



Analysis of experience with formalizing handicapped parking system

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ABSTRACT

Saga is the first region in Japan to introduce a formalized handicapped parking permit system (known as the PP system), an identification card system, in order to protect accessibility privileges designed for disabled individuals. This paper describes the analysis methodology that relied on a graphical representation to quantify type of occupants and dwell times of usage of handicap parking spaces.

The effectiveness of the PP system and its attributes has been analyzed using two different surveys in this research project. The first investigation was an observational survey that focused on quantifying changes in usage patterns including potential illegal use. The investigation indicates that there is an increase of the usage level of parking space allocated following the implementation of new system as it accompanied a broadening of the definition of eligibility. At certain sites, the allocated handicapped parking spaces were occupied for nearly 60% of the time causing unacceptable level of inconvenience for disabled. The second investigation applied a questionnaire survey to examine perception of users of parking facilities. Results of this survey are consistent with findings of the other survey. Although the introduction of permit system and broadening of the definition of disabilities were done with best intentions, the new system has reduced the availability of parking spaces to wheelchair users.

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1. Introduction

The Japanese government legislation has been mainly silent on policing aspects of handicapped parking although it has specified the minimum standards to be maintained by owners of traffic generators. There are three relevant specifications that have legal status in Japan: (i) the width of handicapped parking spaces should be at least 3.5 m (Kubota, 2008); (ii) handicapped parking space should be provided as close as possible to entrances of demand centers such as shopping malls (Cabinet of Japan Government, 1994); and (iii) the minimum required number of handicapped parking spaces is 2% of the number of total parking spaces when that total available space is equal to or less than 200, or 1% of the total parking spaces plus two when the 200 spaces threshold is exceeded (Ministry of Construction of Japan, 1994). The regulation framework in Japan is limited and simple compared to overseas examples such as the Americans with Disabilities Act (ADA). ADA stipulations are relatively more detailed, accordingly, the parking space marker color has to be blue and width 60-inch-wide

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(1.52 m) in access aisles in order for them to be wider than the allowance made for regular spaces. The specifications also state that penalty signs usage should be at least 5–7 feet (1.67–2.13 m) above ground level (Department of Justice in U.S., 2010). Furthermore, the required number of handicapped parking spaces in general parking lots has been specified in ADA. (Anonymous, 1992) Other publications describe facility design specifications including permit requirements for handicapped parking systems in the European Union, United Kingdom, South Korea, and Singapore (Nishidate, Mizuno, & Tokuda, 2008a; SG Enable, 2010).

Although such reserved parking is important because many disabled people depend on private vehicle for transportation, some able-bodied people misuse handicapped parking spaces, resulting in inconvenience and disappointment for genuine disabled people who rely on availability of these spaces. In an effort to reduce the illegal use of parking spaces reserved for people with disabilities, international researchers have investigated effects of signage (Cope & Allred, 1990), printed messages (The Chronicle of Higher Education, 1981), fines (Fletcher, 1995), policing and enforcement on rate of violations (Fletcher, 1996).

The Japanese experience in this field contrasts in two different ways. Firstly, Japan did not have a formalized permit system prior to 2006 when Saga region in the west of the country introduced such a system. The second difference is the lack of punitive measures for illegal users of handicapped parking. In Japan, regulators are reluctant to criminalize petty offences and have not formed a legal framework to deal with handicapped parking lot usage by able-bodied individuals. Adopting a concept from social cognitive theory (Bandura, 1986), the local government of Saga did design a framework based on self-compliance to reduce the abuse of handicapped parking. This paper sets out to investigate the effectiveness and level of acceptance of the parking permit system introduced in Saga. Two field surveys were carried out, one for a quantitative analysis of usage levels and the other for a qualitative analysis of user experience. A brief explanation of the parking permit system implemented is included below before the introduction of surveys.

2. Literature review

On July 29, 2006, Saga prefecture introduced the first formal identification card system (a parking permit system known as the PP system) for disabled users of vehicles to permit such users to occupy handicapped parking spaces. This system classified disabilities according to the length of validity into two categories while broadening the definition of ‘disabled person’ to include non-visible disabilities, intellectual disabilities and temporary impairments. The color of the permit conveyed the length of validity although many locals have come to associate the color with the severity of disability. In addition, pregnant women, the elderly and those having mild trouble with walking are allowed to apply for parking permits as well (Public Health and Welfare Office in Tosu, 2009).

The regional government approached owners of shopping malls and hotels and reached an agreement on the operation of handicapped parking spaces that would be provided by operators within their premises. Such an agreement was necessary because the regional government does not have the legal authority to make unilateral decisions related to private properties. Then, the regional government explained to residents the reasons for not introducing punitive measures to protect individuals with disability. The main reasons were: an appreciation of resistance of the general public to a penalty system; difficulty to implement the penalty system only in one region instead of whole Japan; and the high cost of implementing a penalty system (Saga Government, 2011). Authors believe other reasons were also present, such as: the objections from shopping mall and hotel owners who do not want to offend or discourage the able-bodied customers with a penalty system that maybe perceived as an additional access cost; and a possible deterioration of community harmony as a result of conflicts between drivers who are fined and vigilant neighbors. For these reasons, the handicapped parking proceeded in a gentle way to prevent the able-bodied parking. Although above community consultation measures were carried out, there was no predictive analysis or investigation for handicapped parking spaces in Saga prior to implementation of the PP system (Kiyota, Hayashida, & Maeda, 2009a).

The health and welfare division of Saga (Saga Universal Design Laboratory, 2013a) provides the complete list of disabilities acceptable for use of handicapped parking. The list of accepted disabilities goes beyond the traditional visible impairments. The list includes impairments such as deafness, vision problems and vocal disorders. Heart problems, neurological ailments and HIV (human immunodeficiency virus) infections are also specifically mentioned. Intellectual disabilities are also included in the list. Temporary impairments are also covered bringing pregnancy and sporting injuries into the definition of disabled for the purpose of eligibility for a parking permit.

Traditionally, the disabled people in Japan used to leave a government document in the form of a booklet to indicate that they are in receipt of some kind of disability benefit. This was a voluntary arrangement and relied on definitions of other agencies.

The disabled individual needs to mail an application with relevant information to receive a permit. The application form has to be supported by a medical practitioner who can detail the relevant symptoms and assessments (Saga Universal Design Laboratory, 2013b).

However, when it comes to handicapped parking systems and parking permits (tags or placards) overseas, there are some differences between Japan and other countries. The parking permit in America is quite easy to identify for its bright color. Fig. 1a shows the handicapped parking permits in Florida State (My-DMV, 2008). The red tag is a temporary permit. The permanent or long-term handicapped parking permit (the blue tag shown in Fig. 1a) must be signed by the applicant and a

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