

PEMETAAN MOBILITAS INTRADESTINASI WISATAWAN MENGUNAKAN DATA MEDIA SOSIAL (STUDI KASUS DI DAERAH ISTIMEWA YOGYAKARTA)

INTISARI

Wisatawan memiliki peran utama dalam menggerakkan industri pariwisata suatu daerah. Mobilitas wisatawan menjadi indikator penting yang merefleksikan kunjungan ke berbagai lokasi. Kajian mengenai mobilitas wisatawan menekankan pentingnya memahami mobilitas intradestinasI, yang merupakan pergerakan wisatawan dalam suatu wilayah pada skala lokal. Daerah Istimewa Yogyakarta (DIY) merupakan salah satu provinsi yang mengalami peningkatan kunjungan wisatawan pada periode 2015–2019. Pemanfaatan data media sosial menawarkan alternatif sumber data geospasial untuk mengungkap mobilitas wisatawan, mengingat unggahan pengguna dapat disertai dengan informasi lokasi. Twitter dan Flickr merupakan dua platform yang kerap digunakan dalam penelitian pariwisata karena mampu merekam informasi geospasial sekaligus semantik melalui data multimedia yang diunggah wisatawan. Penyusunan basis data wisatawan dalam penelitian ini dilakukan dengan menyaring data media sosial.

Penelitian ini bertujuan untuk mengidentifikasi karakteristik wisatawan dan memetakan mobilitas intradestinasI menggunakan kerangka teori pemodelan berbasis agen (*Agent-Based Modeling/ABM*). Data media sosial disaring melalui tiga pendekatan—spasial, tekstual, dan temporal—untuk memisahkan unggahan wisatawan dari data mentah. Basisdata mobilitas wisatawan yang diperoleh kemudian dianalisis secara spasial dan temporal melalui serangkaian analisis, meliputi kepadatan, pola, *hot spot*, sentimen, dan pengelompokan. Konfigurasi spasial wisatawan direkonstruksi dari *tracking lines* yang dihasilkan dari data media sosial, sementara mobilitas intradestinasI dimodelkan menggunakan ABM yang berlandaskan *Markov Chain* (MC) dan *Discrete Choice Theory* (DCT). Data *tracking lines*, *trajectory*, serta hasil analisis pengelompokan digunakan untuk menyusun *transition matrix* dan *utility scores* dalam purwarupa ABM.

Hasil penelitian menunjukkan bahwa mobilitas wisatawan di DIY membentuk pola mengelompok dengan kepadatan tinggi pada lokasi tertentu. Analisis pengelompokan mengungkapkan jenis objek wisata populer di setiap kabupaten, dengan Kota Yogyakarta berperan sebagai pusat aktivitas wisata yang didominasi wisata budaya. Rekonstruksi mobilitas berbasis data media sosial berhasil menghasilkan konfigurasi spasial mobilitas wisatawan. Pemodelan ABM yang dikembangkan menggunakan MC dan DCT mampu merepresentasikan pola mobilitas wisatawan di lapangan, dengan nilai *Mean Absolute Error* (MAE) sebesar 27,31186 pada pemodelan dengan 1.000 agen. Nilai ini masih berpotensi ditingkatkan melalui pengaturan ulang parameter maupun pengkategorian agen yang lebih rinci.

Kata kunci: mobilitas intradestinasI, wisatawan, data media sosial, analisis spasiotemporal, pemodelan berbasis agen.

***INTRADESTINATION TOURIST MOBILITY MAPPING
USING SOCIAL MEDIA DATA
(CASE STUDY IN SPECIAL REGION OF YOGYAKARTA)***

ABSTRACT

Tourists have been identified as a key driving force in the tourism industry of a region. Tourist mobility is a significant indicator of visits to various locations. Research conducted on tourist mobility has highlighted the necessity of comprehending intradestination mobility, defined as the movement of tourists within a region on a local scale. The Special Region of Yogyakarta (DIY) is one of the provinces that experienced an increase in tourist visits during the 2015–2019 period. The utilisation of social media data provides an alternative source of geospatial data, thereby enabling the revelation of tourist mobility patterns, as user posts are frequently accompanied by location information. Twitter and Flickr are two platforms that are frequently utilised in tourism research due to their capacity to record geospatial and semantic information through multimedia data uploaded by tourists. The compilation of tourist databases in this study was carried out by means of a social media data filtration process.

The objective of this study is to identify the characteristics of tourists and map intradestination mobility using the agent-based modelling (ABM) theoretical framework. The process of filtering social media data entails the implementation of three distinct approaches: spatial, textual, and temporal. These approaches are employed to segregate tourist posts from the original dataset. The resulting tourist mobility dataset is then analysed spatially and temporally through a series of analyses, including density, patterns, hot spots, sentiment, and clustering. Tourist spatial configurations were reconstructed from tracking lines generated from social media data, while intradestination mobility was modelled using ABM based on Markov Chain (MC) and Discrete Choice Theory (DCT). The construction of transition matrices and utility scores in the ABM prototype was facilitated by the utilisation of tracking lines, trajectories, and clustering analysis results.

The results of the study indicate that tourist mobility in DIY forms a clustered pattern with high density in certain locations. The application of cluster analysis has enabled the identification of the types of popular tourist attractions in each district. The city of Yogyakarta has been identified as the centre of tourist activity, with cultural tourism being the dominant form. The utilisation of social media data for the reconstruction of mobility has yielded a spatial configuration of tourist mobility. The ABM model developed using MC and DCT has been shown to be capable of representing tourist mobility patterns in the field, with a Mean Absolute Error (MAE) value of 27.31186 in the model with 1,000 agents. The potential for enhancement of this parameter remains through re-adjustment of its values or through more detailed categorisation of the agents.

Keywords: *intradestination mobility, tourists, social media data, spatio-temporal analysis, agent-based modeling.*