Study on suggestions for people want to use priority seats by inspecting the actual use situation

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ABSTRACT

Recently, articles on issues to do with priority seats have been trending on the Internet. We investigated whether the idea of “priority” that is put forward really is something that can protect the people who need priority seats. In a field survey, we took a photo of people sitting in priority seats and observed their actions. One third of them were using a smartphone. Here we put forward three hypotheses to ensure that priority seats go to those who need them. The first is “exclusive seats,” in which only people who need the priority seats can use them. The second is “to install stickers to indicate which people are not allowed to use priority seats.” The third is “to install a handrail that reacts to the right user’s fingerprint.” We thought about the future potential of these hypotheses. Whatever the case, we must be aware of the concept of “priority + α.”

Keywords: Priority seat, Universal design

1. Research background and purpose

Recently, on SNS and online, frequent troubles around priority seating 1) are found. Women in the early stages of pregnancy are difficult to identify as such, and there are cases in which seating cannot be handed over even by presenting a maternity mark. In this research, we aim to investigate measures to promote the use of the target person and to discuss efforts leading to securing movement safely and securely by inquiring about the actual situation of using priority seats and giving up their seats.

2. Research method

After investigating the actual condition of use and investigating the present condition of the priority seat, we conducted a survey questionnaire for the user, and conducted a survey on the priority seats and evaluation of the improvement plan.

3. Field survey

In the interview survey by JR West conducted over e-mail, it turned out that there was no clear statistical data on the trouble related to priority seats. Therefore, a field study was conducted to grasp the current situation. We observed and compiled the use and condition of priority seats in JR West Japan Tokaido Line and Kyoto Municipal Subway.

3.1 Survey summary

In the author’s observation, the behavior of the user occupying a priority seat was classified as being either “closed” or “open.” (N=96)

From Figure 1, 28 people (33.3% of the total) were “operating smartphones.” Using a smartphone is a closed behavioral process in which the user’s attention to the surroundings becomes distracted and it becomes difficult to notice an approaching priority seat subject. In the opened seating attitude, “the person is looking at the front” is the most frequent observation, and it is easy to notice that a priority seat subject comes nearby. From this fact, it was inferred that the priority seat user is not aware of the fact that the priority seat user is in the vicinity, and it is difficult to transfer the seat. Then we investigated the consciousness to give way to the seat of the priority seat.
4. Survey questionnaire survey

4.1 Survey summary

A questionnaire survey was conducted on elderly people (65 years old and over) who were healthy volunteers and subjects of priority seats via the Internet and SNS. We conducted a survey questionnaire except for Web. The survey for the elderly was conducted at Kyoto City Public Private Old Welfare Facility Sakae Elderly Welfare Center. Number of responses: N=99 healthy subjects, N=41 elderly people.

4.2 Survey questionnaire survey I (awareness survey of priority seats)

In the survey regarding awareness of priority passengers, I went for the purpose of examining whether there is a consciousness that a healthy person gives up the seat or whether there is a difference in the recognition of the priority seat between the healthy person and the elderly.

4.3 Survey questionnaire survey II (improvement plan evaluation)

From the field survey, we decided to design the designs in Figures 4 to 6 below because we thought that a design to open the awareness such as distributing the line of sight of people sitting in the priority seat was necessary.

Figure 1. Summary of what people are sitting in the priority seat

Figure 2. Graph showing whether a healthy person is conscious of giving up the seat

Figure 3. Graph showing whether the elderly want to sit in the priority seat

Figure 4. Proposal ① Image of exclusive seat

Figure 5. Proposal ② Sticker image that appeals to people who are not easily recognized as candidates for priority seats
A χ² test on the difference between responses of healthy volunteers and elderly people showed a significant difference of * 5%. There was no big difference in agreement or opposition between healthy volunteers and elderly people for proposal ③. However, among the opinions of the elderly, there were many opinions that “It would be good if it could be realized, but would be costly.” Therefore, we hypothesized that there was a difference between the answers of both “good / good.”

A χ² test on the difference between the responses of healthy volunteers and elderly people showed a significant difference of 1%. From Figure 10, those who answered that the subjects could sit by the handrail with glowing lights accounted for about 66% for elderly people and about 83% for healthy subjects, resulting in slightly more healthy subjects. In the improvement plan evaluation, it was found that a design that is easy to understand for both the appearance and the mechanism for the elderly, and a mechanism to notify the target person for a healthy person.

**5. Summary of this research and future prospects**

The hypothesis that seats must be redesignated as a category other than “priority” in order to ensure availability of the priority seat was rejected, resulting in the necessity of “priority” of the concession. Priority passengers felt that a mechanism is needed to make a healthy person notice the target person and voluntarily vacate the priority seat.

When raising priority seats or making new designs, it is thought that railroad companies etc. should recommend not only “priority” but also a “priority + α”
concept, which promotes compromise. The railroad company actually observed the inside of the car and determined that the company’s research department, together with the university, should collaborate toward solving the trouble over priority seating.

Because the concession of priority seats is entrusted solely to people’s individual subjective judgement, the troubles concerning them are all those with pain in my heart. We hope that the results of this research will lead to safe and secure train journeys for priority passengers.

Supplemental and References

1) The priority seat is a seat set to give the seat to the customers who need the seat, such as elderly people, physically handicapped people, pregnant women, those with infants and the like.
