Research for Promoting Suica Use at In-station Shops Through Behavior Observation Method

Behavior observation is a method for finding out the innermost true feelings of a person regarding a certain subject by observing his or her behavior. This method has been drawing attention recently because of its possibilities in exposing potential needs of people.

We used behavior observation in research at NEWDAYS in-station convenience stores on the benefits of using Suica e-money and factors that prevent people from using Suica despite the benefits, and we made proposals for promoting Suica use there. This article will report on research where we conducted interviews and behavior observation and organized workshops to summarize our findings.

**Keywords**: Behavior observation, Marketing, Service science, In-station shop, Suica utilization

### 1 Introduction

The Frontier Service Development Laboratory of the Research and Development Center of JR East Group, as an internal laboratory of JR East, has launched the “Smart Station Vision” concept for next-generation stations. Under that, we are studying the ideal form of future stations and railways so as to be able to meet diversified customer needs and provide value-added services.

The laboratory received a request from a department of JR East that manages NEWDAYS in-station convenience stores (see Fig. 1) to identify the benefits of using Suica and to make a proposal to improve Suica utilization in NEWDAYS shops.

Suica is JR East’s rechargeable prepaid e-money card for train use and shopping. Although Suica utilization on JR East railway lines in the greater Tokyo area exceeds 80%, Suica utilization in NEWDAYS shops does not reach even a half of that percentage, and promoting further Suica use in the shops is now becoming an issue for us. We assumed that factors at shops prevent customers who use Suica with railways from using it at shops, even though they had the ability to do so. As we believed that potential demands of customers (in other words, vague dissatisfaction of customers regarding the current situation) needed to be clarified to identify those factors, we decided to employ the behavior observation method to solve this problem.

### 2 What is Behavior Observation?

Behavior observation is a method for finding out the innermost true feelings of a person regarding a certain subject by observing his or her behavior. Conventional questionnaire and interview methods can identify needs of a person that be expressed and exposed. However, through those methods, it is difficult to discover potential needs that a person is unaware of and that cannot be expressed in words. But behavior of a person always is always influenced by motive. There is a high probability of exposing potential needs of a person by scientifically analyzing his or her behavior, so behavior observation has been drawing attention recently (see Fig. 2 and 3).

Furthermore, responses to questionnaires and interviews tend to be guided to “socially correct” responses, sometimes making it difficult to gain accurate responses. Excluding such social bias is another reason for behavior observation being effective.

Behavior observation can be applied to marketing research and service science. Use of those is expected in a broad range of fields such as product development and improvement of customer satisfaction and employee satisfaction.

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3 Research Project Steps

We decided to proceed with the research project with step 1 being work up to making an improvement proposal for promoting Suica use in NEWDAYS shops. Implementation of the improvement proposal will be the next step.

The reason for dividing the steps is that the improvement proposal might include both human elements such as serving customers and large-scale physical measures such as renovation of shop layout. We could not predict time and costs required before actually implementing the improvement proposal, so we would restart the project after deciding the improvement items based on step 1 results.

Step 1 included interviews, behavior observation in shops, and workshops.

The following sections cover the individual stages. As this article is an interim report of the research project up to making the improvement proposal, the report only summarizes the results of the stages.

4 Interviews

4.1 Overview
The purpose of the interviews was to identify factors in users’ minds that encouraged or prevented Suica use. Thus, we conducted group interviews separately for people who often used Suica in NEWDAYS shops and those who did not to see the difference of the mindset of each group.

4.2 Interview Period
The interviews were conducted on a Sunday in April 2012, and they lasted two hours for each group.

4.3 Subjects
We interviewed females in their 30s and older as they are usually considered highly motivated to spend.

We picked out in advance by online survey subjects who met the required conditions, and we divided them into two groups of six persons each. One group was frequent Suica users in NEWDAYS shops and the other group was those who are not frequent users. Interviews were held for the groups separately.

4.4 Interview Items
- Actual use of Suica
- Actual use of NEWDAYS shops
- Reasons of paying or not paying by Suica
- Other comments and requests regarding Suica

4.5 Major Interview Results
As reasons for by paying by Suica, the group of frequent Suica users pointed out it being fast and convenient and looking smart. But no one cited the advantage of the loyalty point system. Awareness of the point system should be raised.

In contrast, the group of non-frequent Suica users answered as reasons for not paying by Suica that they felt Suica was for railway use, they found no particular benefit of paying by Suica, and they habitually took out their wallet and paid by cash.

Those responses revealed that they had no definite reasons of not using Suica, such as a strong will to avoid overspending by Suica. Further spread of Suica for uses other than railway fare payment and further recognition of the benefits of paying by Suica—fast payment at the counter and the point system—could increase Suica utilization.

One interesting interview result was that many interviewees replied to the question “when do you notice the availability of Suica payment in an ordinary shop?” they noticed the availability when they saw a Suica card reader at the counter (see Fig. 5).

It was a new finding for us that users recognized the availability of Suica payment by the Suica card reader instead of publicity by POP ads and the like in the shop.
5 Shop Survey

5.1 Overview
A few observers surveyed by observing the behavior of customers in actual shops to identify factors that encouraged or prevented Suica use in NEWDAYS shops.

5.2 Survey Period
May 2012

5.3 Survey Method
- Direct and nonparticipating behavior observation was conducted.
- Using existing cameras, we obtained video around the counter for quantitative and qualitative analysis.

5.4 Surveyed Shops
Two shops with above-average Suica utilization and one shop with below-average Suica utilization were surveyed. All shops were of the same approximate size, and we surveyed both shops inside the station ticked area and those outside of the ticket gate.

5.5 Major Surveyed Items
- Customer behavior in and outside of the shops (behavior relating to encouragement/prevention of Suica use)
- Actual use of self-checkout
And, using recorded video,
- Measurement of time required for paying by cash and by Suica
- Ratio of customers who received a receipt
- Ratio of customers who received a shopping bag

5.6 Survey Result
5.6.1 Time Required for Payment
One can assume that time required for payment by Suica would be shorter than that by cash. However, there had been no previous quantified results. We thus compared time required for payment.

The time varied according to the number of items purchased; but on an average, payment by Suica required 65% of the time required for payment by cash. This data verified our assumption.

5.6.2 Choice of Payment
Surveying the relation between the number of items purchased and the choice of payment (Suica or cash), we found that the rate of payment by cash increased as the number of items purchased increased. This could come from the psychology of users of wanting to avoid repeating the payment process in the event that the balance on the Suica card was insufficient.

In the group interview with frequent Suica users, some replied that they would pay by cash from the start when the balance might run short. This is because they wanted to avoid repeating the payment process due to insufficient balance of on the Suica card.

5.6.3 Use of Self-Checkout
Some NEWDAYS shops are equipped with a self-checkout terminal as shown in Fig. 6 that accepts Suica payment only. This is a terminal with which customers instead of the clerk read the barcode on the goods for payment on their own. As self-checkout terminal utilization increases, Suica utilization increases too, so we surveyed use of the self-checkout terminals in detail.

In the survey, we observed customers who bought many items passed by the self-checkout terminal and went to the staffed counter. The reason could be that the self-checkout terminal is difficult to use for many items due to having no space around it for personal items and purchased items. Customers were therefore forced to rely on the staffed counter.

Fig. 5 Suica Card Reader on Counter by Cash Register

Fig. 6 Self-Checkout Terminal in Shop
6 Workshops

6.1 Overview
The purpose of the workshops was to discuss among persons concerned factors encouraging/preventing Suica use and the Suica use promotion plan (see Fig. 7).

Observers could make proposals on Suica use promotion, but such one-sided proposals are sometimes unacceptable at the actual worksite. In behavior observation, therefore, workshops where the persons concerned have discussions to find a solution together are seen as important for making improvement proposals.

6.2 Workshop Period
June 2012

6.3 Workshop Members
Representatives from
- IT & Suica Business Development Headquarters, JR East
- Frontier service Development Laboratory, JR East
- JR East Retail Net Co., Ltd.
- JR East Mechatronics, Co., Ltd.

6.4 Workshop Flow
(1) Results of group interviews and shop surveys were reported and shared among the members.
(2) Based on (1), factors encouraging/preventing Suica use at the NEWDAYS shops were sorted out, and then improvement plans and ideas were discussed by all members.
(3) Proposed improvement plans were considered by all members, and plans were narrowed down for effect examination.

6.5 Main Improvement Plans Proposed in the Workshops
The improvement plans proposed in the workshops are as follows:
- Promote conveniences of Suica such as fast payment because users are not sufficiently aware of the convenience.
- Make Suica card readers stand out more because users notice the availability of Suica payment by presence of card readers.
- Promote that Suica cards can be charged at the staffed counter because many users do not pay by Suica due to concern about insufficient balance. Suica charging terminals can be set up in NEWDAYS shops for self-charging.
- Set up racks around the self-checkout terminal to put items to increase convenience for users.

7 Summary and Future Outlook
Through interviews, shop surveys, and workshops, we were able to make out many proposals to improve Suica utilization. We also verified that using Suica is highly beneficial both for customers and shop management through significantly shortening time required for payment.

In step 2, we will implement the proposed improvement plans to see whether they actually lead to the increase of Suica utilization. We also intend to hold further discussions on the method of implementing the many plans and verifying their effectiveness.

8 Conclusion
Not many examples have been seen in field improvement activities at JR East of applying the behavior observation method carefully and over a long time. Along with aiming to make further efforts in improving Suica utilization at NEWDAYS shops, we will work to confirm whether or not such a solution is effective in improving work at JR East.

Reference:
1) Haruhito Matsunami, Businessman no tame no Kodo Kansatsu Nyumon (Introduction to Behavior Observation for Businessman) [in Japanese], (Kodansha Ltd., October 2011)
2) Fig. 2 excepted with permission from the website of lnet Corporation
3) Fig. 3 excepted with permission from the website of Research Institute of Behavior Observation, Osaka Gas Co., Ltd.
(Cooperation for survey provided by lnet Corporation)