

Traffic flow analysis about the Malaysian city

Johor Bahru

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CHAPTER 4

INITIAL RESULTS

4.1 Introduction

This chapter delves into the exploratory data analysis (EDA) of Johor Bahru traffic flow to understand the main data and obtain preliminary conclusions related to the research. Exploratory data analysis (EDA) is often used by data scientists to study and analyze data sets and summarize their main features based on the research process. The commonly used method is data visualization. Therefore, the data collected in this paper will be organized and analyzed using simple statistical data methods and visualization tools.

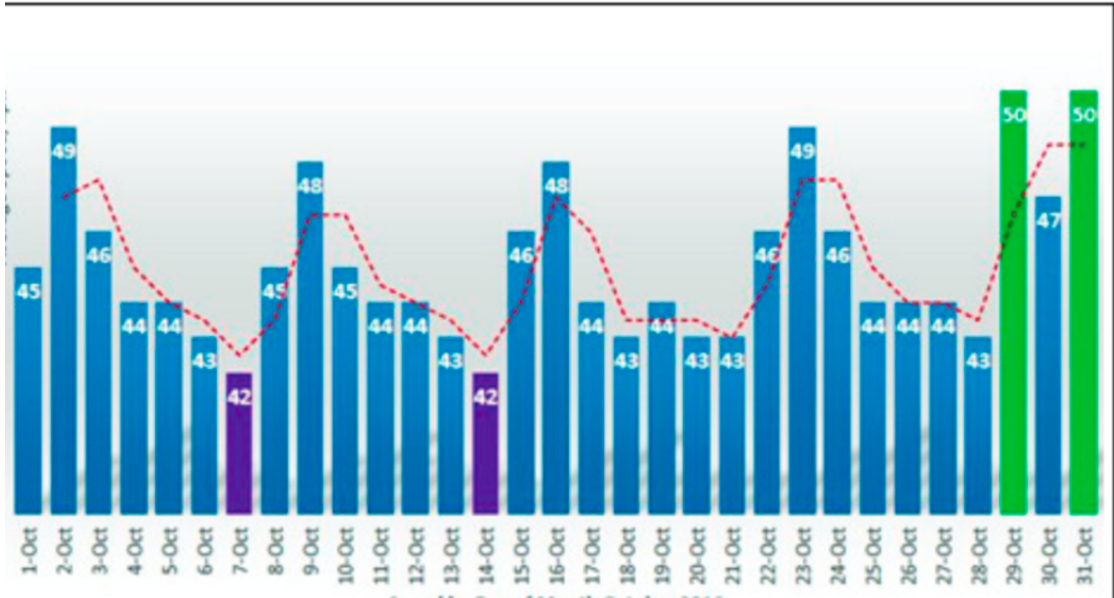
4.1 Previously used data sources and statistical methods

1. The data collected in this paper mainly come from the following sources: intelligent traffic information system, crowdsourcing-based traffic information system, social geography network, open transportation system and online car-hailing application network called Grab Taxi.
2. OSM, or Open Street Map, is an open source map application that allows third-party editing. The traffic flow data for Johor Bahru, Malaysia was exported from this website.

4.2 The following figure is a traffic analysis of the entire Johor Bahru area in September 2024

According to the data in the figure, the situation of the main roads in Johor Bahru in September is basically similar every week. The average speed of vehicles on Friday and Saturday is between 40 and 50 kilometers per hour because they are rest days, and

slightly faster at other times. The lowest speed occurred on November 8, 15 and 22, 2024, which shows that the overall average speed on Fridays of each week is lower. This is because on the weekend rest day, students are off school, migrant workers return home and tourists gather, which leads to traffic congestion on Fridays, while the heavy traffic on Sundays is because it is the first day of the working day.



4.3 Traffic flow analysis of each road

The figure below shows the average speed of each street from November 24 to 30, 2024. It is observed that the traffic speed of Inner Ring Road and Jalan Bukit Cagar is slower compared to other roads.

Data	Jalan Stulang Laut	Inner Ring Road	Eastern Dispersal Link Expressway	Jalan Sultan Ibrahim	Jalan Bukit Cagar
24 NOV 2024	33	22	35	33	24
25 NOV 2024	33	20	30	35	21
26 NOV 2024	32	20	33	33	22
27 NOV 2024	33	17	32	35	25
28 NOV 2024	32	16	37	36	26
29 NOV 2024	30	20	35	36	25
30 NOV 2024	31	19	42	37	23

4.4 Conclusion

This work collected the average traffic speed of certain blocks in Johor Bahru in November 2024. The relevant data were collected through Grab Taxi and OSM

software, sorted using excel tables, and summarized and analyzed through visualization tools.