

Road design and subjective safety

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Abstract

The human element is certainly the most vulnerable, but also the most flexible, in any decision-making process. Human factors are therefore important in the prevention of road accidents. In this paper a new experimental module for a questionnaire is proposed. It reflects the great interest that many researchers have taken in recent years in the issue of the design consistency of roads, in order to improve road safety. The study has been carried out with a representative number of young drivers. Elements of road alignment, the design elements of a cross section and of the roadside were classified, all in relation to road safety. The experiment consisted of a questionnaire-interview method on the topics of road safety and road design and it offers indications for future research and developments.

Introduction

A pilot study with a representative sample of drivers was performed aiming to end up with a list of elements of road alignment, cross sections and the roadside elements that affect road safety. The study focuses on *design consistency*, a subject that has received considerable attention in recent years (Hassan *et al.*, 2001). As important in road design is traffic psychology (Rothengatter, 1998). The purpose of the study is to define the functions involved in driving which can be used by road engineers to design, check and maintain a safe road infrastructure.

Pilot study

The 'Driver Questionnaire' developed during the study draws up a list of the elements of road alignment, road cross section and roadside elements which affect road safety (Zakowska, 1995). The test consists of multiple choice questions, with stated preferences. This study was conducted on the basis of the subjective assessment method. Subjects were asked to choose what they consider a safe layout. In figure 1 an example of a multiple choice question is shown.

In D. de Waard, K.A. Brookhuis, J. Moraal, and A. Toffetti (2002), *Human Factors in Transportation, Communication, Health, and the Workplace* (pp. 205 - 208). Maastricht, the Netherlands: Shaker.