



# Critical Parameters for the Development of Web-Based Knowledge System for Low Volume Rural Roads in Sarawak

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**Abstract.** Low Volume Rural Roads serve as one of the key infrastructure projects for integrated rural development in Sarawak. This road is important to help promote development, improve the flow of goods and services and ensure good public health and education, as well as land and resource management support. The aim of this study is to identify the critical parameters for the development of a knowledge-based system for the design of Low Volume Rural Roads (LVRRs) in Sarawak. A total of eleven experts with more than 10 years of experience have been selected, particularly in the areas of low-volume road design, construction and planning. The questionnaire and feedback form were used to request knowledge from domain experts. According to the survey, experts agreed that all parameters, namely traffic loading, soil condition, type of terrain, geometric features and drainage, are important for the design of low-volume rural roads.

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**Keywords:** Pavement · Low volume roads · Expert system

## 1 Introduction

Low volume roads serve as one of the key infrastructure work, placed for integrated rural development which has become a matter of growing urgency for consideration of social justice, national integration and economic uplift of rural area [3, 4]. Study by Agarwal et al. [1, 2], state that the huge network of rural road that was created in India has resulted in increased in social and economic benefits in rural areas. Also, low volume road provide farm to market access roads, roads connecting communities, and road for logging and mining are also significant parts of any transportation system around the world especially those in the developing countries such as in Malaysia. To help promote development, to improve the flow of goods and services, for a good public health and education, as well as to aid in land and resources management, the



WORLD ENGINEERING, SCIENCE & TECHNOLOGY CONGRESS  
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