ABSTRACT

Tourism sector is one of the biggest contributors for Indonesia's national income. This can be seen from the data in 2018 where tourism become one of the leading sectors and successfully contributed US$ 20 million income. It shows the significance of tourism in Indonesia. Bali as one of the provinces that get most of its income from tourism and also a favorite tourist destination plays an important role in Indonesia's tourism, especially in achieving the government's target of making Indonesia's tourism the best in region.

The purpose of this study is to give insight for all stakeholders in the tourism industry regarding the characteristic and movement pattern of foreign tourist in Bali especially in Sarbagita metropolitan area. In this study, researcher tries to identify Area of Interest (AOI) for tourist using DBSCAN on geotagged photo uploaded by Flickr users. The DBSCAN result shows that there are six AOI namely North Kuta, Ubud, South Kuta, Nusa Dua, Sanur, and Tanah Lot. In which North Kuta become the favorite AOI because it was visited by the most Flickr users.

This study also identified preference of tourist visiting time at each AOI, where it was found that AOI with coastal attraction will experience an increase during the sunset while AOI with rural attraction experience a decrease due to the end of operational hours of those attractions.

Finally, this research identifies movement pattern of tourist by using markov chain model to map and predict a tourist's next destination, where the resulting model has an accuracy rate of 75.2%. Future research is recommended to add another variable, such as tourist preferences to the types of attraction available, into the prediction model to improve the accuracy of the model.

Keywords: movement pattern of tourist, Bali, Flickr, DBSCAN, markov chain