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Author(s)	松尾, 匡記
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A hazard avoidance guide system for home networks

Masaki Matsuo (1010060)

School of Information Science,
Japan Advanced Institute of Science and Technology

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More than 10,000 people have died each year by hazards that occur in the home. The number of deaths has been increasing gradually, suggesting that current measures to hazard avoidance in the home are not enough.

In this study, I classified two methods, used for hazard avoidance: "forced approach" and "explicit approach". Forced approach is used to prevent the use of equipment. The base idea of this approach is to ignore the wishes of people when they are using household equipment. This approach, it is include Child Lock and safety equipment. This approach is an effective method for hazard avoidance. However, this approach may worsen the symptoms of dementia because elderly people will think that their actions are being prevented by external or invisible forces. Explicit approach uses voice or text, that may affect the behavior of the human. Examples of this approach include passenger station announcements, escalator announcements and so on. The disadvantage of this approach is that if the subjects that receive guidance get used to it they may choose to ignore it, thus rendering this method ineffective. In this study we proposed a new method for hazard avoidance in the home that is different from the forced and explicit approaches and we verified its effectiveness.

In this study, when the resident to use the equipment and facilities, we propose a method by controlling the operation of the equipment that, and may be induced not to use them, therefore hazards avoidance in the home.

This proposed method, it is differ from forced approach to block completely use of the equipment, is to give a sense different from the normal. Thereby, I think can avoidance the occurrence of hazards in the home, it is attention to not use the controlled equipment.

In this study, I defined the subject equipment. It is a thing of equipment and facilities in the home increase the likelihood of occur hazards when they use in the home. In this study, I was select door in the target device. Because, I can thought control the movement of between rooms of the subject, induced by applying a load to its behavior when they subject is open the door. In this way, subject can be determined intuitively induction should not be moved from the room. For example, controls the operation of the door of entry to the room when the subject induction of the target device is present, can be induced not to enter the room that can be expected. Alternatively, this method, the arousal so as not to move from room by controlling the operation of the door when you move from room while using the combustion equipment is subject induction, to avoidance the occurrence of fire thereby can also be expected. By control the operation of the door in this way, it is possible to avoidance the induction of a wide range of hazards in the home.

The important thing is to select the appropriate load values in order to realize the proposed method. It can be shown that for normal subjects and different induction. In addition, it does not feel it's an obstacle. In this study, the appropriate load value, sensory evaluation experiments were conducted to derive whether there is a tendency by people in what sliding door in the room. The results indicated that subjects it was possible to distinguish between normal and when the load is being applied. In addition, the psychological effects due to load value was found that there is a similar trend to some extent in all subjects. Next, Subjects were sensory evaluation experiments conducted under the same conditions in the state with the hand luggage of 1.5kg when they opening the door. From the experimental results of these two types, in lightweight of the room door was determined to be appropriate load value is 6.865N-9.807N. In addition, by using by the appropriate load value, I was obtained knowledge that is valid uniformly for the door. Next, I was create system of the proposed method, and conducted sensory evaluation as a system, to evaluate its effectiveness.

Thus, the difference handedness of the subjects, and attitude for open the door of the subjects, and from the time of presentation is did not affect the percentage of correct answers when differentiate load from the system from the normal.

In this study, the experiment was determined by sensory evaluation of the load values appropriate to give people when they open the door. However, the load value shown in the experiment is that the limited circumstances when you use the sliding door of the room, shall be considered a method for the induction of other target device. In addition, by controlling the operation of the equipment other than the target device, it is also necessary for the study of coquet approach with of the induction subject. In addition, there is desired as valid scene in the same manner against other residents while focusing on the induction method to hazards avoidance for such as elderly and children of including the non-induction subject.

In summary, in this study, I was propose a method to load when they opened the door. Were able to show that the experiment, there is a similar tendency of subjects to evaluate the value of each load. In addition, by setting appropriate values for the load, the proposed method was obtained to can be effectively used in the induction of hazards aversion in the home.

Future work is to examine response to the safety, change of the load value by the situation in the home, and effectiveness in the actual home environment.