

The Influence of Industrial Area Existence towards Community Behavior in Space Utilization at Gresik, Indonesia

Titik Poerwati, Ardiyanto Maksimilianus Gai
Urban and Regional Planning Department,
Faculty of Civil Engineering and Planning, National Institute of Technology (ITN) Malang

Abstract

The existence of industry in certain region either in large industrial scale or small industrial scale will give influence and bring changes to the socio-economic conditions of surrounding community. Gresik Regency is one of regencies considered as sub-center of development in the concept of *Gerbangkertosusila*, and the one which takes the role as one of the centers in industrial activity, not only in national scale but also international scale. This study was aimed to identify the influence of industrial area existence toward community behavior in space utilization at Gresik. The methods of the analysis associated with the target of the study were qualitative descriptive method, and quantitative descriptive method using Chi-square test and behavioral mapping. The analysis of the study revealed that there was a positive influence in which the quality of life was improved by taking an opportunity as labors or by starting business; the influence was also found in a form of community space utilization where every individual needs it in order to interact with the surrounding environment because of the simultaneous difference in the process of individual assessment so that there was a difference between the character of industrial community and non-industrial community. Secondly, industrial development inflicts a tendency to use the opportunity by becoming factory employees and by starting trading business such as food and beverage, rented house business for those who had not been married yet or even for married employees, hence, the income from the well-managed business sectors was raised. For the surrounding community, the industrial areas significantly increased from the previous condition. Furthermore, the other influence of the industry existence involved an interaction between individuals in a certain community by following several activities which were necessary to do. Lastly, the tendency of space utilization for industrial community and non industrial community was nearly same either in monthly events or yearly events, yet the difference was only additional activities beyond the job as industrial employees.

Keywords: *Industrial area, Influence, Behavior, Space Utilization*

1. Introduction

Industrial activity is a factor which is expected to be able to support and encourage economic growth of a region (Sari, 2014). The existence of industry in a certain region including large industrial scale or small industrial scale will give influence and bring changes to the socio-economic conditions of surrounding community. According to Singgih (1991: 6), the existence of job opportunity in a big industry stimulates a new chance, for instance the chance of being hired directly by the company in the new unit, and free economical business which directly meets the industry needs.

Gresik Regency is one of regencies considered as sub-center of development in the concept of *Gerbangkertosusila*, and the one which plays a role as one of the centers in industrial activity, not only in national scale but also international scale. The development of the industrial area will cause a change of land function which is started from an unbuilt land until becoming a built land. Gresik City which is located in the East of Gresik Regency and directly bordered on Surabaya takes roles as government center and district of industry and warehousing development.

According to Purnomo (2007), industrial area in Gresik consists of household scale, multinational scale, and even international scale. Those industries are cement industry, wood processing industry, paint industry, textile industry, home appliance industry, manufacturing industry, fertilizer industry, steel melting industry and power plants. Furthermore, there are four harbors in Gresik where large ships docked. Those harbors are of PT Semen Gresik, Pelindo III Gresik, PT Petrokimia Gresik dan PT Maspion (Herdiansa, 2014). In 2008, based on data from BPS East Java in Gresik Regency, 160 big industries and 332 medium industries raise, meanwhile in 2012, there are 166 big industries and 346 medium industries.

The existence of the industrial activities which is considered as one of elements in an environment of a study area will give good influence toward spatial aspect, that is, a change of space utilization system such as housing development, trade, worship, and other physical activities. Meanwhile, non-spatial aspect will affect individual characters such as economical and social activities, and tend to utilize the space around the environment. This study is aimed to identify the influence of industrial area existence towards community behavior in space utilization at Gresik.

2. Literature Review

2.1 Definition of Community Behavior

Community behavior is a realization of community effort in utilizing the existing space in order to meet needs or wants, either material or spiritual which establishes hopes and some illustrations in the future.

2.2 Definition of Space Utilization

Space utilization is a movement which is done by human in utilizing or living in a certain area where the movement is done by the community behavior that has a distinct value and meaning depending on appreciation degree and cognition of individuals who use the space. In doing any activities, the community will build a space as a place for the activity, thus space patterns will be designed based on the community behavior. Those space patterns include:

- a. Home range
- b. Core Area
- c. Territory
- d. Yurisdiction

2.3 Definition of Industrial Area

Industrial area is defined as an area where people activities are concentrated to a zone for industry that manages feedstock, raw materials, semi-finished products, intermediate goods, which will have higher values in use. The land used in industrial area is a place for work such as factory, warehouse, employee's house, and so forth.

3. Research Methodology

Based on the object of the study, the analysis of the study use:

1. Analysis of industrial community and non-industrial community character around the industrial area.
By distributing questionnaire using descriptive qualitative method based on observation variables towards industrial community and non-industrial community character for instance sex, living duration, home status, and educational degree of the respondent.
2. Analysis of activity which is done by the community as the effect of industrial area existence.
The method used in this study is quantitative descriptive Chi-square test (X^2). This method is aimed to describe characteristics of a progressive situation when the study is conducted and to observe some causes of certain condition tendency. Moreover, this method is also aimed to know the relationship between a variable and other variables and the relationship between two tendencies or more and analyzed with Crosstab (Iskandar, 2010). The analyzed variables are economical activity and social activity of the industrial community and non-industrial community affected by the industrial area.
3. Analysis of the tendencies of community space utilization affected by the industrial area. In this phase, it discusses about the influence of industrial area and industrial and non-industrial community behavior towards the space building such as setting system and community behavior in order to know tendencies movement pattern using behavioral mapping technique. Behavior setting is defined as a stable combination among activities, places, and the following criterion according to Barker 1968 in Joyce 2005: 175 :
 - There are repeated activities as behavior setting.
 - Supporting by certain environment management.
 - Build same relationship between them.
 - Conducted in certain period of time.

4. Finding and Discussion

4.1 The Analysis of Community Character

A. Industrial Community

Industrial community means people who act their main work as workers or factory employees from the existed industry in the study area. The system of employment for the people who work in industrial sector use the system which is divided in three hours shift such as Shift I (07.30-14.30), Shift II (14.00-22.00) and Shift III (22.00-06.00) by turning eight hours a day.

For the industry that has 2 hours work (Shift I dan Shift II), the distribution of employment gets once a week for each shift. Meanwhile, for the industry that has 3 shifts (Shift I, Shift II dan Shift III) is divided once in two weeks for each shift. For example, for those who get to work in shift I, they should work fully in a week or two weeks and be continued in second week for second shift along a week or two weeks, and so forth.

B. Non-Industrial Community

Non-industrial community here means the community who works in non-industrial sector, such as civil servant, private employee, service provider et cetera. For civil servant or private employee, working hour is associated with normal working hour along six or five days work with 8 hours work or more. Meanwhile, for traders, the

working hour is associated with the situation and the condition of the trader himself/herself.

4.2 The Analysis of Community Behavior in Space Utilization

This analysis will explain about space utilization setting such as micro, meso, and macro, and about behavior setting such as physical setting. This physical setting will be elaborated with the pattern of home range, core area, territory, and jurisdiction for industrial and non-industrial community.

The Analysis of Setting and Setting System

Setting is a space with certain limited spatial and human activity which holds in certain duration of time. Meanwhile, setting system is a correlation among each setting which controls human activity system in certain duration of time. There are three setting systems, they are:

(1) Micro Space

Is a space used by the community and limited only in the area around people's house such as family mosque if it is available, private room, family room, kitchen, and so forth, as well as in the environment of factory only such as mosque that are intentionally prepared for those who work. In the other hand, the most usable room is canteen in the environment of factory as the place for taking rest and assembling with all workers.

(2) Meso Space

Is a space used by the people to act social activity, and the limitation of the setting is only in every environment where the place is a gathering place such as residential complex, security pos, maternal and child health center, industry polyclinic, and stall.

(3) Macro Space

Is a space used in wider district in every village and outside study area by using spaces such as village office, mosque, community health center, market, stall, and elementary school.

4.3 The Analysis of Behavior Setting

This analysis is distinguished in space utilization for industrial and non-industrial community so that it is known how well the tendency of community movement setting towards space facility and its utilization.

a. Home Range

Is a common limitation of regular community movement and available in several settings or location, and community network which is classified into daily, weekly, and monthly home range.

1. Daily Activity

Include working, shopping, and worshipping. They are implemented regularly/every day, thus the tendency of facility utilization is those who are near with home or workplace and their needs can be fulfilled in utilizing the facility. See diagram 1 and 2.

2. Weekly Activity

Weekly activities here is recitation activity such as *tahlil* or *diba'an*, almost all of the community in that area join the activities. This activity is a framer of primer social relationship that strengthens the kinship of the community, because it is done in the environment of community association so that this weekly religious activity only utilizes space in the area.

Diagram 1
Community Worshipping Activity

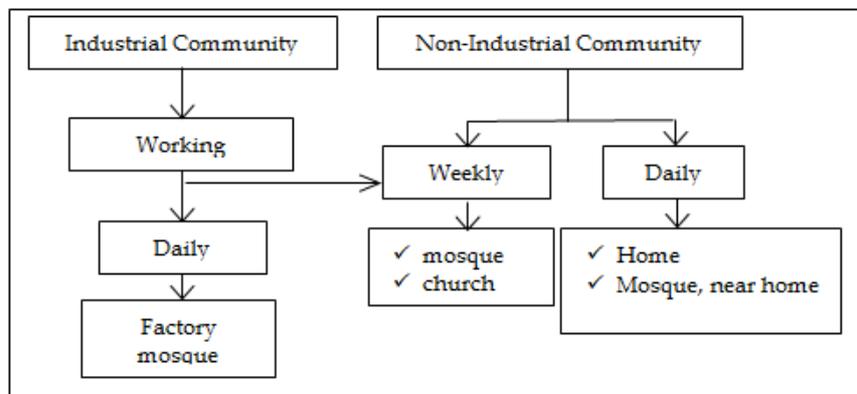
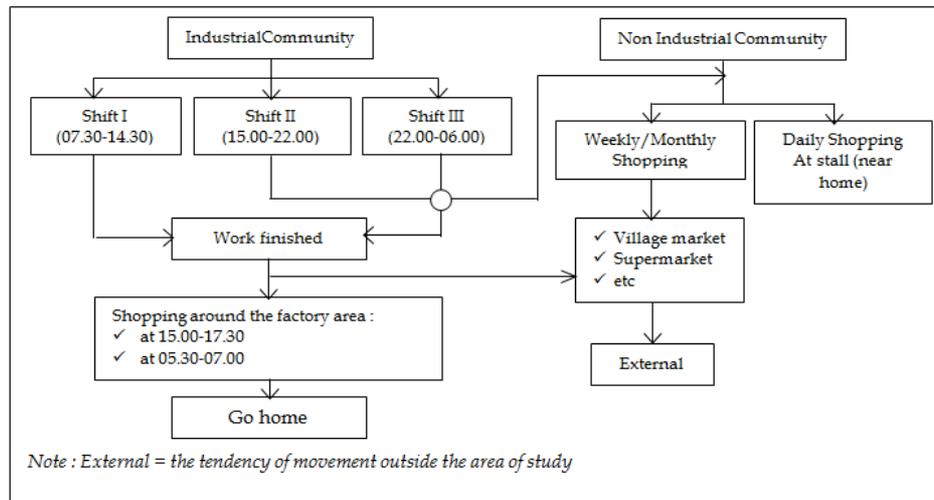


Diagram 2
Shopping Community Activity



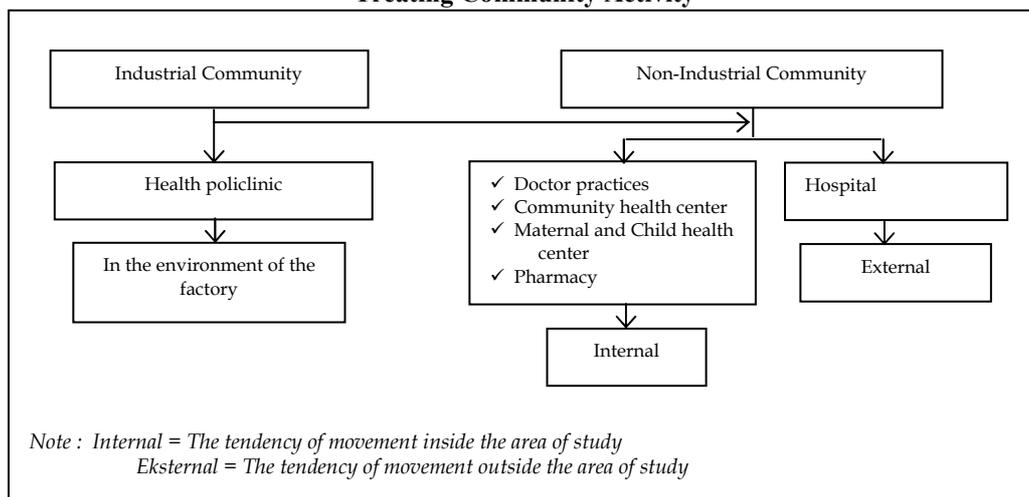
3. Monthly Activity

- a. Include family welfare programme activity and maternal and child health center in once a month. The family welfare programme activity is done in village office and for maternal and child health center, it is done in the house of hamlets.
- b. For men and teenagers, the activity is neighborhood security system activity which is done in neighborhood security pos in every corner of resident once in three weeks by turns.
- c. Kegiatan berobat bagi masyarakat dapat diasumsikan tidak dapat dipastikan frekuensinya untuk tiap-tiap individu sesuai dengan kondisi dan keadaan. Lebih jelasnya dapat dilihat pada diagram 3.

4. Supporting Activity

For industrial or non-industrial community, the supporting activity here is neighborhood activity yet it is not routine. The utilized spaces are house terrace with 30,95%, house yard with 13,10%. Meanwhile, there are some respondents who cannot do the activity due to their business and their mindset to not waste time by talking about other people that is not necessary to do.

Diagram 3
Treating Community Activity



b. Core area

Core area is main area in home range which is mostly usable, understandable, or controllable directly by the community. In this study area, the core area is in each house community due to good kinship between original community and migrant community. For the factory environment, the core area is the factory itself as a place for working. Moreover, there is a canteen/stall in the area of factory as a place for gathering and spending time or taking a rest for the factory employees.

c. Territory

Is a limitation specifically owned and maintained well in physical or non-physical based on certain regulation or

norm. In this area of factory, there is a place for worshipping and caring health such as policlinic for factory employee. In residential environment, there are mosque, market, and community health center that take care the surrounding community and even the migrant community to fulfill their needs in spiritual, health, and public service.

d Jurisdiction

Is an area controlled temporarily by certain community. In the study area, jurisdiction is in warehouse industrial area around the community resident where the area should always be controlled and saved because only certain people can enter the area.

b. Core Area

These are the core areas within the home range boundaries that are most commonly used, understood or directly controlled by a group of people. In the area of study which is the core area is the residence of each resident due to the good kinship between the local indigenous people and the immigrant community. For the core area of the factory environment is the existence of the factory environment itself as a place to perform work activities, furthermore the canteen / shop provided in the area of the factory environment as a place to gather and spend time and rest for factory employees.

c. Territory

A limit that is specifically owned and maintained both physically and non-physically with certain rules or norms. For areas within the factory environment is the existence of means of worship and health in the form of polyclinics provided only for the needs of factory employees. For community settlement is a mosque, a public market and a health center that can serve the local community even from outside communities to fill the needs in the form of spiritual, health and public servants.

d. Jurisdiction

It is an area that is mastered and controlled temporarily by a group of interest citizens. In the study that became controlled area of industrial warehousing area around the residential area where this area should always be controlled and guarded because the area can enter only for those with an interest people only.

4.4 Analysis of Community Activities Behavior Due to the Influence of Industrial Estate

To know more clearly about the quantitative and qualitative results of community activities around the industrial area can be seen in table 3 below.

Tabel 3
Quantitative analysis results (statistical test conclusions) and qualitative analysis of economic and social activities of the community, with the ratio of variables reviewed: assumptions and facts in industrial areas

No.	Dependent Variables: Work Activity Changes	Quantitative Analysis (Statistics Conclusion Test)	Qualitative Analysis			Conclusion	
			Theory	Assumption	Fact		
Economy Activity							
1.	Main job	Have relation	The main occupation in urban area is in area or industrial area generally non agrarian and heterogeneous.	The existence of the industry gives influence to the behavior of the community in the activities undertaken. With assumption : 1. The tendency of individuals to work due to the opportunity to work. 2. With work, there is an increase in income	The main occupations are varied and dominated by 40 respondents of factory employees (47.62%), 26 respondent of private sector worker / trade (26.95%), and 3 respondents of government employees (3.57%).	With the development of industrial activities, the tendency for people around the industrial area to take advantage of opportunities that exist to work or open a business as their main job.	
2.	Level of primary income	Have relation			17 respondents (20,24%) confess their income increase from Rp. 300.000 to Rp. 500.000, 34 respondents (40,48) confess their income increase from Rp. 500.00 to Rp. 700.000, between Rp. 700.000-900.000 there are 17 respondents (20,24%) and those earning more than Rp.900.000 are 9 respondents (10,71%).		By having the opportunity to work there is an increase in income compared to the conditions before and some respondents use it to open a business as a side job around the industrial area.
3.	Workplace main location	Have relation			The location of the main work is still within the scope of Kebomas Sub-district, which is 35 respondents (41,67%), and the urban village is 23 respondents (27,38%).		The direction and location of the workplace is still within the scope close to the residence, so that the tendency to work is higher.
4.	Side job	Have relation	As a result of the development of industrial activities, indirectly has provided opportunities for people living around the industry to open business opportunities in serving the needs of factory employees and local communities.	The influence of the existence of industrial area on social economic activities, gives the assumption that: 1. The tendency to take advantage of opportunities to open a business as a livelihood or side job. 2. There is an increase in income not only from the main income (main occupation) but also from the income earned in taking advantage of opportunities to trade.	i. With the industry, respondents who said their lives affect were 73 respondents (86,9%), and who said unaffected were 11 respondents (13,1%) ii. Opportunities that are used as a side job to open a stall/shop is 31 respondents (36,9%), and open boarders business are 7 respondents (8,33%) iii. The function of the managed business is to serve the local community which is 19 respondents (22,62%), factory workers are 15 respondents (17,86%) and those who providing the community as well as the factory workers are 35 respondents (41,67%).	Increased labor demand will be profitable to the local communities to take advantage of opportunities for businesses to be managed due to positive influences from industrial estates in the study area.	
5.	Level of side income	Not have relation			The side income earned by current respondents are: i. <Rp. 150.000 (27 respondents (32,14%)) ii. Rp. 150.000 - 300.000 (17 respondents (20,24%)) iii. Rp. 300.000 - 450.000 (15 respondents (17,86%)) iv. >Rp. 500.000 (16,67%).	By having a managed business as a side job, apart from the main work activities it has a positive impact on the increased income level obtained by the respondents.	
6.	Workplace side location	Not have relation			The location that is done to open the business: i. At home (27 respondents (32,14%)) ii. In the urban village and sub-district (15 respondents (17,86%)) iii. Still in the city (12 respondents (14,29%))	The number of respondents who opened the business at home due to the level of expenditure that must be spent is not too high besides that time is very flexible.	
Social Activity							
7.	Participation of social activities	Have relation	Community activities tend to be loose because the city is dominant individualism but still can take the time to be able to follow social activities in accordance with the needs and desires of the community.	With the high activity doing work, the tendency to perform activities outside the home somewhat reduced.	Type of activity that followed is activity of social gathering / PKK which generally done by mothers because have more time that is 16 respondent (19,05%) whereas religious activity 30 respondent (35,71%) done when there is an event thanksgiving, assay, dead recitation and Friday legion both men and women.	Participation of the community follows the social activities mainly the women are more visible by following the activities held on the grounds, with reason it is important to follow and they want to be involved in the surrounding community.	
8.	Social activity undertaken	Have relation			Frequency of activity is generally done: i. Once a month, 28 respondents (33,33%) ii. Sometimes, 24 respondents (28,57%)		
9.	Social activity Frequency	Have relation					
10.	Reason to stay	Not have relation	It gives a big influence on the amount of labor that there is a large number of migrants to settle / domiciled in order to be close and easy to achieve with the environment where it works.	With the opportunity to work in industrial areas, the tendency of the community (migrants) to mutate or move increasing.	As it is known that the residents are partly migrant population 45 respondents (53,57%), coming from outside the sub-district (35,7%) and out of town (31%), the reason why living in the area because close to the work place is 33 respondents (39,29%), the opportunity to open a business is 28 respondents (33,33%) and because the land is still cheap & affordable is 13 respondents (15,48%).	The existence of industrial estate has attracted individuals / respondents who come from outside the city to get job opportunities so that requires settling in the study area so that easy to reach with the workplace.	
11.	Individual relationship with neighbor	Not have relation	The attitude of his / her life tends to the individual / egoism, each member of the community tries to separately without being bound by other members of the community.	The tendency of the community to gather with the neighbors is still exist, although began to loose due to bustle of each individual. And there is no difference between immigrants and indigenous people.	Public relations that look excellent 27 respondents (32,14%), quite good 37 respondents (44,05), and good 17 respondents (20,24%). Social relations of this society can be said to start loose because of the many newcomers who are domiciled.	The trend of industrial influence on individual relationships is not very influential despite the large number of immigrant communities, but for gathering activities have begun to loose due to the bustle of each individual.	
12.	Shopping activity	Not have relation	People in industrial areas tend to have high consumption patterns in fill up their daily needs.	High consumption patterns in terms of shopping to buy daily necessities and other supporting needs that tend to increase in an easily accessible place at an affordable price.	Habit of respondent in shopping activity, tend to choose in stall / shop nearest to home that is 41 respondent (48,81%), shopping at supermarket 22 respondent (26,19%), and in general market that is 18 respondents (21,43%).	The number of respondents stated that the need for daily increases with the number of needs that must be obtained is 80,85% and the remaining 19,05% stated fixed.	
13.	Shopping activity frequency	Not have relation			Frequency of respondent shopping generally done every day that is 27 respondents (32,14%), once a month and once every three days are 19 respondents (22,62%)		

Source: Analysis Result

5. Conclusion

From the results of the research above, it can be concluded that there is an influence that gives positive aspects to the community around the industrial area. That is the improvement of life quality by exploiting the opportunity as a workforce or by opening a business but also in the form of community space utilization where every individual needs to be able to interact with the surrounding environment due to the simultaneous differences in the process of individual assessment so that there are differences in the character of industrial community and non-industrial.

The character of industrial and non-industrial community is almost the same with the demands of their lives used the opportunities that exist for work, also responds to the opportunities that exist in the study area that is as a factory employee, or also open a business like a stall/shop and others. The type of work selected based on the educational level of a person that they are dominated generally junior high school and senior high school, mostly non-technical who do not need formal education. In this case, the type of work chosen is generally entrepreneur / merchant and as factory worker.

The existence of industrial development causes the tendency to take advantage of existing opportunities to become workers/employees of the factory and open a trading business such as food and beverage stalls, boarding/rented business for both unmarried or also for workers who already married, so there is an increase in income from the business sector for the community around the location of industrial areas from their previous conditions or situation. In addition, industrial influence is the interaction between one individual with other individuals in a particular community by following some activities that are considered necessary.

Based on the result of analysis, the tendency utilization space of industrial society and non-industrial society is almost the same in terms of monthly and yearly activities, the difference is only from the aspect of activities or activities outside work as industrial employees, namely:

- a. Daily shopping activities
 - Industrial society, for those who gets shift I and III usually buy things after work near the factory environment because there are services and markets in the morning and afternoon before the workers go home.
 - Non-industrial society, they shopping activities done near their house like stall/store, for daily and weekly needs done in market. As well as shift II of industrial society, their activity almost same because after work they usually directly go home and rest and the next activity continued on the next day.
- b. Treatment activities
 - For industrial society, they can use health facilities in factory because they get a health insurance in their factory, because of the type of their job is risky and dangerous. But apart from that, industrial society also has a treatment outside the factory area like non-industrial society.
- c. Worship activities
 - While working, industrial society do their daily worship activities at Islamic prayer room that has been provided in factory area. Except for weekly worship activities like Friday prayers done outside the factory area.
 - For non-industrial society, they tend to choose the location near their home to do worship activities, like in the Islamic prayer room in their house or in the nearest mosque.

6. References

- Arndt H.W dan R.M Sundrum. 1996, Indonesia di Masa Orde Baru, PT. Pustaka LP3ES
- Cahyono, Bambang Tri. 1995, Pengembangan Kesempatan Kerja, Gajah Mada University Press, Yogyakarta.
- Gintings, Perdana. 1995, Mencegah dan Mengendalikan Pencemaran Industri. PT. Pustaka Sinar Harapan, Jakarta.
- Haryadi, B, Setiawan. 1995, Arsitektur Lingkungan dan Perilaku. Direktorat Jenderal Pendidikan Tinggi Departemen Pendidikan dan Kebudayaan RI, Yogyakarta.
- Iskandar, (2010), Metodologi Penelitian Pendidikan dan Sosial (Kuantitatif dan Kualitatif), Jakarta, Gaung Persada Pers
- J. King Leslie dan Regihnauld G. Goledge. 1984, Cities, Spaces and Behaviour. The Elements Of Urban Geography, Jakarta.
- Joyce Marcella Laurens. 2005 . Arsitektur Dan Perilaku Manusia. Jakarta. Grasindo
- Narbuko, Cholid dan Abu Achmadi, (2004), Metodologi Penelitian, Cet. V Jakarta: PT Bumi Aksara
- Rakhmat, Jalaludin. 1992, Psikologi Komunikasi, Rineka Cipta, Bandung.
- Pusat Bahasa Departemen Pendidikan Nasional. 2002 Kamus Besar Bahasa Indonesia, Balai Pustaka, Jakarta.
- Saifuddin Azwar. 1995, Sikap Manusia, Teori dan Pengukurannya. Edisi Ke 2, Pustaka Belajar.
- Sekretariat Negara Republik Indonesia, "Undang-undang No. 5 Tahun 1984 tentang Perindustrian Pasal 1 ayat 1 dan 2"
- Sritomo Wignjosoebroto, 1995, Tata Letak Pabrik dan Perpindahan Bahan. PT. Bina Aksara, Bandung.
- Soedarmayanti. 2002, Metodologi Penelitian. Alfabeta, Bandung Hal. 143
- Susanto, Phil Astrid S. 1983, Pengantar Sosial dan Perubahan Sosial. PT. Binacipta, Jakarta.
- Wirawan, Sarlito, Sarwono. 1984, Psikologi Lingkungan. PT. Gramedia Widiasarana, Jakarta.
- Yusmar Yusuf. 1992, Psikologi Antar Budaya, PT. Remaja Rosdakarya. Bandung.
- Zaharuddin. 1999, Perilaku Masyarakat Akibat Pengaruh Industri Sebagai Masukan Bagi Arahana Tata Ruang. Tugas Akhir Teknik Planologi, ITN Malang.