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FOREIGN DIRECT INVESTMENT AND THE PERFORMANCE OF INDONESIAN MARKETPLACE E-COMMERCE CORPORATION: AN APPLICATION OF NETWORK, OWNERSHIP, LOCATION, AND INTERNALISATION FRAMEWORK

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Abstract

Data on real-time marketing performance from micro, small and medium enterprises (MSMEs) selling their products in marketplace e-commerce corporations (MECCs) is a big challenge for researchers studying the performance of MECCs capital structure. This article explores the use of Google Trends to determine the impact of Foreign Direct Investment (FDI) on MECCs' performance. The findings of the trend analysis are explained using the N-OLI framework. It is found that there was a sharp trend decrease in MECCs with partial FDI (Tokopedia and Bukalapak) and full domestic investment (Bibli). On the other hand, there was a sharp increase

in MECCs full FDI (Shopee). Other MECCs with full FDI, namely Lazada, has experienced a decrease but it is not as consistent as that of partial FDI. An increase trend in Shopee has negative correlation with a decline trend in Bukalapak. However, after being grouped, partial FDI has a significantly higher mean score compared to full FDI, and MECCs without FDI has the lowest mean score. This finding shows that in the case of Indonesia, FDI plays a role in encouraging the success of MSMEs, especially in MECCs, which have a combination of FDI and domestic investment.

Keywords: FDI, MSMEs, marketplace, Google Trends, N-OLI framework.

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Introduction

Indonesia has a very large e-commerce market with a size of \$13 billion in 2018. Evidently, the country has brought up 50 percent of online sale annually during the past two years (Bisara, 2019). Although Indonesia's e-commerce quality is relatively low, which was ranked 84th in the world (UNCTAD, 2019), the country is the fourth and the third largest country in terms of the number of online buyers and the growth rate of online sales in the world, respectively (Eshopworld, 2019). Google and Temasek estimated that the Indonesian e-commerce market will be able to reach \$53 billion by 2025 (Bisara, 2019). This is proven that, as much as 93 percent of respondents stated that they had bought clothes online in 2018. Google and Temasek's researches also revealed that 65 percent of respondents believe that they will do more online purchases over time. This is consistent with the fact that 49 percent of Indonesians currently have bank accounts required for online transactions.

E-commerce companies (ECCs) can take shape in various form such as portals, marketplaces, social networks, or product and service providers to perform online businesses (Singh, 2012). For small and medium enterprises (MSMEs), market electronic companies (MECCs) are common choices because they allow well-managed transactions through MECCs intermediaries. In line with this, MECCs in Indonesia strongly support the progress of Bukalapak which is one of the MECCs' traders (Office of Assistant to Deputy Cabinet Secretary for State Documents & Translation, 2019). Undoubtedly, not only this means that at least 2.8 million MSMEs are

selling their products in Bukalapak but also two other million offline stalls are collaborating with Bukalapak. The almost similar composition can also be found in other MECCs in Indonesia. Nevertheless, it is difficult to conduct quantitative studies on MECCs because the data are highly classified. This makes researchers tend to use MSMEs samples and subjective data. Consequently, it is difficult to generalize the whole situation of the MECCs (Amanah & Harahap, 2018; Manalu, Hermadi, & Ratono, 2020).

On the other hand, there is a controversy among the public regarding to the status of MECCs. Indonesian society is a very ethnocentric society (Sutikno & Cheng, 2011). Clearly, ownership of MECCs is an issue gaining public attention (Syarizka, 2019). This is based on a premature assumption that MECCs are owned by foreigners, which would be detrimental to the local economy. For example, the Indonesian Institute for Development on Economic researcher, Bhima Yudhistira Adhinegara, mentioned the fact that around 93 percent of products sold by FDI which financed MECCs in Indonesia are imported products (Okezone, 2019). These products are cheaper than local products. This situation restricts the local manufacturing MSMEs to gain more business advantages from FDI financed MECCs. However, there is no clear evidence to show that foreign ownerships do harm all local MSMEs that are participating in MECCs. Also, any credible research could not be found to support the argument made by Adhinegara or other pure local MECCs supporters. Local MSMEs still gain benefits from selling the imported products, and in fact, almost half of Indonesian non-agricultural MSMEs are resellers (Haryanti & Hidayah, 2019).

For the MSMEs, their profits are determined by the popularity of the marketplace and the consumers' support for their products. Presently, there is a Big Data tool that is provided by Google Trend, which can help to describe of the volume or frequency of any words searched on Google search engine based on particular location, time range, and theme. Thus, it is easy and convenient to check the popularity of the MECCs' products using Google Trends. This is considered as a proxy for the benefits of MSMEs that are participating in the MECCs.

This research will be beneficial in understanding the importance of FDI to MECCs. Empirically, this research contributes to a new analytical method, namely trend analysis using Google Trends, which can be used to analyze the performance of MECCs.

Literature Review

There is a limited conceptual study on the competition of MECCs. As long as authors found, only n-OLI theory by Singh and Kundu (2012) available to explain this phenomenon. Singh and Kundu (2012) proposed that e-commerce companies can operate in other countries if they had four advantages namely network ownership, location, and internalization or simply known as n-OLI. The advantages of n-OLI come from ECC abilities to form networks, which are limited by the institution's characteristics of different countries and from technological complexity related to the networks. Ownership, locations, and internalization or OLI came from relatively internal resources and mainly limited by the firm's dynamic capabilities. The n-OLI theory has emerged as the integration of network theory approach, transaction cost perspective, and resource-based view into the context of e-business. Network theory approach is mainly responsible for network advantages, transaction cost perspective for internalization, and resource-based view for ownership. The advantageous of location is generated from transaction cost perspective and resource-based view.

Furthermore, the advantages of networking are derived from structural and relational plantations, value chain reconfigurations, efficient value systems, network externalities, and value clustering. Excellence in ownership allows companies to customize web, control visitor traffic, measure web metrics, gain knowledge and innovate in terms of marketing and technology as well as entrepreneurial opportunities, and increases invisible assets such as brands, trusts, patents, and word-of-mouth. The advantageous of location originates from social capital, offline presence, internet depth, and a supportive digital environment. The advantages of internalization come from vertical integration and horizontal integration.

Foreign companies do not necessarily own some of the above-mentioned advantages. According to Agarwal and Wu (2015), local companies can also naturally have location-based advantages such as knowing the geography and culture of local communities and being able to acquire social capital easily from local communities (Singh & Keating, 2018). However, foreign companies must struggle to understand the context of the local market (Singh, 2012). Hence, some authors propose the existence of a psychic distance effect, that foreign companies are more likely to invest successfully in a more culturally closer country (Evans, Mavondo, & Bridson, 2008; Fertő & Sass, 2020; Vaccarini, 2015). From the perspective of N-OLI, the theory

of psychic distance could be explained as the desire of foreign companies to gain location advantage that they naturally did not have. Yet, the psychic distance theory has falsified in many contexts (Chikhouni, Edwards, & Farashahi, 2017; Coldwell & Joosub, 2018). This either can be explained by the inability of psychic distance concept to translate to location-based advantages or there are several advantages that foreign companies able to use to defeat location-based advantages, such that firms with further psychic distance could more successful than firms with closer psychic distance to a home country. Foreign companies, namely capital, networks, internalization, and ownership, naturally own these advantages. Generally, local companies have limitations in terms of capital, networks, internalization, and ownership (Benmamoun, Singh, Lehnert, & Lee, 2019). Based on this situation, foreign and local companies can complement each other through integration. FDI flows from foreign companies enable local companies to overcome the shortages of capital, the lack of network, the deficiency of ownership, and the presence of internalization problems, while local companies provide location advantages for foreign investors so that they can share the benefits from the investment.

In line with this theory, this can be expected that MECCs with local capital will continue to endure network, ownership, and internalization problems, while MECCs with foreign capital will only experience location problems. MECCs with a combined capital component, local and foreign (FDI), will perform at best because they have all the advantages needed to achieve sustainable competitive advantage. To test this statement, we propose:

Hypothesis: MECCs with partial FDI (a mixture of FDI and local companies have advantages over pure local and pure foreign MECCs.

Methodology

This research was conducted by applying the trend data analysis method using the Google Trends search engine. Google Trends contains data on the frequency of keyword searches globally which can be sorted by geography, time, and category. It measures the popularity of keywords in the range of 0-100 where 100 represents the highest frequency relative to the specified time range. It has been widely exploited to conduct analysis in studies such as tourism (Antolini & Grassini, 2019), FDI (Narita & Yin, 2018), e-commerce (Opesade, 2020), and MSMEs (Estrada & von Wobeser, 2017).

Furthermore, there are some reasons why data from Google Trends can represent the strength of FDI in the marketplace. First, FDI could be used to finance the search engine optimizations project to increase site visibility on the search engine. Alternatively, FDI could use it to attract more sellers and more variety of products, hence increasing keywords that attach to the brand and easily found on the search engine. These brand reinforcements could have manifested in keywords frequency in the search engine (Swann, 2006). Therefore, Google's search keywords can reflect the strength of a brand, and one of the possible factors for that strength is capital, which can be acquired from FDI. Second, as it is difficult to obtain real-time sales data due to their confidentiality, Google Trends is seen as a possible alternative. Google Trends provides real-time data on the interest of a certain product or brand (Oh, Connerton, & Kim, 2019).

Nevertheless, two issues are limiting the use of Google Trends in this study. First, the keywords used may not be related to economic activity; due to this, it should be checked whether the results provided are relatable to economic activity. Google Trends does this by using related word features by showing the largest frequency of additional words related to the keywords.

Second, the use of keywords reflects only the first search in a search engine on one computer or cellphone. Subsequent visits by users can be facilitated by auto-fill, which is available in the browser because the addresses that have been visited are stored in the browser. If the users use a cellphone, then they can access through the application rather than through Google. So that, it is not recorded as a visit to Google Trends. To synchronize the total visit to Google, it is necessary to compare the Google Trends data of 2019 with the data on the total visits to MECCs in 2020 collected by third parties.

By knowing the advantages and disadvantages, this research was conducted by looking for search-keywords on Google Trends. The keywords used are Tokopedia, Bukalapak, Shopee, Blibli, and Lazada. Keywords are limited to five because Google Trends allows a comparison only up to five keywords in one graph. These five keywords are used in this research because they are the five MECCs with the highest number of visits in Indonesia. According to the latest survey results by Müller (2020), the top five marketplaces based on the number of clicks are Shopee (71.53 million), Tokopedia (69.8 million), Bukalapak (37.63 million), Lazada (24.4 million), and Blibli (17.6 million). Among these five MECCs, two local companies that get FDI are Tokopedia and Bukalapak. Tokopedia was founded in 2009. In 2011, this company

received FDI supplies from CyberAgent Ventures, Japan. In the following years, FDI continued to flow from Netprice Korea (2012), Japan Softbank Ventures (2013), Sequoia Capital USA (2014), and Alibaba China (2017) in several investments (Kalia, Jourdan, & Cadell, 2018; Russel, 2017). Meanwhile, Bukalapak was founded in 2010 and received FDI flow from Batavia Japan Incubator in 2011, Aucfan Japan (2014), IREP Japan (2014), 500 Startups USA (2014), GREE Ventures Japan (2014), Asia Growth Fund Hong Kong (2014), and Shinhan Financial Group Korea (2019) (E27, 2012; Lukman, 2014; Ryza, 2019). Tokopedia and Bukalapak also received domestic investment from East Ventures (2010) and Emtek (2015), respectively. Tokopedia claims to have seven million merchants, most of which are MSMEs, while Bukalapak claims to have four million merchants and two million offline stalls.

The other two companies are pure foreign investment companies. Shopee is a Singaporean company that was established in 2009 and entered Indonesia in December 2015. Shopee claims to have more than 2.5 million merchants. Lazada is also from Singapore and it has been operating since 2012. Meanwhile, Blibli is a pure domestic investment company from the Djarum group (Kompas, 2011). Blibli was founded in 2011 and it has 75 thousand merchants. In line with this, there are three types of marketplaces in this study, namely MECC without FDI (Blibli), MECC with partial FDI (Tokopedia, Bukalapak), and MECC with full FDI (Lazada, Shopee).

Since only five MECCs were studied, there is a problem of sample adequacy to represent the three categories of MECCs. However, according to the iPrice Map of E-Commerce, there are only 19 MECCs in Indonesia, 13 of them are at least partially owned by Indonesian (IPrice, 2020). Hence, the ratio of local MECCs to total is 13/19 or equal 68 percent, quite close to our sample composition, which is 3/5, or equal 60 percent for local MECCs.

The trend of every companies in this study was examined and then compared with the overall trends. Individual data were only from Tokopedia and Bukalapak. Only these two MECCs have a complete FDI history because both are local MECCs that get a portion of their capital from FDI. This allows the points where FDI came to be mapped on the trend graph. In these two MECCs, data were traced from the first month of the company's establishment. For data comparison, the five keywords were compared at the time interval when the newest players start to enter the market. Data were then further restricted in the shopping category so that only keywords relevant to shopping were filtered out by Google Trends.

The data were analyzed by employing descriptive analysis, correlation analysis, and linear regression. Descriptive analysis was performed by comparing charts produced by Google Trends and looking at the upward and downward trends relative to FDI and market players. Meanwhile, the correlation analysis was carried out to see the interrelation between one MECC trend and another MECCs. Specifically, multiple linear regression was performed if one MECC has an uptrend or downtrend while the others have contrary trends so that it can be concluded whether or not the increase/decrease in one MECC is influenced by the decreases/increases in other MECCs.

The data for the analysis taken from the numerical version of Google Trends data, which can be downloaded on it. Google Trends measured trends based on the search volume index (SVI). The SVI depends on the time range of the data and other keywords used for comparators. On any particular time range and a group of keywords compared, the highest SVI is always 100. Only five MECCs was used since Google Trends only allow five keywords to be compared in a single graph.

Furthermore, MECCs were combined to determine group trends by taking the Bukalapak and Tokopedia trend values as Partial FDI trend values, Lazada and Shopee trend values as full FDI trend values, and Blibli values as no FDI. *t*-test was performed to see significant differences between the three types of MECCs.

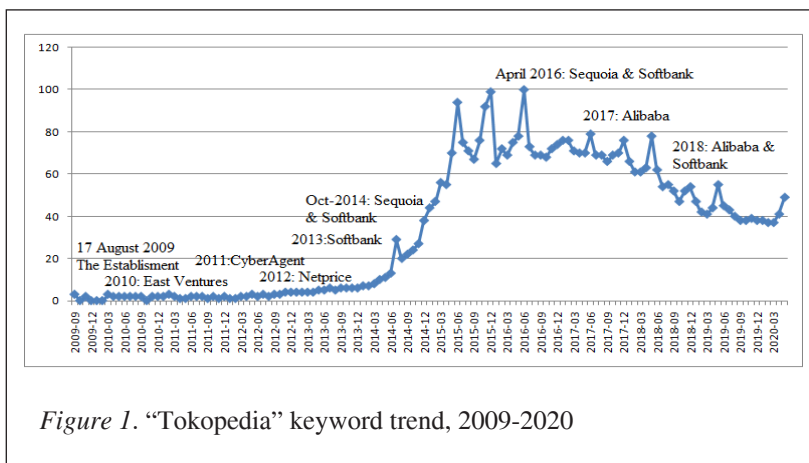
Results and Discussion

Data from the five MECCs show that the first five keywords are related to the used keywords which pertain to economic activity. For Bukalapak, the most related keywords are seller, backpack, free shipping, how to sell, and how to cancel an order. Meanwhile, Tokopedia's related keywords are vouchers, customers, customer service, free shipping, and official stores. The related keywords of Blibli, are Indonesian Blibli, shoes and buy and sell. Shopee's keywords are associated with clothes, shoes, bags, Shopee online, and the robe. As for Lazada, the keywords are shoes, promos, clothes, and sellers. All of these keywords are related to trading activities, specifically the activity of buying products.

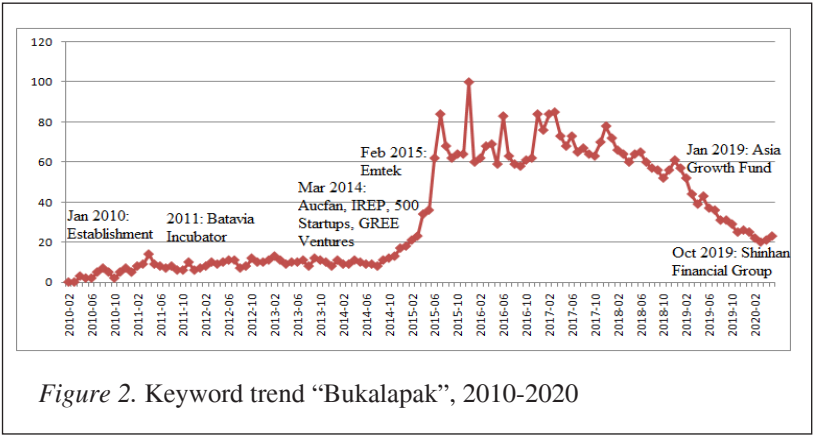
Furthermore, to check the suitability of keyword and market share data, the 2020 data (until May 2020) is compared to the latest MECCs market share

report (Müller, 2020). The mean score of 2020 from Google Trend shows that the highest to lowest rankings are Shopee (28.4), Tokopedia (18.4), Bukalapak (12), Lazada (11.8), and Blibli (2.4). The ranking of market share data is Shopee, Tokopedia, Bukalapak, Lazada, and Blibli. The two data match could prove that Google Trends is valid enough to show changes in marketplace marketing trends.

Since its establishment on August 17, 2009, data from Tokopedia show an upward trend until it reaches the peak and then continues to fall (see Figure 1). The foreign investment moments that occur are supportive while some are unable to drive positive changes in popularity. The increase in popularity began after FDI from Softbank occurred in 2013. Popularity peaked in June 2016, two months after additional FDI received from Sequoia and Softbank. After that, there was a continuous decline in popularity even though Alibaba came to give FDI to Tokopedia.

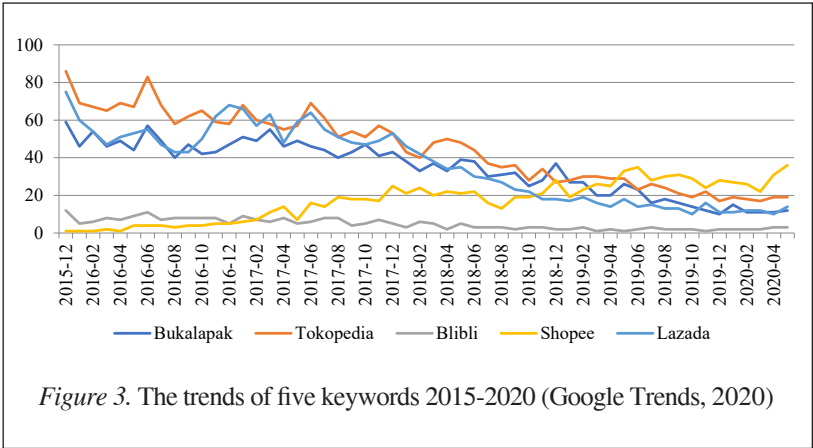


As shown by Figure 2, Bukalapak also shows a similar trend. Since it was founded on January 10, 2010, Bukalapak has continued to experience an increase in popularity. FDI from Aucfan (Japan), IREP (Japan), 500 Startups (USA), and GREE Ventures (Korea) appeared to trigger the increase in popularity in March 2014. Domestic investment from Emtek (Elang Mahkota Teknologi) in February 2015 helped drive Bukalapak's popularity. Bukalapak's popularity peaked in December 2015 and then declined thereafter. FDI from Asia Growth Funds (Hong Kong) and Shinhan Financial Group (Korea) did not seem to have an impact on the decline in Bukalapak's popularity.



In both cases, FDI in the early development of startups seemed to support popularity. However, after the peak, the popularity of the two startups was seen to be continuously decreasing. FDI was further unable to drive the popularity of Tokopedia and Bukalapak back up.

The decline in popularity of Bukalapak and Tokopedia could be due to the emergence of new competitors in the business marketplace. In order to prove this, three new marketplaces were included in the data, namely Lazada (Singapore), Shopee (Singapore), and Blibli (Indonesia). Shopee Indonesia is the newest player. Although its parent company is from Singapore which was established in 2009, Shopee opened a branch in Indonesia in December 2015. Therefore, the first period in Figure 3 is December 2015.



From Figure 3, it appears that the only startup with an increase is Shopee. All other startups experience a decline in popularity during this period. In order to know the strength of the trend, the numerical data of the trends and running trend analysis are plotted. The analysis shows that the linear R^2 value for each trend line, measured with time as x -axis (predictor) and SVI as y -axis (predicted). Large R^2 value denoted the fitness of true SVI value with predicted SVI value from the general linear pattern of the data as it decreasing overtime or increasing over time. The linear R^2 value for Tokopedia is 0.929; Bukalapak is 0.879, Shopee is 0.851; Lazada is 0.825; and Blibli is 0.721. This shows that the consistency of the decline in the Tokopedia trend is very high, reaching 92.9 percent. The least consistent decrease is Blibli. Even so, its consistency is still relatively high at 72.1 percent.

Furthermore, the popularity scores from Bukalapak, Tokopedia, Blibli, and Lazada to Shopee are regressed to see whether the increase in Shopee's popularity is indeed responsible for the decline in popularity of the four startups. The results of the bivariate correlation analysis show that the four popularity scores of Bukalapak, Tokopedia, Blibli, and Lazada were significantly negatively correlated with Lazada's popularity score, with Pearson's correlation with Bukalapak is -0.815 (p -value < 0.001), with Tokopedia -0.872 (p -value < 0.001), with Blibli -0.787 (p -value < 0.001), and with Lazada -0.807 (p -value < 0.001) using 54 weekly data.

Table 1

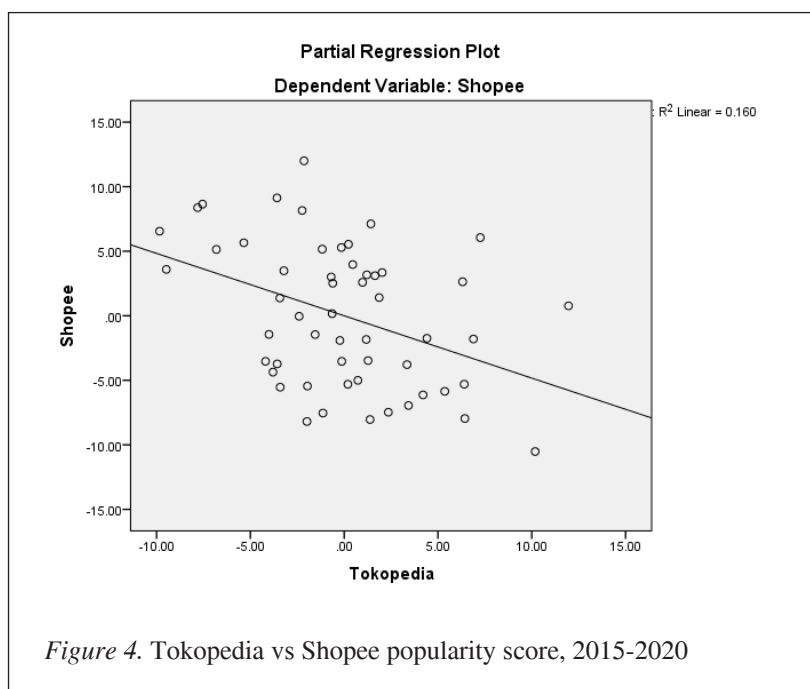
Regression Results of the Impact of MECCs SVI on Shopee's SVI

	Shopee's SVI
Bukalapak SVI	0.040 (0.172)
Tokopedia SVI	-0.896*** (0.158)
Blibli SVI	-0.076 (0.563)
Lazada SVI	0.057 (0.112)
R^2 adj	0.743
# Obs.	54

Note: standard errors are reported in parentheses. *** denotes significance at the 1% level.

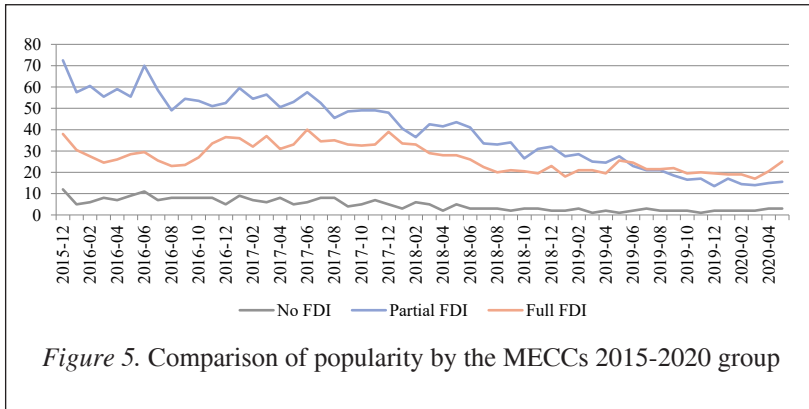
Since Shopee is the only MECC with an upward trend, Shopee SVI is regressed by the other four MECC SVI. The linear regression results (F -value = 39.29, p -value < 0.001) reveals that a significant relationship only occurred between Shopee and Tokopedia (beta = -0.896, p -value < 0.01) while the relationship with the other variables is not significant where the correlation with Bukalapak is 0.040 (p -value = 0.864), Blibli is -0.076 (p -value = 0.618), and Lazada is 0.057 (p -value = 0.789). Table 1 shows the detail regression result.

Figure 4 shows the Tokopedia vs Shopee score plots along with their linear regression plots. Other score plots of Shopee against three other MECCs are not reported because the regression analysis have shown insignificant relationship. With regard to this plot, the value of R^2 is 0.16, indicating that the correlation is relatively weak despite both variables have a significant relationship on the regression results.



Furthermore, SVIs scores of Shopee and Lazada are arranged as full FDI MECC and SVIs scores of Tokopedia and Bukalapak are arranged as partial FDI MECC. Blibli SVIs score are not manipulated since there is no other full

local MECCs. After doing another trend analysis, similar to the procedure to produce Figure 3, the increase in the Shopee trend was offset by a decrease in Lazada which resulting in a downtrend of $R^2 = 0.414$. The value of R^2 for MECCs partial FDI remains high, which is 0.933. The full result are presented in Figure 5.



Paired t -test results show that the three MECCs groups have significant differences. No FDI (full local, i.e Blibli) is significantly different ($t = -18.28$, p -value < 0.001) from partial FDI and significantly different ($t = -31.96$, p -value < 0.001) from full FDI. Full FDI and partial FDI differ significantly from each other with $t = 7.69$ and p -value < 0.001 . If assessed from the mean, MECCs partial FDI has an advantage with a mean equals 39.78 compared to full FDI which only has a mean equals 26.80. MECCs without FDI has the lowest mean of 4.72.

The findings show that value of partial FDI significantly higher than no FDI and full FDI in Dec 2015 to April 2020 confirm the proposed hypothesis that MECCs with mixed capital will perform better than MECCs with pure local capital and pure foreign capital. Empirically, these results indicate that the full FDI MECCs are still behind partial FDI MECCs in the location advantage. Even so, from Figure 3, it can be observed that one of the full FDI MECCs continues to move up to beat the other MECCs. The increasing excellence of Shopee can be sourced from the ability to study location and understand local characteristics that were previously only controlled by partial FDI MECCs.

This research is in line with the previous research done in Romania which identifies that foreign-owned firms perform better than locals in the

manufacturing industry (Boscaiu et al., 2000). Hagemeyer and Tyrowicz (2012) found that 50-70 percent of this effect indeed attributed to ownership, rather than selection bias. The fact that two pure FDI MECCs in this research show conflicting trend (Lazada versus Shopee), although both from Singapore, a country with highly close psychic distance to Indonesia, confirm previous research that FDI psychic distance is more to myth than reality (Coldwell & Joosub, 2018). Hence, Shopee's ability to defeat other MECCs came not from location advantage, but from another component of N-OLI such as network, ownership, or internalization.

For MSMEs, it does not matter which MECC wins. One MSME can create accounts on many MECCs and handle customers from all MECCs. However, a stable MECC allows less cognitive burden for MSMEs in managing their sales. This also enables MSMEs to focus more on serving consumers rather than having to constantly search for and register in the new MECC.

Conclusion

The trend analysis approach provides an important overview of MECCs and N-OLI theory. Based on the findings of analysis, it is evident that MECCs with a mixed capital structure, compared to MECCs with a pure capital structure FDI and pure domestic investment have a better trend in attracting consumers' attention. This advantage is due to the complete N-OLI components, namely network, ownership, location, and internalization. MECCs with pure capital FDI must be able to achieve location advantage to beat MECCs with mixed capital. Meanwhile, to be a meaningful market player, MECCs with purely local capital must find ways to improve the level of network excellence, ownership, and internalization.

There are two policy implications of this research. Firstly, the underperformed local MECCs raise an important issue on how to increase n-OLI advantages other than local advantages, especially from network and internalization. Secondly, nationalistic issues still emerge in the media about MECCs ownership. This could hinder FDI inflow to Indonesian MECCs. The importance of FDI, at least partially, in MECCs capital structure, suggesting that the government should intervene to ease the FDI to MECC and educate people about the importance of FDI for national welfare, rather than focus on the country's ethnocentrism.

Several limitations arise in this research and can be further investigated in future studies. The main limitation is the limited number of cases and

countries. To get valid results, more samples must be used especially for purely local MECCs, which in this study is represented only by Blibli. Besides, research using the N-OLI framework needs to be carried out in other country contexts so that it can be checked whether patterns found in Indonesia also apply in those countries. Future studies can also use primary data by interviewing or surveying MSMEs that participate in MECCs so that it can be examined whether there is or there is not indeed a relationship between FDI, MECCs trends, and MSMEs benefits.

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