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Understanding the characteristics of road traffic accidents in Thailand
Analysis based on Hiyari-Hatto reports

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Abstract: In Thailand, the fatality rate of traffic accidents is very high, more than 9 times that of Japan. In order to proceed with effective traffic accident countermeasures under such circumstances, it is necessary to grasp what type of traffic accidents are frequently occurring. However, except for roads under jurisdiction of the Department of Highway, analysis by traffic accident type has not been sufficiently conducted, so it is not possible to grasp what type of traffic accidents are common in Thailand. Therefore, in this study, based on the Hiyari-Hatto experiences obtained in the Hiyari map development workshop, we grasped the Hiyari-Hatto events that occurred frequently. Then, we clarified the characteristics of traffic accidents by analyzing those Hiyari-Hatto events in Thailand.

1. Introduction

In order to efficiently implement countermeasures to reduce the increasing number of traffic accidents, it is necessary to understand the causes of traffic accidents in detail. In Thiland, traffic accident data has been collected by the related organization and agency independently. However, collosion diagram has not been recorded in most of database, excepy HIMS by DOH. Thus, we employed Hiyari-Hatto experience instead of traffic accident data to identify typical collision types. Hyari-Hatto data is data based on subjective evaluation and is not completely coincident with the traffic accident data, but is effective data for grasping the tendency for each traffic accident type. Thus, we collected Hiyari-Hatto experience by organizing Hiyari Map development workshops and identify typical accident types by clasifing them into collision types.

2. Collection of Hiyari-Hatto experiences by Workshops

We use Hiyari-Hatto data collected at the workshops organized in Spumburi, Chainato, Saraburi, Nakon Rachashima and Khonkaen by ATRANS, IATSS and Nihon University.

On the workhop, concept of Hiyari-Hatto was explained first. Then, the participants of wrokshop were requested to identified Hiyari-Hatto spots in terms of driving a car, riding amotorcycle, and walking by putting stickers with different colors on the map. Identified Hiyari-Hatto spots were summarized in the three maps. At same time, the participants has to drow Hiyari-Hatto situation like as collision diagram for one typical case. As we explain later. Collision types was idenfiied based on drowing and classified into same type.

3. Improvement of Collision Diagram

We arranged the Hiyari-Hatto data mentioned above in correspondence with the Collijon Diagram Classification Table. The Collijung Diagram is a diagram that represents the form of a traffic accident. The Classification Table is developed based on the classification of traffic accidents and road characteristics.

At first, we tried to arrange the collected Hiyari-Hatto events in the Collijung Diagram Classification Table created by the Office of Transportation and Traffic Planning and Policy (OTP), Ministry of Transport in the past. However, since there were many uncorresponding events, we reviewed the classification of the Collision Diagram and added the necessary diagrams to the Classification Table. In addition, some drawing in the Classification Table were difficult to understand, so the the way of expression was improved. These activities were carried out by exchanging opinions several times with a group of Dr. Paramate of Prince Songkla University, Thailand. New events in particular are very common in Thailand, such as events related to motorcycle accidents and U-turn lanes on the main highway. The characteristics of the Hiyari-Hatto events that occurred in Thailand were clarified from the updated Collijon Diagram Classification Table.

As a result of aggregateing Hiyari-Hatto data, it was found that Hiyari-Hatto events can be mainly classified into pedestrian

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Table 1.　the Collision Diagram Classification Table

accidents,intersection accidents (lateral direction, opposite direction), accidents when traveling in one direction, accidents due to start/parking, accidents due to overtaking, accidents by obstacles, accidents due to inability to control, accidents on curves, other accidents, and motorcycle accidents. In particular, in the Collijon diagram classification table, there are many event on No.101; an encounter accident at the intersection, No.202; a collision between a straight car and a right turn car at the intersection, and No.311; a collision with a vehicle in the opposite lane during the U-turn. In Thailand, there are few signalized intersections, and there are many intersections with blind spots, so event classified into No.101 was the most reported.

4.　Utilize of Collision Diagram

From the above results, we were able to grasp the characteristics of the Hiyari-Hatto event in Thailand using the collidium diagram. The results of these Hiyari-Hatto events are expected to be used to some extent for traffic accident countermeasures in Thailand. Currently, we are working on comparing traffic accident data from DOH with the results of the current survey, and we believe that this result will confirm how much the features we have learned from Hiyari-Hatto events correlate with actual accidents. Finally, we can now display the Collision Diagram Classification Table within the ATRANS safety map apps, so we will collect more events and proceed with further analysis.

5.　Reference

[1] Tuenjai Fukuda, Atsushi Fukuda and Makoto Okamura : Effort to Raise Awareness of Traffic Safety Using Hiyari Map Development in Thailand, IATSS Review, Vol. 32, No. 4, pp.291-298