

## **Geographic distribution of voter turnout, ethnic turnout and vote choices in Johor state election**

### **ABSTRACT**

Voter turnout is a crucial indicator of how citizens participate in choosing the leader of their country. The purpose of this study is to identify the hotspots of voter turnout and ethnic turnout in Johor during the 2022 state election by using Local Indicator Spatial Autocorrelation (LISA) and Getis Ord  $G_i^*$ . This study also verifies whether the state has achieved spatial equality among ethnic turnout. Attribute data consist of voter turnout trends for 2013, 2018 and 2022 and ethnic voters in Johor state election 2022, winning party, candidate ethnic, Parliament name, State Legislative Assembly (DUN) name, whereas spatial data comprises the DUN Johor state election (56 polygon). LISA shows high clustering of voter turnout in Johor, mostly detected in urban areas, whereas rural areas are more likely to have random patterns. Getis Ord  $G_i^*$  revealed that there were 15 areas classified as significant hotspots for Malay, Chinese, and Indian voters respectively. This indicates that the ethnic turnout among Malay, Chinese, and Indians in Johor for the 2022 election was equally distributed. Voter turnout-based ethnicity has converged to stability in its geographical distribution across the Johor DUN boundaries. The result found Malay are homogeneous as they are more likely to vote based on their own ethnicity; however Chinese and Indians in Johor are more heterogeneous as they vote based on party and political candidate, which can contribute to the strength of any political parties in Johor. LISA and Getis Ord  $G_i^*$  are very important in identifying statistically significant spatial clustering of high and low values of Malay, Chinese and Indian voters across DUN boundaries, and this finding contributes to political parties in Johor improving their strategies in future elections.