

# Twitter Analysis Choose Location to Open Restaurant Business with R

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## Abstract:

Based on trends in outdoor eating activities and the phenomenon of social media users, the objectives of the study are; 1) Mapping the distribution of the location of tweets with the keyword "eat" to choose the location of opening a restaurant, 2) Selecting the closest location and tweets from Budi Luhur University Jakarta. The sample is obtained from Twitter data on January 1, 2019 - January 4, 2019, with a maximum location point of 20 KM from Jakarta's Budi Luhur University. This study used the R Studio tool and the programming language R with the main approach is to focus on real-time analysis rather than historical datasets. The information generated display the distribution of the mining from the closest to the furthest to the most number of tweets. This research can be used to assist entrepreneurs in making decisions regarding the location of opening a restaurant business.

**Keywords** — Social media analysis, R Programming, Twitter, Restaurant

## I. INTRODUCTION

The eating and drinking activities that had only been done in the house, nowadays many people have developed a lot along with the variety of restaurants. This activity is more commonly known as "eating out". The eating trend outside itself develops with various motivations including, for savings and practicality. For entrepreneurs, this becomes a business opportunity as an analysis to open a restaurant business. The development of the restaurant business was also followed by the development of the number of internet technology users.

According to the agency We are social Hootsuite, active social media users in Indonesia has 130 million or 49% of the population. Twitter as one of active social media in Indonesia, twitter in Indonesia has 335 million active users worldwide on January 2018. Apart from being one of the media used to support work, Twitter is also a medium for delivering information about a person's activities, moods, and location of users. This allows one to find out various activities carried out by the owner of the account, based on the activity of the owner of the account on social media, especially Twitter.

Online social media networks, such as Facebook and Twitter, have allowed people not only to use platforms for interaction with one another but also to read and share news [1]. Users, online friendships, and tweets make Twitter a virtual online world [2]. The ability to accurately profile the location of social media users comes with immense benefits to service providers and consumers themselves[3].

The availability of various types of restaurants and support for the advancement of internet technology, make the restaurant business one of the promising businesses. In opening a business not only see business opportunities, but also the location that must be used as a place of business and also must be promising. One of the things seen when opening a restaurant business is a crowded location and many people eat outside at that location. Twitter allows users to mark their posts with their current location, either with the right place or GPS coordinates[4] and there is a large amount of information brought about [5]. Tweets are taken via the Twitter API [6]. So the researchers tried to propose an application by using Twitter data as an analysis in the selection of the location where to open a restaurant.

## II. METHODOLOGY

The proposed application was with R programming language and R Studio tools. R is an open source Programming language [7] comprehensive statistical platform that provides an estimated 6000 packages and offers different data analysis techniques [8]. These APIs were used to obtain data from Twitter. APIs used to access Twitter data were classified as REST APIs and Streaming APIs [9]. The package twitter of “R” statistical software is used to download and analyze the Twitter data related to an event [10]. Identify the overall sentiment of individual tweets [11]. In 2015, the IEEE was listed as R at 6th position in the top 10 languages of 2015.

Language Rank	Types	Spectrum Ranking
1. Java		100.0
2. C		99.9
3. C++		99.4
4. Python		96.5
5. C#		91.3
6. R		84.8
7. PHP		84.5
8. JavaScript		83.0
9. Ruby		76.2
10. Matlab		72.4

Fig. 1 R's Growth [12]

First, before doing the Twitter analysis, researchers must prepare technical requirements.

- 1) Installed Rprogramming
- 2) Installed R Studio
- 3) Installed Library Package leaflet (For Map Canvas) and Twitter (Crawling data fromtwitter)

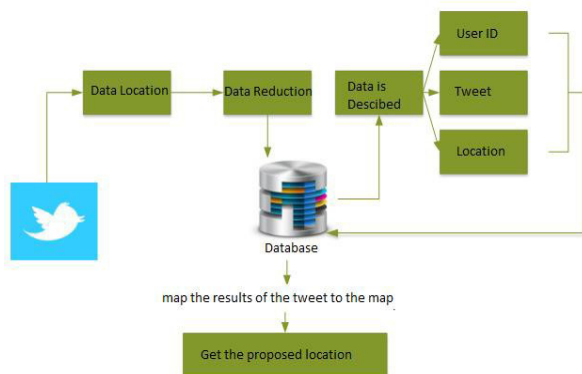


Fig. 2 Data Management Process Diagram

Tweets data that had content in the form of the word "meal" is collected through Twitter and a radius of 20 KM from the central point, namely Budi Luhur University. The data taken was tweets from January 1, 2019 - January 4, 2019. Following were the steps to find out the recommended restaurant business location:

- 1) Import Library Leaflet and Twitter

At this stage, install 2 libraries, namely leaflets for presenting data to maps and Twitter to crawling data fromTwitter.

```

title: "Analisi media sosial untuk penentuan lokasi rumah makan"
author: "Dede Irawan, Imam Halim M, Matin Mutaqin"
date: "January 4, 2018"
output: html_document

---
{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
---
{r}
library(leaflet)
library(twitter)
    
```

Fig. 3 Import Library Leaflets and Twitter

- 2) Set Point Using Leaflet

The researchers made a point at Jakarta Budi Luhur University, researcher could used leaflets to implement points on the map. And also researchers had to adjust the distance we want to see.

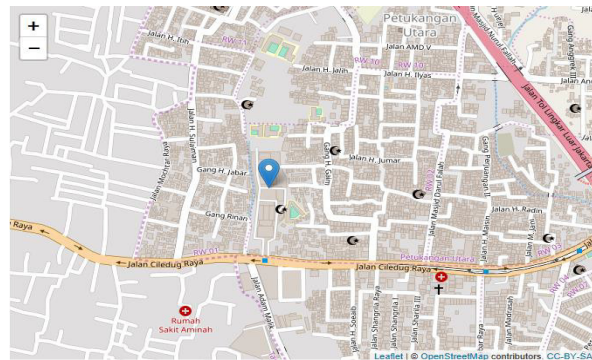


Fig. 4 Set Point Using Leaflet

```

point <- "Budi Luhur"
latitude <- -6.234327
longitude <- 106.747366
map <- leaflet() %>%
addTiles() %>%
addMarkers lng=longitude, lat=latitude, popup=point)
map
    
```

- 3) Crawling Tweet“eat”

At this stage, we will be crawling tweets on Twitter with the keyword "eat".





Fig. 11 Cluster Maps



Fig. 12 Locations Nearby to most tweets

While the furthest location was located in Bekasi's Rawa Lumbu Market.

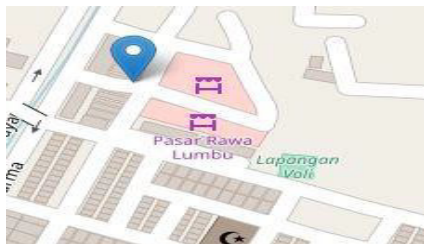


Fig. 11 Farthest location

#### IV. CONCLUSIONS

This paper had provided a study of location mapping to open a restaurant business location. From the results of the mapping, it was found that the closest location with the most tweets that was recommended to be used as a business location for restaurants was Gandaria City Mall.

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