

The Bogor Repeater Radio Frequency is an Infrastructure Facility that functions to overcome congestion in Jakarta and surrounding areas

Sunaryo¹, Fahmi Shakir Rangkuti², Magribi³, Adris. A. Putra⁴, Endro Sukotjo⁵

ABSTRACT- The main objective of this study is that road users in the city of Jakarta and surrounding areas, can avoid congestion by using the Bogor Repeater Radio Frequency (RRF) communication network, can be accessed by drivers on the highway with Radio Frequency (RF) mobile communication, with an output frequency of 142,020 Mhz input 143,520 Mhz, with JZ10ZRD1 call sign. Or can be accessed using Android, with the Team Speak 3 application, can be downloaded on the App Play Store. Research methods this study used 220 respondents, the respondents were road users, in the city of Jakarta and surrounding areas, each of their cars had a radio communication or Radio Frequency (RF) type of 2-meter band radio and was equipped with a license to use radio equipment from related parties. And on the use of SEM will be guided by a significant value $\alpha = 0.05$; probability value ≥ 0.05 ; $C_{min}/DF \leq 2.00$; T_{li} , and $C_{fi} \leq 0.90$; and $RMSEA \leq 0.80$. The structural model is carried out using SEM step by step until it reaches the required significance value, and most importantly the probability value reaches ≥ 0.05 .

Keywords: Congestion, Radio Frequency (RF), Repeater Radio Frequency (RRF), Team Speak 3.

1 INTRODUCTION

The transportation system in Jakarta cannot be separated from the surrounding cities, without inter-city transportation connectivity, all will be paralyzed but on the contrary, transportation is sometimes very helpless, powerless to face the users of transportation itself, so why is that? This is a very basic human need and is related to the development of a city or region.

The development of transportation is a reflection of the progress of the development of an area or a city, the movement of activities of a population must be accompanied by the development of the transportation system, thus the development of the transportation system is very advanced and has been very advanced to use video modeling as an answer to the needs of the transportation sector [1], thus the data analyzed is more accurate and actual according to real conditions in the field.

Highway traffic congestion, a phenomenon that often occurs, therefore various ways must be done to reduce and each individual has their own way of addressing in terms of congestion, starting from using public transportation, leaving somewhere early and so forth. Another just by building alternative routes but influenced by various socio-economic and political factors [2].

and it should be easiest to find alternative routes that already exist can also overcome congestion because it turns out road traffic congestion, because everyone at the time the same takes the main route, this is because there is a choice that is closest to the distance and so on, even though the decision was made by many people at the same time.

There is no doubt that congestion is indeed a big problem in almost all cities in developing countries, there are many ways engineers and stakeholders provide the best solution about traffic jams and many also decide or assume that most of them will change the original travel mode to an alternative mode [3][4]. This also cannot be exact but at least can help provide a solution.

The existence of the Repeaters of the Radio Antar Penduduk Indonesia (RAPI), namely this organization in the United States called the Citizen Band (CB) since 1945, is an organization of users of communication devices both base stations and mobile stations. In Indonesia it was established on October 6, 1980 [5], the organization's presence in Indonesia is very helpful and very useful as a user of highway traffic in Jakarta and surrounding cities. The use of radio communication must follow the rules and regulations that have passed, a lot of information is sent through this radio frequency and has developed since before the advent of cellular technology, the information is very accurate, precise and accountable. In addition to information about highway traffic, it is also used for flood, fire and aid assistance in the flow of Idul Fitri communication.

What is the role of radio communication in road traffic congestion, whether it has an impact on the environment, society, government or is sufficient for individual users of radio communication? In this study, we know the impact of benefits, at least beneficial to individuals.

Radio Frequency (RF) in modern times like today is still very much needed, almost in all human life midwives [6][7], until whenever Radio Frequency (RF) is still the easiest and cheapest

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means, besides being a resource in a country which cannot be renewed. Radio Frequency (RF) user roads are very useful in addition to cell phone use, drivers still prefer to use radio frequency to be able to access the route that will be traversed, if using a cell phone, the information is not very detailed.

The use of antennas is the most important device [8], and all forms and designs of antennas [9], whether mobile radios or base stations, the quality of reception and transmit power is largely determined by the antenna's ability to transfer electromagnetic waves, from a transmitting device to a device receiver. What's more one of the devices in a mobile condition or both in a mobile condition, is greatly influenced by the propagation and conditions of the natural environment around both.

In radio equipment, UHF frequency radio users are very possible [10][11], but for general use by the public in Indonesia it is very limited, and what is permitted in Indonesia is still a VHF and HF type Radio Frequency device, or commonly called a 2 meter band radio and 80 meter band, 40 meter band and 20 meter band. For UHF or 70 centimeters band, is still very limited, except for special purposes.

VoIP-based communication system has become a trend in the world today [12], where this communication system is allegedly able to replace the analog system (RF), but in reality the analog system is still superior, where the analog or Radio Frequency system, will still work even if it is not supported satellite and can work with media or electromagnetic wave resources. While the short distance is enough to use a point to point network or Radio Frequency Repeater (RRF) while for long distances you can use HF or use a radio station.

Many studies can be completed by using an applicative approach or analysis tools in the form of software, in this case, SEM and Smart PLS [13][14], only in this approach is strongly influenced by the respondent variable as a source of data, unless used for research that is applicable experimentally, the data are not influenced by external factors.

2 LITERATURE REVIEW

The use of an FM (Frequency Modulation) communication system, the sound produced is very perfect received by the listener even though it is sent in conditions in the car, the advantages are, among others (i) interference or interference, (ii) interference caused by airing two radio stations on the same wave, and (iii) broadcasting sound of the highest quality to sensitive human ears [6].

Radio frequency communication system, explained by description: a) understanding of radio communication systems; b) radio communication models, namely the simplex, semi-duplex, and duplex models; c) radio frequency waves, d) frequency spectrum in communication with radio frequency, and e) radio wave modulation techniques, namely analog and digital. For conditions where the radio communication system that is built can function optimally, an antenna with a large power emission capability and high sensitivity is needed [7].

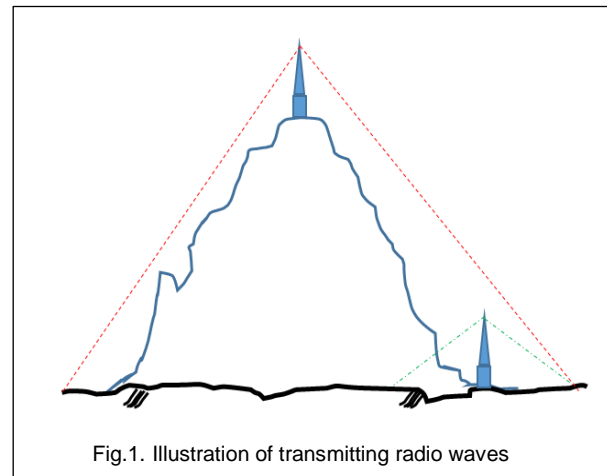


Fig.1. Illustration of transmitting radio waves

Simplex radio communication is the most basic and simple communication model. Radio communication with a simplex system operates at one frequency (Tx = Rx), because all users transmit and receive at the same frequency, so users cannot talk and listen at the same time. Simplex means transmission in one direction and at one time [15]. Illustration of simplex radio communication, as shown in Figure 2.

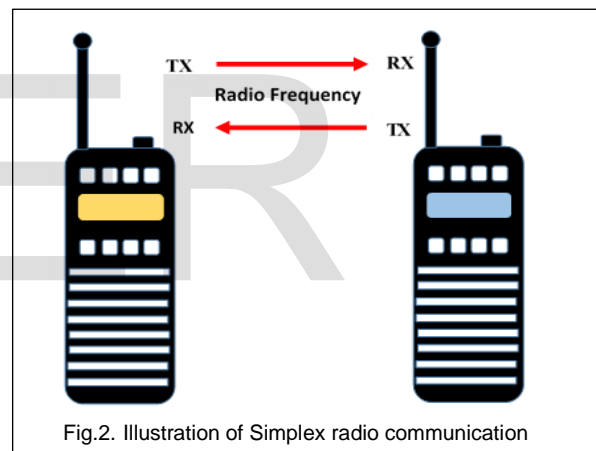


Fig.2. Illustration of Simplex radio communication

Semi-duplex radio communication is communication with the use of two different frequencies, one for sending and one for the reception. Radios operating in the semi-duplex communication model can only send or receive alternately [15]. Illustration of semi-duplex or half-duplex radio communication, as shown in Figure 4.

Full duplex radio communication is communication with different frequencies simultaneously, for transmission (first frequency) and reception (second frequency). Transmitter output that is separated in frequency is used to prevent input from the [15][16]. This type of operation is used as a pointer, that the equipment can be received and sent at the same time. Examples of full-duplex model communication equipment systems, are telephone sets, both fixed lines, and wireless lines or mobile phones. The communication method used is half-duplex, with information signals that can occur in two directions alternately.

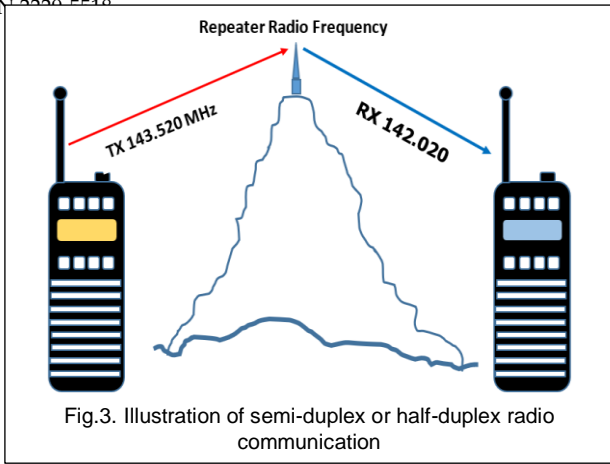


Fig.3. Illustration of semi-duplex or half-duplex radio communication

The two directions, namely the time for sending radio waves (Tx) are different from the time for receiving radio waves (Rx)[15]. Illustration of a full-duplex radio communication system, as shown in Figure 5.

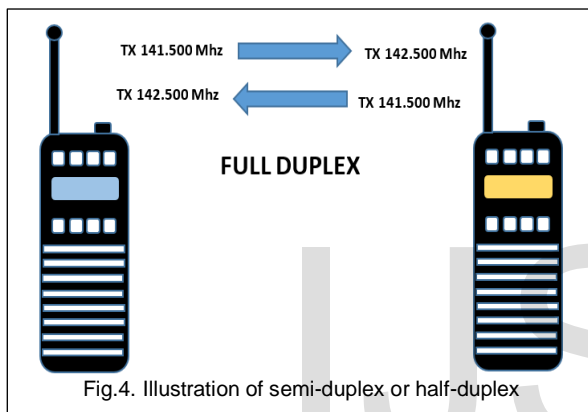


Fig.4. Illustration of semi-duplex or half-duplex

Radio communication users in Indonesia for the Indonesian Inter-Population Radio organization (RAPI) are around 20 million and the largest in West Java followed by East Java, Central Java and followed by Jakarta, besides using Base Station as well as Mobile Radio Station.

The decision of the driver or highway user is an indispensable factor in a transportation process or movement from one place to another [17], including route selection, the condition of the driver on a trip, reading traffic signs, signal lights and things others that can influence the behavior and psychological of the driver. The driver's decision can affect the level of risk of road traffic accident users but can also take action or decisions in driving conditions.

In planning to overcome congestion in a road in an area that covers an area using travel modeling as long as the destination still recommends the selection of alternative routes [18], this is an effort and results that have been recommended or recommended

Development and improvement to reduce congestion is still a concern of many researchers basically is an improvement which is an effort to reduce congestion, but in the end also suggests the opening of new road routes [19][20), concrete actions, but that is an effort to reduce past congestion cross the highway.

In general, the occurrence of road traffic congestion is a condition of the funds for repeating a traffic jam event in the past, and certainly the stakeholders have anticipated or managed a

recurring traffic jam [19], from this event the community or road users should have understood and known that traffic congestion will be jammed first and there is certainly a way to overcome congestion.

Driver behavior and limitations in taking actions or decisions when the driver has not increased in road use [21], therefore an understanding is needed so that driver behavior can be more responsive and responsive in dealing with road traffic conditions that can change at any time.

The mindset of this study is the Re-emitting Radio or commonly called the zero-point located on Mount Salak, Bogor Regency, with a height of sea level of 800 meters from the sea surface, with transmit power using a running of 30 watts. Using an omnidirectional antenna placed on a 40-meter high steel tower radiates using an output frequency of 142,020 MHz and the input uses a frequency of 143,520 MHz. Reach reached Palembang, Bengkulu, Tegal, Pati and even arrived in Blitar, East Java

For car radio users, if they are going to travel by driving their own vehicle, it is certain to have a route to reach the destination, of course, will choose a travel route that is closer to the distance, but the closer route is not as we imagined it would be free from traffic, because we have not moved and still think which route will be taken, this is likened to a mobile radio No 1 in Figure 5.

In conditions that together have been stuck in traffic jams of a car radio driver 2, the driver will inform all car radio users that there is a traffic jam on a road segment.

Thus the information is used by road users who are going through the road to change the route, even though the distance is longer than the planned road segment, but surely the travel time will be faster than the main route or shorter route, this is in suppose as a mobile radio No 3 in Figure 5.

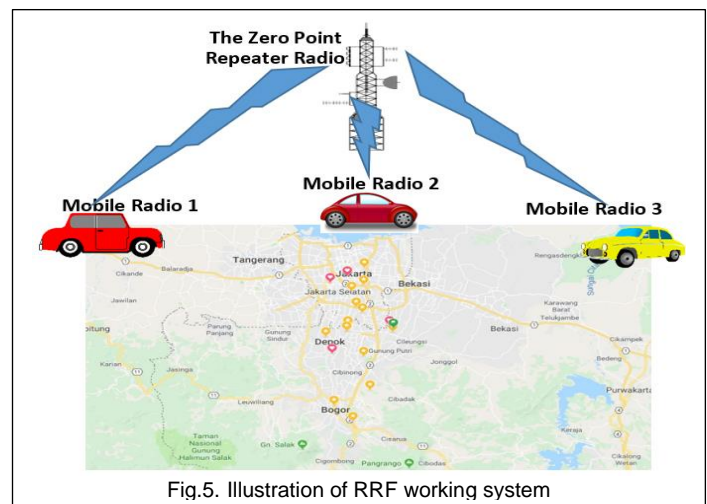


Fig.5. Illustration of RRF working system

3 RESEARCH METHODS

The population of this study is to use highway traffic using Radio Frequency (RF) analog wave communications installed in cars using either Radio Repeater or using Point to Point or Direct, this radio communication will be examined whether there is a relationship with road traffic congestion highway.

This study used 220 respondents, the respondents were road users, in the city of Jakarta and surrounding areas, each of their cars had a radio communication or Radio Frequency (RF) type of 2-meter band radio and was equipped with a license to use radio equipment from related parties.

To retrieve and collect answers to questions researchers use Google Form, as a means of faster formation, which is sent through the WhatsApp group.

Questionnaire data in the initial stages were obtained using Microsoft Excel, then proceed by using SEM (Structural Equation Modeling) from the goodness of the AMOS (Analysis of Moment Structural) program.

On the use of SEM will be guided by a significant value $\alpha = 0.05$; probability value ≥ 0.05 ; $Cmin/DF \leq 2.00$; Tli , and $Cfi \leq 0.90$; and $RMSEA \leq 0.80$. The structural model is carried out using SEM step by step until it reaches the required significance value, and most importantly the probability value reaches ≥ 0.05 .

The location of the study was conducted in the metropolitan city of Jakarta and its surroundings in Figure 8, using the Repeater Radio Frequency (RRF) infrastructure facility, working at an output frequency of 142,020 Mhz input 143,520 Mhz, type 2 meter band, belonging to the RAPI West Java management, with the code name JZ10ZRD1, which placed at the top of Mount Salak, Bogor Regency.

The main objective of this study is that road users in the city of Jakarta and surrounding areas, can avoid congestion by using the Bogor Repeater Radio Frequency (RRF) communication network, can be accessed by drivers on the highway with Radio Frequency (RF) mobile communication, with an output frequency of 142,020 Mhz input 143,520 Mhz, with JZ10ZRD1 call sign. Or can be accessed using Android, with the Team Speak 3 application, can be downloaded on the App Play Store, can be seen in figure 6 & 7.



Fig.6. Congestion, source sindonews.com



Fig.7. Team Speak 3 application

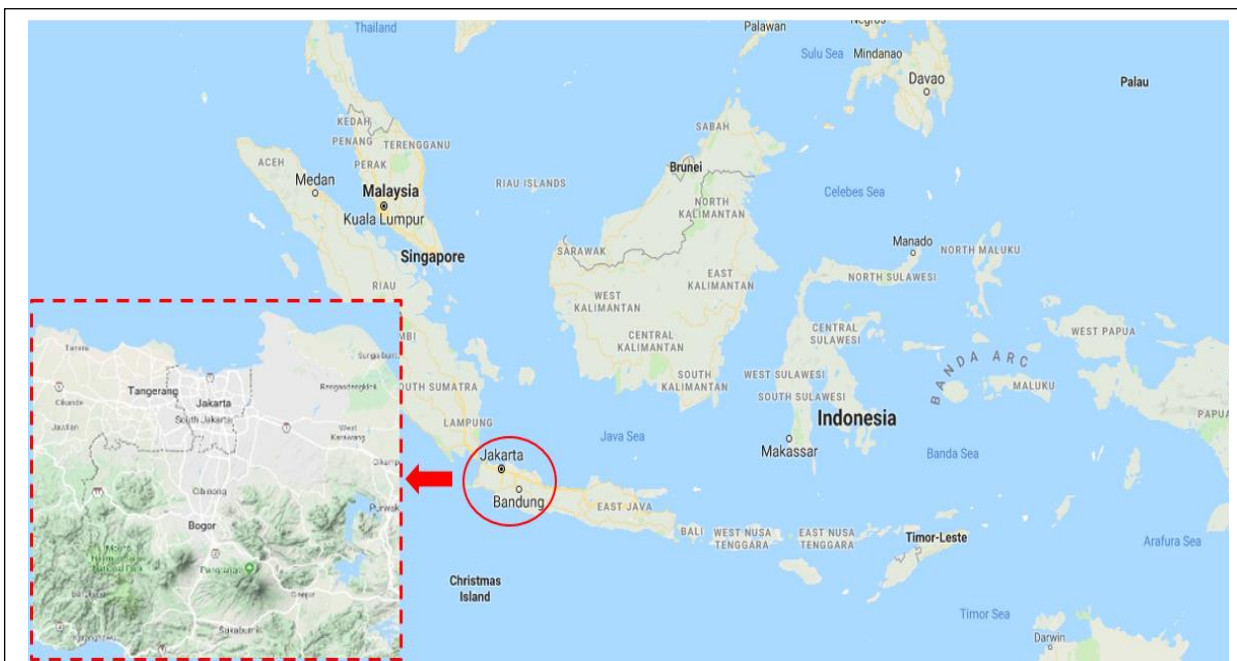


Fig.8. The Research Map

4 RESULTS

4.1 Respondents

This study succeeded in collecting questionnaires from 220 respondents, who came from highway users, in the city of Jakarta and surrounding areas. The respondent's vehicle has been equipped with a Radio Frequency (RF) device and a permit from the relevant agency.

The contents of the questionnaire consisted of 7 dimensions or variables and 36 questions or parameters, which were taken using the goodness of Google Form and sent via the WhatsApp Group. The results of the questionnaire will be useful to measure, traffic congestion in the city of Jakarta and surrounding areas, the driver can find alternative roads to reach the destination, by utilizing the infrastructure of the Radio Frequency Repeater (RRF) communication line.

In order to be understood clearly, the questionnaire questions are described as follows: A. User Legality: (L1) The use of radio communication must have a communication permit or 1028, (L2) I am communicating the radio has a communication permit or 1028, (L3) I communicate with the radio before the public interest, (L4) I communicate with radio prior to distress news or 1033, (L5) I communicate the radio gives a report if I see a traffic accident; B. Communication Ethics: (E1) I am a radio communication user under the auspices of the RAPI organization, (E2) The RAPI organization is a state asset in the field of Defense and Security, (E3) I administer a radio communication permit through the management of the RAPI organization, (E4) I have received Organizational Guidance or Training, (E5) I am a member of RAPI with a spirit and being Obedient, Honest, Courteous, Responsible and Responsive in accordance with the RAPI Code of Ethics.; C. Communication Repeater Radio: (K1) Role of RRF in Eid communication assistance, (K2) The role of Direct or point to point in Eid communication assistance, (K3) The role of radio communication assistance in the event of a natural disaster or flood, (K4) The role of radio communication assistance in elections or local elections, (K5) The role of radio communication assistance in maintaining environmental safety, (K6) The role of radio communication assistance as a means of highway congestion information, (K7) I am a radio communication user, if using a car equipped with radio communication; D. Driver Behavior: (P1) I turn on the communication radio before the vehicle moves, (P2) I use the Repeater Radio facility because the transmit power is strong, (P3) I use the Repeater Radio facility because of a lot of information, (P4) I ask the traffic flow conditions on the main route, (P5) I decide to use Alternative Routes, if the main Route is congested or stuck; E. Move Route: (R1) I moved to an alternative route because the main route was congested or congested, (R2) I moved to an alternative route while looking at the situation and condition of other regions, (R3) I moved to an alternative route to become a reference to other colleagues, (R4) I moved to an alternative route to get to know other regions, (R5) I moved to an alternative route even though the distance was further; F. Decision Making: (T1) I move to an alternative route is a fixed step, (T2) I move to an alternative route to help the government unravel the congestion, (T3) I moved to

an alternative route to help the RAPI Organization, which was positive, (T4) I moved to an alternative route because I wanted to make use of existing resources; G. Arrived Faster: (H1) Through an alternative route even though the distance is further, (H2) Via an alternative route even though the road conditions are narrower, (H3) Via an alternative route even at low speed, (H4) Through alternative routes I am satisfied even further, (H5) Through alternative routes I am satisfied the performance of radio communication helps provide information

4.2 SEM (Structural Equation Modeling) Analysis

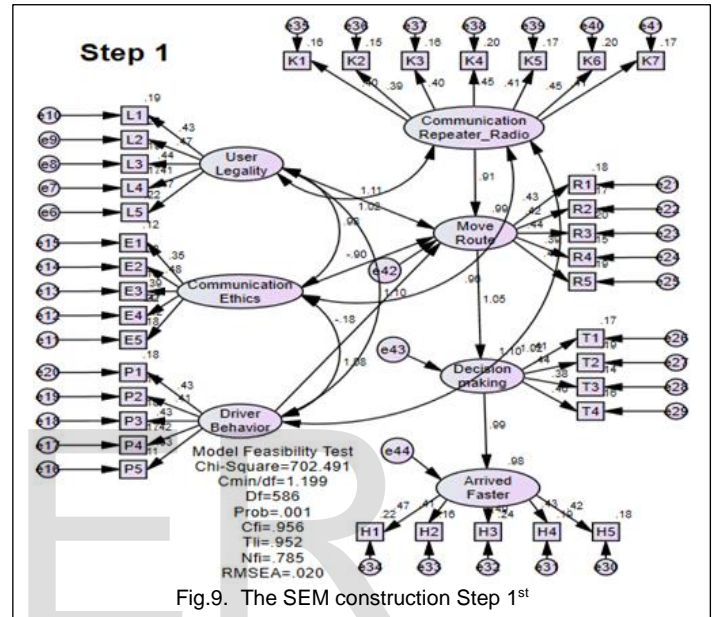


Fig.9. The SEM construction Step 1st

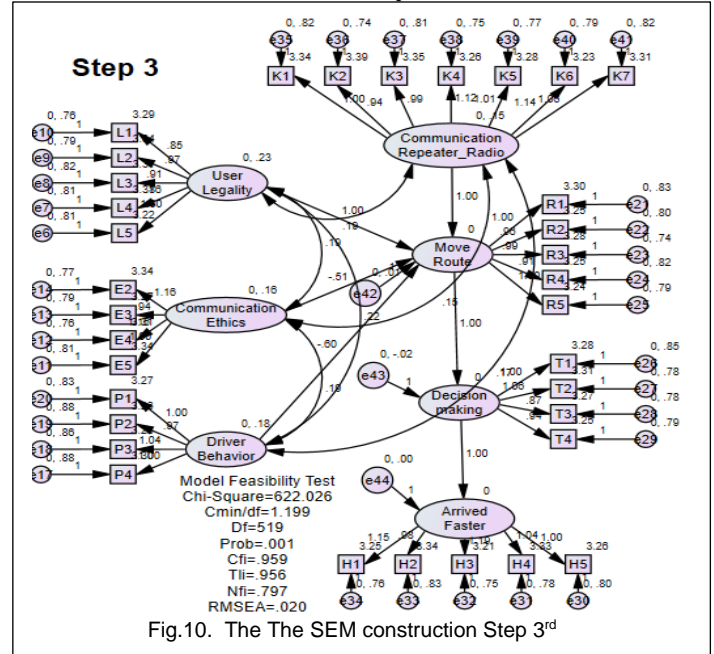


Fig.10. The The SEM construction Step 3rd

In figure 10 the SEM construction is still complete, the parameter E1 is deleted because its value is the smallest, but if you see the probability value, $P = 0.001 < 0.05$, then this construction is declared not yet fit, so the third step must be carried out.

In figure 12 the SEM construction is still complete, the parameter T4 is deleted because its value is the smallest, but if you see the probability value, $P = 0.031 < 0.05$, then this construction is declared not yet fit, so the fifth step must be carried out.

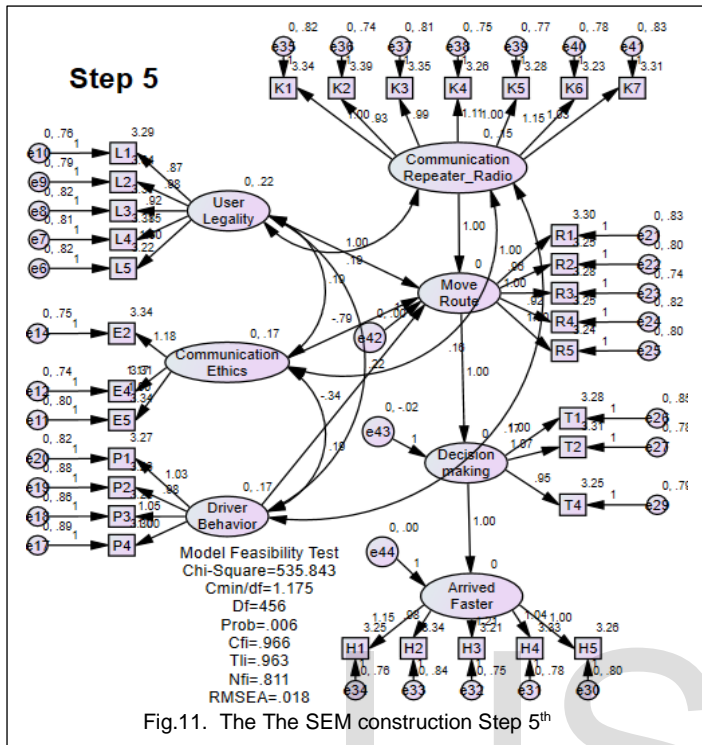


Fig.11. The The SEM construction Step 5th

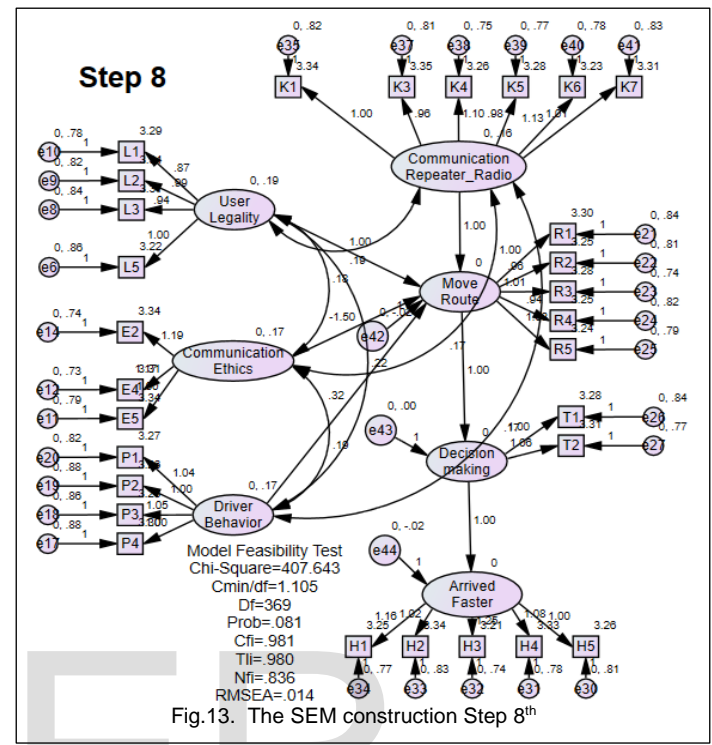


Fig.13. The SEM construction Step 8th

In figure 11 the SEM construction is still complete, the parameter E3 is deleted because its value is the smallest, but if you see the probability value, $P = 0.006 < 0.05$, then this construction is declared not yet fit, so the fourth step must be carried out.

In figure 13 the SEM construction is still complete, the parameter L4 is deleted because its value is the smallest, but if you see the probability value, $P = 0.081 < 0.05$, then this construction is declared not yet fit, so the sixth step must be carried out.

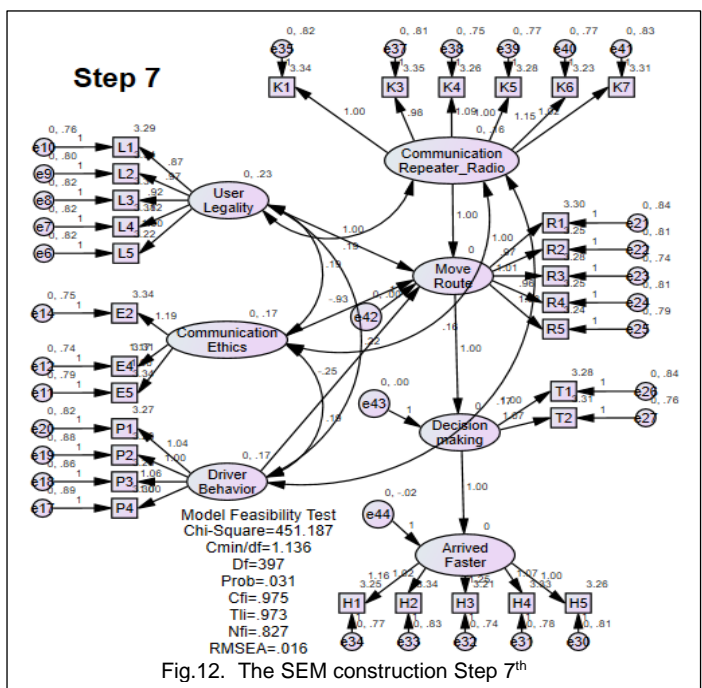


Fig.12. The SEM construction Step 7th

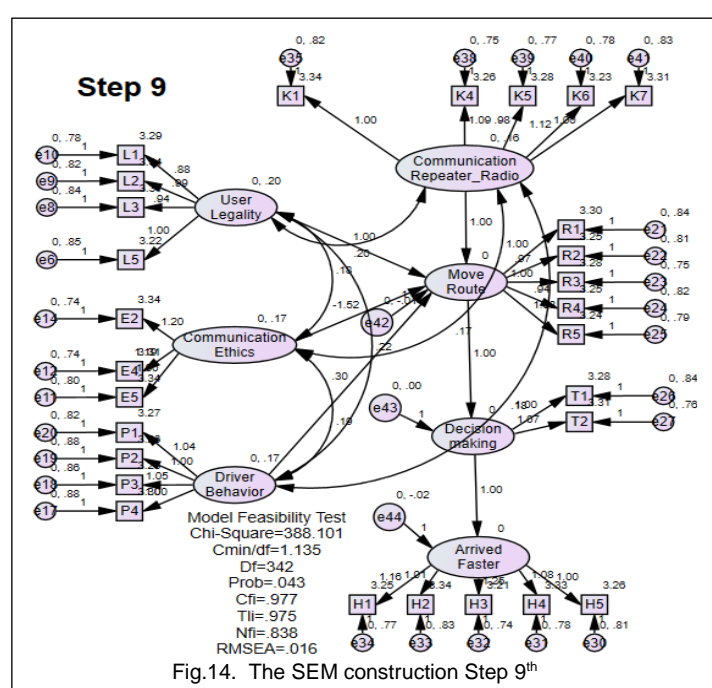


Fig.14. The SEM construction Step 9th

In figure 14 the SEM construction is still complete, the parameter K3 is deleted because its value is the smallest, but if you see the probability value, $P = 0.043 < 0.05$, then this construction is declared not yet fit, so the tenth step must be carried out.

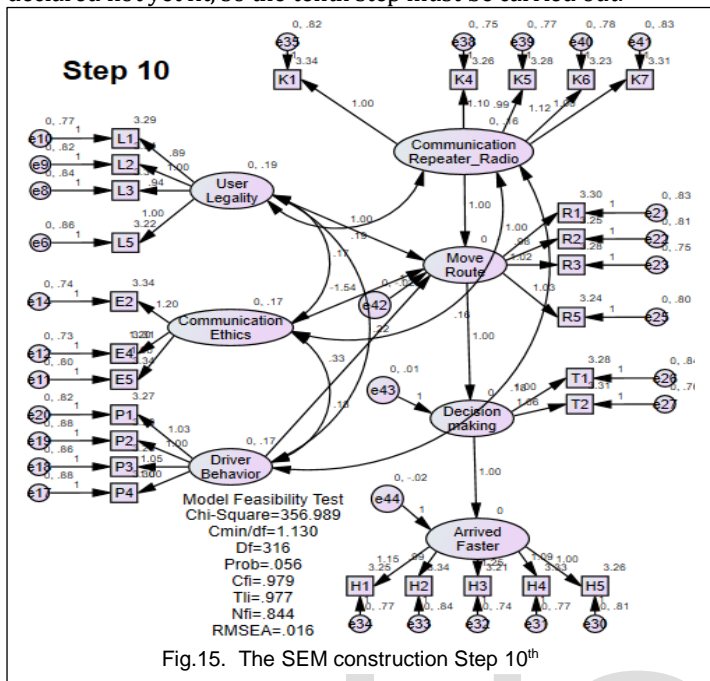


Fig.15. The SEM construction Step 10th

In figure 15 the SEM construction is still complete, the parameter R4 is deleted because its value is the smallest, but if you see the probability value, $P = 0.056 > 0.05$, then this construction is declared to be fit, thus the next step does not need to be done and is sufficient to the tenth step.

What exactly was done, to the point of needing 10 steps in this analysis? The main goal to require 10 steps is to find the Probability value ≥ 0.05 and to find that value, it is not allowed to only 1 step, by changing the value of each parameter. What is done in each step is to trick by removing parameters from the system, one by one with the smallest value criteria in Standardized Regression Weights, estimate column?

Just one is used as a guide, to analyze the construction of models built using SEM, the Probability indicator, if the probability value ≥ 0.05 , then the model can be said to be fit, so that other indicators such as Chi-Square, Cmin/DF, Degree of Freedom, Cfi, Tli and RMSEA, will automatically follow it. And complete the main indicators of the results of this analysis, can be seen in Table 4.

In Figures 10 to 15, intentionally after the parameters are erased, the SEM construction is not tidied up, this is intended to make it appear that elimination has occurred, thus appearing to disappear from appearance, so that it looks more unique, although not beautiful. However, in order to look more beautiful and orderly, it can be tidied up so it looks symmetrical.

In this study the preliminary results obtained from the SEM analysis construction, then there are still sought in accordance with the main objectives of this study.

TABLE 1
Goodnes of fit indices model empiric

| No. | Discription | Terms | SEM analysis (step) | | | | | | | | | | Information |
|-----|-------------------|------------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1 | Degree of Freedom | DF | 586 | 552 | 519 | 487 | 456 | 426 | 397 | 360 | 342 | 316 | |
| 2 | Chi-Square Table | CS Table | 643.425 | 607.766 | 573.106 | 539.446 | 506.784 | 475.122 | 444.458 | 405.244 | 386.125 | 358.456 | =CHIINV(0.05,DF) |
| 3 | Chi-Square | ≤ CS Table | 649.28 | 649.28 | 622.03 | 576.03 | 535.843 | 492.24 | 451.187 | 407.64 | 388.1 | 356.99 | ● Good |
| 4 | Cmin/DF | ≤ 2 | 1.199 | 1.176 | 1.199 | 1.183 | 1.175 | 1.155 | 1.136 | 1.105 | 1.135 | 1.13 | ● Not Good |
| 5 | Probability | ≥ 0.05 | 0.001 | 0.003 | 0.001 | 0.003 | 0.006 | 0.014 | 0.031 | 0.081 | 0.043 | 0.056 | ● Fit |
| 6 | RMSEA | ≤ 0.08 | 0.2 | 0.018 | 0.02 | 0.19 | 0.018 | 0.017 | 0.016 | 0.014 | 0.016 | 0.016 | ● Not Fit |
| 7 | Cfi | ≥ 0.90 | 0.956 | 0.962 | 0.959 | 0.963 | 0.966 | 0.971 | 0.975 | 0.981 | 0.977 | 0.979 | |
| 8 | Tli | ≥ 0.90 | 0.952 | 0.959 | 0.956 | 0.96 | 0.963 | 0.968 | 0.973 | 0.98 | 0.975 | 0.977 | |

Based on Table 1, in the tenth step a probability value of $0.056 > 0.05$ is obtained, to achieve this value, it requires a highly concentrated analysis. The results obtained in Table 1 and explained using the graph in Figure 2, with the following description: 1. Degree of Freedom (DF) starting from the first step to the tenth step, slowly decreases, slowly but surely, without experiencing fluctuations, if seen in the graph Figure 16 Degree of Freedom (DF) the decrease can be said to be almost linear and perfect; 2. Chi-Square Table is not output from direct SEM, but it is an indirect output. Why is that? Because this Degree of Freedom (DF) value is the result of the goodness of Microsoft Excel, by

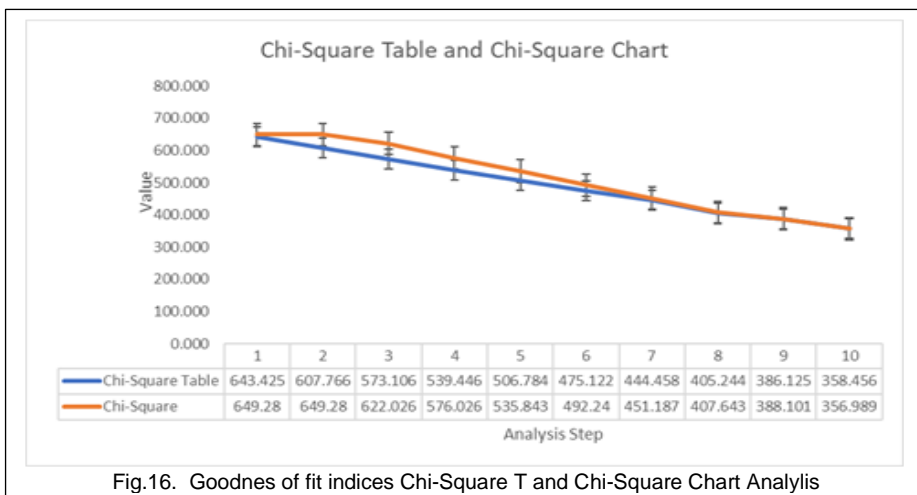


Fig.16. Goodnes of fit indices Chi-Square T and Chi-Square Chart Analisis

entering the DF value into the Excel formula, so that it can be Chi-Square Table $FORMULATEXT=CHIINV(0.05,DF)$; 3. Chi-Square is this value taken directly from SEM construction, said to be fit if the value of $Chi-Square \leq Chi-Square$ Table. The results of SEM analysis in table 1, states that the Chi-Square Table value has fluctuated so that when viewed in figure 16 the graph forms an asymmetrical parabolic. But in the tenth step, there is a surprise, where the value obtained is very fit; 4. Cmin/DF is a value taken directly from SEM construction, said to be fit if the value of $Cmin/DF \leq 2$. The results of SEM analysis in table 1, states that the value of Cmin/DF has fluctuated so that if seen in Figure 16 the graph forms a line not linearly. However even this Cmin/DF since the first step up to the tenth step is very fit; 5. Probability, this value is the main indicator in conducting SEM analysis. SEM analysis results in Table 1, states that the probability value from step to step is very dramatic and tense, in fact, the value obtained is very volatile, in the third step there is a decrease so that when viewed in Figure 16 graphs form random lines. However, in the tenth step, the value shows the SEM construction is very fit with a value of $0.074 > 0.05$. Thus the SEM structure analysis is stopped at the tenth step only; 6. RMSEA, this value is an indicator in conducting SEM analysis. The results of SEM analysis in Table 1, states that the RMSEA value from step to step is very dramatic and tense, in fact, the value obtained is very volatile, in the third step there is a decrease so that when viewed in Figure 16 the graph forms random lines. However, in the tenth step, the value shows the SEM construction is very fit with a value of $0.014 > 0.08$; 6. Cfi and Tli this indicator from the first step to the tenth step is declared very fit.

5 DISCUSSION

Based on the results of SEM analysis, it has been completely explained, that there are 9 questionnaire questions that have been eliminated, this means that the questions that are eliminated, do

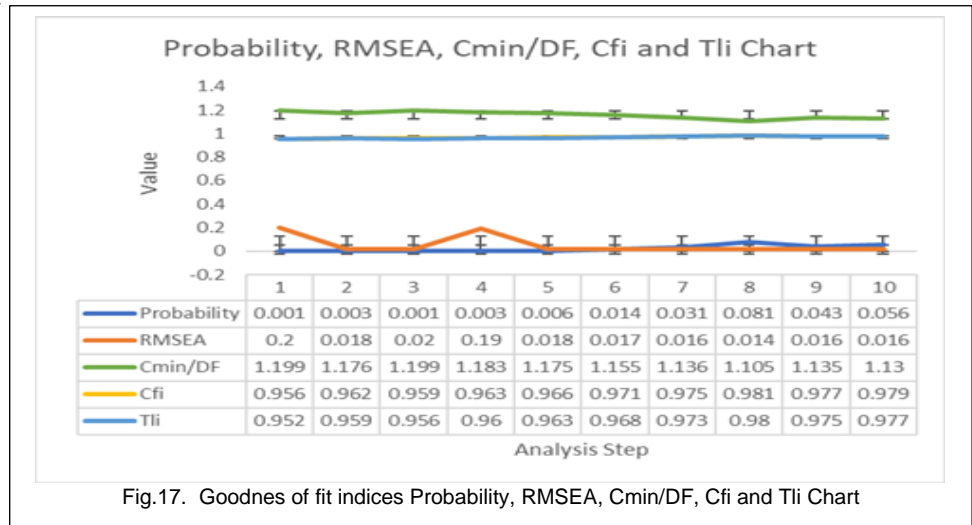


Fig.17. Goodnes of fit indices Probability, RMSEA, Cmin/DF, Cfi and Tli Chart

not affect traffic congestion in Jakarta and its surroundings, where a driver can make a selection or change the route, such as Figure 19.a, 19.b and 20.a, using the infrastructure of Radio Frequency Repeater infrastructure (RRF).

Of the 9 questions raised to respondents that were eliminated based on SEM analysis, the question is therefore insignificant. As for the insignificant question of the behavior of the driver to change routes, if the main route is jammed, then the driver can take an alternative route, using the help of Radio Repeater (RRF) communication. The main routes in figure 19.a alternative routes in figures 19.b and 20.a.

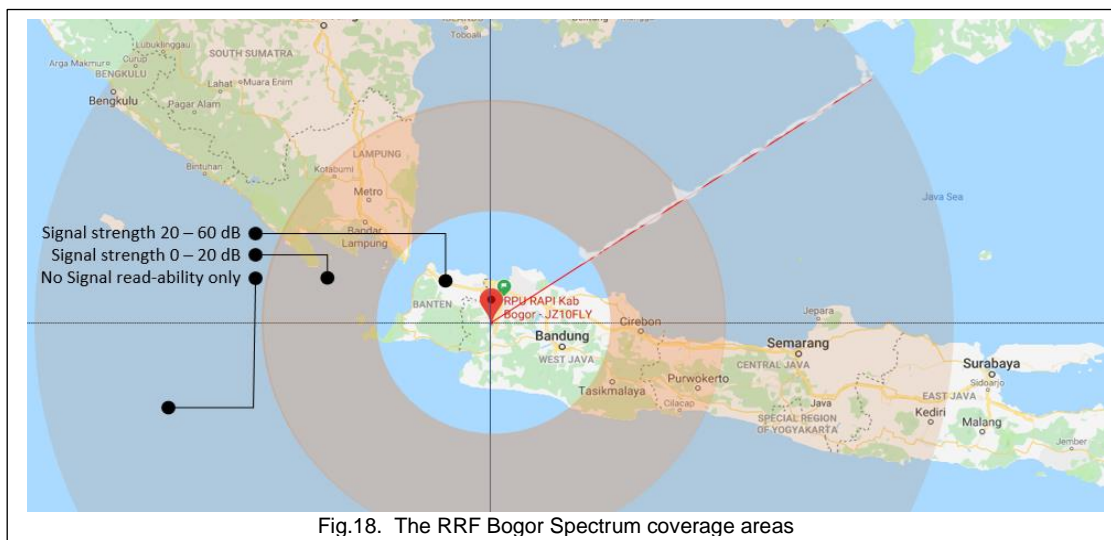
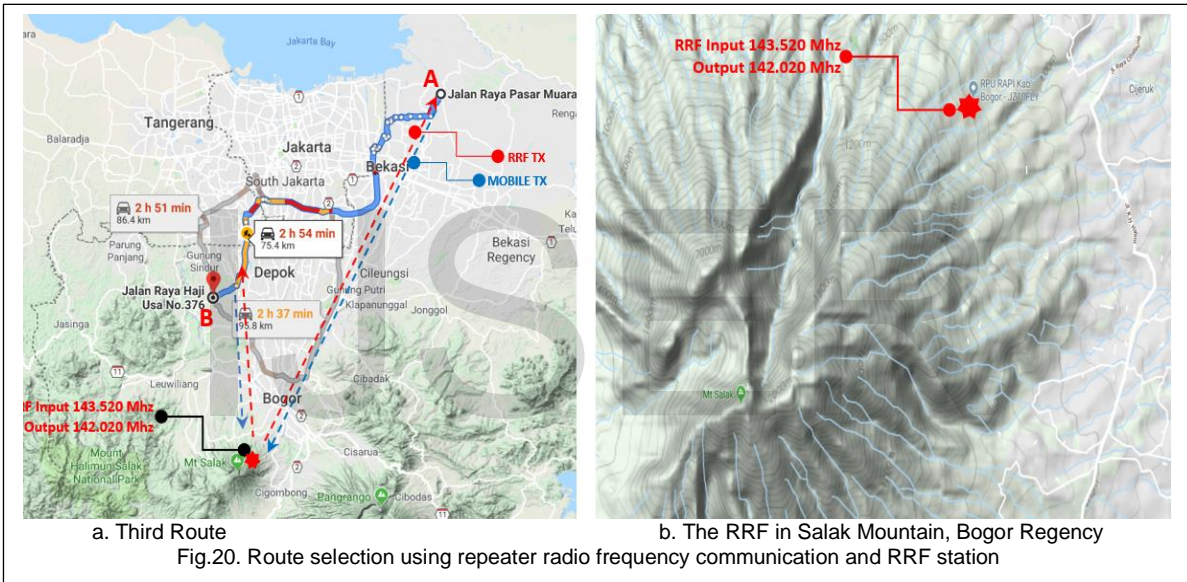
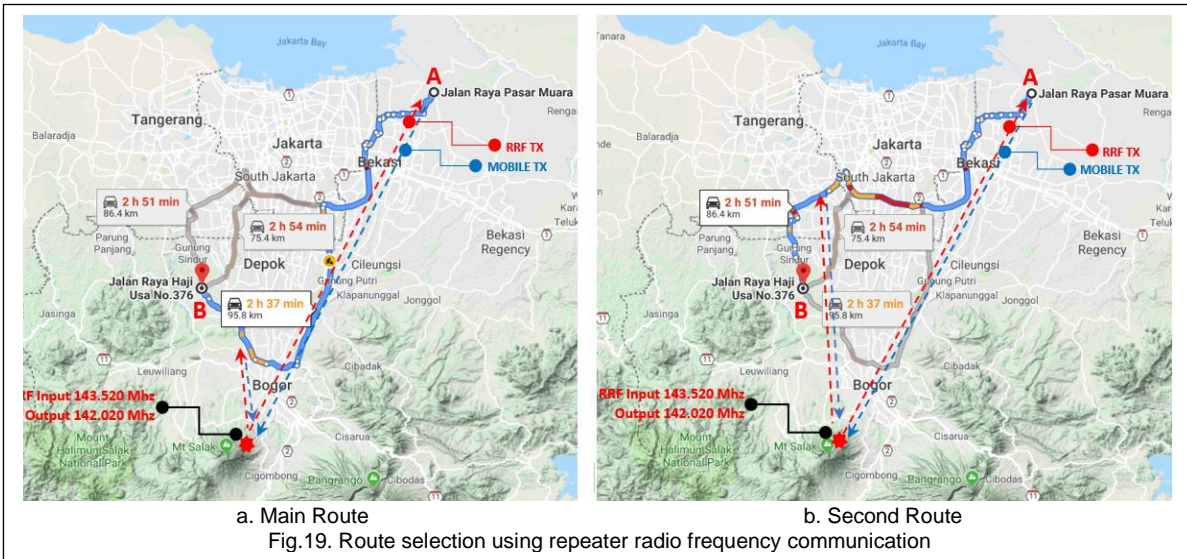


Fig.18. The RRF Bogor Spectrum coverage areas

RRF infrastructure that was built, its ability is very reliable, emitted from the top of Mount Salak, Bogor Regency can be seen in figure 18. In zone 1 the RRF transmit signal strength is received between 20 - 60 dB, zone 2 the RRF transmit signal strength is

received between 0-20 dB, while for zone 3 the RRF transmit power no signal is received, but the sound can still be received well, and is only influenced by propagation only, can be seen in Figure 19.b.



The condition of the Repeaters Radio Frequency (RRF) infrastructure that was built by the radio communication user community, which is a member of the RAPI organization, in figure 21 is very simple. But its function and usefulness are very helpful

to overcome congestion in the city of Jakarta and surrounding areas, by road users and users of Repeaters Radio Frequency (RRF).

TABLE 2
 Questions that are eliminated by SEM Analysis

| Step | Discription | SRW* Value | Status |
|------|---|------------|----------|
| 1 | SEM structure in intact condition | 0.000 | Original |
| 2 | P5. I decide to use Alternative Routes, if the main Route is congested or stuck | 0.334 | Deleted |
| 3 | E1. I am a radio communication user under the auspices of the RAPI organization | 0.348 | Deleted |
| 4 | T3. I moved to an alternative route to help the RAPI Organization, which was positive | 0.374 | Deleted |
| 5 | E3. I administer a radio communication permit through the management of the RAPI | 0.389 | Deleted |
| 6 | K2. The role of Direct or point to point in Eid communication assistance | 0.389 | Deleted |
| 7 | T4. I moved to an alternative route because I wanted to make use of existing resource | 0.395 | Deleted |
| 8 | L4. I communicate with radio prior to distress news or 1033 | 0.396 | Deleted |
| 9 | K3. The role of radio communication assistance in the event of a natural disaster or fl | 0.392 | Deleted |
| 10 | R4. I moved to an alternative route to become a reference to other colleagues | 0.399 | Deleted |

* Standardized Regression Weights

Based on Table 2, there are 10 steps to find that the SEM structural model reaches a probability value that meets the requirements, or with a value > 0.05. To achieve this value it must be run and eliminate the smallest standardized regression weights value, so in this study requires 10 steps and must eliminate and remove from the system as many as 9 questions or indicators. And graphically it can be described as shown in Figure 22.

Radio Frequency (RF) with Android in project operational communication, Violations of law committed by the project or an operational work unit that does not have permission to use the radio spectrum. Why in the operation of a project or an event the use of Radio Frequency (RF) communication is always used, what are its advantages in today's modern times.

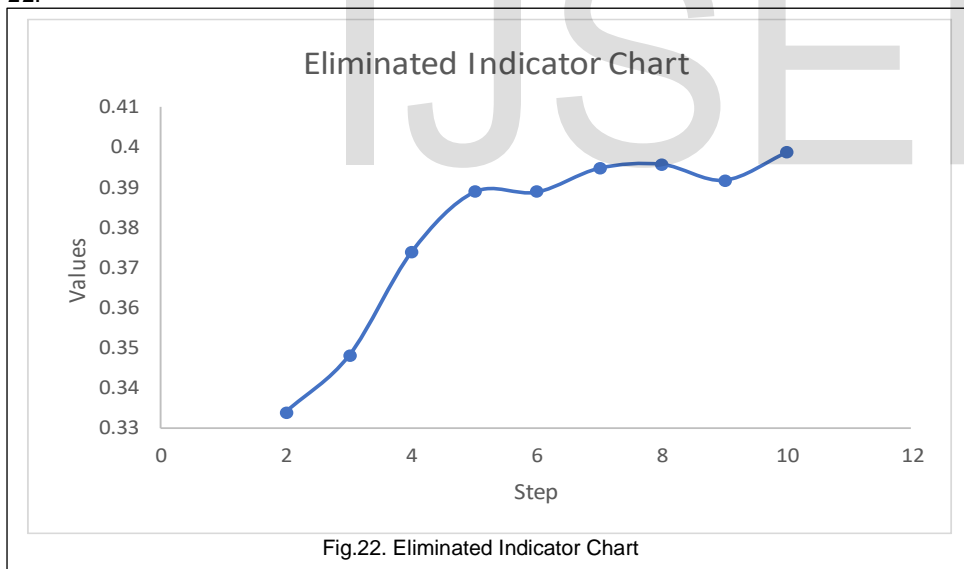


Fig.22. Eliminated Indicator Chart

6 CONCLUSIONS

The conclusion that based on the results obtained is as follows:

Based on research that the selection or change of route to avoid road congestion, in the city of Jakarta and surrounding areas, based on the respondents of highway users who use the infrastructure of Radio Frequency Repeater communication infrastructure (RRF), of the 36 questions asked to respondents there were 9 questions eliminated by SEM analysis model. Thus the 9 questions are not significant to the selection and change of route to avoid road congestion.

The use of RF communication is still very much needed in modern times like today, compared to using digital communication like Android and the like,

even though Radio Frequency (RF) communication was once victorious in the era of the 1940s during the second world war. And the most important thing is that Radio Frequency RF is an asset of one country that cannot be renewed and needs to be protected and protected by law in a country so that it can be used for the benefit of human life, as well as possible.

The RAPI organization is an asset of the Indonesian people who are always present to provide communication rocks for volcanic eruptions, earthquake disasters, flood disasters, Eid Al-Fitr traffic accidents, road traffic accidents, local elections and elections in Indonesia.

Research limitations and suggestions for further research.

Further research suggestions and creative ideas: It is hoped that other researchers can examine the legality of the use of mobile and base station radio spectrum, detect repeater intruders, different road users using radio repeaters as analog waves with multimedia or other means, repeater transmitters due to underpass infrastructure and high rise buildings, the role of radio communication in Eid homecoming communication assistance, the role of radio communication in road traffic accidents, the speed of information on news of natural disasters between Radio Frequency and Android, the advantages of using

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