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A GIS-based multicriteria model for the evaluation of territorial accessibility

José F. G. Mendes, Daniel S. Rodrigues, Rui A. R. Ramos
*Department of Civil Engineering,
University of Minho, Braga, Portugal*

Abstract

In most of the land-use planning and management processes, location analysis is present and often plays a major role. Accessibility models were developed by many authors as a way to evaluate how easy or difficult can be to link origins and destinations, adopting different formulations. In this paper, a multicriteria approach for the evaluation of accessibility is presented. The model was developed and implemented within a GIS context and applied to three different typologies of problems: general accessibility evaluation; accessibility evaluation in the context of industrial location; and accessibility evaluation of a University campus.

Keywords: accessibility, multicriteria evaluation, GIS

1 Introduction

Land-use planning is a decision-making process that often involves selection, evaluation and combination of several factors. Some of these factors are closely related to the accessibility of the potential location alternatives, which stresses the interest of evaluating accessibility.

The concept and evaluation of accessibility have been discussed for almost two hundred years. In one of the most interesting texts about accessibility, Hoggart [1] sustains that accessibility is associated with the interpretation, implicit or explicit, of the easiness of reaching spatially distributed opportunities. This means that accessibility depends not only on the location of opportunities but also on the easiness of overcoming the spatial separation between individuals and specific places.