



Utilization of Social Network Analysis (SNA) in determining The Most Popular Driver Partner App Brands To maximize sales of home-made culinary SMEs

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ABSTRACT

The development of digital and information technology in Indonesia is increasing very rapidly, so this has triggered the development of driver-partner applications and social media in Indonesia. No exception to food SMEs, food SMEs can shift by utilizing the development of driver-partner applications and social media to expand the market segment by distributing information online. In Twitter's social media information, users disclose information that is known to be associated with a brand. This proves the level of user awareness of a brand. Information from these users is User Generated Content (UGC), namely the track records left by users on social media. This study uses this phenomenon to measure the most popular brands on social media to measure one's awareness and interest in an online driver-partner brand. Utilization of analysis of social media users on Twitter social media using Social Network Analysis (SNA) helps food SMEs in assessing the position of driver-partner applications based on the level of public awareness on Twitter social media regarding the driver-partner application brand. So, this research will show and determine the most popular brand between the two driver-partner applications. This study uses the SNA method, with secondary data in the form of consumer tweets on Twitter related to GoFood and GrabFood. This type of research is qualitative that aims to describe a result of the phenomenon that occurs. The result of this research is the ranking of the driver-partner application brand based on the level of user awareness on social media Twitter.

Keywords: *Small and Medium Enterprises; Social Network Analysis; User Generated Content*

INTRODUCTION

Of the many food SMEs actors, it turns out that only a few use Information Technology (IT) to run their business. The causes include inadequate understanding of IT, minimal availability of investment, lack of government support (Lubis & Junaidi, 2016), no previous experience, low education, low skills, and age (Saifullah, 2015). Many of these factors make

it difficult for them to develop their business. Even though IT is a change that we cannot afford. If an entrepreneur does not follow changes, the change itself will erode him.

Driver Partner Application Phenomenon itself, as a form of IT implementation, the development is increasing rapidly. Along with the number of driver-partners (the name for online motorcycle taxi drivers), this is in line with the number of SME food businesses. The number of driver-partners is estimated at more than 2 million in Indonesia (Azka, 2019). The culinary business is also a growing business sector. The Minister of Industry estimates that the food and beverage industry will grow above 9% in 2019, which in previous years grew below 9%, namely 8.73% and 7.91%. However, the food and beverage industry itself is a labor-intensive industry, which can employ a lot of workers (Pebrianto, 2019). Therefore, researchers need to analyze the factors that can influence food SMEs to implement IT, especially the existing simple applications. The application is GoFood or GrabFood, which has run culinary delivery services by utilizing the services of driver-partners. This means positioning the food SMEs actors to be able to make friends with existing changes, especially IT. When IT is implemented, Utami (2010) and Al-Mubaraki & Aruna (2013) show that the application of technology will increase the income of food SMEs.

Entrepreneurs of home-based culinary food SMEs are often faced with problems with promotion, timing (caring for children), and delivery. With the GoFood and GrabFood applications, these problems can be avoided. However, not all home-based culinary SMEs know, are aware, and understand the use of these applications. So that their income is only limited to the surrounding environment. But when implementing GoFood and GrabFood applications, the marketing will expand and the income will increase.

Supposedly, food SMEs in Indonesia should always be supported by the Government. Food SMEs have proven successful in surviving the swift current of the economic crisis experienced by the country. The more food SMEs there are, the more workers will be absorbed as well. Not to mention the contribution to GDP of 60.34% (Putra, 2018). So we can see the role of food SMEs in the country's economy.

MATERIALS AND METHODS

Literature Review

Entrepreneurship is a source of innovation, job creation, and economic growth (Looi & Lattimore, 2015). The existence of entrepreneurship is like a mushroom. Suddenly, nowadays, there are so many new business actors who are starting to dare to open a business. Even though there are many, it is still not the main choice of the younger generation. Many things make them prefer to work as workers rather than entrepreneurs. Even Looi & Lattimore (2015) also suggest the need for a new form of entrepreneurship education, training, and government policy development. So apart from internal factors, entrepreneurship also needs to be supported by the government, as an external factor.

Entrepreneurship itself cannot be separated from the need for information, capital, technology, and labor. Entrepreneurs can obtain these resources through the social networks they have. Therefore, those with extensive social networks will tend to venture into

the world of entrepreneurship (Zhang et al., 2019). So it can be concluded that an entrepreneur has several factors, including innovation, education/training, and social networking.

Innovation

Innovation is seen as an engine for the growing movement and the developing economy. Ebrahimi et al. (2018) showed that innovation is equally important between medium-sized companies and small companies because it is very fruitful and vital. In developing countries, innovation is more important because there more food SMEs has the right innovation, and there are not sufficient external sources to protect and encourage innovation. Therefore, innovation can be a potential solution for the development and growth of food SMEs.

Education/Training

Entrepreneurship education and training are often held. Many places in the archipelago often hold training. However, many are not able to do what the trainer or facilitator has done. Many things make this thing not happen. Problems such as materials, targets, different problems were experienced by the participants. Training is a process by which a person achieves certain abilities and is only short-term (Dessler, 2013). To maximize training, one has to match with committed entrepreneurs. The International Labor Organization (ILO) created "Know About Business" (KAB). KAB is a methodology that can be used for the self-awareness of entrepreneurs. Through KAB it can also increase the level of entrepreneurial business education (ILO, 2013).

Social Networks

In today's technology-filled era, most people cannot escape the sophistication of technology such as cell phones. From a cellphone, one can access the world, including social media. Social media is an online platform that people use to build social networks or relationships with other people who have similar interests, activities or careers, real-life backgrounds, or connections. This shows that social networks have become a part of it. Social media is a brilliant idea with additional scope for progress (Akram, 2018).

Driver Partner Application

The driver-partner application is an application for intermediary service providers between consumers and driver-partners / SME partners engaged in online buying and selling services or what we often call e-commerce. In this study, the driver-partner application that we will examine is GOJEK with a collaboration product with food SMEs called GoFood and Grab with a collaboration product with food SMEs called GrabFood.

User Generated Content (UGC)

The meaning of User Generated Content is data or content that can generally be seen by other users/users, where the content contains the number of information, creativity and is made by people who are not professionals in this regard. So that mining / UGC mining means carrying out the process of finding maps, patterns, or information on user-created

content. As for what is also included in UGC are blogs, wikis, discussion forums, posts, chat, tweets, podcasts, pins, digital images, videos, audios, and various other forms of media created by users / online users that can be accessed via the web or media social.

Social Network Analysis (SNA)

For this study, researchers used a Social Network Analysis (SNA) approach. SNA was introduced by Otte and Rousseau (2002) and is still valid for use today. SNA is actually the same as structural analysis. However, it is not as a theory, but rather a broad strategy for investigating social structures. SNA is widely used to analyze the use of social media in seeing a dimension. SNA means analyzing various distribution patterns of relational bonds and concluding the network as a whole or about the people who are considered as individuals or groups (Bandyopadhyay et. al., 2011).

SNA studies the structure of relationships that link individuals or other social units and dependence on behavior or attitudes related to the structure of social relationships. The relationship is represented by nodes, or vertices, which represent actors or users, and ties or also called edges, links, or connections, which represent the relationships between actors. There are five network properties in social networks, including:

Table 1. SNA Network Properties

Network Diameter	Meaning
<i>Size</i>	Shows the number of nodes in a network, which represents the number of interacting users, and also shows the number of edges that represent the many relationships that occur on the social network.
<i>Modularity</i>	Shows how existing relationships on social networks can form different groups in a social network.
<i>Diameter</i>	The maximum closest path in a network or it can be called the largest distance between a pair of nodes.
<i>Average Degree</i>	Shows the average number of relationships that an actor (nodes) has on a social network.
<i>Average Path Length</i>	The average distance between one node and another node in a network.

METHODS

In this research, the use of SNA in determining the most popular driver partner application brands to maximize the sales of home-based culinary SMEs is a descriptive and qualitative research type. Descriptive research is research that aims to describe the characteristics of an object, person, group, organization, or environment that describes a certain situation or

event. Whereas, research in a qualitative approach is often used to look deeper into a social phenomenon, including the study of education, management and business administration, public policy, development, or the law.

The method used in this research is Social Network Analysis (SNA). In simple terms, SNA can be called a study that studies the relationships between humans depicted in the form of maps and images. SNA describes social relationships in network theory consisting of nodes and ties (or also called edges, links, or connections) where nodes are users/actors/individuals in a network and ties are the relationships between users/actors (Passmore, 2011).

Content created by users on social media that is open and accessible to many people can be said to be UGC, as defined by Moens et. al. (2014). Based on previous research conducted by Olmedilla, M., et al. (2016) that online UGC data plays an important role as a source of information for organizations to seek value exploration, so companies must be able to manage big UGC data as business intelligence. Furthermore, UGC data collection or also called UGC Mining is carried out on social media. Mining UGC uses the Gephi application to crawl tweets containing the keywords "GoFood" and "GrabFood". The results of crawling tweets are pre-processed to eliminate irrelevant tweets so that the analysis process is easier to perform. Next, determine the users who interact with each tweet to serve as a node in the social network. After pre-processing the data, social network modeling was carried out using the SNA method. Visualization of the network is done with the Gephi application so that nodes will appear that represent users and edges that represent relationships between actors in social networks. In a social network that has been modeled, it can be seen the properties of social networks to compare social networks between businesses.

The social network properties analyzed include size, modularity, diameter, average degree, average path length, and clustering coefficient. Size shows the size of the social network, this can be business intelligence regarding the number of users interacting and the number of interactions formed so that the driver-partner application business knows the level of user awareness regarding their brand.

- a. Modularity shows a group formed regarding conversations on social media.
- b. Diameter indicates the distance of the relationship between interacting users, the closer it is, the better it is because the relationship between users who talk about the brand is getting better.
- c. Average degree describes the average relationship on a social network. Average path-length signifies the average number of user accounts that a particular user must pass to interact. The results of the comparison of network properties can be used as an alternative to analyzing the most popular driver partner application brands on social media based on the network properties that occur, which symbolize the level of user awareness regarding the driver-partner application.

RESULTS AND DISCUSSION

Data Crawling Results

Data crawling was carried out on Twitter social media for 1 week, namely September 5, 2020, to September 12, 2020, using the Gephi programming application.

Table 2. Data Crawling Results

<i>Driver Partners Small and Medium Enterprises</i>	<i>Crawling Tweets Results</i>
GoFood	44.660
GrabFood	24.416

It can be seen in Table II, that the tweets that have been crawled on user interactions on Twitter social media regarding the GoFood SME driver-partner application are 44,660 tweets, while the interaction tweets regarding the GrabFood driver partner application are 24,416 tweets posted by actors.

GoFood Network

The results of social network modeling for user conversations about GoFood can be seen in Figure 1 below:

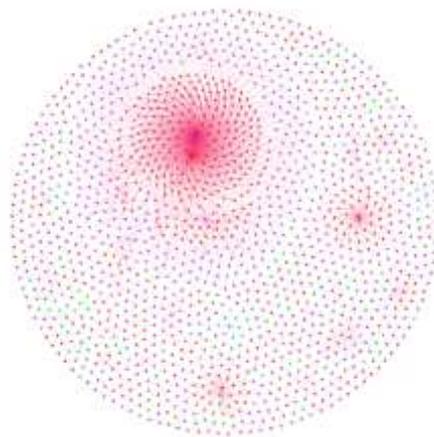


Figure 1. GoFood Social Network

Modeling results that describe the social network formed from user interaction regarding GoFood can be seen in Figure 1. Seeing in the node (point) represents the actor/user, and the edge (line), which symbolizes the relationship between actors/users. After modeling the social network, an analysis of the properties of the network is carried out to determine the value of the social network.

Table 3. GoFood's Social Property Results

Number	Network Properties	Result
1	Size	Nodes : 44,660 Edges : 67,088
2	Modularity	0.695

3	Diameter	27
4	Average Degree	1.661
5	Average Path Length	5.656

In Table 3, an assessment can be made related to social networks that are formed regarding GoFood. Size indicates the number of components in the system. Size on the social network GoFood has 44,660 actors and 67,088 relationships between actors. Modularity shows how actors can form different groups in a network. The value of modularity on the GoFood social network is 0.882. The diameter is the closest distance between the 2 furthest nodes. The diameter value of the GoFood social network is 10, so the closest distance between the 2 farthest actors on the GoFood social network is 27. The average degree shows the average degree of the number of links that connect one node to another. The average degree value on the GoFood social network is 1.661. Average path-length is translated as the average number of accounts or nodes an account has to pass to reach a particular account. The average path length value on GoFood's social network is 5,656.

GrabFood Social Network

After passing data pre-processing and network modeling, the results of the social network about GrabFood on Twitter can be seen in Figure 2.

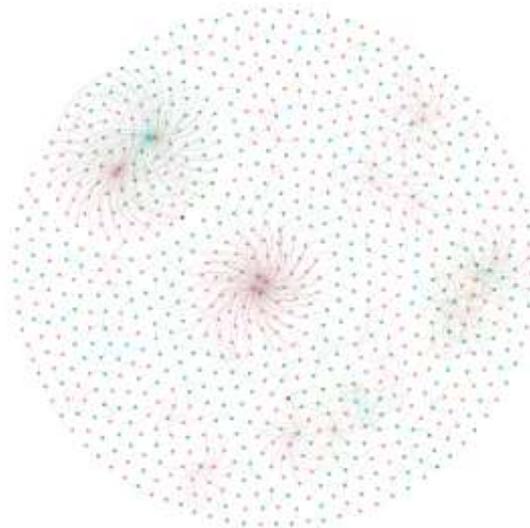


Figure 2. GrabFood Social Network

The results of modeling that describe the social network formed from user interactions regarding GrabFood can be seen in Figure 2. It can be seen in the picture nodes (dots) which represent actors and edges (lines) which symbolize the relationships between actors. After modeling the social network, an analysis of the properties of the network is carried out to determine the value of the social network.

Table 4. GrabFood's Social Property Results

Number	Network Properties	Result
1	Size	Nodes : 24,416

		Edges : 40,544
2	Modularity	0.882
3	Diameter	13
4	Average Degree	1.502
5	Average Path Length	3.948

In Table 4, an assessment can be made related to social networks that are formed regarding GrabFood. Size indicates the number of components in the system. Size on the social network GrabFood has 24,416 actors and 40,544 relationships between actors. Modularity shows how actors can form different groups in a network. The value of modularity on the GrabFood social network is 13. Diameter is the shortest distance between the two farthest nodes. The diameter value of the GrabFood social network is 13, so the closest distance between the two farthest actors on the GrabFood social network is 13. The average degree shows the average degree of the number of links connecting one node to another. The average degree value on the GrabFood social network is 1.502. The average path length is translated as the average number of accounts or nodes an account has to pass to reach a particular account. The average path length value on the GrabFood social network is 3,948.

Analysis Social Network Properties

From each network property on the user's social network, the GoFood SME Partners Application and the GrabFood SME Partners Application can be ranked as an alternative to the favorite driver-partner application. The ranking of network properties between GoFood and GrabFood's SME Food Partner Applications can be seen in Table 5.

Table 5. GrabFood's Social Property Results

Number	Network Properties	GoFood	GrabFood	Rank
1	Size	Nodes : 44,660 Edges : 67,088	Nodes : 24,416 Edges : 40,544	1.GoFood 2.GrabFood
2	Modularity	0.695	0.882	1.GoFood 2.GrabFood
3	Diameter	13	27	1.GoFood 2.GrabFood
4	Average Degree	1.661	1.502	1.GoFood 2.GrabFood
5	Average Path Length	3.948	5.656	1.GoFood 2.GrabFood

The first network property value is size. A good and active network has a large size. The results of data crawling show that the GoFood social network has a larger size with more actors and relationships. The second network property is modularity. The greater the value of modularity, the clearer the group formed. Each group that is formed can be a different community so that more specifications are needed for the products in each community. So

that the smaller the better, namely GoFood with a value of 0.695. The next network property is the diameter. The smaller diameter, the easier nodes to communicate with each other because of the short distance. The GoFood social network has a smaller diameter of 13 compared to the GrabFood 27 social network. The fourth property of the network is the average degree. The more links (edges) that connect between nodes, the faster and easier information dissemination will be. The social network that has the most average degree will be in the first rank, namely GoFood with an average degree value of 1.661 Network properties which are than the average path length. The fewer accounts that are skipped, the better because it means the network has a strong relationship. So, the GoFood social network was ranked first with a value of 3,948.

CONCLUSION

It can be concluded that through the analysis of the Food SME Driver Partner Application network on social media, it can be used as a brand by looking at the social network on Twitter social media. The results of favorite brands with social network analysis concluded that the social networks formed on Twitter related to GoFood are superior. This indicates the similarity with Sarinastiti and Vardhani's (2018) research which shows the superiority of GoFood in menu diversity and quality of content. To increase the size, the Driver Partner Application is more active in tweeting on Twitter and invites users/customers to tweet, post, or repost on Twitter related to the Application "the driver-partner". To be able to increase the average degree value, a company can hold a campaign by inviting users to mention, tag friends and companies can work together (follow) with companies that already have a lot of followers or friends and hold campaigns involving the two companies. However, what needs to be guaranteed is the stability of supply and demand for the sustainability of food delivery itself (Fauzi, 2020). So it is necessary to have further research related to this matter. When the brand is known to consumers, it must be ready under any circumstances to accept orders from them and of course you do not want this application to disappear just because of this inability to fulfill it or a sense of distrust.

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REFERENCE

Akram, W. (2017). A Study on Positive and Negative Effects of Social Media on Society. *International Journal of Computer Sciences and Engineering*, 5(10), 347-354. https://www.researchgate.net/publication/323903323_A_Study_on_Positive_and_Negative_Effects_of_Social_Media_on_Society

- Al-Mubarak, H. and Aruna, M. (2013). Technology Innovation for SME Growth: A Perception for The Emerging Economy. *Journal of Economics and Sustainable Development*, 4(3). 156-162.
https://www.researchgate.net/publication/278484100_Technology_Innovation_for_SME_Growth_A_Perception_for_the_Emerging_Economies
- Ariyanto, A., Nuryani, A., & Sunarsi, D. (2020). Pengaruh Store Atmosphere Dan Promosi Terhadap Keputusan Pembelian Pada Alfamart BSD Tangerang Selatan. *Jurnal Ekonomi Efektif*, 3(1).
- Azka, R. (2019, November 12). How many online motorcycle taxi drivers are there? Listen to Bisnis.com Search! (in Indonesian). *bisnis.com*.
<https://ekonomi.bisnis.com/read/20191112/98/1169620/berapa-sih-jumlah-pengemudi-objek-online-simak-penelusuran-bisnis.com>
- Bandyopadhyay, S., Rao, A., & Kumar, B. (2011). *Models for Social Networks with Statistical Applications*. California: SAGE
- Dessler, G. (2015). *Human Resources 13th Edition*. London: Pearson
- Ebrahimi, P., Shirsavar, H.R.A., Forootani, F., Roohbakhsh, N., and Ebrahimi, K. (2018). Entrepreneurship and SME's Performance: Studying the Mediating Role of Innovation and The Moderating Role of Firm Size. In: Khajeheian, D., Friedrichsen, M., & Modinger, W. (Eds), *Competitiveness In Emerging Markets*. Berlin: Springer.
https://doi.org/10.1007/978-3-319-71722-7_24
- Effendy, A., & Sunarsi, D. (2020). Persepsi Mahasiswa Terhadap Kemampuan Dalam Mendirikan UMKM Dan Efektivitas Promosi Melalui Online Di Kota Tangerang Selatan. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, & Akuntansi)*, 4(3), 702-714.
<https://doi.org/10.31955/mea.vol4.iss3.pp702-714>
- Fauzi, A. A. (2020, April 22). Predict the Growth Rate of "Food Delivery" Service on Ride-Hailing Applications (in Indonesian). *perbanas.ac.id*.
<https://photos.perbanas.ac.id/index.php/id/det/549-menerka-laju-pertumbuhan-layanan-%E2%80%9Cfood-delivery%E2%80%9D-pada-aplikasi-ride-hailing>
- Haque, MG., Munawaroh, Sunarsi, D., (2020). Analysis of SMEs Culinary Marketing Strategy During Covid 19 Pancemic: A Study at "Sate Bebek Cilegon" Resto in Cilegon, Banten. *International Journal of Education, Information Technology, and Others*. Vol.3. Issue 2
https://www.researchgate.net/publication/280722668_Undergraduate_students'_entrepreneurial_intention_Born_or_made
- ILO (2013). *Know About Business 2013: An Outreach report from the ILO's Entrepreneurship Education Programme*. Geneva: Small Enterprises Unit-Enterprises Department, ILO. https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---ifp_seed/documents/genericdocument/wcms_233208.pdf

- Kasmad, K., Mustakim, M., & Sunarsi, D. (2020). Increasing Community School Interest Through Service Quality, Prices and Promotion in Vocational High Schools. *Journal of Educational Science and Technology (EST)*, 6(2).
- Lesmana, R., & Ayu, S. D. (2019). Pengaruh Kualitas Produk Dan Citra Merek Terhadap Keputusan Pembelian Kosmetik Wardah PT Paragon Tehnology And Innovation. *Jurnal Pemasaran Kompetitif*, 2(3), 59-72.
- Lesmana, R., Widodo, A. S., & Sunardi, N. (2020). The Formation of Customer Loyalty From Brand Awareness and Perceived Quality through Brand Equity of Xiaomi Smartphone Users in South Tangerang. *Jurnal Pemasaran Kompetitif*, 4(1), 1-12.
- Looi, K.H. and Lattimore, C.K. (2015). Undergraduate Students' Entrepreneurial Intention: Born or Made?. *International Journal Entrepreneurship and Small Business*, 26(1), 1-20.
- Lubis, T. and Junaidi. (2016). Utilization of Information Technology in Micro, Small and Medium Enterprises in Jambi City (in Indonesian). *Journal of Perspectives on Financing and Regional Development*, 3(3), 163-174. <https://doi.org/10.22437/ppd.v3i3.3535>
- Lukiastuti, Fitri, et.al (2020). The Influence of Entrepreneur's Personal Characteristics on SMES Performance Mediated by Entrepreneurial Orientation. *International Journal of Psychosocial Rehabilitation*. Volume 24 - Issue 8
- Maddinsyah, A., Sunarsi, D., Hermawati, R., Pranoto. (2020). Analysis of location selection effect on the user decision that influence the success of the service business of micro, small and medium enterprise (MSME) in bandung timur region. *International Journal of Advanced Science and Technology*. Vol. 29 No. 06
- Moens, M., Li, J., and Chua, T. (2014). *Mining User Generated Content*. Florida: Taylor & Francis Group
- Olmedilla, M., Martínez-Torres, M., dan Toral, S. (2016). Harvesting Big Data in Social Science: A Methodological Approach for Collecting Online User-Generated Content. *Journal Computer Standards and Interfaces*, 46, 79-87. <https://doi.org/10.1016/j.csi.2016.02.003>
- Otte, E. and Rousseau, R. (2002). Social Network Analysis: A Powerful Strategy, also for The Information Sciences. *Journal of Information Science*, 28(6), 441-453. DOI: 10.1177/016555150202800601
- Passmore, D.(2011). *Social network analysis: Theory and applications*. Institute for Research in Training & Development-IRTD. https://www.politaktiv.org/documents/10157/29141/SocNet_TheoryApp.pdf
- Pebrianto, F. (2019, April 20). Minister of Industry: 2019, Food Beverage Industry Will Grow 9 Percent (in Indonesian). *tempo.co*. <https://bisnis.tempco.co/read/1197530/menperin-2019-industri-makanan-minuman-bakal-tumbuh-9-persen/full&view=ok>

- Purwanti, P., Sarwani, S., & Sunarsi, D. (2020). Pengaruh Inovasi Produk Dan Brand Awareness Terhadap Keputusan Pembelian Konsumen Pada PT. Unilever Indonesia. *Inovasi*, 7(1), 24-31.
- Purwanto, H., Fauzi, . M., Wijayanti, . R., Awwaly, . K. U. A., Jayanto, . I., Mahyuddin, ., Purwanto, . A., Fahlevi, . M., Adinugraha, H. H., Syamsudin, . R. A., Pratama, . A., Ariyanto, . N., Sunarsi, . D., Hartuti, . E. T. K. & Jasmani, . (2020) Developing Model of Halal Food Purchase Intention among Indonesian Non-Muslim Consumers: An Explanatory Sequential Mixed Methods Research. *Systematic Reviews in Pharmacy*, 11 (10), 396-407. doi:10.31838/srp.2020.10.63
- Putra, D. A. (2018, July 6). UMKM Donates 60 Percent to National Economic Growth (in Indonesian). *Liputan6.com*. <https://www.liputan6.com/bisnis/read/3581067/umkm-sumbang-60-persen-ke-pertumbuhan-ekonomi-nasional>
- Saifullah, M. (2015). Innovation in the Use of Information Technology: Adoption of Innovations in the Utilization of Information Technology at SME Kampung Sepatu in Tambak Osowilangon, Benowo District, Surabaya (in Indonesian). *Kebijakan dan Manajemen Publik*, 3(2), 132-141. <http://www.journal.unair.ac.id/filerPDF/kmp500a6d29f9full.pdf>
- Sarinastiti, E. & Vardhani, N. (2018). Co-Branding Online Food Delivery: Changes in Yogyakarta's Typical Local Culinary Tourism Business Model (in Indonesian). *AdBispreneur*, 3(3), 177-193. <https://doi.org/10.24198/adbispreneur.v3i3.19157>
- Sunarsi, D., & Baharuddin, A. (2019). The Effect of Service Quality and Price Accuracy on Consumer Confidence and Implications for Sales Increase. *PINISI Discretion Review*, 3(2), 101-110.
- Utami, S. (2010). The Influence of Information Technology in Business Development (in Indonesian). *Jurnal Akuntansi dan Sistem Teknologi Informasi*, 8(1), 61-67. <https://digilib.unikom.ac.id/download.php?getTugasFile&tid=Mzg5MzAw>
- Zhang, L., Jiang, W., and Tang, Z. (2019). Study on the Promotion Effect of Information on Entrepreneurship: An Empirical Evidence from China. *Journal of Global Entrepreneurship Research*, 9(45), 1-22. <https://doi.org/10.1186/s40497-019-0171-5>