

Urban Sprawl, Suburbanization, and Informal Sector in Western Suburb Area-Malang City-East Java

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Abstract

This study aimed at analyzing the impact of urban sprawl towards suburbanization and informal sector in western suburb area of Malang City. Mix method was employed by incorporating both quantitative and qualitative approaches. A quantitative approach was employed to investigate the urban sprawl by utilizing SIG method integrated with remote sensing by the indicators of built-up land in 1995, 2000, 2003, 2010, and 2015. A qualitative approach was aimed at detecting the stages of suburbanization in the western suburb area of Malang City. The location to conduct the study was determined by means of purposive sampling. The data were collected through semi-structured interview with the recruited 50 natives and 50 migrants. The in-depth interviews were conducted with some community figures. This current study has found that suburbanization in the western suburb area of Malang City comprises three stages, namely: 1) pre-suburbanization occurred until 1990; 2) the first stage of suburbanization occurred in the early 1990s; and 3) the second stage of suburbanization occurred in 2000s. This study has also uncovered that suburbanization affects the growth of an informal sector that has eroded the strategic role of the agricultural sector, and thus the area grows as peri-urban. Eventually, urban sprawl, suburbanization, and the growth of informal sector result in the agricultural involution and emerging poverty phenomenon.

Key words: urban sprawl, suburbanization, informal sector, agricultural involution

INTRODUCTION

Urban sprawl and suburbanization are two processes running simultaneously. Both are likened as if they were two sides of a coin because causes and effects resulted by the urbanization and suburbanization processes are inseparable. Substantively, they both are identical with the areas with low-density of the population, the congestion, and the increase of the population's amount spread out all over the suburb areas [1] [2]. The number of the supporting factors of the two processes, such as centripetal, centrifugal, lateral, and in-situ are relatively typical. Some studies conducted in some metropolitan cities of Indonesia, namely Yogyakarta, Makassar, Semarang and Jakarta, have unveiled that those four mentioned factors result in different physical characteristics for each of the suburb areas [3] [4] [5] [6].

Suburbanization constitutes one of the several stages of urbanization. Alluding to the theory proposed by Van den Berg [7] [8], the process of suburbanization is initiated by the process of urbanization, before being followed by the process of de-urbanization and ended by the process of re-urbanization. These so-called processes will always be entailed by a proportion alteration of the residences

who reside in the suburb and urban areas, due to the difference of mobilization directions or migration.

The difference related to migration direction has said to create a different pattern as well. The globalized mobilization pattern of the community moves towards two major aspects, both national and metropolitan scales. Related to the national scale, there is a tendency of a centralization of some areas to create a metropolitan agglomeration. On the other hands, based on the metropolitan scale, there is a trend of migration to the suburb areas so as to withdraw the social and environmental effects [9] [10]. In addition, the aforesaid migration has casually been termed as suburbanization.

In Europe, Australia, New Zealand, and the USA, the suburbanization is commonly committed by the high-end-class community [11] [12]. However; it is completely different from what is happening in China. The suburbanization is frequently committed by the low-end class community. A study conducted by [13] has uncovered that the suburbanization that occurs in China is influenced by a condition where one household cannot make any decision for relocation, and thus the government takes control over them to make a policy for a renewal of the old urban areas. Therefore, it is suggested that the relocation of the

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households is headed to all over old urban areas. In Toronto, Canada, the suburbanization is performed by the high-end-class community, to be specific those who have not born any children yet and mean to live a better life than that of living in the central cities [14].

In Indonesia, the suburbanization is mostly committed by the low-end-class community due to the superiority of the supporting factors that are more dominant than that of the attracting factors. The supporting factors, furthermore, refer to any high price of land as well as residence in the urban areas while the purchasing power of the residences is moderately low. The more affordable and economical residences strongly force the urbanites to migrate to the suburb areas. Another supporting factor is addressed to the relatively-well-conditioned accessibility from the central urban to the suburb area so as to facilitate the mobility of social and economic sectors of the urbanites to the city center.

In general, the supporting factors of the suburbanization are far stronger than that of the attracting factors of the suburb areas itself. The implication is that the suburb area refers to the undeveloped region. The expansion of the suburb area is denoted by the mass dispersal of the residences in the agricultural lands so that there is a massive land alterations detected. Furthermore, the growth of many new residences is also supported by the expansion of the industrial areas, the infrastructure of the road access, and varied transportation that connects the suburb area to the city center.

Suburbanization tends to occur in the city within mid-class and metropolitan scales. A study of [15] has shown that the growth of the mid-class cities happens to be stagnant; while the suburbanization is occurring in the metropolitan cities. However, the mid-class cities have been more specialized. In addition, the specialization for the mid-class cities throughout Indonesia has been included as a characteristic of the urban area that gives them a specific difference from other mid-class cities. This means that suburbanization does not only implicate a demographical process, but also refers to a non-demographical process.

Additionally, both aforementioned processes happen simultaneously. To be logical, the addition of residents along the suburb area will result in various economical activities. Some studies conducted in some suburb areas in Indonesia have shown that the suburb areas have experienced a major dysfunction; not as the support of the cities, but as the new and autonomous ones. The autonomy of the suburb areas also denotes the effect of polarization of economic activities occurring in the urban areas [16] [18] [19]. That effect has been deemed to provide some

positive as well as negative influences to the economic development of the suburb areas.

One of the several effects of the polarization signifies the development of the informal sectors in the suburb area. The economic development on the informal sectors, to be specific, indicates that the migration and social alteration have been occurring in a certain area [13] [20][16]. However, it is completely different from the informal economy that grows in the urban area. In the suburb area, the informal economy players are the natives, not the urbanites.

Suburbanization and informal sectors are the two processes happening simultaneously. The result of the study of [21] conducted in the suburb area of Semarang City has uncovered that the process from de-urbanization to urbanization is always entailed by the suburbanization and development on the informal sectors. The native inhabitants, eventually, go to be economically-dependent in the urban area, for the non-agricultural sector grows well in the suburb area. The expose of [6] about their findings revealing that suburbanization has been suspected to change the characteristics of the rural community to behave like the urban one in Depok District, Sleman Regency. The presence of the migrants has vertically affected the natives, to be specific in the changing from the socio-economic condition of the rural community to be the urban one.

Suburbanization in Malang City, that is represented by the increase of the migrant population, the industrial growth in the north suburb area, the population density in the east, western, and south suburb areas, constitutes the main issue that requires a suitable follow-up. The issue occurs due to the fact that the suburbanization and the development of the informal sectors are part of the undeveloped process [22], so it results in the unstructured alteration on the regional economy development in addition to generating the negative excess. The occurring negative excess can be a decrease in productivity, as the informal sector is not the same as that of the real sector that is based on the comparative excellence and regional competitiveness, not on the product and its temporariness.

The effect of the negative economic polarization is begun from the land misuse from the agricultural land to the residential as well as to the industrial ones so that the agricultural sector gradually shows a trend to decrease. In due course, the suburb area of Malang City has been assumed to be an overtopping of the economic activities from the central city. During its process, the overtopping still remains unplanned and, all this time, there has not been a firm and integrated regulation that controls the development in the suburb area.

Out of the four foremost suburb areas of Malang City, the western suburb area has been alleged to be the area with a relatively-faster development. The acceleration of the development has been affected by the regional location of the western suburb that is located in the connecting access of all areas in East Java. In addition, the existence of a private university, University of Muhammadiyah Malang, has also been believed as one of the several factors that attract the community to reside in the western suburb area. The presence of the students from outside Malang Raya, in addition, has been also assumed to grow a potential for entrepreneurship, especially for the natives, such as initiating businesses of the boarding house, restaurants, laundry, photo-copy, printing, and other businesses like providing some services for finance and banking. Those mentioned economic activities must need a sufficient land that, furthermore, costs the usage alteration of land from the agricultural to the non-agricultural lands. It has been revealed that, during 1990-2014, 80% in the significance of the usage alteration of the land, from the agricultural to the non-agricultural land, has occurred.

The usage alteration of the land it self-gives an influence to narrowing the agricultural land so that the community will not have any agricultural land for farming expansion that it makes them work as construction labors, housemaids, street vendors, parking officers, and in other informal sectors. It means that the regional economic system is no longer product-oriented. In a long term, some new issues will typically appear, for the fundamental of the regional economic system in the suburban will progressively alter to be non-product-oriented, even only be a retail.

Gradually, a poverty symptom has been detected to exist in the suburb area. The natives have vended the agricultural land to the residence developers, in order to meet the requirement of housing for the urbanites, so the lands for agriculture are narrower and very often, cannot be found any longer. To work in other sectors apart from agriculture, many people find it difficult since their main skill to work is only for farming. As the solution offered for this issue, many farmers have decided to work in the other informal sectors (such as construction labors, factory labors, housemaids, and street vendors). In addition, the fee for working in the informal sector is considerably low, and simply for fulfilling the minimum physical needs. This condition is commonly judged as the supporting factor of another poverty issue in the suburb area of Malang City.

This phenomenon shows that the unplanned regional expansion has been already initiated in the western suburb area of Malang City. The regional expansion is assisted by the structural alteration as contended by [23]. Therefore, it is of importance to

make an in-depth evaluation regarding what phenomena and noumena have existed in the western suburb of Malang City in terms of suburbanization and informal sectors. In accordance with any reality happening in the western suburban, therefore, the research questions are formulated as follows: 1) how do the urbanization as well as suburbanization processes and the informal sectors run in the western suburb area of Malang City; 2) What is the occurring reality found in the urbanization as well as suburbanization processes and the informal sectors in the western suburb area of Malang City?

This study aimed at analyzing the effects of the urban sprawl towards the suburbanization and the informal sectors that have been said to occur simultaneously and be unplanned. Referring to some suburb areas, not all the areas experienced the suburbanization. This is because suburbanization is dependent on the regional characteristics. Only the suburb areas having the attracting factors will become the destination to which the urbanites will migrate. Therefore, in this current study, the focus is only on the western suburb areas that own the greater attracting factors than that of the other suburb areas. This study is expected to give a viewpoint related to the main role of the government and the private parties in making a plan for developing the urban area. It is expected that the regulation for the land usage in Malang City, Malang Regency, and Batu City that gives negative influences to the land usage in the suburb areas be evaluated as it is the requirement to make a supervisory on its implementation to create an integrated regulation.

MATERIAL AND METHOD

Mixed method was employed by incorporating both quantitative and qualitative approaches. A quantitative approach was occupied by utilizing SIG method integrated with a remote sensing. In addition, a qualitative approach was used to describe the results of the in-depth interviews with some key informants and to interpret the suburbanization towards the informal sectors. Moreover, a hermeneutic phenomenology approach was used since it was assumed to be phenomenology-oriented and be able to interpret the ambiance of the suburb areas.

Meanwhile, to collect the data, semi-structured interviews, participant observation, in-depth interviews, and documentation were all used. The semi-structured interviews were conducted to the recruited 100 respondents. Furthermore, the in-depth interviews were addressed to the community figures in the western suburb of Malang City.

Data analysis was done after the data collection was completed. In addition, the technique used for the data analysis comprised two main stages. The first

stage was by analyzing the urban sprawl by the main indicators of the built-up land growth in the western suburb areas in 1995, 2000, 2003, 2010, and 2015. This analysis employed the data of the Citra satellite, comprising Landsat 5, 7 ETM, and 8 OLI by means of SIG method and remote sensing as follows:

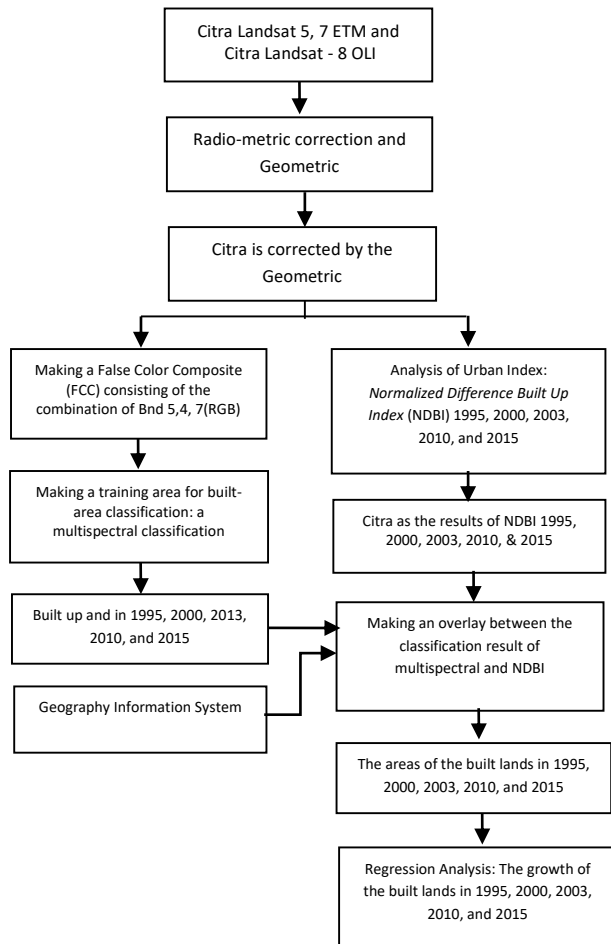


Figure 1. The Flowchart of GIS Method Integrated with the Remote Sensing

The next stage constituted the semi-structured interviews to the recruited 50 natives and 50 migrants. Furthermore, the in-depth interviews were conducted to the community figures (namely the head of the neighborhood community or the elder) and the other figures recommended by the respondents. The purposive sampling was deployed for assisting this current study in order to fulfill the sample criterion that had to have as many as 100 respondents in total.

Referring to the fact that this study denoted a combination between the qualitative and quantitative approaches, the triangulation technique was inserted during the data collection. The selection

of this technique in this study was due to the requirement for credibility test on the collected data, as it was said that, through triangulation, the researcher had already administered the credibility test [24].

RESULTS AND DISCUSSION

Urban sprawl has been uncovered by the built up area growth as much as 0.18 in significance with the area of the built land constituting 1,161.88 Ha or 40.117% out of the area of the western suburb area; while the area of unbuilt land signified 59.883%. Urban sprawl to the western suburb area has not relatively contributed environmental impacts due to the less percentage of the built land density, constituting more than 30% free area out of the total area. However, if this typical condition remains continuing within 20 upcoming years, it is of major possibility for the environmental degradation to existing.

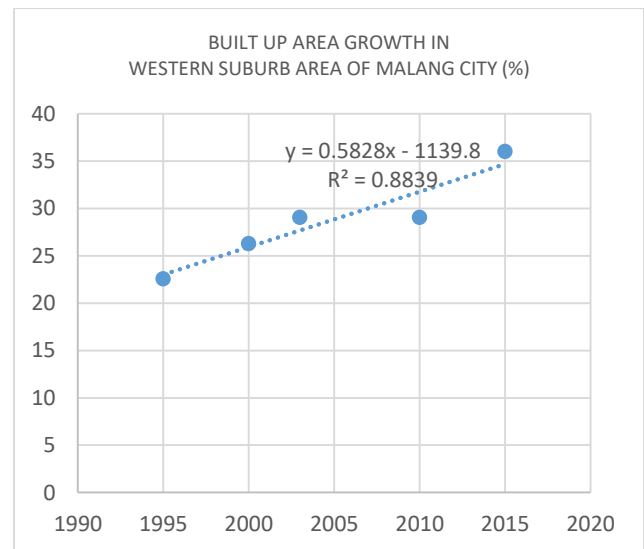


Figure 2. The Graph of the Covering Growth of the Built up Area in the Western Suburb Area of Malang City

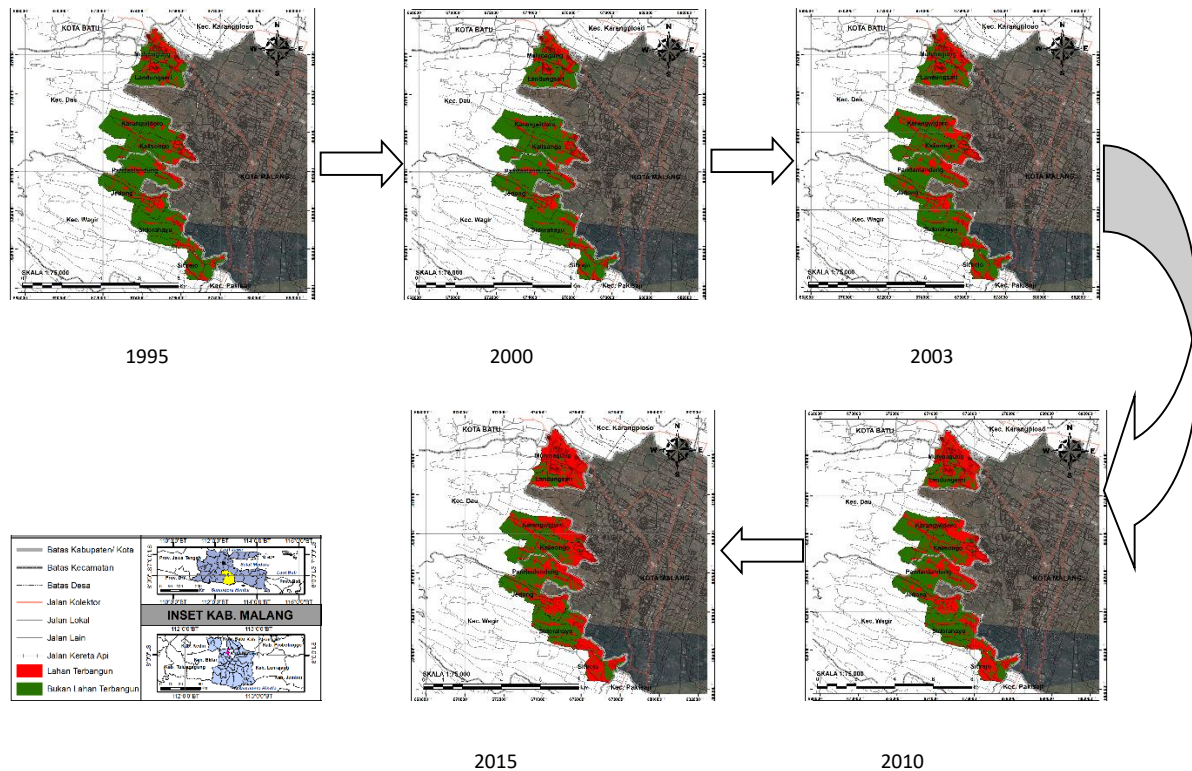


Figure 3. The Dynamic of the Built Land Covering in the Location of the Study in 1995-2015

The alteration from the unbuilt land to the built ones was much more functioned as the planned residences. There was a large growth of the residential land as many as 2.726 Ha with the average increase of 160.35 ha per year during 17 years long. The 2.726-Ha residential land has shown to locate more on the productive agricultural lands. As a consequence, the landscape of the land is converted to be the culture-scape. Gradually, the rural area is changed to be the western suburb of Malang City with the compact physical characteristic. This kind of change was called as urban sprawl in the studies conducted by [2][3][12] [24][26][30].

The residential area has been deemed to be larger due to the increase of the population and it has always been followed by the increase of the needs of residences as well. The data of the population growth have shown the trend to approach the exponential curve. The average growth of the population in the western suburb area constituted 0.0241 or equal to 2.41% in significance since 2008-2016. The existence of the migrants, said to be more massive, has represented that suburbanization in the western suburb area of Malang City has occurred so as to create the relatively-high migration and mobility of the community.

Suburbanization in the western suburb area of Malang City comprised three main stages, namely: 1) pre- suburbanization (occurred until the 1990s), 2) the first stage of suburbanization (occurred in early 1990s), and 3) the second stage of suburbanization

(occurred in 2000s). The pre-suburbanization stage was characterized by the land usage for agriculture, working in farming, low-density population, and gradual regional development. In this stage, the economic variation tended to be low, for the economic fundamental mainly referred to the agricultural sector. However, the level of regional production was relatively high, as the agriculture did not only prioritize the commodity of rice and *palawija* (plants excluding the rice), but also the farming of other commodities, such as coffee and clove. The in-depth interviews resulted in the fact that the western suburb area of Malang City was one of the greatest producers of dairy milk since the 1980s.

In the first stage of suburbanization, the regional development of the western suburb area of Malang City was relatively slow. The urban characteristics were not visible yet; the demographic alteration did not exist, and the economic activities varied. Urban sprawl and suburbanization were initiated in the early 1990s as that in Poland, where suburbanization and the existence of the suburb area existed in early 1990s as well [11]. In this stage, there was a conversion usage of land from the agricultural areas to residences as well as a utility area. The planned residences started to grow when migrants, such as newcomers and students, arrived. The presence of Campus III of University of Muhammadiyah Malang (UMM) contributed to the population of the migrants and being the supporting factor for regional dynamics. This fact was in line with the study of [16]

[31] showing that one of the determining factors of peri-urban development is the complex growth of universities. The role of universities is thought to create regional dynamics [32]. The role manifests an influence of universities to the physical development of certain regions and sometimes to the more complex non-physical development, such as economic activities, so there will be a variety in the economic sectors, to be specific in the trading, service, residences, industry, or even in some other informal sectors.

The second stage of the suburbanization is said to be not massive yet, but significantly affecting the regional development. This stage was characterized by the structural change of the region and the variety of regional economic system. In this stage, the regional economic system which was based on the agricultural sector gradually transformed to the non-agricultural sector. Most people who used to work in the agricultural sector steadily moved to work at the service and trading activities. The newcomers or migrants with their heterogeneous social, economic, and cultural characteristics are believed to fasten the regional dynamics. Furthermore, the results of the interviews showed that the existence of the migrant respondents in the western suburb area began in the 1990s and was constantly continuing until 2016.

Henceforward, the second stage of suburbanization has also been triggered by the status of Batu City as the autonomous region since 21st of June 2001. This status of being autonomous region significantly affected the regional development. The transportation facility has grown rapidly so that the accessibility from Malang City to the western suburb area of Malang is relatively high. The second trigger to the level of preference of the migrant respondents to stay in the western suburb area was caused by the continual increase in the price of land and residences in Malang City and the affordability of land in the western suburb area. This was relevant to the study of [16] contending that suburbanization is affected by the need of having a residence since the purchasing power of the community will be low if the price of the land and residence is highly expensive. Since 2007 to 2015, the pricing index of residences in Malang City has been identified to experience an increase as much as 125%. This meant that the average of the price fluctuation the consumers had to pay to purchase for a house constituted 125% in total. The second factor referred to the process of suburbanization in the western suburb area which was different from Jakarta. The study of Rustiadi et al (1999) has exhibited that suburbanization process all over JABODETABEK is triggered by industrialization in the suburb areas of Jakarta. The third factor that was believed to affect suburbanization was that the migrant respondents assumed that the western

suburb area was the comparatively strategic location, located along the primary route connecting Malang City and Batu City.

In the second stage of the suburbanization, there was a planned-developed residential area located in the agricultural land, which was not distributed and integrated with the residential area of the natives. The alteration usage from agricultural to the residential land was well-planned without considering the support of the suburb area, so as to represent the characteristic of urban sprawl. 64% migrant respondents reside in the planned residential area; while the other 36% migrants stay in the natives' location.

Urban sprawl followed by suburbanization has given a significant influence on the socio-economic condition of the natives. The regional transformation from rural to hinterland prior to suburban encouraged the farmer community to adapt to the new environment. The demand for the land used for residential area and property sector caused the expensiveness of the land's pricing. The residence developers are willing to pay higher than the standard price. The farmer community has been slowly affected by the condition of the surrounding environment so that they change their mind to sell their land. In this condition, a distortion of the demand on land happened, for the existing demand does not represent the actual demand. The demand for land is not only for being redirected to residences but also to investment and speculation. Consequently, the expected value of the land is high. This condition has already been revealed by the study of [25] [26].

Suburbanization and informal sector signify two consecutive processes. The informal sector has arisen due to the fact that the farmers along the western suburb area of Malang City decided to sell their own lands to the residence developers. The situation showed in Table 1.

Table 1. The Main Livelihood of the Natives and Migrants

No	Kinds of Livelihoods	The Natives		The Migrants	
		Frequency	%	Frequency	%
1	Civil Servant	5	10	12	24
2	Private Employee	7	14	17	34
3	Vendor	2	4	6	12
4	Labor	24	48	0	0
5	Farmer	8	16	0	0
6	Entrepreneur	4	8	15	30
Total		50	100	50	100

Sources: Primary Data Analyzed

Table 1 described that majorities of the natives (76%) have as worker informal sector. The part of 76% it as a farmer only 16%. The agricultural land has turned to be narrower, and thus no ownership. Eventually, the farmers work as labors on the non-agricultural sectors that do not require them to have a special skill and knowledge. The only alternative available is that they work in some informal sectors, such as construction labor, factory labor, housemaid, shop assistant, driver of public transportation, Indonesian migrant worker, or scavenger. They are working in Malang City or in the newly-built residences separated from theirs.

It is very far different from the migrants who are working in the formal sectors. The migrant of majorities has as a worker in the formal sector. It has 58%. The situation explained that the migrant to contribute to informal sector growth in western suburb area. This study has uncovered that the main livelihood of the natives has changed from being a farmer to being a labor.

The development of UMM as one of the private universities with its thousands of students has caused the existence of many entrepreneurship in order to fulfill the students' needs. One of the main needs required by the students who are originally from outside Malang City was a boarding house. This opportunity is detected by the community by offering the boarding house to the students. There are at least 4 rooms in a house located nearby the campus. Surprisingly, there have been a number of boarding houses with apartment-like facilities. Boarding house business has been the main livelihood of a small number of natives. Besides, in line with a huge distribution of the boarding houses, there are also numerous informal services to offer fulfillment for the other student's needs. The services could vary, for instance, laundry, restaurant, computer rental, a street vendor, clothing shop, stationary, café, and coffee shop during five recent years. This means that the informal sectors having converted to be the main income earning for the community residing at that location have been said to be able to change the economic structure, to be precise, from agriculture to the informal sector.

Some natives who decided to sell some parts of their own lands or not to sell any lands or part of which to the residence developer kept working as a farmer. However, the level of the land proprietorship has decreased or sometimes goes stagnant, yet the fertilization of the land tends to lower. The quality of the land has shown decreasing trend along the decreasing environmental quality (ecology).

Gradually, the ecological, as well as economic characteristics of the rural area directed to be urban area due to the extension or the urban sprawl, have raised social alteration. On the other hands, the farmer community basically hesitates to accept that kind of alteration. Nonetheless, due to the existence

of the elite modernization on the development itself, the farmer community in the western suburb of Malang City is desperate and hopeless.

The abovementioned condition has generated an agricultural involution. The exposed of [28] and [29] that the agricultural involution is caused by the less ownership on the land by the farmers, the status alteration from rural to suburban, the rural community development that tends to be urban community, the agricultural sector that is unready to face global competitions, and the existence of labor transformation from agriculture to non-agriculture. [34] contends that the symptoms of agricultural involution are mainly caused by the population growth in the rural area due to incoming migration mobility and narrowed agricultural land, so that the agricultural sector is left undeveloped. In the end, poverty occurs and farmers feel hopeless to the social environment that would gradually be altered [33]. That sort of characteristic has also been found in the western suburb area of Malang City. The rural area experienced the dysfunction as it is converted to be one of the suburb areas in Malang City. The alteration process is not equalized by the adaptation committed by the farmers. In addition, the farmers have preferred to follow the flow of the occurring alteration and do not conceptualize any strategy of life in order to face the upcoming alteration. Besides, the farmers use an intensification technique to only live their life as stated by Pak SM (66 years old):

"If living in the village, there are still so many agricultural lands. However, in this area, the agricultural lands have been converted to be residential areas. Some other farmers have sold their lands to the residence developers. Mine has remained 2 minor parts (less than 0.25 Ha) since I have sold the other parts to the developers. Now, my main livelihood is no longer farmer, but construction labor. Farming is my assistive livelihood. To minimize the production cost, I plant corn. In the rainy season, I plant rice."

Pak SM and the other farmers intensified the land by recruiting the workers from their families to minimize the production cost. This farmer's adaptation signifies a substantial paradigm (Geertz, 1983). The intensification, furthermore, is based on the attempts of the farmers to fulfill the required needs within the social environment, not fully based on the rational economic consideration. The agricultural involution that has occurred in the western suburb area of Malang City essentially refers to the second agricultural involution right after the green revolution occurring in the 1970s. This second agricultural involution has been formerly predicted by the experts of rural agriculture and sociology [35]. The agricultural involution is the result of urban sprawl and suburbanization. Both processes started in the 1990s when UMM was developed. Afterward, it has been expanded until present and there are only

some remaining farmers aging more than 60 years old. Furthermore, there is not any farmer descendant found to work as a farmer. It is believed that the main reasons for this occurrence refer to the ownership issue of the agricultural land and their working at the non-agricultural sectors located in Malang City

CONCLUSION

There are some aspects to conclude from this current study, namely:

1. Suburbanization massively occurred in the early 2000s and caused the informal sector growth in the western suburb area of Malang City;
2. Suburbanization occurred in Malang due to the supporting factor referring to the high pricing of land and residence and due to the attracting factor of the suburb area, like the high accessibility from and to Malang City;
3. Suburbanization has caused a symptom of agricultural involution. This involution resulted in new poverty. This was the noumena from suburbanization and informal sectors in the western suburb area of Malang City.

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