METHODOLOGY FOR SCHEDULING PUBLIC TRANSIT IN NAIROBI AND PILOT STUDY ON KENCOM-KAWANGWARE ROUTE

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Abstract

Public transport in Nairobi city is characterised by inefficiency. This has led to inconveniences to both business owners and clients within the central business district. There is therefore need for a well-planned and operational public transit system that will encourage ridership and reduce over-reliance on personal cars. A reliable and efficient public transit requires well-thought planning and scheduling to ensure on-time performance and temporal and spatial availability of the service. This planning requires tools and manuals which are not available in a form currently applicable to the situation in Nairobi. This research was therefore undertaken with the overall goal of developing transit planning tools and procedures that are applicable to Nairobi. It also seeks to examine the obstacles to bus transit scheduling in Nairobi. The research further investigates the use of software in scheduling within the context of the study. The study commenced by examining discrete and continuous models applicable to transit planning as identified in previous studies. A proposed method applicable to Nairobi was synthesised and a checklist of data necessary for transit planning using this method formulated. Data collection tools were developed based on a hybrid of both the discrete and continuous models. These tools were designed to work with a bespoke software developed for the purpose of analysing the large volume of data generated. A pilot study was undertaken to test the applicability of the proposed method in developing transit networks for Nairobi. The results indicated that using the developed model, various public transit parameters can be determined for Nairobi to support planning and setting transit performance standards. In conclusion, a methodology based on a hybrid of both the discrete and continuous models was found to be adequate for scheduling of public transit in Nairobi.

Key words: frequency, headway, temporal and spatial availability, transit system, vehicle and crew schedules