

# Analysis of “Halal” Word in Social Media Using Text Mining and Word Networking

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**Abstract**—The increasing of Islam news in internet makes some perceptions for many people in the world. One of them is about “Halal” concepts as the Islam standard for muslim belief of God. Halal product is the product that created based on Islamic standard law. In every product, it is necessary to ensure its safety by conducting halal certification from the Indonesian Ulama Council (MUI). Then, based on the explanation, this research aims to analysis what internet user say about halal by using social media Twitter. This research uses text mining, word networking and word networking matrix to understanding the use of halal word. This research shows that “halal” has a large network and having relationship with many of word such as: food, meat, certification, restaurant, slaughter, animal, and industry. Then, from the network shows that “food” is the biggest word matrix in the “halal” networking. It word define degree centrality 75, betweenness centrality 20.001,38, and closeness centrality 0.473064 which mean that “halal” word have strong relationship with “food”.

**Keywords:** *halal, social media, word networking*

## I. INTRODUCTION

The increasing of Islam news in internet makes some perceptions for many people in the world. One of them is about “Halal” concepts as the Islam standard for muslim belief of God.

This research aims to analysis what internet user say about halal by using social media Twitter. This research uses text mining and word networking to understanding the use of halal word.

## II. LITERATURE REVIEW

### A. Halal

Halal is the crucial issue which always talked by muslim (people who embrace Islam religion), this issue involves the consumption product and digestible by body which can give effect as the reflection of behavior and daily activities [1].

Halal product is the product that created based on Islamic standard law. In every product, it is necessary to ensure its safety by conducting halal certification from the Indonesian Ulama Council (MUI). The certification needed to provide certainty status which can bring peaceful for muslim who will consume the product. Therefore, food products, medicines,

cosmetics and other product need to get MUI standard halal certification.

Halal and Haram based on Allah and His Messenger which explained in Al Quran. This understanding is based surah Al-Baqarah: 29 which mean “He is Allah, who made all in this earth for you and He willed (created) the haven, then made seven heavens, and He knows everything”. Based on this verse, Al-Qardhawi writes that the origins of everything, whether in goods or benefits which can be taken by humans is halal (permissible), and could not be said as haram, unless there is a *nash* (text) which explains about the forbiddingness [2].

### B. Networking Analysis

This research uses word networking analysis method to analyze the “Halal” word in social media. Word networking analysis is the development of social network analysis, which it uses words network to know correlation between its words and give information from the network.

The social network literature was first made by Stanley Milgram in 1960 which known as “small world” experiment [3]. The result of this experiment defines that people in the world connected each other by 6 steps (hubs). Newman defines social network as connections between actor which can be represented as people in a community or organization, which they have relationship such friendship or interaction between each other [3].

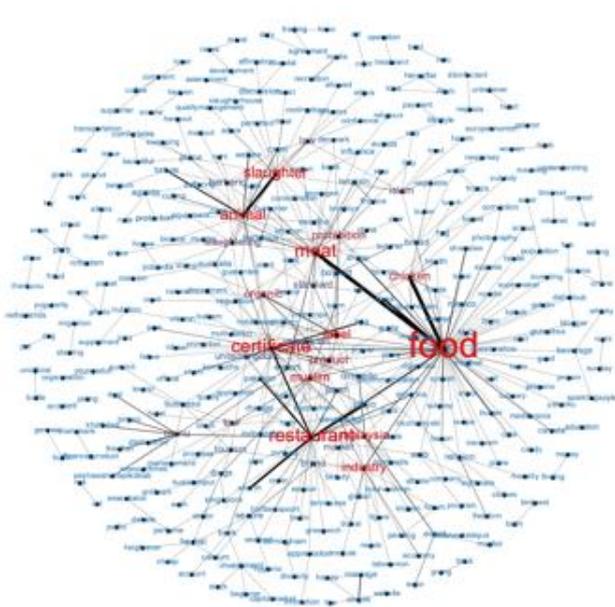
Elgandy and Elgaral define social networks as a tool to capture a pattern of relationship between people [4]. In its use, Ntwiga uses social network analysis to model an assessment of consumer credit risk based on the behavior of each agent, to conduct a risk assessment of consumer credit [5].

### C. Text Mining

Elgandy and Elgaral define text mining to understand the content and meaning of information which appears excessively, analyze and understand the emotion which exist in every individual [4].

Furthermore, Hasanah and Koesrindartoto use online forum data to understand the sentiments in every online forum member who discuss about credit card restriction regulation [6]. This research use sentiment contained in the comments by using bucket of words which were then weighted with positive (1), negative (-1) and neutral (0). This research discovers that

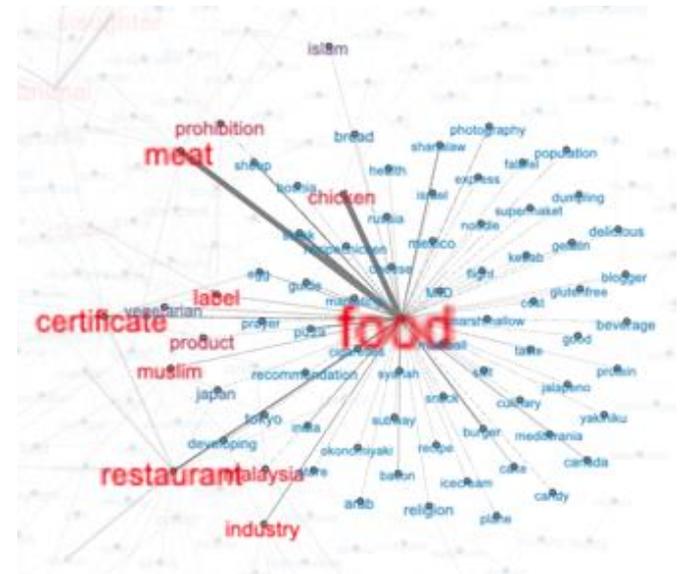




Sources: Data Processing (2019)

Fig. 3. Overall word networking Twitter.

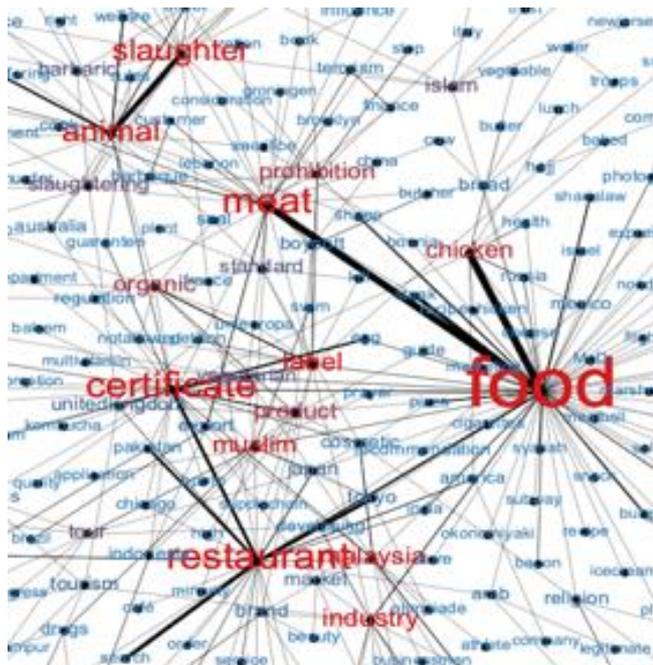
The networking word above show the pattern of “Halal” word from tweets data on Twitter. It show that when people talking about “halal”, so it identical with “food”. On the networking word above also show that “food” has very close relationship with “meat”, “restaurant”, “certificate”, “meat”, “animal” and “slaughter” as the highest degree centrality basen on nodes and edges count, then it will be the focus exploration in this paper.



Sources: Data Processing (2019)

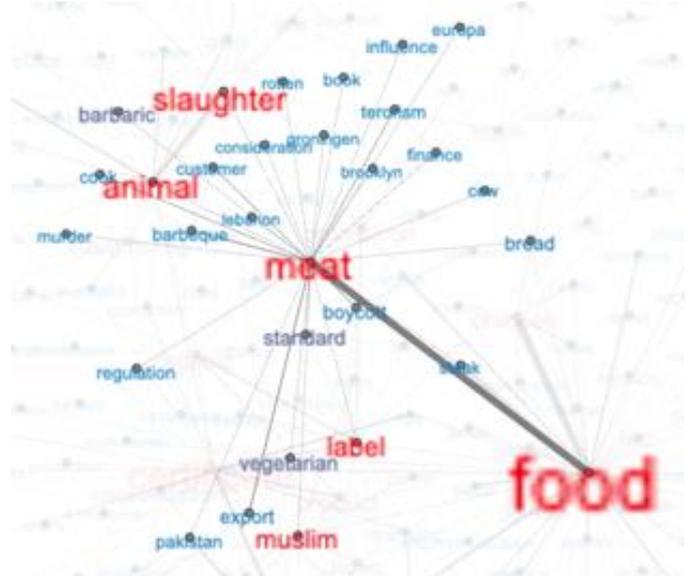
Fig. 5. “Food” networking of “Halal” word.

On the word “food” network figure 5, it has relations with “meat”, “certification”, “restaurant”, “chicken”, and many other words, but the strong relationship shown from strong relation between “meat” and “chicken” with 17 relationships respectively. In negative term, the tweets which criticize about “halal” contain about the relationship between “halal” and terrorism, but in the positive term, it shown about the increasing of halal meat lovers in Europe.



Sources: Data Processing (2019)

Fig. 4. Dominant word in networking of “Halal” word.



Sources: Data Processing (2019)

Fig. 6. “Meat” networking of “Halal” word.

In the figure 6, it shows the networking word of “meat” which has relation with “slaughter”, “animal”, “muslim”, and “label”. In some tweets, there are tweets which criticize about “halal” which said that the slaughter in Islam way is a barbaric medieval practice and does not respect the animal welfare. It



“food”, “restaurant”, “certificate”, “meat”, and “animal”, and many other words. Then, from the network shows that “food” is the biggest word matrix in the “halal” networking.

On the network discovered positive and negative tweets discuss about “meat” especially for people in muslim minority countries. The extreme tweets talking about boycott of halal products, especially meat which slaughtered by sharp knife in accordance with Islam way. But in positive term, there are many tweets which looking for halal restaurant in some countries.

#### REFERENCES

- [1] M. Rohandi, E. Gumelar and F. Sumpena, *Description Model Produk Halal Kosmetik Pada Digital Entrepreneurs*, 2017.
- [2] Y. Al-Qardhawi, *Halal Haram Dalam Islam*, terj. Abu Hana Zulkarnain dan Abdurrahim Mu'thi, cet. 1. Jakarta: Akbar; Media Eka Sarana, 2004.
- [3] M. Newman, *Networks: An introduction*. New York: Oxford University Press, 2010.
- [4] N. Elgend and A. Elgaral, *Big data analytics: A literature review paper*. ICDM: *Advances in Data Mining. Applications and Theoretical Aspects*. Cairo, 2014.
- [5] D.B. Ntwiga, *ocial network analysis for credit risk modeling*. Kenya: University of Nairobi, 2016.
- [6] E.N. Hasanah and D.P. Koesrindartoto, “Understanding the effects of Indonesia credit card ownership limitation policy through customer perspective in online forum,” *Advanced Science Letters*, vol. 21, no. 6, pp. 1638-1642, 2015.
- [7] A.M. Kaplan and M. Haenlein, “Users of the world, unite! the challenges and opportunities of social media,” *Business Horizons*, pp. 59-68, 2010.
- [8] O. Kwon and Y. Wen, “An empirical study of the factors affecting social network service use,” *Computer in Human Behavior*, 254-263, 2010.
- [9] J. Carr, L. Decreton, W. Qin, B. Rojas, T. Rossochacki and Y.W. Yang, “Social media in product development,” *Food Quality and Preference*, 40, pp. 354-364, 2015.
- [10] W. He, S. Zha, and L. Li, “Social media competitive analysis and text mining: A case study in the pizza industry,” *International Journal of Information Management*, 33, pp. 464-472, 2013.
- [11] C. Jiang, K. Liang, H. Chen, and Y. Ding, “Analyzing market performance via social media: A case study of a banking industry crisis,” *Science China Information Sciences*, vol. 57, no. 18, 2014.