

The spatial and statistical distribution pattern of illegal bicycle parking behavior: A case study of Tsukuba city, Japan.

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1. Motivation

Many types of travel behavior involve positive social interaction (conformity effect) and it sometimes induces undesirable results, such as chronic illegal bicycle parking and illegal car parking. In this study, we took a case study of illegal bicycle parking behavior. It is common for a bicycle user to park his/her bicycle on a street illegally, if he/she sees other people parking illegally on a street.

2. Introduction

Japan and many European countries have invested heavily in bike-and-ride facilities, providing many guarded bicycle parking garages at major rail stations, and have adopted policies favoring bicycling and walking, with extensive use of traffic calming techniques and provision of bicycle paths and lanes leading to stations.

In many cases parking of bicycles at main attraction points, such as railway stations, constitutes a problem. This report is a case study of a bicycle-parking problem in the very rapid developed Japanese city of Tsukuba but the methodology applied is of general value. The illegal parking behavior has been investigated by means of field surveys.

Tsukuba police post as a field investigating location. Before selecting the location I have been considered several factors such as the distance from the Railway station, City center and proximity of the legal bicycle from this point and the distance from the police post. The figure1 shows the spatial distribution pattern of both legal and illegal locations of around Tsukuba railway station with important buildings.

4. Methodology

Recognition of the Tsukuba center area has found the both legal and illegal bicycle parking locations, which have been coordinated by the Hand held GPS technology (Garmin Venture HC device). Further illegal behavior pattern had been observed the every minute from morning 9'O clock to evening 4'O clock during the holiday (28th November 2010) and working day (29th November 2010).

5. Results and Discussion

There are two-multi regressions models have been derived with analyzing of data sets of two days. These analyses are mainly described in statically, graphically and spatially. As a result I found strong correlation between gender and illegal bicycle parking pattern in both days through the statistical analysis and in addition graphical point of view found the 2 models for each days and finally in spatial point of view make two maps for each hour of each days to investigate the behavior pattern. As summarizing most of illegal bicycle parking has happened in morning session than the evening and there is a highly probability doing these kind of illegal thing by the young generation than the children and the old generation.

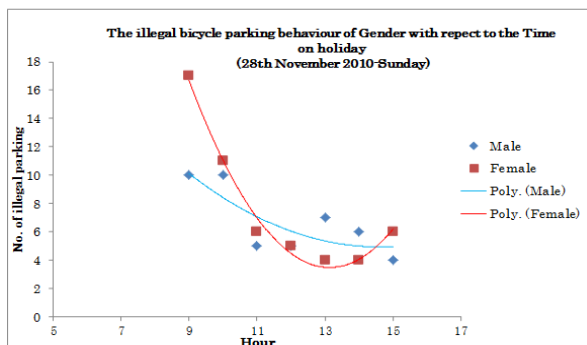
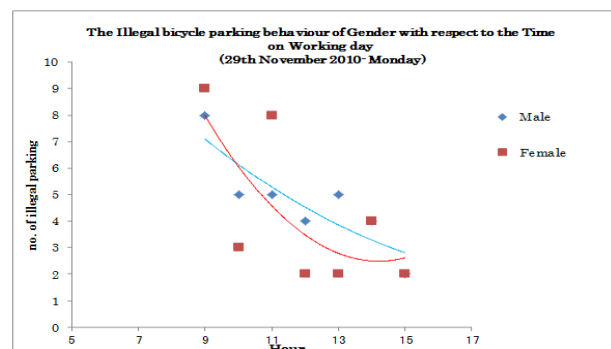


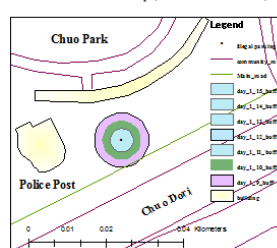
Figure1

3. Study Area

The fieldwork has carried out the well-designed and maintained city of Japan, called Tsukuba. After doing the field recognition I select the location in front of the



The illegal bicycle parking spatial distribution pattern of the holiday (28th November 2010)



The illegal bicycle parking spatial distribution pattern of the holiday (29th November 2010)

