase the effectiveness of communicative measures in MM such as TFPs or OTPs that aim at yielding voluntarily travel behavior change.

In this paper, I distinguish TDM measures from MM measures in the point that 1) MM measures are communicative measures and 2) MM measures tries to yield voluntarily travel behavior change. With this recognition, I review MM experiences in Japan.

2. Travel Feedback Programs in Japan

Table 1, 2, 3 shows the summary of TFPs in Japan.
As can be seen in this table, TFPs were implemented in residential area, work places and schools. In the point of time of 2005, TFPs implemented in Japan were not large scale but rather pilots.

Of these ten TFPs implemented in Japan, CO₂ emissions were reduced by about 19%, car use was reduced by about 12%, and public transport use increased by about 50%. These effects are similar to those reported in European and Australian cases (Ampt & Rooney, 1999; Brög, 1998; Department for Transport, UK, 2004; Jones, 2003; Rose & Ampt, 2001)

<table>
<thead>
<tr>
<th>City (year)</th>
<th>Target</th>
<th>Main objective</th>
<th>Techniques</th>
<th>Procedure and communication media</th>
<th>Effect</th>
<th>Control group</th>
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</thead>
<tbody>
<tr>
<td>Sapporo and Ebetsu (2000)</td>
<td>ca. 200 HHs</td>
<td>CO₂ reduction</td>
<td>a) motivation b) no plan c) provide individualized information</td>
<td>1) travel diary survey with leaflet for motivation (mail) 2) provide personalized comments (mail) 3) travel diary survey (mail) 4) provide personalized comments (mail)</td>
<td>ca. 15% reduction in CO₂</td>
<td>no</td>
</tr>
<tr>
<td>Osaka (2001)</td>
<td>ca. 100 HHs</td>
<td>reduce car use</td>
<td>a) motivation b) no plan c) provide individualized information</td>
<td>1) travel diary survey with leaflet for motivation (mail) 2) provide personalized comments (mail) 3) travel diary survey (mail) 4) provide personalized comments (mail)</td>
<td>ca. 35% reduction in CO₂ (with 1-week travel diary), and ca. 20% reduction in CO₂ (with 1-day travel diary)</td>
<td>yes</td>
</tr>
<tr>
<td>Suita (2002)</td>
<td>ca. 500 persons</td>
<td>promote PT</td>
<td>a) no motivation b) plan c) provide non-individualized information</td>
<td>1) provide non-personalized information on bus use with or without requesting a behavioral plan on how to use PT (mail)</td>
<td>bus use frequency increase:  - 0% for frequent bus users - ca. 25% for non-bus users no behavioral plan, - ca. 60% for non-bus users with a behavioral plan, - ca. 50% for new residents no behavioral plan - ca. 90% for new residents with a belief</td>
<td>no</td>
</tr>
<tr>
<td>Kawasumi /Inagawa (2003)</td>
<td>ca. 700 persons</td>
<td>reduce car use and promote PT</td>
<td>a) motivation b) plan c) provide personalized information</td>
<td>1) questionnaire survey (mail) 2) request a behavioral plan on how to change travel behavior with personalized information on PT use (mail) 3) repeat first questionnaire survey (mail) 4) provide personalized comments (mail)</td>
<td>ca. 15% reduction in car use (2 steps, for PT users), ca. 25% reduction in car use (4 steps, for PT users), ca. 40% reduction in car use (4 steps and incentives to use PT, for non-PT users) [the average reduction in car use was ca. 25%]</td>
<td>yes</td>
</tr>
<tr>
<td>Obhiro (2003)</td>
<td>ca. 15,000 HHs</td>
<td>promote PT</td>
<td>a) no motivation b) plan c) provide non-individualized information</td>
<td>1) request behavioral plan on how to use PT with non-personalized information on bus use (mail)</td>
<td>ca. 100% increase in bus use</td>
<td>yes</td>
</tr>
</tbody>
</table>

1 Taniguchi et al. (2003); 2 Matsumura et al. (2003); 3 Matsumura (2004); 4 Doi et al. (2004); 5 Taniguchi et al. (2005)

HHs: households, PT: public transport.

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<tr>
<td>Kanazawa (2001)</td>
<td>ca. 50 HHs (100 persons) working in 10 companies</td>
<td>reduce car use</td>
<td>a) motivation b) no plan c) provide personalized information</td>
<td>1) travel diary survey with leaflet for motivation (mail, by hand) 2) provide personalized comments (mail, by hand) 3) travel diary survey (mail, by hand) 4) provide personalized comments (mail, by hand)</td>
<td>ca. 30% increase in bus use, ca. 50% increase in bicycle use, and no reduction in car use.</td>
<td>no</td>
</tr>
<tr>
<td>Toyonaka (2003)</td>
<td>100 workers in a company</td>
<td>reduce car use</td>
<td>a) motivation b) plan c) provide non-personalized information</td>
<td>1) questionnaire survey (e-mail) 2) request a behavioral plan on how to change travel behavior (e-mail)</td>
<td>ca. 10 % reduction in car use</td>
<td>no</td>
</tr>
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</table>

1 Hashimoto (2002); 2 Daito et al. (2004)
Although there have not been enough TFP cases in Japan to thoroughly consider all of the factors that determine the effectiveness of TFPs, my review implies that requesting a behavioral plan is a determinant of the effectiveness of a TFP. TFPs with a behavioral plan yielded the largest CO₂ reduction (35% reduction in Sapporo; Fujii and Taniguchi, 2003), the largest reduction in car use (25% reduction in Kawanishi/Inagawa; Doi et al., 2004), and the largest increase in public transport use (100% increase in Obihiro; Taniguchi et al., 2005).

Table 3. Summary of school TFPs implemented in Japan

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<tr>
<td>1 Sapporo</td>
<td>150 school students (5th grade) in an elementary school in Sapporo and their families.</td>
<td>CO₂ reduction and environmental education</td>
<td>a) motivation b) no plan c) provide individualized information</td>
<td>1) travel survey with a class for motivation (in class) 2) provide personalized comments (in class) 3) travel diary survey (in class) 4) provide personalized comments (in class)</td>
<td>ca. 15% reduction of CO₂</td>
<td>no</td>
</tr>
<tr>
<td>2 Sapporo</td>
<td>130 school students (5th grade) in an elementary school in Sapporo and their families.</td>
<td>CO₂ reduction and environmental education</td>
<td>a) motivation b) no plan c) provide individualized information</td>
<td>1) travel survey with a class for motivation (in class) 2) provide personalized comments or request a behavioral plan (in class) 3) travel diary survey (in class) 4) provide personalized comments (in class)</td>
<td>ca. 35% reduction in CO₂ with a behavioral plan, no reduction without a behavioral plan.</td>
<td>no</td>
</tr>
<tr>
<td>3 Izumi</td>
<td>200 school students (5th grade) in two elementary schools in Izumi and their families.</td>
<td>CO₂ reduction and environmental education</td>
<td>a) motivation b) no plan c) provide individualized information</td>
<td>1) travel survey with a class for motivation (in class) 2) request behavioral plan (in class) 3) travel diary survey (in class) 4) provide personalized comments (in class)</td>
<td>ca. 15% reduction of CO₂</td>
<td>no</td>
</tr>
</tbody>
</table>


HHs: households, PT: public transport.

3. Organizational Travel Plan in Japan

There are not many cases of implementation of organizational travel plans in Japan. As can be seen in table 2, some companies implemented TFPs in companies as OTP. In addition, some offices (Nagoya city hall and a company in Osaka) install a system that provides monetary incentives to public transport commuters. Especially, Nagoya city hall reduced monetary support toward car commuters. Then, it was reported in the case of Nagoya city hall that car use commuters decreased by half.

The survey in Nagoya city indicated that almost 40% companies have an intention to reduce commuters by car, that is much higher than rate of companies which did not have such intention, that is 16%. This indicates that there may be a large number of companies or offices that are willing to participate in OTPs.

4. Prospects for MM in Japan

Not a few TFPs have been implemented in Japan. These produced almost 20% reduction of CO₂ emission and 50% increase of public transportation use. Although they are all pilot studies, such results from pilot studies would persuade transportation planners to believe in the effectiveness TFPs. Hopefully,
in the near future TFPs would be implemented widely in large scales with large scale fund, like the case in Perth or London.

With respect to OTPs, examples were rather limited in Japan. But there may be a large number of companies that have intention to participate in OTPs. An obstacle of participation of companies may be just lack of companies’ knowledge about MM. If we can successfully get MM known to many companies by collaborating with industrial circle, MM may get to be widely implemented in Japan.

In anyway, MM seems to be effective in Japan. Japanese people and Japanese companies seem to be able to change their behavior for the purpose of contributing to public. A reason for them not to change their travel behavior in the past would be just a lack of opportunity to think their way to travel. Furthermore, just a few transportation policy makers in Japan knows what is MM and how much MM can successfully change peoples’ and organizations’ travel behavior. I believe that if MM would be widely known to almost of all transportation policy makers in Japan, they would willing to include MM measures such as TFP or OTP as effective transportation measures in addition to existing measures such as TDM and capacity expansion. If so, MM would be able to change the way Japanese people travel.
REFERENCES


Matsumura, N. (2004) Mobility Management for residents, presented at *The One Day Seminar of “Social Transportation Management: Travel behavior can be changed due to communication”*, Tokyo, Japan.


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