

## ABSTRACT

*The Central Java government is prioritizing tourism recovery due to covid-19. The hotel room occupancy rate (TPK) can be a sign of the success of tourist interest in the area visited and one of the leading indicators in measuring the economy in the tourism sector. Central Java hotel TPK is published by the Central Statistics Agency (BPS) one or two months later. This study compares the Sarimax and Prophet models for predicting the TPK of Central Java star hotels based on the MAPE value and program execution time. The model is made using 2 categories of datasets that have been checked for stationarity. Dataset 1 is 2005-2022 data (including the covid 19 pandemic situation until the termination of PPKM) and data set 2 is 2005-2019 (without including the covid 19 pandemic situation). The result is that the best Sarimax and prophet models are models that use dataset 2 with a MAPE value of 10.43% and 47.529 seconds of execution time while the prophet model with dataset 2 gets a MAPE value of 6.05% and 0.892 seconds of execution time. Furthermore, Sarimax and prophet models that use dataset 2, are predicted from 2022 to February 2023. The prediction results of both models are compared with the actual data. As a result, Sarimax is superior to prophet with a MAPE value of 12.05% and an execution time of 0.014, prophet is 14.07% and 0.100 seconds.*

**Keywords:** *Comparison, Prediction, Sarimax, Prophet*