

A design for the priority seating system on Taiwan buses

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Purpose This design project is intended to ameliorate the current priority seating system used on buses in Taiwan. In specific, our goal is to make effective use of the priority seats, even when all the seats are occupied on the bus. Three issues were discussed in this project: (i) current priority seats system; (ii) suggestions on priority seating system design; (iii) a new design for the priority seating system on buses in Taiwan.

Method The literature review and secondary data analysis were applied to evaluate current priority seating system in Taiwan. The priority seats were originally designed for a good purpose, to give seats to those who are in need. However, frequent failures of the system include cases where the priority seat is conceded, but the one in need is unable see it due to the crowding on the bus, or when an individual needs the priority, but have a hidden disability they do not wish to disclose, e.g., chronic pain, difficulty in walking etc. Moreover, when the priority seat is conceded and the one in need sees it, it also occurs that other passengers fail to notice the situation and claim the seat before the person in need is able to secure it for themselves. All these problems can be the result of the lack of an accurate method of signalling need (*Figure 1*). To solve this problem, there is a need to have accurate signage for people with special needs. Three elements need to be considered: (i) information display; (ii) the target is obvious and confirmed; and (iii) the personal judgment. A new strategy to improve current situation is to raise a need-signal by the one who is in need.

Results and Discussion The EasyCard is a smartcard payment system for bus fares. It also can be used as an ID to identify a person with special needs. Hence, we connect the EasyCard sensor with a light signal to improve the design of priority seating system (*Figure 2*). The light on the top of the priority seat is the key design of this project. As the passenger with special need boards, his/her EasyCard directs the light downward. Occupants of the seat without special needs who notice the sign and want to abdicate the priority seat can hit the light to change the light to its upward position. This will inform other passengers of the available seat and its position.

Keywords: mobility & transport, priority seat design, senior-friendly design

Address: Hua-Hsia Institute of Technology, New Taipei City, Taiwan; E: tjolee@gmail.com



Figure 1. The current priority seats on bus in Taiwan

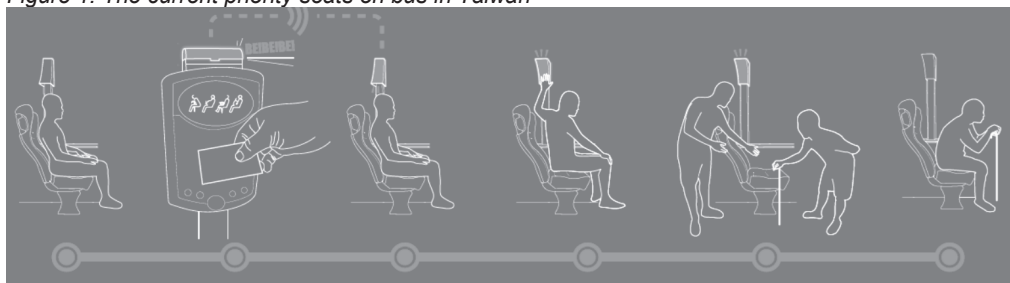


Figure 2. A new design of priority seats system