A Route Planner to Encourage the Use of Public Transport Services in a Pandemic Context

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Introduction

- The evolution of the COVID-19 pandemic quickly brought profound effects on the lifestyle of the population, especially with regards to their mobility;
- Changes in their mobility behaviours were observed, with a decrease in the number of public transport trips throughout the world [1], which raised several questions about the future sustainability of mobility in cities;
- It is essential to restore confidence to citizens so that they feel safe and comfortable when using public transport;
- The promotion of public transportation by making information available to travellers supports their perceptions of personal safety and comfort while traveling, playing these factors a vital role in the acceptance of the use of public transportation as a means of mobility [2];
- The provision of information to travellers through route planning systems aims to help travellers find the best route to travel between a certain origin and destination;

![Fig. 1 - Change in the use of public transport services between February 15 and June 5, 2020 [1]](image)

Goals

- Understand passengers needs regarding route planners for public transport;
- Identify the factors that would lead the population to regain confidence in using public transport services as a means of mobility;

Methodology

Systematic literature review

Considering the following query:

("safety" OR "security" OR "comfortable" OR "travel safety perception")
AND ("mobility" OR "public transport")
AND ("route planner" OR "transportation planning")

The application of the query resulted in a total of 250 articles (213 after removing the duplicates). After applying screening criteria and reading the selected articles in full, 27 articles were included in the analysis.

Qualitative research

Qualitative research was developed with resource by a set of focus group sessions in order to understand and identify the needs of passengers and the factors that would lead the population to regain confidence in using public transport services as a means of mobility.

Results

- Crowding is the factor that most affects comfort during a trip. However there are other important factors, such as air quality, temperature, odour and ambient noise;
- Uncertainty regarding vehicle schedules, long waiting periods, and poorly lit access routes are associated with experiences of discomfort and insecurity when using public transport services;
- With the emergence of the COVID-19 pandemic, the perception of safety and comfort during public transport travel has gained greater importance;
- The availability of travel information on public transport was considered a fundamental factor in restoring confidence in using public transport services;
- Travellers need easy-to-use information systems that providing travel planning tools to obtain real-time information on the road and access data on:
  - Vehicle stocking, ventilation and hygiene;
  - Operating status of lines and stations;
  - Vehicle departure times calculated according to your actual position on the route;
  - Characteristics of the areas where individuals access public transport vehicles and the walking time to these;
- Route planning systems help users to find the best route to travel between a certain origin and destination, however, the definition of the best route is a very subjective concept, as it varies depending on the user’s needs and perceptions of the system;

Conclusions

It is essential that route planners meet the current needs of passengers, taking into account safety and comfort requirements, in addition to conventional solutions, thus contributing to the restoration of confidence in using public transport services, promoting a modal transition in their favour.

References