ATLANTIS PRESS

Advances in Economics, Business and Management Research, volume 112

International Conference on Business, Economic, Social Science, and Humanities – Economics, Business and Management Track (ICOBEST-EBM 2019)

A Dynamic Strategical Plan to Strengthen Food Security

Arjuna Rizaldi
Departemen Manajemen
Universitas Komputer Indonesia
Bandung, Indonesia
arjuna@email.unikom.ac.id

***Abstract* — This study aims to build a strategical planning to improve the agricultural sector in Subang Regency, West Java Province especially in accordance to central government's establishment of Subang as one of Indonesian national granary to strengthen Indonesian food security. The research method used was the Location Quotient (LQ) method to determine the leading sector combined with the vision and mission of Subang Regency. The secondary data obtained from the Indonesian Central Bureau of Statistic was used supported by various previous researches as well as government regulations. The conclusion in this research is based on the LQ calculation shows that agricultural sector is the leading sector in Subang Regency with the highest LQ value. Therefore, it can be concluded to develop agricultural sector, a strategical planning in the form of developments model supported by both private and government sectors. The impact of this research is built into a model and is expected to become a useful input for local government to develop the agricultural sector in Subang Regency through regulations from Subang's Government.**

Keywords—Agriculture, Economic Development, Subang Regency, National Granary

I. INTRODUCTION

To strengthen the food security a dynamic strategical plan requires investments that occur consistenty, continuously, and optimally require capital investments in consistent and uniformed areas [1]. Therefore, factors that hold up capital investments in the areas should be appropriately surmounted through improved coordination and effective collaboration development between government institutions and private businesses both large and small, and medium enterprises (SMEs). This is a logical consequence based on global competition that private demands, in this case SMEs to grow and become big businesses that serves positive and significant impacts throughout the regional economy and social welfare. This is in accordance with the opinion of Hwang where low economic barriers will flow multinational capitals to the areas [2]. This resulted in local investment strengthening that flows capital to the industries within the areas, including SMEs. The economic barriers must be structurally addressed. Therefore, the vision of the area is a vital component in the structured strategy development and capable of reaching the entire line. It was stated that insufficient clear visions in many areas do not focus on designing the correct strategy [3]. This research was conducted in Subang Regency in the West Java Province. The vision of the regency is:

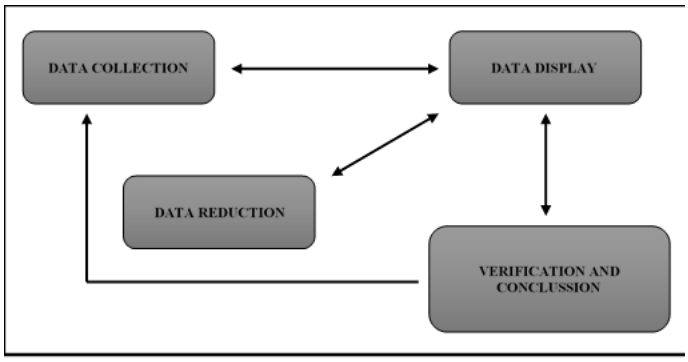
"Terwujudnya Kabupaten Subang sebagai daerah Agribisnis, pariwisata dan industri yang berwawasan lingkungan dan religius serta berbudaya melalui pembangunan berbasis gotong-royong pada tahun 2024"

Therefore, the investment development in Subang will be directed based on the vision of the regency with focus on sectors that serves optimal multiplier effects. Thus, in order to carry out obstacles such as investment which is necessary to apply effective strategies in accordance with regional condtions. Due to the current situation, the first sectors of the regional priorities needs to be identified. Thus, the problem of this research is the sector which become the main priority to support food security, and the generation of a development model for that sector so it can emulate an effective collaboration between government institutes and private companies for both SMEs and big enterprises?

A strategic approach is needed it build a value chain as an economic entity involving a number of actors, physical and financial flows, as well as the end consummer market, where the final product is a top priority. Therefore, the dominant sector that needs to be developed must be prioritized on meeting the needs of consumers [4]. Thus, this research aims to build a model of strategical development planning of agricultural sector in Subang Regency. The method used in this research was based on the Miles and Huberman four stages method while the data was analysed using the Location Quotient (LQ) calculation to determine the basis economic sector in Subang Regency [13]. The research results showed that the agricultural sector was the leading sector in Subang Regency. Therefore, it was expected to have particular impact on Subang's development planning by local government through their regulations.

II. METHODS

This research used a descriptive qualitative-inductive approach implemented in five phases accordingly. The research was carried out by stages in accordance with the Miles and Huberman Method. Research Models by this method were made based on data collection stages, data reduction, data presentation, conclusion and verification, as shown in Fig 1. specifically, the execution flow of the reseatch is divided into data collection, data reduction, data presentation stages, and conclusion and verification stages.



Source: LQ Calculation [13]

Fig 1. Research model for agribusiness development strategy

At the stage of data collection, conducted a literature review and preliminary data in order to inventory data needs. The data collection was done manually through the data provided by the Department of One Stop Investment and Integrated Services Subang Regency as well the data collected online through the official website of the Central Statistics Agency of Subang district. The target of this phase is the fulfilment of the adequacy of data so that it can be analysed accurately.

Data reduction stage is an activity assigned in order to reduce the data that is not needed to achieve the research objectives. This needs to be done so that the analysis and discussion remains focused on the most important aspects in the study and do not spread to other subjects outside the research topic.

Data presentation stage (data display) is performed after the data obtained is in accordance with the needs of research, then the presentation of data is conducted in order to obtain a complete picture of research. The data presented is calculated by using certain methods. In this study, the data calculation method used was the Location Quotient (LQ) method. LQ method is used to determine whether a sector/sub-sector in the economy is the sector/sub-sector basis or featured. Sector/sub-sector basis or featured is a sub-sector sector that is able to meet the market needs not only in the region, but also the market requirements in the surrounding area or regional (provincial), and even national. LQ calculation method refers to the following formula:

$$\boldsymbol{LQ = \frac{X_r/RV_r}{X_n/RV_n} or \frac{X_r/X_n}{RV_r/RV_n}} \qquad \textbf{(1)}$$

where:

Xr : Value production sector/subsector is specific to one area (county or city)

Rvr : Total Gross Domestic Product in the area (county or city)

Xn : Production Values of the province

Rvn : Total of the Gross Domestic product in the province

While the LQ measurement value criteria are as follows:

a. LQ>1, the degree of specialization sector / subsector certain areas at a greater level of sector / subsector are same at the provincial level (Basis Economy Sector or dominant).
b. LQ<1, the degree of specialization sector / subsector particular at the level of districts are smaller than the same sector at the provincial level (Economic Sector Non-Base or undominant).
c. LQ=1, the degree of specialization sector / subsector is the same at the provincial level.

Thus, the LQ method is considered as the most appropriate method for analyzing the priority sector or economic sector basis. This is in accordance with Moineddin et al., [5] stating that LQ is a technique that allows comparisons between regions with national characteristics. While Tian states that LQ is a measurement of the ratio between the areas of production activity compared with the activity of the national production [6].

The conclusion and verification phase. Drawing conclusions are not only be based LQ alone, but also taking into account of other aspects that are considered important such as the central and local government policies, vision and mission areas as well as other factors deemed necessary. After impyling, the conclusion is verified by the recommendation that the sector is used as a research topic can be developed through a dynamic strategy models that are always able to adapt to the increasingly rapid development.

III. Results and Discussion

Location Quotient (LQ) method indicates the output value of each sector in Subang is shown in Table 1. The results of the calculation using the LQ showed that almost all sectors in Subang district are dominant. This may imply that the production of each sector is able to meet the market demand not only for the district of Subang, but also the demand from the surrounding area and the Subang district of West Java province in general. Furthermore, it can be seen that the agribusiness sector is the most dominant sector and the most potential for development. It can be seen from the calculation using the LQ method where agribusiness sector has the highest value with the LQ value of 3.847, LQ count results can be seen in the Table I.

TABLE I. THE LQ CALCULATION IN SUBANG REGENCY

SECTOR	GDP/SECTOR SUBANG REGENCY	GDP TOTAL SUBANG REGENCY	GDP/SECTOR (WEST JAVA)	GDP TOTAL (WEST JAVA)	LQ VALUE	ORDER
Agriculture, Livestock, Hunting, Fishing	6.668,82	22.157,69	98.181,66	1.254.948,62	**3,847**	1
Public Administration and Defence, Compulsory Social Security	932,74	22.157,69	25.731,42	1.254.948,62	**2,053**	2
Financial and Insurance Activities	1.072,96	22.157,69	33.030,52	1.254.948,62	**1,840**	3
Accommodation and Food Service Activities	874,11	22.157,69	32.549,52	1.254.948,62	**1,521**	4
Education Activities	855,45	22.157,69	34.885,81	1.254.948,62	**1,389**	5
Other Services Activities	598,83	22.157,69	26.226,54	1.254.948,62	**1,293**	6
Water Supply, Sewerage, Waste Management, and Remediation	22,34	22.157,69	1.009,02	1.254.948,62	**1,254**	7
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	3.967,86	22.157,69	198.887,07	1.254.948,62	**1,130**	8
Human wealth and Social Work Activities	190,81	22.157,69	9.723,04	1.254.948,62	**1,111**	9
Construction	2.007,41	22.157,69	103.507,07	1.254.948,62	**1,098**	10
Information and Communication	880,49	22.157,69	47.856,80	1.254.948,62	**1,042**	11
Real Estate Activities	249,71	22.157,69	14.738,07	1.254.948,62	**0,960**	12
Transportation and Storage	952,52	22.157,69	61.135,34	1.254.948,62	**0,882**	13
Manufacturing	2.851,48	22.157,69	549.471,38	1.254.948,62	**0,294**	14
Electricity and Gas	16,7	22.157,69	6.139,55	1.254.948,62	**0,154**	15
Business Activities	11,43	22.157,69	5.334,98	1.254.948,62	**0,121**	16
Mining and Quarrying	4,01	22.157,69	6.540,83	1.254.948,62	**0,035**	17
GDP TOTAL (WIHTOUT OIL AND GAS)	**22.157,69**		**1.254.948,62**			

Source: LQ Calculation, 2017

Based on the LQ calculation results in Table I, it can be seen that the agribusiness sector is a most favoured priority sector. Thus, the agribusiness sector in relation to food security. Therefore, it is necessary to build a model of a strategy for the development of the agribusiness sector in Subang that the development of this sector can be structured and involve all parties, both government and private sectors. This is in accordance with the opinion of Behzai et al states that the agribusiness sector plays a very decisive role in the economy as a key source of food production [7]. Food security is largely determined by how much of the agricultural sector is built in the area. Based on the results obtained, it can be seen that the agribusiness sector is the most favoured sector in Subang. Thus, the agricultural sector is a sector that should continue to be protected and developed into modern agriculture. In developing agribusiness, rules must be applied fully to agricultural development in which all sub-systems simultaneously develop agribusiness and harmony which are [8]:

Upstream agribusiness, which includes economic activities that produce agricultural inputs, such as nursery industry / hatchery, agrochemical industry (fertilizers and drugs / pesticides), agro-industry automotive (tools and agricultural machinery), etc.

Sub-farming system should also be developed primarily (on farm agribusiness) are activities that make use of agricultural inputs to produce agricultural commodities the primary into intermediate products (intermediate product) in the form of ready-cooked amd consumed and the final product along with its trading activities in domestic and international markets.

Furthermore, Sub-system development should not be missed becacuse it supports services, namely banking, transportation, financial institutions / finance, information services agribusiness research and development, public policy, education, agribusiness insurance etc.

One activity that is deemed able to accelerate the development of agribusiness through farmer groups or through cooperative is through a partnership pertisipatif performed within three (3) stages: Engineering Business Partnership which includes the business relationship between economic operators with several principles:

a) One Unit Act, ie all components or members carry out their functions harmoniously and in a unity of action.
b) Direct bonding in Institutional, namely the relationship among all the components or members are woven directly through institutional bonds (non-market).
c) One Unity of Life, the survival and development of each component or members who are interdependent on each other.
d) Cooperative, ie each component or members help each other for the common interest.

Furthermore, Special Funds for Engineering needs to be established as an effort to support the development of infrastructure and working capital for SMEs / farmers and should also be built Institutional Engineering Economy As the guarantor of the legality of the actors.

Referring to Schneider in his research on the agribusiness sector in China, the apparatus of the state and private companies should work together to consolidate the improvement of the agribusiness sector [9]. The engineering process involves three parties: 1). Joint Group of Agricultural cooperatives, 2). Private, as business partners whose involvement is mainly related to the development of improved varieties, 3). Local Government as a facilitator which includes Ministry of Agriculture, Higher Education,

Department of Agriculture, Department of Animal Husbandry etc. The overall engineering was built into a model of the agribusiness sector development strategy that can be seen in Fig 2.

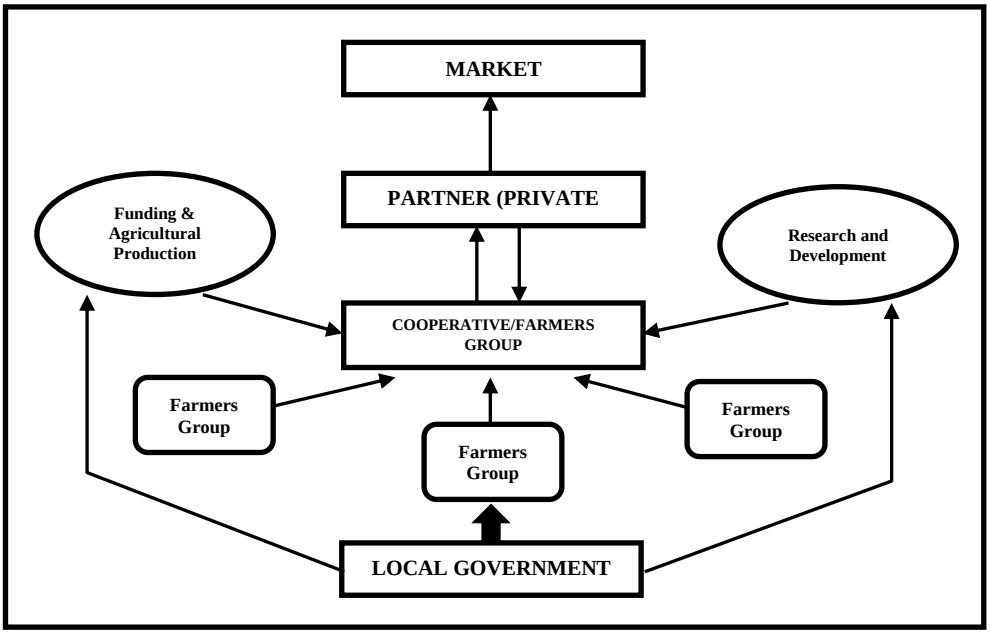


Fig 2. Research model for agribusiness development strategy

Based on the model it can be arranged to an agribusiness sector development program that focuses on the development of modern farmers and agricultural processing in Subang scattered in several areas. The recommendations include the promotion, formation of farmer groups, the formation of cooperatives, giving incentives and capital assistance, training, and promotion of digitization for the agribusiness sector. These recommendations can be seen in Table II.

TABLE II. RECOMMENDATION TO DEVELOP AGRIBUSINESS SECTOR IN SUBANG REGENCY

LOCATION	PROGRAM RECOMMENDATION
KSK* Minapolitan Blanakan	- **Promotional packaging the right to solicit investors** - **The formation of farmer groups / Farmer / Fisherman (Keltan) and Joint Farmers / Farmer / Fisherman (Gapoktan) and / or cooperative** - **Incentives and ease of investing in agribusiness subsystem upstream (seeding, seeding, agrochemicals and others), primary agricultural subsystem (producer of agricultural commodities) and subsystems supporting services, agriculture / animal husbandry / fisheries (banking, transport, research, extension and so on)** - **Training to improve the expertise and skills of human resources in the agribusiness sector** - **Development / optimization website / site specifically for investment** - **Construction of the call centre system to provide information and handle investor complaints** - **CSR for large enterprises**
KSK Hulu Sungai dan Derah Tangkapan Sungai Ciasem	
KSK Hulu Sungai dan Derah Tangkapan Sungai Cimalaya	
KSK Hulu Sungai dan Derah Tangkapan Sungai Cipunagara	
KSK Agropolitan Ponggang	

*KSK = Kawasan Strategis Kabupaten/Regency Strategic Area
Source: Kabupaten Subang dalam Angka, 2017, Data processed, 2017

Strategic development programs for the agribusiness sector in Subang district in accordance with the predetermined area can be seen in Fig 3.

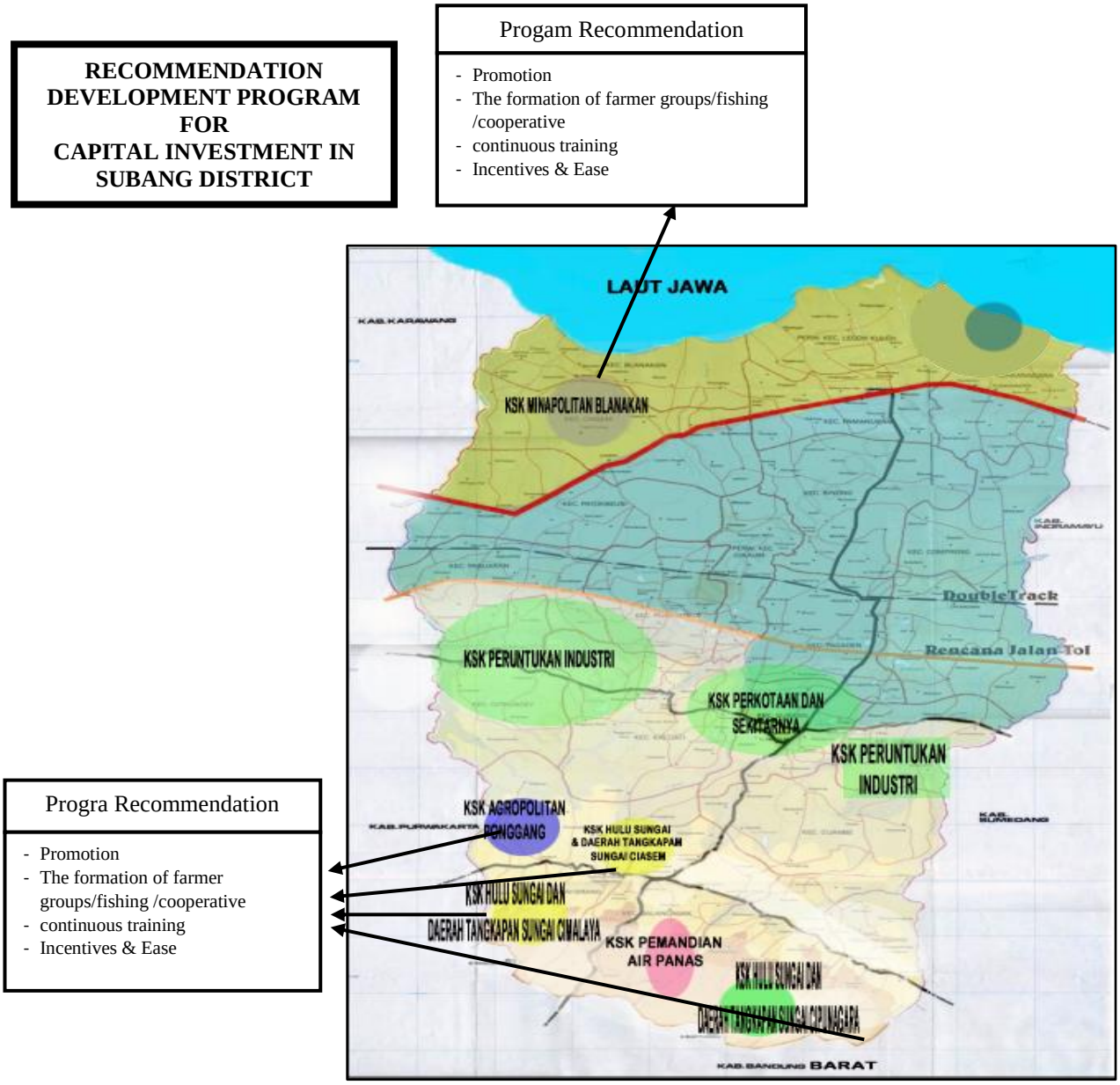


Fig 3. Subang Regency and recommendation for agribusiness development
Source: Kabupaten Subang dalam Angka, 2017 [13], Data processed, 2019

It is expected that with the construction of an agribusiness sector development strategy in Subang, flow of investment will happen from both private companies and banks through a method known as the Trickle-Down Effect. This concept emphasizes a large-scale investment to stimulate investment by the existing level underneath to grow around it. The main ideas of the trickle-down effects are the accumulation of well-being resulting from high-income to the low income due to an increase in the transfer of these two groups [10, 11]. Thus, it can be seen if the land earmarked for the development of sectors of agribusiness could stimulate the growth of the new industries and can be maximized for investment both domestic and foreign. It will provide a multiplier effect on economic development in Subang this case in accordance with the opinion of Caceres (2014) in research on the agribusiness sector in Argentina where the agribusiness sector will have the ability to evolve, adapt, and the consolidation of a series of technological and managerial innovations that enable the rapid and efficient transformation [12].

IV. Conclusion

Based on the discussion above, it can be concluded that the agribusiness sector is the sector with the most potential to be developed in order to strengthen food security in both the region, as well as regional and national levels. Therefore, the authors attempted to build a model of the agribusiness sector development strategy in Subang district, involving all stakeholders, namely the government, farmers, banks, private companies, and cooperatives. The recommendation

in the form of program is also required to be adapted to the conditions and needs of each region is used as the centre of agribusiness development.

ACKNOWLEDGMENT

The author would like to thank the Rector of Universitas Komputer Indonesia, the Dean of Fakultas Ekonomi dan Bisnis and the Government of Subang Regency especially Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu of Subang Regency who has given the opportunity to conduct this research.

REFERENCES

[1] Arrow, Kenneth j & Mordecai Kurz, "Public Investment, the Rate of Return and Optimal Fiscal Policy", RFF Press, (2013), ISBN: 978-1-61726-000-1

[2] Hwang, Sanghyun, and Seungrae Lee. "Regional economic integration and multinational firm strategies." The Journal of International Trade & Economic Development 24.7 (2015): 968-1013.

[3] Tödtling, Franz & Michaela Trippl "One size fits all? Towards a differentiated regional innovation policy apporach", Research Policy 34 1203-1219 doi:10.1016/j.respol.2005.01.018, (2005).

[4] Mac Clay, Pablo, Roberto Feeney "Analyzing agribusiness value chain: a literature review." International Food and Agribusiness Management Review. (2019), Vol. 22, Issue 1

[5] Moineddin, Rahim, Joseph Beyene & Eleanor Boyle, "On the Location Quotient Confidence Interval" Geographical Analysis, (2003), 34 3

[6] Tian, Zheng, "Measuring Agglomeration Using the Standardized Location Quotient with a Bootstrap Method", The Journal of Regional Analysis and Policy. JRAP (2013), 43(2): 186-197

[7] Behzai, Golnar, Michael Justin O'Sullivan, Tava Lennon Olsen, and Abraham Zang, "Agribusiness Supply Chain Risk Management: A Review of Quantitative Decision Models" Omega., (2017). doi: 10.1016/j.omega.2017.07.005

[8] Suryana, "Tahap-tahapan Penelitian Kualitatif Mata Kuliah Analisis Data Kualitatif. Bandung: Universitas Pendidikan Indonesia", (2007).

[9] Schneider, Mindi , "Dragon Head Enterprises and the State of Agribusiness in China" Journal of Agrarian Change, (2016).

[10] Aghion, Philippe & Patrick Bolton, "A Theory of Trickle-Down Growth", Review of Economics Studies, (1997), 64, 151-172, 0034-6527/97/00080151$02.00

[11] Akinci, Merter, "Inequality and Economic Growth: Trickle Down Effect Revisited", (2017). doi: 10.1111/dpr.12214

[12] Càceres, Daniel M, "Accumulation by Disposession and Socio-Environmental Conflicts Caused by the Expansion of Agribusiness in Argentina", (2014).

[12] Kabupaten Subang dalam Angka. Badan Pusat Statistik Kabupaten Subang, (2017).

[13] Gusnardi, Iskandar Muda, "Educational Institution Performance Measurement based on Miles and Huberman Models using Balanced Scorecard Approach", General Management, (2019), 20, 170