

CHAPTER II

LITERATURE REVIEW AND BASIC THEORY

2.1. Literature Review

According to *Undang-Undang Republik Indonesia nomor 22 tahun 2009 tentang lalu lintas dan angkutan jalan*, traffic signs are one of the road equipments, in the form of symbols, letters, numbers, sentences or combinations of them that serve as warning, regulatory, command or guide to road users (RI, 2009).

Traffic signs are used to control and guide traffic and to promote road safety. Primarily, traffic signs serve to provide very useful information to road users. These information help road users to respond with the appropriate behavior to prevent accidents.

However, according to Charlton, S.G (2006), accurate understanding is a dominant factor for the effectiveness of a traffic sign system. With poor comprehension, memory for sign meanings and the likelihood of prompting effective road users reactions will decrease. Some unfamiliar and ambiguous signs may even give road users an impression that they are allowed to take certain actions although in fact it may be dangerous to do so (Al-Madani, H, 2000). The traffic signs cannot effectively serve their intended purposes if road users do not understand the information concerning safe road users behavior that is encoded in the signs (Stokes et al., 1995).

There are several previous research about understanding traffic signs. Munawar & Setiadji (2016), discussed about the drivers' comprehension of the

traffic signs. They used questionnaires distributed to a total of 202 respondents who have obtained driver's license and are domiciled in Soloraya region with examine these respondents' comprehension of the existing 15 traffic signs and the correlation for the variable of the respondents' comprehension score was carried out using the F-test, while the correlation among the variables was carried out using the t-test. The resulted that 67% of the respondents has the correct comprehension of the traffic signs meaning. F-test indicates that the variables of age, sex, education, occupation, type of driver's license owned and the length of time driver's license simultaneously bring a significant effect on the obtained score for the respondents' comprehension, but only the variable of the type of driver's license owned which partially has a significant effect on the respondents' comprehension of the traffic signs. Makinde & Opeyemi (2012), investigated the understanding of traffic signs by drivers in the city of Akure with respect to their personal characteristics such as age, marital status, gender, and educational background. They investigated 20 symbolic warning and regulatory-prohibitory signs with 200 questionnaires were prepared and distributed within the various motor parks in Akure, 185 of the questionnaires were returned. The result showed that there is a low understanding of traffic signs by drivers. The average percentages of drivers who correctly understood the warning and prohibitory signs were 67 and 58%, respectively. Age, Education and years of driving experience played prominent roles in drivers' understanding of signs, however marital status and gender had no effect. Kirmiziloglu (2010), discussed the analysis of comprehension of traffic signs: a pilot study in Ankara, Turkey. The survey questionnaire included 30 selected traffic

signs (including two prohibition signs omitting oblique bar recently changed as a part of the European Union Participation Process) and 9 control group signs, a total of 39 traffic signs, and driver characteristic questions, such as gender, age, educational background, etc. To reveal insights about the level of comprehensibility of different groups of traffic signs and driver characteristics that may affect the comprehensibility of these signs. The results showed that the control group signs have very high comprehensibility as expected, while some of the critical signs were not known much, or mistaken for others, even mistaken for opposite meanings. The significance of driver characteristics (gender, education, occupation etc).

2.2. Traffic Signs

According to *Keputusan Menteri Perhubungan No. KM 61 tahun 1993* Concerning Traffic Signs on the Road, traffic signs are one of the tools of the road in a certain form which contains symbols, letters, numbers, sentences or combinations in between, which are used to provide warnings, prohibitions, commands and guidances for road users. Traffic signs are created to create smoothness, regularity and safety in driving. Road markings and signposts are objects to convey information or instructions or directions to road users (Departemen Perhubungan, 1993). Every road user whether a pedestrian, two-wheeler rider, driver of four-wheeled vehicle should have knowledge regarding these traffic controlling devices and should be aware of what they signify. So, Traffic Signs are there to regulate traffic, warn about hazards and to guide the road user.






2.2.1. Traffic Signs Classification

Based on the type and function, then the traffic signs can be divided into 4 types, namely:














1. Warning Signs

Warning signs are used to warn of possible danger or dangerous places on the road front. Warning signs are placed at least 50 meters away or at a certain distance prior to the site of danger by observing traffic conditions, weather and road conditions caused by geographical, geometric, and road surface factors. The form of warning signs is a square and four rectangles. The basic color of the warning signs is yellow with black insignia or writing. Warning signs can be equipped with additional boards. The distance between the signs and the start of dangerous parts of the road may be expressed on an additional board when the distance between the signs and the start of the hazardous part of the road is unpredictable to the road user and does not conform to normal circumstances. Table 2.1 shows the picture and meaning of warning signs.




















Table 2.1 Picture and Meaning of Warning Signs

Signs	Meaning
	Narrow road ahead. The road you are travelling on, or the lane you are travelling in, is about to reduce in width.
	Road widens
	Narrowing on the left side of the road
	Narrowing on the right side of the road
	Widen left




















Continued Table 2.1 Picture and Meaning of Warning Signs

Signs	Meaning
	Widen right
	Lane reduction on left
	Lane reduction on right
	Lane addition on right
	Narrow bridge sign. The bridge ahead is narrower than the road leading up to the bridge.
	Slippery road surface
	Gravel
	Left Falling rocks signs. You should be aware that rocks or soil may fall, or have fallen, onto the road.
	Right Falling rocks signs. You should be aware that rocks or soil may fall, or have fallen, onto the road.
	Pedestrian area
	Pedestrians sign. Pedestrians may be crossing the road ahead (not at a pedestrian crossing).
	Warning Signs Many Traffic for Persons with Disabilities
	Bicycle warning sign. Cyclists are using the path or road ahead.
	Stock sign. Farm animals may be wandering on the road ahead and may cause a hazard for a distance shown on a Next km sign.
	Flagger Ahead Sign. Warning of Traffic Arrangement by Warning Officer Implementation of Road Inspection Warning Implementation of Road Survey
	Warning Obstacles or Objects Dangerous On The Left Side of the Road (Can only make traffic movement on the right side)
	Warning Obstacles or Dangerous Objects on the Right Side of the Road (Can only make traffic movement on the left side)
	Warning of Obstacles or Dangerous Objects on a Line or Lane Ruler (Can perform traffic movement on both sides)
	Warning Explaining that the Critical Location is 450 m from Locations (Warning Types Explained with Warning Signs)



















Continued Table 2.1 Picture and Meaning of Warning Signs

Signs	Meaning
	Warning Explaining that the Critical Location is 350 m from Locations (Warning Types Explained with Warning Signs)
	Warning Explaining that the Critical Location is 150 m from Locations (Warning Types Explained with Warning Signs)
	Left Chevron Sign. Used in addition to the curve signs when there is a need to draw added attention to a change in the road's direction
	Right Chevron Sign. Used in addition to the curve signs when there is a need to draw added attention to a change in the road's direction.
	Gradual Left Curve. Road ahead curves gradually to the right. Be prepared for the change in direction.
	Gradual Right Curve. Road ahead curves gradually to the right. Be prepared for the change in direction.
	Reverse Curve Signs (left). Warning of Double Dots with First Bend to Left
	Reverse Curve Signs (right). Warning of Double Dots with First Bend to Right.
	Left turn sign. The road ahead is about to turn sharply in the direction of the narrow.
	Right turn sign. The road ahead is about to turn sharply in the direction of the narrow.
	Reverse turn signs. 2 sharp turns in opposite directions are close to each other on the road ahead.
	Reverse turn signs. 2 sharp turns in opposite directions are close to each other on the road ahead.
	Warning sign Many Curves with First Bend to Left
	Warning sign Many Curves with First Bend to Right
	Cycle warning turns to the left
	Cycle warning turns to the right
	Steep hill downwards
	Hazardous hill downwards
	Steep hill upwards



Continued Table 2.1 Picture and Meaning of Warning Signs

Signs	Meaning
	Hazardous hill upwards
	Surface Warning of a Sunken or Hollow Road
	Road hump sign. This sign lets you are approaching a speed bump. A speed bump is an obstacle used to make vehicle reduce their speed on the road.
	Uneven road surface
	Traffic Light. These signs are used on roads with higher speeds. Be ready for an intersection and a stop light.
	Intersection/Crossroad. There is another road ahead that crosses the road you are on. Watch carefully for cross traffic in your path.
	Alert four priority warning (Placed on Major Arm)
	Roundabout ahead sign. This sign means you are approaching a roundabout.
	Alert three left oblique warning (Placed on Minor Arm)
	Alert three right oblique warning (Placed on Minor Arm)
	Merging Traffic. If you are on the main road and see this sign, be prepared for other vehicles from left blending into your lane.
	Merging Traffic. If you are on the main road and see this sign, be prepared for other vehicles from right blending into your lane.
	Left side road junction ahead
	Right side road junction ahead
	Successive side road intersection signs. You will see 2 side roads close together that meet on the continuing road ahead.
	Successive side road intersection signs. You will see 2 side roads close together that meet on the continuing road ahead.
	Road branching off left
	Road branching off right
	Third Left Crossing Warning (Placed to Major Arm)

Continued Table 2.1 Picture and Meaning of Warning Signs`

Signs	Meaning
	Third Right Crossing Warning (Placed to Major Arm)
	Left Side road intersection signs. An intersection is ahead made by a side road joining the continuing road. This sign warns you that you are approaching an intersection with a side road.
	Right Side road intersection signs. An intersection is ahead made by a side road joining the continuing road. This sign warns you that you are approaching an intersection with a side road.
	T-Intersection Ahead. The road you are on does not go straight ahead. Prepare to turn right or left.
	Y-Junction. Warning of the junction of three
	Divided Highway Begins. You are getting close to the place where two-way traffic will be divided by a center strip.
	Divided Highway Ends. Two-way traffic will no longer be divided by a center strip. Watch out for oncoming vehicles.
	Trucks-crossing or entering sign. This sign tells you that trucks frequently enter or cross this section of road.
	Warning of lots of flammable freight traffic
	Warning lots of public transport traffic
	Pedestrian Crossing. Watch out for people who might walk or run in front of your vehicle.
	Warning (Usually followed with a supplementary sign beneath)
	Roadworks ahead
	Max height ahead
	Max width ahead
	Level crossing ahead
	Railway Open level crossing ahead- passive control signs. A railway crossing is ahead and controlled by a give way or stop sign. This sign used with a railway crossing on road signs gives you warning of the railway ahead.
	Aircraft sign. An airfield is nearby and aircraft may fly over the road at low altitude.

Continued Table 2.1 Picture and Meaning of Warning Signs`

Signs	Meaning
	Two-Way Traffic. Keep to the right because you are leaving a one-way road and entering a two-way road.
	Warning Signs with Words

2. Prohibition Signs

Signs of prohibition are used to declare actions prohibited by street users.

Prohibition signs are placed as close as possible to the starting point of the ban.




To provide preliminary directions to road users can be placed signs of other clues at a reasonable distance before the starting point begins. Prohibition signs

can be equipped with additional boards. The prohibited sign can be an equilateral, equilateral triangle with rounded corners, a cross with a sharpened end, a circle and a rectangle. The basic color of the ban signs are white and the



















symbol or writing is black or red. Table 2.2 shows the picture and meaning of prohibition signs.

prohibition signs.





Table 2.2 Picture and Meaning of Prohibition Signs

Signs	Meaning
	Stop at intersection. Stop at the marked stop line or before entering the crosswalk or before your vehicle enters the intersection. Let other vehicles or pedestrians pass if they are in your path.
	No entry for vehicle
	No vehicles

Continued Table 2.2 Picture and Meaning of Prohibition Signs

Signs	Meaning
	No motorcycles
	No cars
	No trucks
	No Buses
	No entry for vehicle with gross vehicle mass of more than 5 tonnes.
	Weight limit per axle
	The maximum speed is 40 km per hour and any vehicles are not allowed to travel at a speed of faster than it.
	Yield Sign. Means that you must reduce speed as your vehicle approaches the intersection. You must give the right of way, stopping if necessary, to any other traffic in, or closely approaching, the intersection.
	Give Way to oncoming traffic
	One-track level crossing
	Multiple-tracks level crossing
	No Slow Moving Vehicle
	No pedestrians
	No cyclists. This sign indicates that bicycles and tricycles are prohibited from passing beyond the sign.
	No stopping
	No parking
	Prohibition Walk Continues
	No left turn





Continued Table 2.2 Picture and Meaning of Prohibition Signs

Signs	Meaning
	No right turn
	No U Turn
	Bans Running Vehicles at More Than Written Speeds, for example: Prohibited Vehicle Maximum Speed is 50km / h
	Horn sounding prohibited

















3. Command Signs

Command signs are used to declare commands that must be performed by road users. Signs must be placed as close as possible to the point of obligation begins. To provide preliminary directions to road users can be placed guidance signs at a reasonable distance before the point of obligation begins. Command signs can also be equipped with additional boards. The basic color of a command sign is blue with a white or red insignia or writing for the oblique line as the command limit with the circle shape. Table 2.3 shows the picture and meaning of command signs.

Table 2.3 Picture and Meaning of Command Signs

Signs	Meaning
	Turn Left. This sign indicates that vehicles must proceed in the left direction shown by the arrow
	Turn Right. This sign indicates that vehicles must proceed in the right direction shown by the arrow.
	Turn left ahead
	Turn right ahead

Continued Table 2.3 Picture and Meaning of Command Signs













Signs	Meaning
	Ahead only
	Keep straight ahead or turn left
	Keep straight ahead or turn right
	Keep Left. The sign indicates that passage must be to the left(right) of some permanent or temporary obstruction.
	Keep Right. The sign indicates that passage must be to the left(right) of some permanent or temporary obstruction.
	Keep left or right
	End of tire chain usage
	Motorcycle lane
	Bus lane
	Lorry lane
	Pedestrians only
	Bikes only
	Minimum speed limit. The minimum required speed, for example: The Ordered Minimum Vehicle Minimum Speed is 50km / h
	Rickshaws only
	Carts only
	Horse carriage only

4. Guidance Signs


















Guidance signs are used to indicate directions about majors, roads, situations, cities, places, settings, facilities and others for road users. Guidance signs are

placed in such a way that they have the greatest possible power with regard to road conditions and traffic conditions. Guidance signs may be repeated provided that the distance between the sign and the object stated on the beam can be expressed with an additional board. Guidance signs indicating the place of public facilities, the boundaries of a region, the road situation, and signs of words and special places are expressed in blue base color and rectangle shape. Table 2.4 shows the picture and meaning of guidance signs.



















Table 2.4 Picture and Meaning of Guidance Signs

Signs	Meaning
	Mosque
	Church
	Guidance of pedestrian crossing location
	Parking area
	Parking area for disabled
	Hospital
	Clinic, Community Health Center
	Pharmacy
	Petrol station
	Scheduled service station
	Emission service station
	Weigh station






Continued Table 2.4 Picture and Meaning of Guidance Signs

Signs	Meaning
	Museum
	Market
	Restaurant
	Cafe
	Lodging
	Park
	Cross-country route
	Tent camp
	Caravan camp
	Camp
	Villa
	Beach
	Open sports field
	Indoor sports centre
	Swimming pool
	Stadium
	School

Continued Table 2.4 Picture and Meaning of Guidance Signs

Signs	Meaning
	Library
	U-turn area
	One-way system instructions
	Left One way
	Right One way
	Dead end
	Bus stop
	Taxi stand
	Public transport stand apart from buses and taxis
	Volcano eruption evacuation route
	Emergency muster zone
	Refuge camp
	Refuge centre
	Tunnel
	End of tunnel
	Waste disposal
	Landfill
	Post office

Continued Table 2.4 Picture and Meaning of Guidance Signs

Signs	Meaning
	Public phone
	Bus terminal
	Train station
	Harbour
	Airport

2.3. Understanding of Traffic Signs

2.3.1. Understanding

Understanding comes from the word "understand" which means understanding, mastering right. In the general dictionary Indonesian language "understanding" means things, the work of understanding or something that we understand correctly. According to Suharsimi (2013), understanding is the ability of a person to maintain, differentiate, estimate, explain, expand, conclude, generalize, exemplify, rewrite, and estimate. Then understanding is a person's ability to understand something. In other words, understanding is knowing about something and can see it in various aspects. Winkel (2004), is said to understand something if he can provide an explanation and imitate it by using his own words.

2.3.2. Understanding of Traffic Signs

Based on the meaning of understanding and the traffic signs, then understanding of traffic signs is a ability of a person to understand the traffic signs correctly. In the sense that someone can understand the meaning of each type of traffic signs. Al-Madani, H, (2000) said that some unfamiliar and ambiguous signs may even give road users an impression that they are allowed to take certain actions although in fact it may be dangerous to do so. The traffic signs cannot effectively serve their intended purposes if road users do not understand the information concerning safe road users behavior that is encoded in the signs (Stokes et al., 1995). Then understanding traffic signs is very important to reduce risk in traffic.

To know the understanding traffic signs of road user, there are classification of understanding levels in percentage of understanding traffic signs.

- >0% - 20% : Very poor understanding
- >20% - 40% : Poor understanding
- >40% - 60% : Slightly uderstanding
- >60% - 80% : Good understanding
- >80% - 100% : Very good understanding

2.4. **Traffic Accident**

According to *Undang-Undang Nomor 22 Tahun 2009* traffic accident as unexpected and unintentional road events involving vehicles with or without other road users resulting in human casualties and property losses.

According to Sutomo (1999), the causes of traffic accidents on the highway can be divided into four factors: 1) human factors; 2) vehicle factors; 3) road factors

and 4) environmental factors. Human factor was the biggest factor causing the accident in 1997 which was 90.6%. This is caused by drivers who have the knowledge and attitude in driving a vehicle that is still very bad.

2.5. Human (Road User) Behaviour

Road user is anyone who uses a road, such as a pedestrian, cyclist or motorist (Collins English Dictionary, 2013). According to the UU No. 22 Tahun 2009, the driver is a person who drives a motorized vehicle on a road that has a driver's license. Every person who uses the road must behave in an orderly manner and prevent things that can hinder, endanger the security and safety of traffic and road transport, or which can cause road damage. Comply with the provisions regarding road classes, road signs and markers, traffic signals, working time and rest periods, traffic movements, stop and parking, motorized vehicle and roadworthy technical requirements, use of motorized vehicles, warning with sound and light , maximum or minimum speed, procedures for transporting people, procedures for coupling and attaching other vehicles. Driving behavior is defined as the behavior of the owner or vehicle user in driving and caring for his vehicle (Lulie, 2005).

According to the Safety Psychologist (Goldenson in Rahmawati (1998) there are certain personality traits that can lead to behaviors that endanger safety. This not only endangers oneself, but can also endanger others or the community of road users. These characteristics include:

1. Lack of responsibility. This characteristic is often found in adolescents around the age of 18-20 years. According to Smither (in Rahmawati, 1998)

most traffic victims are in their teens and those who are not married. Most with characteristics: careless and unable to face danger.

2. Ego centric nature. Selfishness and lack of attention / disrespect for others, so that in traffic is easy to cause accidents, because everything around them is considered only for their own needs and interests.
3. Aggressive. The characteristics are: lack of patience; full of competition; easy to attack and blame others, so that the vehicle being driven can be used as a tool to vent his aggressive appetite to attack other people, so that accidents are easy.
4. Less stable emotions. The characteristics are: his personality is less mature, easily offended and less able to control his anger. Sargent's research (in Rahmawati, 1998) shows that truck drivers who have stable emotions have a low accident rate.
5. Excessive Confidence. This type of person feels able to overcome all obstacles and tends to easily overlook the rules, ignore traffic signs and drive vehicles at high speed, the vehicle being driven is too close to the vehicle in front of him, when the vehicle in front of him brakes suddenly it will be easy to crash .
6. Other temporary conditions such as stress, anxiety, depression, boredom can cause accidents for the driver, because concentration and feeling of alertness is reduced. Physical state such as pain, fatigue, thirst can also interfere with the concentration of the driver.

2.6. Basic Theory

2.6.1. Questionnaire

According to Abawi (2013), a questionnaire is a data collection instrument consistant of a series of questions and other prompts for the purpose of gathering information from respondents. Questionnaire helps researcher to obtain required informations to answer the objectives of the survey (Brace, 2008). Questionnaire used in this study is based on questionnaire that was developed by (Akpan, Ph, Senam, Ph, & Elijah, 2015) and modify by the author. The target respondent for this research are the college student in Yogyakarta.

2.6.2. Method of Analysis

There are some methods which are used in this study to determine the results of the research, those are:

1. Slovin's Formula

Slovins's formula is used to calculate an appropriate sample size from a population. Slovin's formula allows a researcher to sample the population with a desired degree of accuracy (Stephanie, 2013). Slovin's formula was used to calculate the sample size. The Slovin's formula was calculated as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where : n : Number of samples or sample size

N : Total population

e : Error tolerance

2. Percentage Method

This method used in the questionnaire to decide the percentage of the data in the first part of questionnaire which consist of general information of the respondent.

The formula that used is:

$$P = \frac{Xi}{N} \times 100\%$$

Note:

P : Percentage value

Xi : Number of variable X

N : Number of respondent

3. Method of Validity Test

Validity test is used to measure whether a questionnaire is valid or not. According to Ghozali (2011) a questionnaire is said to be valid if the question in the questionnaire is able to reveal something that will be measured by the questionnaire. This research uses the Pearson correlation product moment coefficient (ρ or r) is used as a valid limit or not an item (Hidayat A, 2012). Formula of Pearson correlation product moment coefficient is :

$$r = \frac{n (\sum XY - (\sum X)(\sum Y))}{\sqrt{[n(\sum X^2) - (\sum X)^2][n(\sum Y^2) - (\sum Y)^2]}}$$

Note : n : Total respondent

X : Variable score (respondent's response)

Y : Total score variable n

SPSS version 17.0 program is the tool to test the construct validity with Bivariate Pearson technique (Pearson Moment Product). This analysis is by correlating each item's score with a total score. The total score is the sum of all items. Question items that were significantly correlated with the total score showed that the items were able to provide support in revealing what was wanted to be revealed (Duwi P, 2011). Validity related to the purpose of the measurement. Measurement declared valid if it measures its purpose correctly. It is said to be valid if the value of $r_{count} > r_{table}$, and if the value of $r_{count} < r_{table}$ is invalid ($\alpha; n-2$), n is total sample.

The test used a two-tailed test with a significance level of 0.07. The testing criteria are as follows:

- If $r_{count} > r_{table}$ (test 2 tailed with sig. 0.07) then the instrument or question items have a significant correlation to the total score (declared valid).
- If $r_{count} < r_{table}$ (test 2 tailed with sig. 0.07) or r_{count} negative, then the instrument or question items do not correlate significantly to the total score (declared invalid).

The calculated r count can be seen from the Total Pearson Correlation column and the r table value is obtained from r table or using r table formula. The r table value for this research done with r table formula (Junaidi, 2010) below :

$$r = \frac{t}{\sqrt{df + t^2}}$$

Note : r : r table value

t : t table value

df : degree of freedom

Based on the formula, then in Microsoft Excel the following steps are performed: (see table 2.5)

Table 2.5. Example calculation of r-table and t-table

A	B	C
df	t-table 0.07	r-table 0.07
1	9.0579	0.9940
2	3.5782	0.9300
3	2.7626	0.8472
4	2.4559	0.7754
5	2.2974	0.7166

Steps to Calculates t table and r table (Two Tailed Test) using Microsoft Excel :

1. In column A input degrees of freedom (df). The degree of freedom is calculated by the formula $N-2$, where N is the amount of data. In the example, degree of freedom is 1 – 5.

2. The column B we use to calculate the value of the t table. In cell B2 input the number (example 0.07). This example is to find the value of t table with α (7% of significance level). Then in cell B3 we write the formula of t table: =TINV(Level Significant;Total of Respondent) then for this example =TINV (B\$2; \$A3).
3. Then, copy the formula to cell B7 to get all t table value.
4. Next, calculate r table. In cell C2 input the number (example 0.07). This example is to find the r table value with α (7% of significance level). Then in cell C3 input the formula of r table: =B3 / SQRT (\$A3 + B3 ^ 2). Next, copy the formula to cell C7 to get all r table value.

Note: Calculation for One Tailed Test the significance level is alpha multiplied by 2 ($\alpha \times 2$) as in the example with the same α which is 7%, the alpha is changed to 14% ($2 \times 7\%$).

4. Method of Reability Test

According to Sugiyono (2010) reliability is the degree of consistency / constancy of data at certain time intervals. The Cronbach's alpha method is performed in this study to test the reliability of the questionnaires internal consistency. However, the Cronbach's alpha coefficient value is within the range from 0 to 1. If the coefficient value is high, means that the indicator is reliable. The alpha value should be

at least 0.60 or higher to make the indicator is in an 'adequate' scale.

The formula for calculating Cronbach's Alpha is:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_T^2} \right)$$

Note: α : Cronbach's alpha coefficient

k : Number of items

$\sum \sigma_i^2$: Variance of the i items

σ_T^2 : Variance of the total score formed by sum all the items

5. Descriptive Analysis

Descriptive analysis method is a statistic used to analyze data by describing data that has been collected as it is without the intention of making conclusions that apply to the general and generalization (Sugiyono, 2010). Descriptive analysis is used to show respondent answers based on the quisioner. The descriptive statistic provide simple summaries about the sample and the measure is sufficient for the investigation and is usefull to learn from the behaviours and to understand how extent they understand the traffic sign and correlation with traffic accident, also how extent they are obey the traffic sign. The result is given on percentage.