

The Central Market Transportation Control Model in Medan City

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Abstract

Millions of Indonesians still supply their daily needs to a traditional market that is synonymous with the lower middle class. The study aimed at the problem of transportation at the center of the terrain city market and how to find solutions to the transport problem. The terrain city market center as a first-class market in the terrain city is one of the largest in the terrain city. One of the problems at the center of the terrain city market is that of transportation, which involves the daily congestion we encounter at a very critical stage. The central market for the city of Medan does seem to be physically, financially and under. In the study, problems are set in place (1) what is the current condition of the urban market market and (2) what is the solution to the transportation problems that exist in the municipal market center? Using transportation control model approaches in the center of the city market that will be directly observed and analyzed using Vissim software. Researchers in this regard took a direct look at the problem at the city market center. Studies indicate that economic activity in the central urban market area has significant transportation problems, especially congestion. With the transport conditions and until the moment.

Keywords: Transportation, City, Central Market

INTRODUCTION

The existence of markets is intended to provide services to communities in order to meet the desires needed for daily survival. But today's growth not only serves as a means to meet the daily needs of life (the need for food and clothing), but also offers other items besides the need for the basics. Recognizing the importance of the market role, so nearly every community group now has a market even in remote villages. As the center, the market with all the devices in it indirectly became a model for the people around it. This suggests that not only the economic role but also the cultural role of the people around it is substantial (Syariadin, 199:1-2).

The terrain city market center as a first-class market in the terrain city is one of the largest in the terrain city. One of the problems at the center of the terrain market for cities is that of transport, congestion, and noise and air pollution we see so often each day are at a very critical stage. Before a definitive solution can be determined, the first thing to do is to study and understand in detail the interconnective patterns between the factors that lead to the problem in qualitative and quantitative (measurable) forms on the site. Transportation planning and modeling are the most effective and efficient media that can combine all these factors and its output can be used to solve transportation problems both present and future.

The urban urban market center, which is the largest market on a vital urban infrastructure, has suffered many decline in both physical, function, image, legal, locational, financial and economic. As for the change description are as follows:

1. Physical phenomena

The physical condition of the historical building and environmental conditions at the center of the city market experienced both a visual and visual decline in quality resulting from the effects of time, climate, and skin movement of the earth, vibrations generated by either traffic or extreme maintenance and the structurally sound of the region's poorly constructed components. This caused discomfort to the users of the region.

2. Function phenomena

The presence of new buildings in the central market area is irrelevant and does not support one another's historical landmarks.

3. Image phenomem

The historical region of the local market centre has an ugly image where a lot of crime and hooliality has made the visitor and the user uncomfortable to engage in activities.

4. 'Legal' and 'official' phenomena

According to the local municipal market, the municipal government does not provide sufficient funds to care for the central market area, such as the garbage removal of not daily, the unrepaired elevators and the parking system still controlled by a third party.

5. The locational phenomena

There was a change in the physical environment in the central market area that caused many residents to leave it and rent it to a third party at a high price.

6. Personal financial phenomena

High rent prices in the central market area have resulted in loss of many ruko's and the merchants' choice to sell their goods on the streets by giving wild quotations to the local youth organization that seize the opportunity.

7. Economic phenomena (economic)

The high cost of rent/building prices leads to many who start to look for other cheaper locations and this, when left unchecked, can cause the region to become an abandoned area or empty space.

Iis nurlaela, d.h. (2015). Said that the existence of the commercial center was one of the most visible indicators of the economic activity of people in the region. Physically, trade is divided into the traditional market and the modern shopping center (Friday, 2010). The activity taking place in such a trading center as the traditional market is one of the sub. the trading center system in a city is one of the parameters that can be used to know the economic growth and dynamics of a city (kiik, 2006).

Transportation and congestion problems are indeed an ever - present problem and are experienced by major cities especially in cities in Indonesia because of the increasing and modern life of a community within a city, with the need to become complex. Although public transportation is one of the solutions to this problem, it is also ironic that congestion is also often caused by public transportation, such as microlets or buses that stop at random to drop or pick up passengers, thus causing those who drive behind them to slow down or pull up behind them and create long lines of vehicles or other road users. It is impossible, however, to argue that people in major cities including terrain are in desperate need of such public transportation in order to smooth their daily routine of running smoothly as they should.

THEORETICAL REVIEW

According to the amphetamines, 1997, in planning books and transport modelling, there is a report that rapid urbanization is causing a number of problems, one of which is transportation. Factors that significantly affect urban transport, are as follows:

1. the further the average human movement every day

The higher the rate of land prices in urban hubs causes the settlement to shift to the suburbs, while the workplace tends to become more centralized in the urban center. This causes a person to move farther and longer to reach the workplace. The farther away and the longer a person weighs down the road network, the higher his contribution to traffic jams will be.

2. more women working

There is no denying that the present needs of the family cannot be supported only by the income of the husband. There is to be another, and this causes the wife to have to work, which leads to more movement by the family

3. more and more students and students

Increasingly strict competition trends in the future cause sustained education such as course, training, a part-time degree education to become a necessity for someone who has worked. This trend leads to additional movement toward the city center, where the center is usually located

4. more and more tourists

The high pressures felt by everyone living in urban areas make recreation a major necessity. Of course it also causes more movement

According to Homer Hoyt (jonah, 1991 & 1999), new developments taking place inside a city gradually reproduced characteristics that had the same sectors first. This reason is based primarily on the fact that large cities have varying types of land lease or house rent.

According to (harsono, 1995:2) the market is a center for trades, usually at locations that are convenient from all directions, taking place at certain times and, at the same time, putting the items of daily life in the family.

According to weber in (sulaiman, 1988:290) the market itself is viewed economically as a place of residence where people live primarily from commerce rather than from agriculture.

Referring to the 2012 rule of interior minister of the republic of Indonesia: management offices, parking lots, public toilets, garbage dumps, drainage, hydrants, security stations, places of worship, kiosks, loading and transport areas. Traditional market infrastructure, among other things; Road access, electrical installations, communications, health care and clean water.

Transportation is an essential part of the context of sustainable city development (ade sjafruddin, 2000). This makes any city planning independent of the planning or confirmation of the transport that would be the key ingredient in the city.

In transport control are the five most basic elements :

1. man, that need
2. goods, required
3. vehicles, for transports
4. street, as a transit infrastructure, and
5. organization, who is the administrator of transports

According to botero in the city elements, of the elements of urban form parallels history (kostof.1992) :
"A city is said to be a assembly of people, a ceremony together to the end the better live at their wealth and plenty. And the notion of city is said to be, not the largeness of the site or the circuit of the walls, but the wailing and number of the obstacles and their power. Now men are obsessed together upon sundry causes and virtues there unto them moving; Some by authority; "Some by force, some by pleasure, and some by profit that survives ofit."

Congestion is either a situation or a pinch or even a road stop caused by the sheer number of vehicles exceeding road capacity. Congestion is high in big cities, especially cities that do not have good or adequate public transport nor do they balance road requirements with people such as Jakarta and Bangkok. Traffic jams became daily congestion in Jakarta, Balikpapan, Surabaya, Bandung, terrain and other major cities in Indonesia (eko busuljo, 2005:18).

The 1992-year-old RI No.14 traffic understanding is the vehicle, people and animals in the traffic area that have the basic prerequisite for moving vehicles, people and or objects of road and support facilities (Sri Rahardjo, 1985:10).

Yusup, M, 2017, for the final analysis of the cost of congestion using a 9 Vissim software system, Sleman Yogyakarta, said that traffic delays will always have a negative impact on their own drivers as well as economic and environmental assessments. For the driver of a vehicle, traffic jams can cause tension.

Governments aim to bring about safe, safe, fast, fast, orderly and orderly, comfortable and efficient traffic management and traffic engineering (eko butojo, 2005:11). As for the components of traffic itself made up of humans, vehicles and roads that interact with one another in the movement of vehicles that meet the requirements for worthiness of drivers following the regulations of traffic and road transport that meet the requirements.

Warpani S (1990) transportation or transport are associated with moving persons and goods from one place to another that aims to reach the desired places or to deliver goods from home to destination.

The 22-year 2009 law on passenger and road transport defines transportation or transports is the transfer of people and or goods from one place to another by vehicle in the traffic room.

According to Ahmad Munawar, 2011, the system is a form of attachment and connection between one variable and another in a structured order while transportation is the transfer of passengers and goods from place to place.

The subject of urban transport development policies is as follows (Tamines, 2000):

1. The development of urban transport should be directed toward the unified, orderly, fluent, secure and comfortable national transportation systems and efficient in supporting human mobility, goods and services, and in supporting regional development
2. Urban transport systems must be laid out and constantly enhanced by enhanced human resources
3. Urban transport systems must be coordinated and continue to be adapted to economic development, technological progress levels, spatial policy, environmental function preservation, and national energy policies in order to always meet the needs of people's development and requirements
4. Transportation in urban areas will develop an orderly, smooth, safe, comfortable and efficient system of mass transportation to appeal to those using transit services so that congestion and traffic disorders can be avoided and the quality of life maintained
5. Transport of passengers and goods in cities must be scanty and developed in order to contribute to the smooth flow of passengers and goods, in accordance with the development dynamics

The challenge and problems of Indonesia's urban passenger transport (2000) :

1. The driver's desire is to earn a large amount of money to fill a deposit and a sufficient wage
2. Driver indiscipline in carrying the vehicle and obeying the traffic signals there
3. The owners want a maximum advantage by raising as many passengers as possible, even if putting the passengers' interests aside from a sense of security, security, and comfort
4. A discrepancy between the number of fleets operating with the need for movement
5. Passengers need to be able to access large Numbers of urban passenger transport and at low rates, as well as quickly, safely, and comfortably
6. Unauthorized access to public transport passengers in all urban areas.

Tamines (1997) public transportation USES an infrastructure that is more efficient than a personal vehicle, especially during peak hours. There are two better types of public transportation services:

1. Repair operation waitress, frequency, speed and passenger comfort
2. Passenger utility repair
 1. locate and design good terminals and terminals, especially with different mode of transportation on the road or track.
 2. prioritization of more public transportation. Frequent techniques include special bus lanes, bus priorities, taxi stop traffic lights and so on.

The notion of transportation by experts :

1. steenbrink (1974).

Transportation was a geographical transfer of people or things by means of tools or vehicles to and from places geographically separated

2. morlok (1978)

Transportation is about transferring or transporting something from one place to another

3. the bowersox (1981)

Transport is a transfer of goods or passengers from one place to another, where the product is transferred to the destination

4. ancient hasim (2005) in the law of transport on the sea

Transportation is a transference of human beings and or goods from one location to another by land, water or air using a certain form of transport.

5. soegijatna university (1995)

Transportation is the commodity of goods and passengers from one place to another, until transporters produce public transports or artificial services that require their delivery or express goods.

As of lovelock, (2002), consumers have criteria that are essentially identical to some services that give consumer satisfaction. Among the criteria are:

1. Reliability is the ability to render services accurately as promised.
2. Responsive (responsiveness) is an employee's ability to help customers provide services quickly according to what the consumer wants.
3. Assurance is an employee's knowledge and ability to serve with confidence.
4. Emphaty (empathy) is employees should give individual attention to the consumer and understand consumer needs.

5. Visible are the appearance of physical facilities, tools, personnel and communication tools.

Transport may be viewed as an activity that permits the transport of goods and or people from one place to another. Each transport resulted in transportation that involved traffic and movement (soejono,1991). Morlok (1988) defines transportation as an integral part of society's function, because it indicates close ties to the lifestyle, scope and location of production, entertainment, goods, and items available for consumption.

Papacostas (1987) says that it is classified in the transport system into four large categories:

1. Ground transportation

- a. highway
- b. railroad

2. Air transport

- a. shithhead
- b. international

3. Water transportation

- a. inland
- b. coast of coast

c. sea

4. Transport in land and sea pipes

- a. oil
- b. gas

A model is a representation of an object, an object, or ideas in a simplified form of a condition or natural phenomenon. A model contains information about a phenomenon made with the purpose of studying an actual system phenomenon.

The word "model" is derived from Latin mold (mold) or pettern (pattern). According to mahmud achmad (2008: 2), there are four general models, those of systems, mental models, verbal models, and mathematical models.

A model can be a replica of an object, a real system or event that contains only information that is deemed important to study. (mehmet achmad, 2008: 1)

According to the sondang p. siagian still in the book nanang fattah (2007:176) explains that "control isa surveillance process rather than the execution of all organizational activities to ensure that all the work being done goes according to the established plan."

While control according to the paradise of ahmad's world was(2009:5) suggests that: "control is a management effort to achieve the goals that have been implemented through continuous comparisons between implementation and plan. Through the process of comparing real results with structured programs or budgets, management can then make an assessment of the efficiency of the businesses and the proficiency of the products. In addition, managers may conduct corrective measures if there are deviations generated from the comparative result."

In the information technology journal by hormansyah, by d.s., sugiarto, v., and amalia, e.l., 2016, say that the use of traffic simulation is one of the most widely used approaches to measuring the accuracy of

a simulation with actual conditions in traffic. Vissim is a simulation software used by professionals to create simulations of dynamic traffic scenarios before making real plans.

Vissim is a visual programming language for simulating dynamic systems. Vissim provides an aid or software that specializes in passenger engineering, transportation planning, signal time, public transportation, and urban planning that are microscopic in the visual flow of multi-sensory moda Developed in 1992 by one of the it companies in the German country. (Siemens,2012).

Vissim comes from the word verkehrstaden simulationsmodel (in German), which means a model of the town's passenger traffic model was a simulation software used by professionals to simulate a dynamic traffic scenario before making real plans. Vissim is capable of showing a simulation with the various types and characteristics of the vehicles we use daily, including the weight (cars, buses, trucks), public transport (tram, bus), cycles (cycles, motorcycles), and pedestrians. With 3d visual, vissim is capable of showing a realistic animation from simulations made and of course vissim use will reduce the cost of any real design.

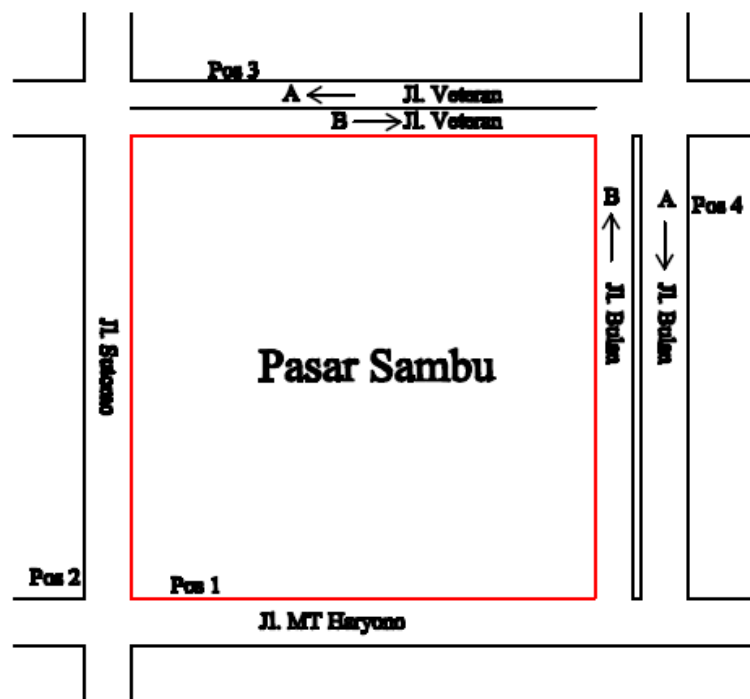


Image 1. Research layout

METHOD

The approach used in this study is a positive approach that emanates from fact labor where science is based on the results of sensory perception supported by a theoretical basis (muhadjir, 1990). Theoretical positions limit only the scope and definition of a plan. This approach makes a comparison between the purpose and the objective of the study. The methods of research used dominated quantitative research according to the purpose and objectives of the research.

It USES quantitative research used to achieve the goal and target of the research to find solutions to transportation problems in a model for transport control in the central urban market.

Identification methods were employed using observation methods. Observation methods are used to obtain data of existential physical conditions the metrics and transportation infrastructure in the center of the terrain city market for analysis in a model for transport control in the central urban market.

The research area is located in the central region of the terrain city market located in the central cost-district district of the terrain.

Selection of a central market area as an object of study may be thought to represent a common problem of transaction-based historical region control in the regional market center of north Sumatra province in the national and terrain city local context.

This method of research is interpreted as part of a series of systemic investigations of phenomena by collecting data to then be measured by mathematical or computing statistics. The research is done largely by using statistical methods in quantitative data collection through research studies.

This quantitative research is used to formulate actions to solve problems. The study conducted a formulation of actions to provide an appropriate recommendation for the research achieved in conjunction with the model for transport control in the central urban marketplace that is the focus of research in this study.

The sources and methods of data collection in this study consist of primary and secondary data.

A. primary data

Primary data collection is obtained through interviews, questionnaire and observation methods.

1. Interview/interview (indepth interview-ida bagoes mantra, 2004)

As is the case with observation, so in-depth interviews are also research AIDS. With interviews conducted to the respondents/informers, the writer could have known the condition of the central urban market area from its build up to the present day. An informer is someone who can provide information or information on an ednag problem studied and can act as a source nara during the research process (Moleong, 2000, Miles et al, 1987).

As for the informant in this research, there are 2 (two) groups:

1. expert informant

Expert informers are experts who are knowledgeable and can explain things related to research and not limited to living areas, such as academics, cultural leaders, local governments and so on.

2. traffic jam information

The information on the traffic jam is the data of traffic that is in the central city market at the location of the central city market area from 05:00 until wib such as vehicle data, the number of vehicles passing through and other data support.

2. Kuis

The questionnaire was the main data needed in the process of research analysis particularly in the customer-setting of the model for transport control in the central city market. The questionnaire is a list of the criteria for control and conservation set up according to the type of criteria used as a model for using transport control models in the central city market

B. secondary data

Secondary data collected in this study are data obtained from associated services such as the terrain city/agency government, north Sumatra provincial government, research on historical region control concepts, literature and others.

It uses quantitative research design. Quantitative is a scientific approach to decision-making to get evidence

Causal connections or influences from research variables.

RESULT

1. Land ownership

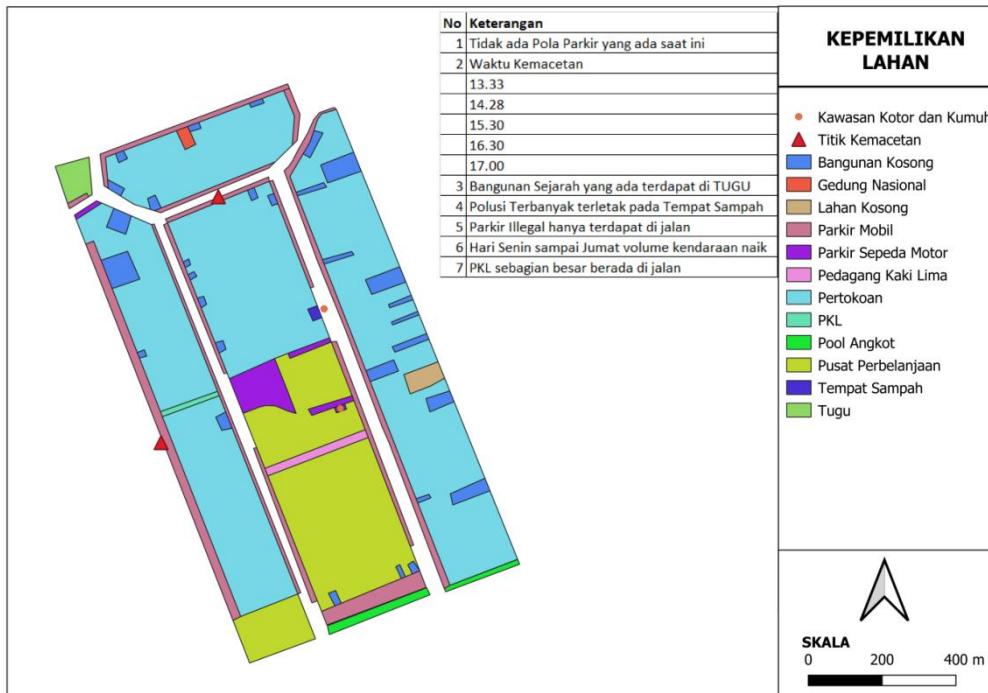


Image 2. Land ownership

Data analysis and surveys have found that the land at the local market center primarily serves as a shopping mall followed by a shopping mall.

2. Parking

According to surveys and data analysis, came up with the following :

- a. parking conditions in the central region of the market with a system between a three-wheel (rickshaw) parking, 4 wheel (car, public transportation), 2 (motorcycle) and a garbage truck
- b. there are double parking shoplifting at the entrance using an official ticket and inside the market, without a formal ticket by the back.
- c. parking lots are either irregular or unspecific and incompatible with the type of vehicle

Illegal parking

a. parked on the sidewalk

At the market entrance (next to the mall) where the motorcycle park is on the sidewalk



Image 3. Park on the sidewalk

b. park on the sidewalk

Illegal parking is located in the governing body of roads across much of the market center
In this case there are taken there are 4 dots that are

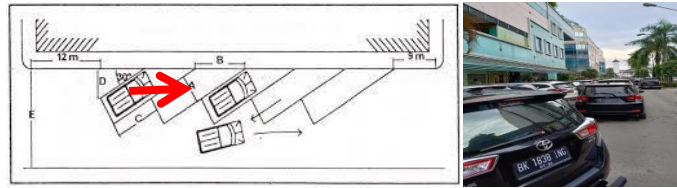
- in front of the mall field
- inside the market center
- in the bamboo tugu region
- just outside Olympia building



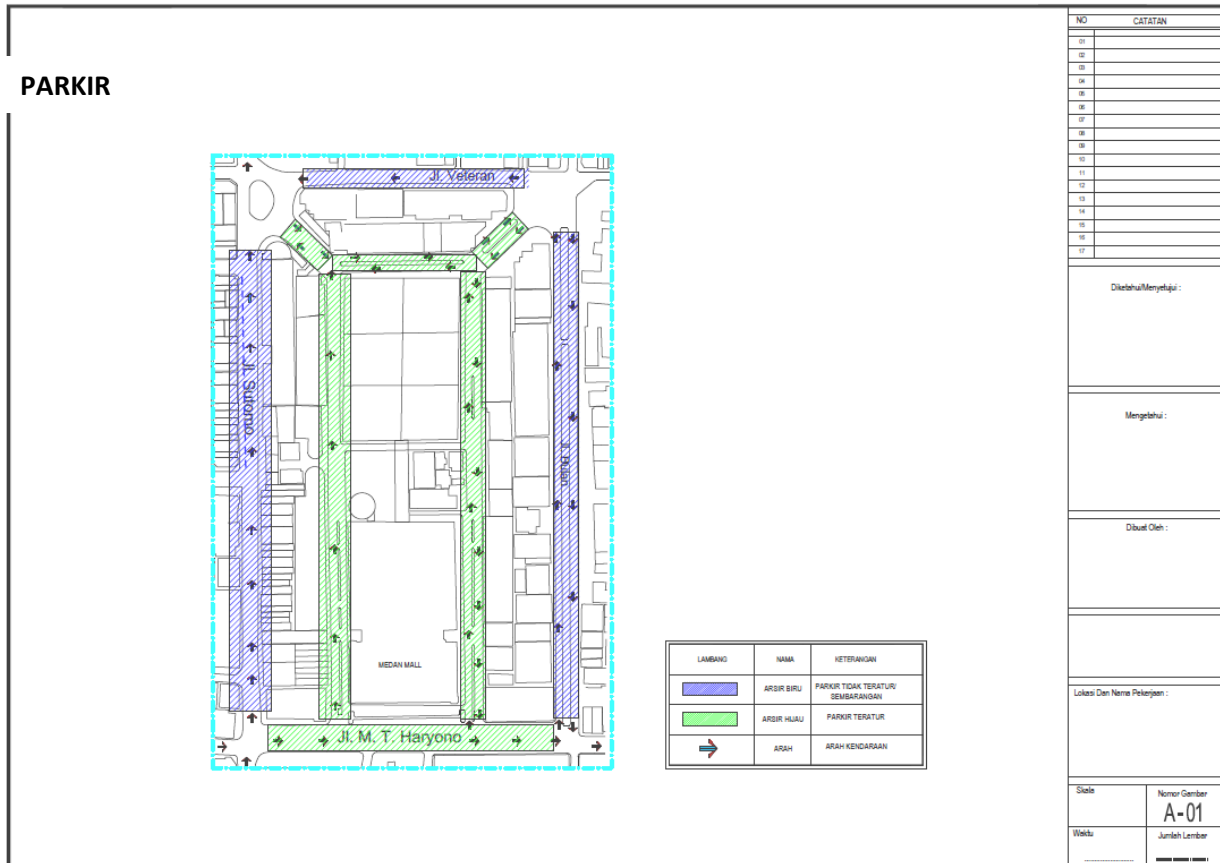
Image 4. Parking on the sidewalk

c. kind of parking

The kind of parking that we know is parallel, upright, square, reverse, and double parking. The type of parking in the central market area is that a double parking lot in personal cars takes place at 1p and at 2p



- d. volume of vehicles increased at a certain hour of 1:33 p.m., at 14.28 wib, at 3:30 wib, 16.30 wib, and 5:00 p.m., the volume of cars that increased visually was a private car and city transport.



3. Crime rates

- a. high crime site on the street street streets where traders sell at the front of the street bodies, there isa system of rent for merchants and a warehouse rent for a shortage of merchandise on that day, resulting from a system of interviews conducted by a group calling the public organization that covers 50% of the day's revenue



Image 5. High crime area

- b. High crime rates are also triggered by light shortages, homes that have been abandoned by owners. Months) and the many organizational offices in the region have been less than scarce.



Image 6. High crime area (moon street)

- c. triggers high levels of crime based on the culture provided by market center supervisors, interviews by traders that the supervisor is aware of the pungli incident (a government function is not visible in terms of surveillance and protection).

The high point of crime in the downtown market area is at the three dots:

a. Sutomo street

Usually criminality in the form of bullying and illegal collections by youth organizations on the pretext of security money

b. Veterans road

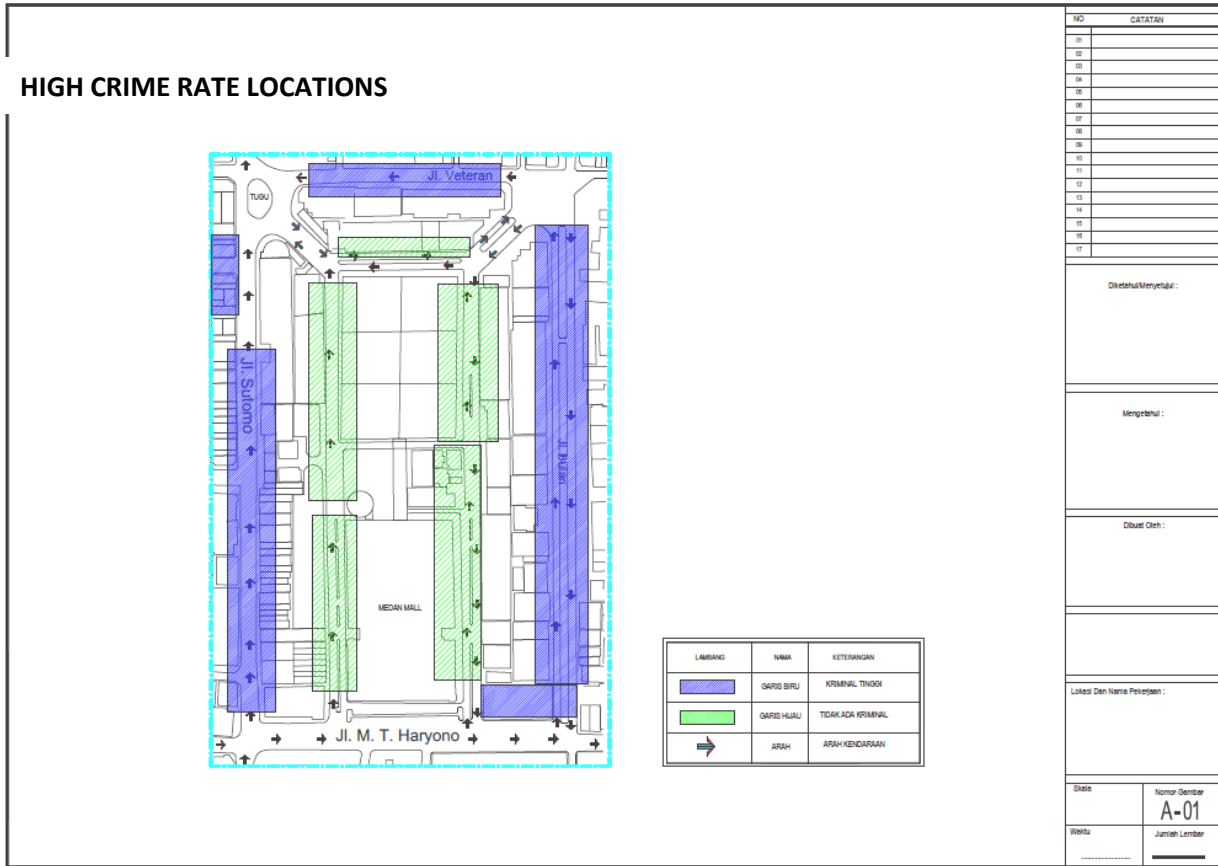
Is done by the youth organization on the pretext of the money for scrap or the rent of the place and the cleaning money

c. Market center

Carried out by a illegal valet by demanding parking money, even though a parking lot user has paid for a ticket at the market centre entry, a roving thief, a disturbed individual running around freely and sometimes stealing food, even throwing random ACTS of violence at market centre visitors to a killing of fellow market organizations.

High crime causes

- a. lack of security and poor governance with the commerce system in the central market area
- b. the breeding of youth organizations on illegal activities
- c. very minimal light bulbs even on the lunar road are nowhere near those roads
- d. public facilities not provided by local authorities so happens to rent public facilities like bathrooms, warehouses to store the leftover merchant merchandise
- e. lack of jobs so many young dropouts feel comfortable in the area to make quick money
- f. a lot of vacant buildings in the region are thus being used by homeless or people who don't have homes to illegally rest.



4. It's a shabby and dirty place

The rundown, grimy location is inside the market center, especially with the fish market and the rest of the street hawkers. From observations and surveys that the cause of the seedy, filthy locations is as follows

1. lack awareness of clean living for merchants
2. a quote from the official on the cost of cleanliness so that the merchant no longer felt the need to keep his surroundings clean
3. no comparable merchant to the location of the marketplace
4. there are no sanitary facilities such as garbage dumps
5. from the interview with the street hawker came that there was never any talk of cleanliness from the clerk
6. garbage pickup is not made daily



Internal market center



Internal market center



Olimpia building



The fish market



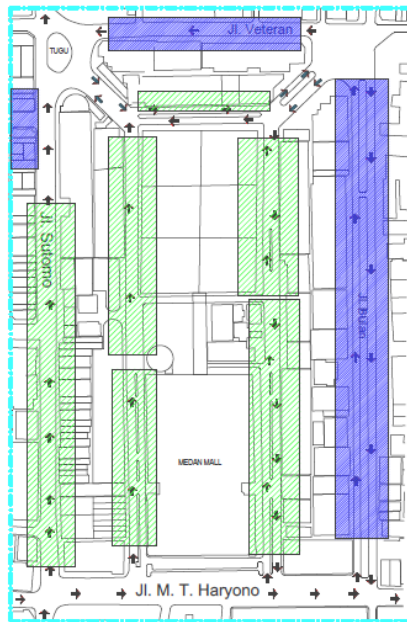
National monuments



Veteran street

- los traders particularly los fish in the market center
- the moonlight walk

FILTHY SLUMS



LAMBAK	NAMA	KETERANGAN
	GARIS BIRU	AREA KUMUH
	GARIS HIRU	ARSAH TIDAK KUMUH
	ARSAH	ARSAH KENDARAAN

NO	CATATAN
01	
02	
03	
04	
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20	

Diketahui/ Menyetujui :

Menggambar :

Dibuat Oleh :

Lokasi Dan Nama Pekerjaan :

Status

Nomor Gambar

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Waktu

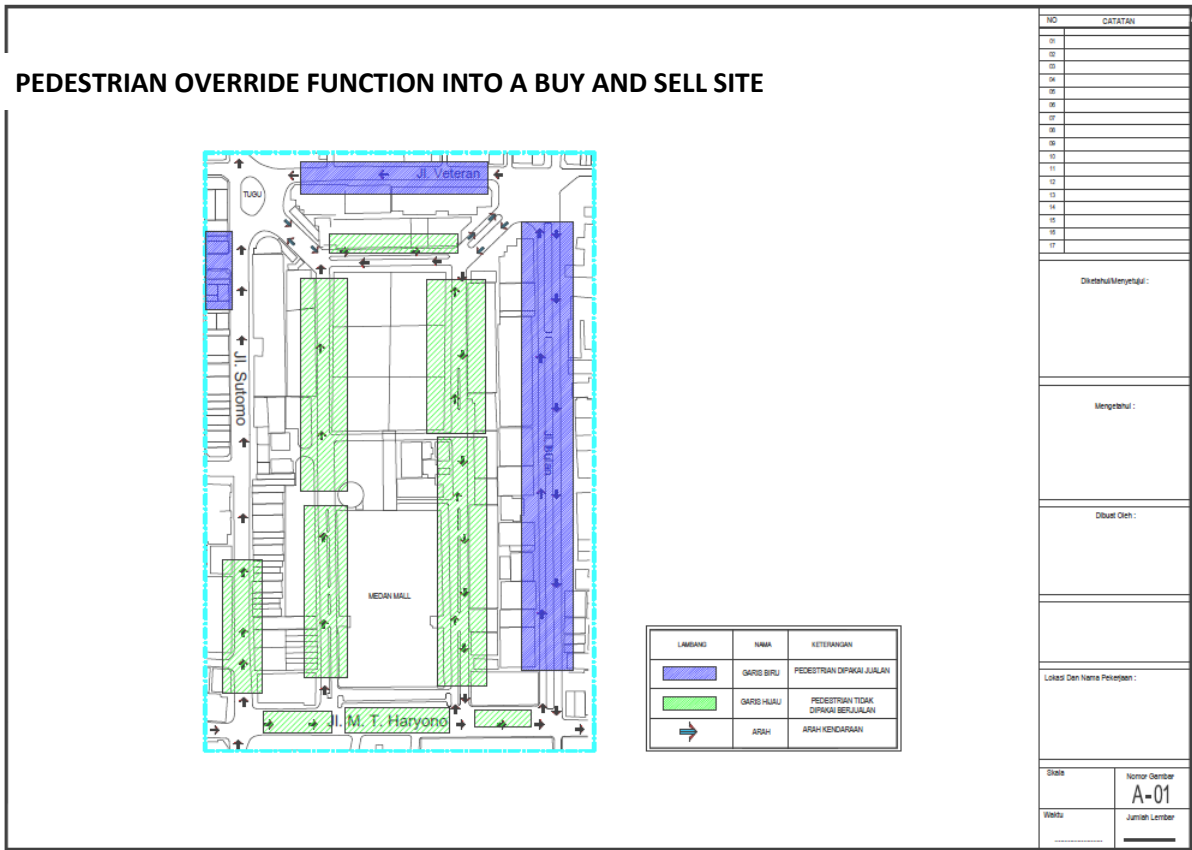
Jumlah Lembar

5. Pedestrians are used for pedestrians

Based on surveys and data analysis, the pedestrians used to trade are dominated on the sutomo road, the veteran road and the lunar highway. The conditions of pedestrians being used to traffic DNA goods cause pedestrians to avoid pedestrians and to walk down highways where such pedestrian paths are particularly dangerous. In the case of pedestrians' merering to trade also involves illegal land rents by local youths and interviews are obtained that there has been no outright bullying by local governments to organize the governance of the pedestrians in the region and no clear action is taken against the sustainable administration.



Image 7. Pedestrians are a pedestrian

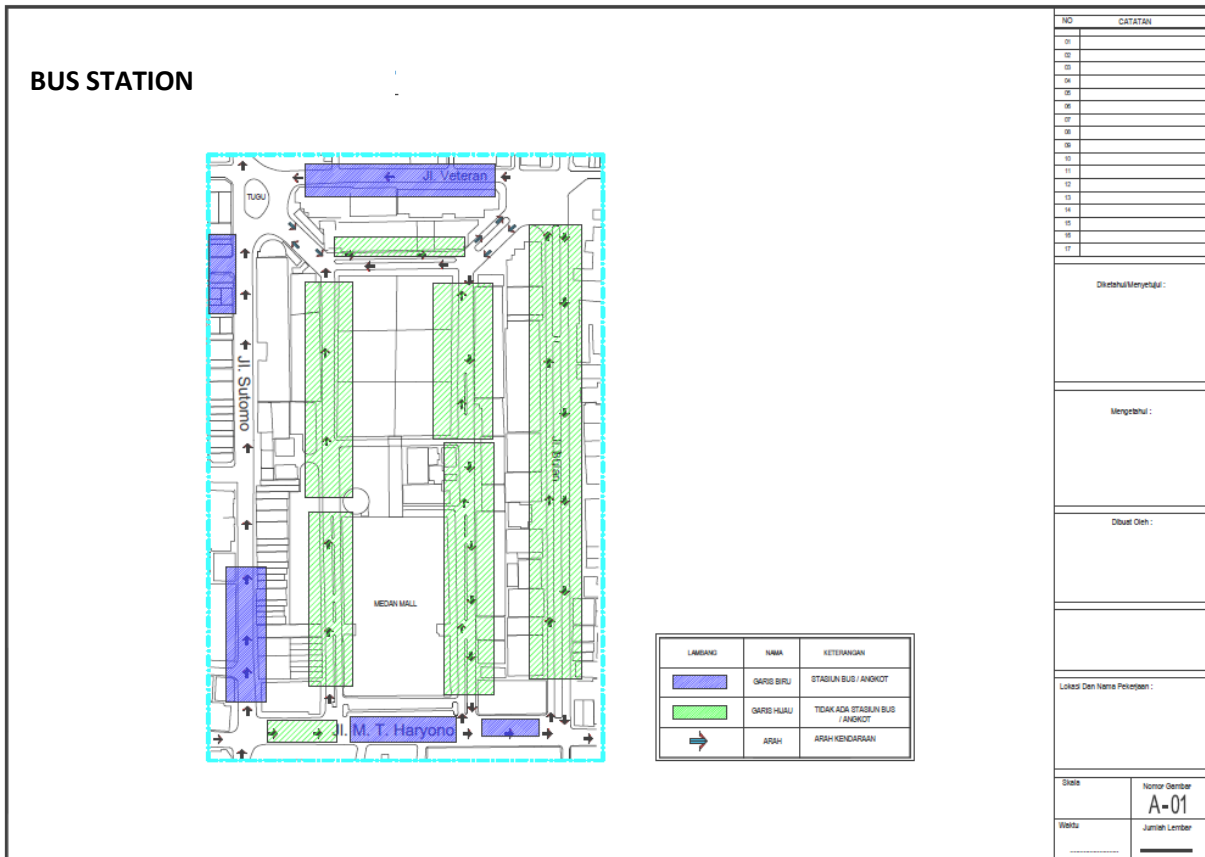


Bus station

Surveys based on the field and data analysis revealed that the bus station at the city market center was right in front of the mall area and on m.t. haryono road, veteran street and sutomo road. Surveys and analysis revealed that the bus/angkot station in the central market area was not well supervised and that several parking buses were covered with up to 4 layers especially at the peak hours at 5:00 p.m.



Image 8. Central city market bus station



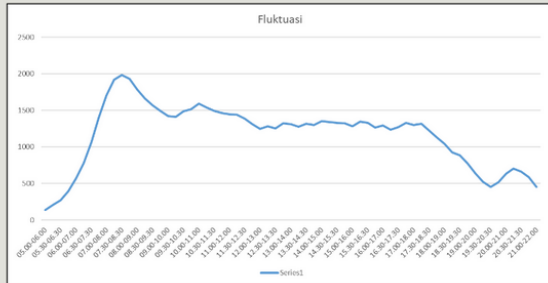
6. Historical landmarks

The historic buildings on the center of the square are located on the corner of sutomo street and the street of the veteran, the historic buildings called the bamboo monument and the national building, the conditions are not in place at all, populated by people who come from the village to the homeless town that most interviews have found and are populated by residents from nias island.



Image 9. The historical building in the central city market

Ruas Jalan Sutomo

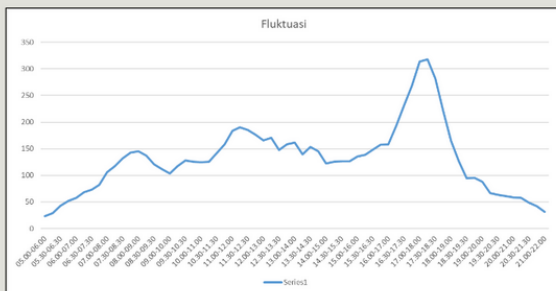


Fluktuasi pada Hari Puncak (Senin)

Jam Puncak

Hari	Jam	Volume (smp/jam)
Senin	07.30 – 08.30	1985,5
Sabtu	09.30 – 10.30	1663,6
Minggu	11.30 – 12.30	1076,9

Ruas Jalan Veteran (A)

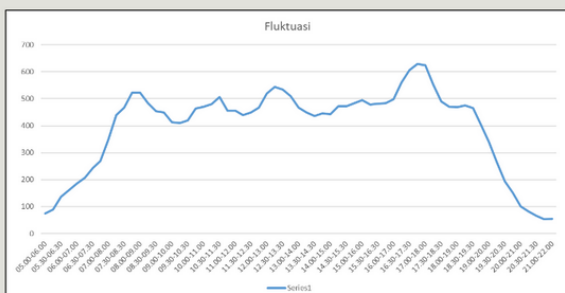


Fluktuasi pada Hari Puncak (Senin)

Jam Puncak

Hari	Jam	Volume (smp/jam)
Senin	17.15 – 18.15	317,5
Sabtu	17.30 – 18.30	311,9
Minggu	17.00 – 18.00	123,9

Ruas Jalan Veteran (B)

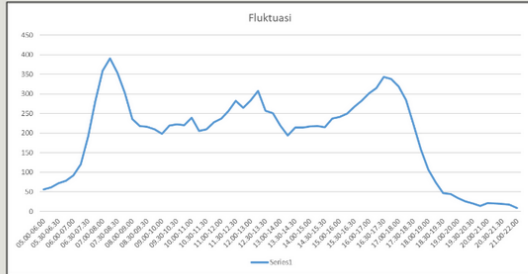


Fluktuasi pada Hari Puncak (Senin)

Jam Puncak

Hari	Jam	Volume (smp/jam)
Senin	16.45 – 17.45	628,9
Sabtu	16.45 – 17.45	610,3
Minggu	12.15 – 13.15	402,4

Ruas Jalan Bulan (A)

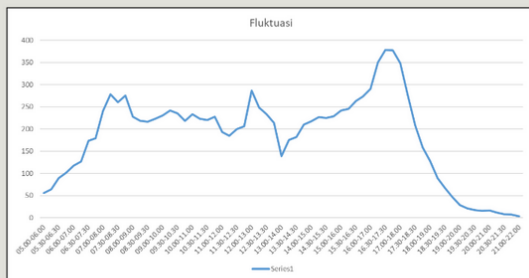


Fluktuasi pada Hari Puncak (Senin)

Jam Puncak

Hari	Jam	Volume (smp/jam)
Senin	07.15 – 08.15	390,5
Sabtu	11.15 – 12.15	274,3
Minggu	19.00 – 20.00	98,2

Ruas Jalan Bulan (B)



Fluktuasi pada Hari Puncak (Senin)

Jam Puncak

Hari	Jam	Volume (smp/jam)
Senin	16.30 – 17.30	378,6
Sabtu	07.15 – 08.15	336,5
Minggu	09.30 – 10.30	165,8

Pemilihan Waktu Analisis

Berdasarkan pengolahan data hasil survei, didapatkan volume kendaraan terbanyak dari keseluruhan ruas yang ditinjau yaitu pada hari **senin** di jam puncak **17.00 – 18.00**.

Maka besar volume untuk masing-masing ruas adalah sebagai berikut.

Jam	Jl. MT. Haryono	Jl. Sutomo	Jl. Veteran		Jl. Bulan	
			A	B	A	B
17.00 – 18.00	3127,8	1298,7	313,5	624	319,6	348,2

Based on data from road surveys made, it obtained a model of the central urban market environment through visual programming for simulating dynamic systems (vissim) with the inhibitions of parking and vehicle stops as follows:



Existential Condition Model	
Traffic Performance	
Average Delay	16 s
Average Stops	0,65
Average Speed	17,61 km/h

Image 10. The central urban market condition model

The model when the whole side barrier is removed (parking structure and vehicle stop)



Model When There Are No Side Obstacles	
Traffic Performance	
Average Delay	1,52 s
Average Stops	0,01
Average Speed	46,99 km/h

Image 11. A condition model where the whole side drag is removed at the central market for the terrain

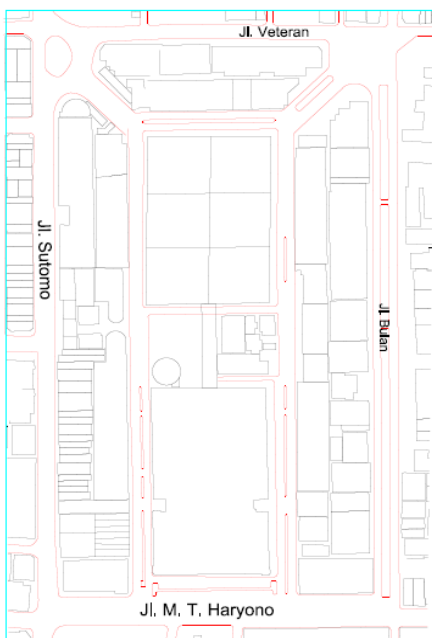
From a model existential condition simulation with side drag and no side model comes the comparison as follows:

Comparative conditions with side obstacles and no side obstacles :

Conditions	Average Delay	Average Stop	Average Speed
Eksisting	16,0 s	0,65	17,61 km/h
Without hindrance	1,52 s	0,01	46,99 km/h
Discretionary time and speed	14,48 s	0,64	29,38 km/h

CONCLUSION

Based on data from road surveys made, it obtained a model of the central urban market environment through visual programming for simulating dynamic systems (vissim) with the inhibitions of parking and vehicle stops as follows:



PETA PUSAT PASAR MEDAN

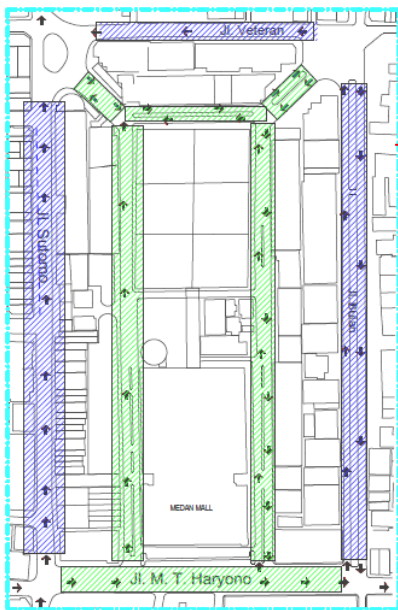


1. Average traffic: 17.6 km/h
2. Average time delay 16 seconds
3. Average time stops 0.65 seconds

Terrain city market center

Terrain city market center conditions with side barriers

The model when the whole side barrier is removed (parking structure and vehicle stop)



Terrain city market center



Conditions after side barriers are removed

Existential condition

1. Average congestion rate: 46.99 km/h
2. Average time delay 1.52 seconds
3. Average time stops.01 seconds

Figure 13. A condition model where the whole side drag is removed at the central market for the terrain. From a model existential condition simulation with side drag and no side model comes the comparison as follows:

Comparative conditions with side obstacles and no side obstacles :

Conditions	Average Delay	Average Stop	Average Speed
Eksisting	16,0 s	0,65	17,61 km/h
Without hindrance	1,52 s	0,01	46,99 km/h
Discretionary time and speed	14,48 s	0,64	29,38 km/h

According to bank Indonesia the central bank/bi's decision to raise its benchmark interest rate by 25 basis points to 8.25 percent, he said. 1997) congestion is a condition in which a passing traffic flow on the grid is covered beyond the capacity of the road plan, resulting in a speed approaching 0 km/ hr that leads to queue.

Congestion is increasing when currents are so large that vehicles are very close to each other (tamines, 2000). Traffic jams occur when road capacity remains and the number of road users increases, resulting in longer travel time (wohl et al in sugiyanto, 2011). Traffic congestion as a vehicle disrupts other vehicles, including the connection between current and speed, in which the approach used by transport users is the street capacity (goodwin in sugiyanto, 2011).

The result of this study is that the rate of road service could not hold the number of vehicles passing through the road, which can be seen from the average degree of delay on the road to 0.65 seconds and would lead to a queue. A method used to improve road service in the region is traffic management. An alternative to the best solution to this study is by widening the area and parking structure according to the statute of limitation.

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