

Comparative Analysis of Travel Time Use between Tokyo and Seoul

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This study compares differences in travel time use between university students in Tokyo, Japan and those in Seoul, South Korea, focusing especially on the influence of mobile communications devices such as cell phones. In general, students in both cities spend much of their travel time using their cell phones; however, whereas in Seoul many make phone calls, in Tokyo many engage in online activities. Particularly when traveling inside a railway car, differences in activities are affected by both social norms and regulations about cell phone use, general reception availability, as well as the range of online services available.

Key Words: *travel time use, mobile communications, international comparison, Tokyo, Seoul*

1. INTRODUCTION AND PURPOSE

In general travel is considered a necessary evil, and travel time wasteful or unproductive, but it is possible to use this time efficiently. In particular, the rapid spread of information and communications technologies (ICTs), such as cellular phones and mobile Internet service, is allowing travelers to engage in an increasingly broad range of activities while traveling¹⁾⁻⁴⁾. It is also interesting to note that there are differences in use of travel time between countries, due either to a difference in environment, or in social norms and/or regulations.

For this study, comparisons regarding use of travel time will be drawn between Japan and South Korea. The two countries are close neighbors and have fairly similar transportation systems, especially in the metropolitan areas of Tokyo and Seoul. In particular, railway use is common, and the shape and size, alignment of seats, etc. of the railway cars are nearly the same. In addition, both countries are enjoying a rapid spread of cell phone possession and use.

But unlike Japan, in South Korea, where railways are often built underground (especially in the metropolitan areas), all tunnels are equipped with

antennae, allowing cell phone reception for subway passengers at all times. In Japan this is not the case, and although reception is usually provided when a train pulls in to a station, there is usually little or none when between stations.

In addition, in South Korea it is permissible to talk on cell phones in railway cars, whereas in Japan this act is considered a taboo. Inside railway cars announcements are made repeatedly, asking passengers to refrain from making calls, and particularly when near the “priority area” (seats that should be offered to the elderly or disabled) to turn their cell phones off.

Furthermore, overall cell phone use differs between the two countries; for example, Japanese cell phones can send e-mails to online e-mail accounts, whereas South Korean cell phones can send only text messages compatible with other cell phones. Also, the use of cell phones for online activities is not as widespread in South Korea as it is in Japan, and online services are not as abundant. Factors such as this explain why Smartphones, i.e. cell phones with similar features as a computer, are rapidly gaining popularity among South Koreans.

The purpose of this study is to compare the differences in travel time use between Tokyo and Seoul, focusing especially on the influence of mobile communications devices such as cell phones. Particularly when inside a railway car, differences in activities are assumed to be the result of social norms and rules about cell phone use, general reception availability, as well as the range of online services that are accessible.

2. METHOD OF ANALYSIS

A questionnaire survey was conducted for students attending universities in Tokyo, Japan, and in Seoul, South Korea. (The survey was limited to university students in order to examine the affect of cell phone use, which is especially popular among the younger generation.)

In Tokyo a total of 218 questionnaire sheets were answered between December 13th and 17th of 2010, by undergraduate students at Kyoritsu Women’s University and by undergraduate and graduate students studying Urban Engineering at the

University of Tokyo. In Seoul Shin-chon a total of 180 questionnaire sheets were distributed and 158 collected between December 21st and 26th of 2010, at the following universities: Yonsei University, Hongik University, Sogang University, Myongji University, and Ewha Women’s University.

Information obtained included respondents’ characteristics (gender, age, affiliation), basic information about commute (mode(s) of transport, train stations and/or bus stops used, average commute time), use of mobile communication devices (possession of cell phones and laptop computers, frequency of using cell phones and laptop computers to go online, cell phone type), what respondents carried from their homes during their commute, and their general opinions about travel time use, including their thoughts about cell phone use in railway cars.

Questionnaire surveys also asked respondents to recall what activities they engaged in when using various modes of transport (by foot, bicycle, automobile, railway, bus), during wait times (station platform, bus stop), and when in various situations inside a railway car (when the congestion level is at least 180%, near the “priority seats”, in a “women-only car”, or below ground). When on public transport they were asked to write what they did when standing up and when sitting down.

Respondents were asked to select activities they engaged in from a total of 22 types of activities on a pre-defined list on the questionnaire sheet. (The

Table 1 List of activities used on questionnaire

Activities			
A	Use cell phone for calling	L	Play electronic games
B	Use cell phone for e-mail/text	M	Chat with companion(s)
C	Use phone for online activity	N	Apply make-up, fix hair
D	Use laptop for online activity	O	Eat and/or drink
E	Use laptop for offline activity	P	Sing a song
F	Watch TV	Q	Look at ads, incl. display
G	Watch video/movie clips, etc.	R	Look at view outside
H	Listen to radio	S	Think about something
I	Listen to MP3s, CDs, etc.	T	Fall asleep
J	Read newspaper	U	Do nothing
K	Read papers, books, etc.	V	Other ()

categorization of activities was intended to distinguish the difference between activities where some form of reception was necessary, such as television, radio, etc., and those that did not.) They were asked to classify whether each activity was conducted “always” or “sometimes,” and whether or not it was conducted in order to use travel time efficiently (i.e. that they would engage in even if their travel time did not exist).

3. COMPARISON BETWEEN TOKYO AND SEOUL

The characteristics of survey respondents showed that compared to Tokyo, in Seoul more students took the bus and fewer rode bicycles for commute, and in general they had shorter commute times. In both cities almost all students owned cell phones and carried them during commute, but the percentage of Smartphone users was twice as high in Seoul than in Tokyo. Even so, the ratio of students who used their cell phones to go online on a daily basis was much higher in Tokyo than in Seoul, and a fair number in Seoul never used this feature. Overall students in Tokyo carried more things with them during their commute (especially MP3 player), but were less likely to carry newspapers and laptops- both of which can be substituted for with an advanced cell phone.

In general, more students in Seoul thought that travel time was a waste of time; in fact, compared to Tokyo twice as many answered that whether or not they could use their travel time efficiently affected their transport mode and/or route. Furthermore, those in Tokyo were more likely to agree that travel time could be used efficiently on various forms of transport (with the exception of driving, perhaps because it is so uncommon in Tokyo), particularly when using public transport, and especially when using the railway above ground (in Seoul there was no such difference between the two types of railways). This may be attributed to the fact that three-fourths of students in Tokyo agreed that there should be cell phone reception between underground stations.

Also, the vast majority of students in Tokyo agreed that phone calls should not be made inside

railway cars, and a similar ratio agreed they would not answer if someone called them in such a situation. In Seoul few agreed with either opinion (in particular the latter).

In both cities, cell phone use was a very popular activity while traveling either on foot or by public transport. In general, students in Seoul were more likely to make phone calls, and those in Tokyo to engage in online activities. Possibly as a result, as a whole, students in Seoul engaged in a wider range of activities, such as watching TV, listening to radio, reading newspapers, or using laptop computers. In contrast, students in Tokyo, while generally engaging in a higher number of activities per person (with the exception of when on foot, and especially when on public transport), all engaged in the same certain activities. It can be said that students in Seoul engaged in a fewer number of specific activities that differed among individuals.

It is interesting to note that when traveling either on foot or by bicycle, students in Seoul tended to look at ads, and those in Tokyo to look at the view. Similarly, regardless of transport mode students in Seoul were more likely to apply make-up, etc., and those in Tokyo to eat and/or drink, while traveling. This may be attributed to social norms about permissible behavior in public.

Also interesting to note was that while students in Seoul spent their time similarly when on the railway and when on a bus, those in Tokyo engaged in fewer activities when on a bus, most of which required little preparation and/or concentration. We can assume this is because bus use is fairly uncommon in Tokyo, especially among young students who may choose to walk from train stations to their destinations.

Patterns between activities and opinions about “efficient use of travel time” were noticed within both cities, particularly in situations where activities are limited, such as walking or driving. These patterns were slightly more apparent in Tokyo than in Seoul, and students in Tokyo who agreed that travel time could be used efficiently when on a certain form of transport tended to be engaging in similar activities when using them. In contrast the results in Seoul were more independent, perhaps due to the aforementioned diversity in travel behavior. It

is also interesting to note that among students in Seoul, in some cases, participation in a certain activity rose in proportion to levels of disagreement regarding travel time use efficiency. We can infer that they are either engaging in activities they believe to be unproductive, and/or are dissatisfied with travel conditions. This would support the result that students in Seoul were more likely to believe travel time to be a waste of time. Furthermore, patterns observed on transport modes within Tokyo and Seoul rarely coincided when compared with one another, proving that perceptions of “efficient travel time” differed among the two cities.

4. DETAILED COMPARISON ABOUT RAILWAY

Further analysis of travel time use inside a railway car helped confirm my assumptions about specific differences between Tokyo and Seoul. In both cities, (when standing) the majority of students used their cell phones for e-mail/text and/or listened to MP3 players, but in Tokyo engaged in online activities, and in Seoul made phone calls (an act almost no one in Tokyo committed). While in general, students in Tokyo had a higher tendency of engaging in most activities, those in Seoul were more likely to watch TV or video clips, listen to the radio, or read a newspaper. This may be because students in Tokyo depend on information and entertainment obtained through cell phones, eliminating the need for other forms of media. Since the majority of students in Tokyo engage in activities that require cell phone reception, when using the railway below ground (where reception is usually unavailable between stations) they have few

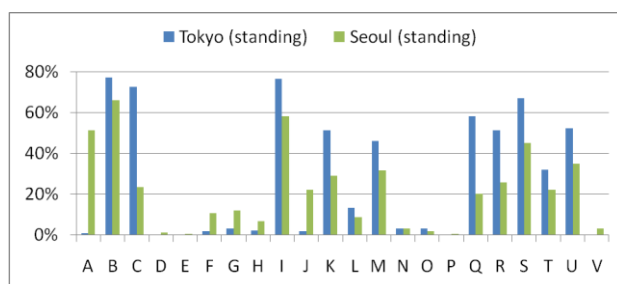


Fig.1 Percentage of respondents engaging in activities when standing in a railway car

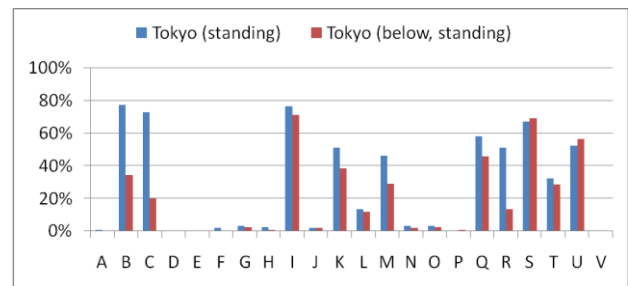


Fig.2 Percentage of respondents engaging in activities (when above and below ground, in Tokyo)

ways to pass the time. Instead of using cell phones, most think about something and/or do nothing.

As mobile websites are not as widespread in South Korea, use of travel time by Smartphone users was compared to those with regular cell phones. Smartphone users were much more likely to engage in online activities and less likely to engage in other activities, especially reading a newspaper, book, magazine, or document. As the ratio of students who used television, video clips, and/or radio did not decrease among these Smartphone users (and in fact, slightly increased in Tokyo), we can assume that the unpopularity of these activities in Tokyo is not due solely to a dependence on mobile Internet.

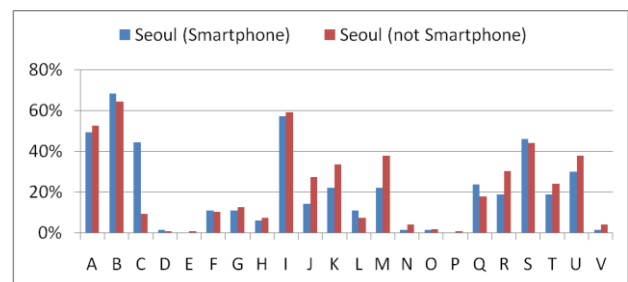


Fig.3 Percentage of respondents engaging in activities (depending on Smartphone possession, in Seoul)

When in a crowded railway car, students in both cities generally conducted fewer activities. However, compared to Tokyo, in Seoul there was a less dramatic decrease in those chatting with companions, and in fact a slight increase in those singing songs. Furthermore, many students continued making phone calls. It can be inferred that students in Seoul are less reluctant about engaging in noise-emitting activities. This would also explain why the use of TV, video clips, and/or radio was less popular among students in Tokyo. (It is also

interesting to note that those who fell asleep increased in Tokyo, but dropped to half in Seoul.)

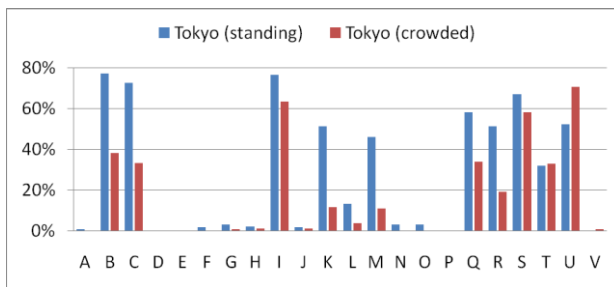


Fig.4 Percentage of respondents engaging in activities (depending on congestion levels, in Tokyo)

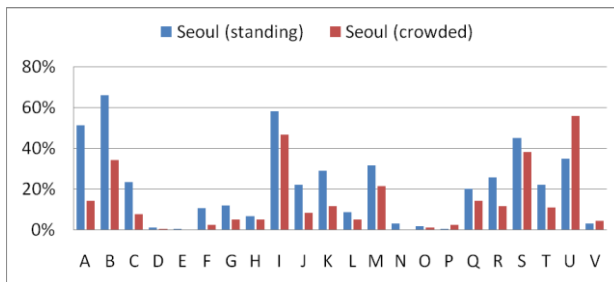


Fig.5 Percentage of respondents engaging in activities (depending on congestion levels, in Seoul)

When sitting down, students in both cities favored falling asleep and cell phone use seemed less important. The ratio of students reading a book, magazine, or document increased as well. Overall, a wider range of activities was available.

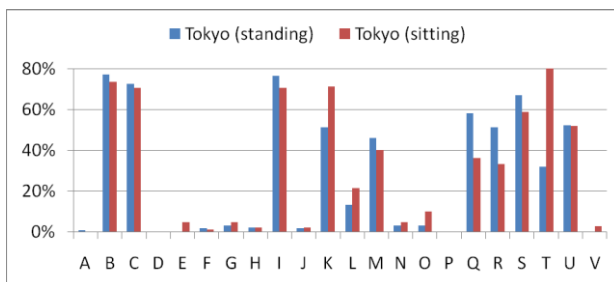


Fig.6 Percentage of respondents engaging in activities, (when standing and sitting, in Tokyo)

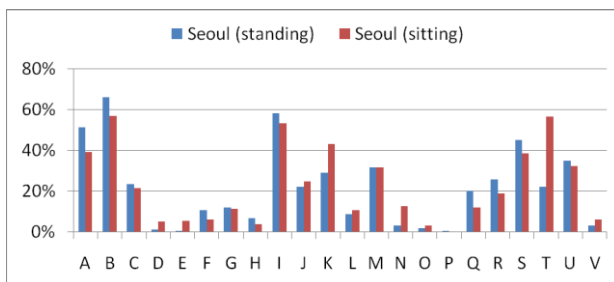


Fig.7 Percentage of respondents engaging in activities, (when standing and sitting, in Seoul)

5. CONCLUSION

The most significant difference between the two cities was that many students in Seoul spent their travel time making phone calls. In general they were less reluctant about making noise (while this made a wider range of activities available, it may also make it more difficult, for example, to fall sleep). On the other hand, many students in Tokyo use their cell phones to engage in online activities, which seem to be their main source of information; thus, the lack of cell phone reception between underground railway stations is inconvenient. In Seoul, students with Smartphones were better equipped to engage in online activities. Though cell phones have a great influence on the use of travel time, when sitting down on public transport many prefer to sleep, and also enjoy reading.

Future studies may study the use of travel time by members of the working population. It may also be interesting to study the content of online activities being accessed.

ACKNOWLEDGEMENT: I am deeply grateful to Dr. Joon Ki Kim and his colleagues at the Korea Research Institute for Human Settlements (KRIHS) for their cooperation in conducting this study.

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