

INTISARI

Pertumbuhan kota yang tidak terencana di negara berkembang menyebabkan distribusi kegiatan ekonomi dan pelayanan transportasi tidak merata, termasuk di kota kecil Kota Parepare, sehingga diperlukan perbaikan melalui perencanaan transportasi. Saat ini, perencanaan transportasi dengan 4 Step Model dikritik karena tidak inklusif, digantikan dengan activity-based dan agent-based. Model-model perjalanan ini banyak digunakan dalam eksplorasi bangkitan perjalanan di kota-kota besar negara maju seperti Amerika Serikat, China, dan Australia namun tidak di kota-kota kecil negara berkembang seperti Indonesia, sehingga perlu dilakukan eksplorasi bangkitan perjalanan dengan ketiga model tersebut untuk melihat faktor-faktor yang berpengaruh. Kota Parepare merepresentasikan kota kecil dengan pelayanan transportasi umum terbatas.

Penelitian ini dilakukan dengan metode kuantitatif dengan hipotesis bahwa faktor demografi, sosioekonomi, lingkungan terbangun dan pelayanan angkutan umum memiliki pengaruh terhadap bangkitan perjalanan. Data perilaku perjalanan dikumpulkan melalui survei rumah tangga dengan kuesioner terhadap 344 orang yang berdomisili di Kota Parepare secara purposive. Analisis data menggunakan analisis jalur dengan pendekatan PLS-SEM menggunakan SMART-PLS 4.0.

Hasil penelitian menunjukkan bahwa bangkitan perjalanan dengan trip-based model direpresentasikan oleh jumlah perjalanan rata-rata 3 trip sehari. Trip-based model dipengaruhi oleh faktor pendidikan terakhir, lingkungan terbangun dan pengeluaran. Activity-based model menghasilkan bahwa perjalanan sehari-hari lebih sering dilakukan pukul 05:00 - 18:00, pola perjalanan home-work-home, durasi perjalanan rata-rata 21,26 menit dan total jarak perjalanan 9 km. Activity-based model ini dipengaruhi oleh pendidikan terakhir, lingkungan terbangun dan usia. Pada model agent-based ditemukan bahwa perjalanan wajib (mandatory), seperti bekerja, rata-rata berdurasi 7,52 menit dengan jarak rata-rata 2,5 km. Bangkitan perjalanan pada agent-based model ini dipengaruhi oleh faktor usia dan pendidikan terakhir. Sementara itu, perjalanan yang tidak wajib (discretionary), seperti berbelanja, rata-rata berdurasi 7,52 menit dengan jarak rata-rata 1 km, yang banyak dipengaruhi oleh faktor pengeluaran atau tingkat pendapatan.

Kata kunci: bangkitan perjalanan, kota kecil, trip-based, activity-based, agent-based

ABSTRACT

The unplanned growth of cities in small developing cities, such as Parepare, often caused an uneven distribution of economic activities and transportation services. To address this, an effective transportation planning is needed, but the planning process often utilizes 4 Step Model, which has been criticized for not being inclusive. It is suggested that this model should be replaced by activity-based model and agent-based model, which are widely used in big cities in developed countries such as the United States, China and Australia. For small towns in developing country such as Parepare, which often does not have sufficient resources for performing advanced modeling, it is necessary to explore trip generation and its influencing factors using these three models.

This quantitative research is based on the hypothesis that demographic, socioeconomic, residential location, and public transport services influence trip generation. Travel behavior data was collected through a household survey from 344 questionnaires. Data were analysed using path analysis (PLS-SEM) with the help of SMART-PLS 4.0 tool.

The research found that trip generation using trip-based model, which is represented by the average number of trips (3 trips per day), is influenced by users' education level, residential location and household expenses. When using activity-based model, it is found that daily trips are mostly performed from 05:00 to 18:00, dominated by travel pattern of home-work-home, with an average trip duration of 21.26 minutes and total trip distance of 9 km. This is heavily influenced by education level, residential location, and age. For the agent-based model, it is found that mandatory trips (i.e., work trip), which on average is 7.52 minutes covering the distance of 2.5 km, is influenced by age and education level. Meanwhile, discretionary trips (i.e., shopping), which on average is 7.52 minutes covering 1 km distance, is heavily influenced by household expenses.

Keyword: trip generation, travel modelling, small town, trip-based, activity-based, agent-based