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Moderator Effects of Character Values on the Influence of Awareness and Attitude on Road Safety

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Abstract

Many discussions about road safety have been carried out, for example using a civil engineering approach. However, research on road safety is rarely discussed using a management approach, especially human behavior. This study aims to look at the moderating effect of character values owned by the Indonesian nation on the influence of awareness and attitudes on road safety. The research method uses a combination approach. Distribution of questionnaires, observation and focus group discussions were used as data collection techniques. The population in this study is motorcyclists whose number is larger than other road users. A total of 409 samples were selected using a purposive sampling technique. Analysis using PLS-SEM show that, there is no direct influence from motorcyclist awareness on road safety. However, through the attitude of motorbike riders, there is a significant indirect effect of motorbike rider awareness on road safety; there is a positive influence of motorbike riders' attitudes on road safety; there is a positive influence of motorcyclist awareness on motorcyclist attitudes; there is no moderating effect of motorcyclist character values on awareness and attitudes towards road safety. Apart from that, it was also concluded that character values have a positive effect on road safety.

Keywords: Character Values, Awareness, Attitude, Road Safety, Motorcyclist

Introduction

Road accidents are caused by many factors, including driver factors and factors other than drivers. Factors other than the driver related to the vehicle, road conditions and its environment. Meanwhile, driver factors concern the physical and psychological condition of drivers, whether car or motorcycle riders. Physical conditions for example include vision, concentration, fatigue and drowsiness. Meanwhile, psychological conditions include consciousness, attitudes, personality behaviors and others. Some of the causes of accidents that occur in Batam city are due to several factors, namely: human factors involving drivers

and motorcyclists, vehicle factors, road factors, natural environment factors and other factors. From these factors, the human factor is the largest component, especially motorcycle accidents among the highest in Batam compared to other road users.

Based on a report from the Ministry of Communications ((Marroli, 2017), road transport accident victims in Indonesia will reach 204,447 people throughout 2022. This number has increased by 33% (year-on-year/yoy), compared to victims in 2021 which reached. 153,732 people. Accident victims in 2022 will be the highest in the last four years. In detail, last year's accident victims were dominated by minor injuries, which amounted to 163,686 people. This was followed by 27,531 deaths and 12,230 serious injuries ((Muhamad, 2023). It is also stated that road accidents have a negative impact on the national economy. The National Public Safety Plan (RUNK 2011-2020) shows that traffic accidents result in economic losses of around 3.1 percent of the Gross National Income; around Rp.220 trillion. While road accidents can cause systemic poverty if the victim is the backbone of the family.

Batam, which borders Singapore and Malaysia, is an industrial city that is developing rapidly. The issue of traffic accidents and collisions is common in Batam. Many behaviors and habits of drivers do not obey the signs and violate the rules on the road. Low awareness of traffic and discipline as well as frequent collisions on the highway, low culture and behavior of road users add to the level of congestion and the high number of road accidents. Security issues, especially in meeting the needs of movement and increasing the number of trips has become one of the problems that occur in the city of Batam. Public awareness of road safety, driving attitudes and behavior, understanding of traffic rules and signs also play a role in adding to the problems that occur. Road accidents that occur in Batam are dominated by motorcyclists. This situation can be identified through Barelang Police'sroad accident data ((Satuan, 2021) based on the type of vehicle that did the collision. Police data shows the types of vehicles that cause road collisions, namely buses, lorries, public transport, private cars, taxis, motorcycles, and pickup trucks. Motorcycles are the type of vehicle that has the most road collisions compared to other types of vehicles. Traffic collision data, if viewed by age, are mostly experienced by motorists in the age group 0-16 years, the age group 21-30 years and the age group 31- 40 years. This data provides information that traffic collisions are mostly committed by the productive age group, which is 16-40 years.

There are reports stating that the level of awareness and attitude of road users in Indonesia is still very low. A study on Road Safety Behavior Research in 2020, which was carried out in 15 cities, such as Jakarta, Tangerang, Bandung, Yogyakarta, Semarang, Surabaya, Malang, Denpasar, Medan, Padang, Palembang, Banjarmasin, Balikpapan, Samarinda, and Makassar. This survey involved 1,527 respondents who participated. The results of the study revealed various things, ranging from the driving safety index, to the number of traffic collisions in Indonesia. From the index, there is a considerable score difference between the aspects of knowledge, attitude, and behavior. The large score gap between each of these aspects indicates that the community's level of awareness to behave safely and safely while on the road is still relatively low (Rizal, 2021).

Based on police information and various reports in the media, the facts that show the lack of awareness and attitude of motorcyclists in Batam are more (1) lack of discipline towards road rules, such as: not wearing a helmet, breaking road signs, turning or turning in prohibited places, crossing a one-way street, not turning on the headlights during the day and night, not using the rearview mirror, not signaling when turning, driving a motorcycle at high speed; (2) lack of responsibility for motorcycle safety, for example not completing the vehicle license and driver's license, allowing minors to ride motorcycles, carrying infants/underage passengers without safety, carrying passengers and goods beyond the capacity of the motorcycle and lack of tolerance towards road users other holidays, as well as other violations.

Some of these facts show that humans as road users, whether male or female, from a young and productive age with varying levels of education commit various forms of collisions on the road while driving a vehicle or motorcycle. The various types of collisions that occur every day show that the level of awareness and attitude of road user needs to be further investigated so that the level of accidents that take lives, resulting in disability and loss of productivity can be suppressed in such a way.

Objective

In particular, the objectives of this study are to:

1. Determine the relationship between motorcyclists' awareness of road safety.
2. Determine the relationship between the attitude of motorcyclists towards road safety.
3. Determine the influence of motorcyclists' awareness on road safety.
4. Determine the influence of motorcyclists' attitude on road safety.
5. Determine the moderating effect of character values on the awareness and attitude of motorcyclists and its influence on road safety

Methods and Instruments

The research design used in this research is a mixed research method. The population in this study is a sample of 400 motorcyclists who use motor vehicles in the city of Batam, Indonesia. While the sampling technique used is a purposive sampling technique. Primary data will be obtained through a survey approach using a questionnaire and focus group discussion (FGD). Questionnaires were distributed to respondents using Google Form. The link was distributed to the motorcycle community in Batam via *WhatsApp social media*. Some of the question indicators found in the questionnaire for the awareness variable were modified from the instrument used by Chakrabarty (2013), and (Parihar, 2014) for the attitude variable from (Batool, 2012). Meanwhile, road safety variables are developed by researchers based on road safety indicators taken from the literature, especially those found in UU No. 22 of 2009 and the National Road Safety General Plan (RUNK) 2011-2035. Before the questionnaire was distributed to the respondents, preliminary tests were carried out using two types, namely participating test-driven expert and undeclared pretest-respondent driven.

FGD was carried out to obtain additional information needed from related parties, including: traffic police officers, transport officers, insurance officers, motorcycle club presidents and community leaders. Observation techniques have been used to enrich the research results. Secondary data is obtained by using databases (documentation) found in several related agencies. Some secondary data obtained using documentation techniques include: reports on

accident rates, accident types, age of accident victims, road infrastructure, traffic signs, regulations related to traffic and roads, forms of accident insurance covered by insurance, accident insurance value, and data other related. Secondary data is also obtained from the Batam Statistics Bureau's annual report on the total population, the number of vehicles, motorcycles and traffic facilities. The statistical analysis technique in this study uses the Partial Least Squares-Structural Equation Modeling (PLS-SEM) program, meanwhile qualitative data analysis in this study was carried out with the following steps: selecting data, sorting data, organizing and interpreting data.

Results and Discussion

a. Respondent Demographics

Table 1

Socio Demographic Respondents

Characteristics	**n**	**%**
Gender		
Male	266	65.00
Female	143	35.00
Age		
<17	3	0,7
17-20	116	28,4
21-30	186	45,5
31-40	60	14,7
41-60	43	10,5
> 60	1	0,2
Education		
Elementary school	2	0,5
Junior high school	5	1,2
High school	211	51,6
Diploma	35	8,6
Bachelor	151	36,9
Masters	5	1,2
PhD	0	0,0
Others	0	0,0
Profession		
Student	164	40,1
Teacher/Lecturer	21	5,1
Private sector worker	177	43,3
State civil servants/Police/Military	22	5,4
Director/Manager	4	1,0
Housewife/Retired	11	2,7
Online Motorbike Taxi	10	2,4
Family Income/Month (Rupiah)		
< Rp. 3.500.000	133	32,5
Rp. 3.600.000-8.600.000	231	56,5
Rp. 8.700.000-13.600.000	31	7,6
Rp.13.700.000-18.600.000	5	1,2
> Rp. 18.700.000	9	2,2

Driving License		
Type A		
Yes	120	29,3
No	289	70,7
Type B		
Yes	21	5,1
No	388	94,9
Type C (for motorbike riders)		
Yes	292	71,4
No	117	28,6
Motorcycle Riders Taking the Test to obtain a license		
Yes	296	72,4
No	113	27,6
Motorcycle Riding Time		
< 6 months	31	7,6
6 months - 1 year	15	3,7
1.5 - 2 years	26	6,4
> 2 years	337	82,4
Understanding Traffic Signs and Rules		
Yes	405	99,0
No	4	1,0
Violating Traffic Rules Always		
Yes	16	3,9
No	393	96,1
Violating Traffic Rules Sometimes		
Yes	141	34,5
No	268	65,5
Violating Traffic Rules Never		
Yes	147	35,9
No	262	64,1
Violating Traffic Rules Not remember		
Yes	81	19,8
No	328	80,2
Ride a motorbike according to speed regulations		
Always	218	53,3
Sometimes	140	34,2
Almost never	16	3,9
Not remember	35	8,6
Get a ticket 1 times		
Once	116	28,4
Never	293	71,6
Get a ticket 2-3 times		
Once	32	7,8
Never	377	92,2
Get a ticket 4-5 times		
Once	5	1,2
Never	404	98,8

Got an accident 1 time		
Once	187	45,7
Never	222	54,3
Got an accident more than 1 time		
Once	90	22,0
Never	319	78,0
Cause of accident		
Once	34	8,3
Never	375	91,7
Casualty		
Once	92	22,5
Never	317	77,5

In Table 2 it can be understood that the types of violations that are most often committed if arranged from the most are breaking the traffic light, not wearing a helmet turning in prohibited places and so on.

Table 2
Various Types of Violations Most Frequently Committed

No	Type of violation	Amount
1	Never/Never broke the rules	21
2	Turning in prohibited places	28
3	Breaking through the traffic light	82
4	Not wearing a helmet	49
5	Using a cell phone while driving	2
6	Stop at a Stop sign	2
7	Random parking	5
8	Forget Signaling Lights	3
9	Go Against the Current on a one-way street	14
10	No rear view mirrors	1
11	No driver's license/vehicle registration certificate	3
12	Violating traffic signs/rules	9
13	Exceeding the speed limit	2

The FGD which was carried out by inviting informants from representatives of the traffic police, transportation department, motorbike community, community leaders and the Raharja Insurance Company, resulted in the same opinion, that awareness and attitudes of motorbike riders towards road rules and safety are still low. Regarding the character of road users, especially motorcyclists, the awareness of road safety and the various rules that must be obeyed is still lacking, there is no awareness among people who commit violations, so they will only obey the rules if there is the police watching. Meanwhile, they know that having a high level of discipline towards road rules will reduce the number of accidents. The behavior of road users, especially motorcyclists, needs to be constantly monitored by the police, if the police are not there, violations will occur again. Road users are not aware and do not understand the rules on the road. This means that the awareness to obey the rules of the road does not come from the heart. There are still many violations and training for motorbike riders is still being carried out by related parties. Observations were carried out at 3 different locations with a duration of 1-2 hours. One of the locations observed is the point where there

is an Electronic Traffic Law Enforcement (ETLE) camera to record violations from road users, including motorbike riders. The observation results are demonstrated in table 3.

Table 3
Observation

No	Observation	Location 1	Location 2	Location 3
1	Turn around according to procedure	381	296	310
2	Enter from the right side	381	296	310
3	Turned around in the wrong place	112	24	193
4	Entering from an unauthorized side	112	48	193
5	Motorbike riders wear helmets	493	12	503
6	Motorcyclists riding more than one pillion	0	0	3
7	Motorcyclist while using cellphone	0	0	0

Other observations made were unstructured observations of various objects related to awareness, attitudes, character values and road safety on the roads observed by the researcher. The results of this unstructured observation include: the presence/absence of road signs along the observation location, observations of the implementation of police work programs including appeals in the form of voice messages, messages via radio broadcasts, appeals using banners/advertising boards, police cooperation programs with universities, guidance for road users or especially motorbike riders who carry out violations, as well as observing various violations committed by motorbike riders while driving. The results of unstructured observations at the observation point for turning around, there are no signs for turning around at location 2 and location 3. There are no signs for not turning around at location 1 for the reverse route. The result of police collaboration with universities, one of which is the Batam State Polytechnic, is in the form of an "Order Traffic Campus". Every time at 08.00 in the morning and 05.00 in the afternoon, a voice message is heard over the loudspeaker for students who have just arrived and will be going home in the afternoon to be careful on the road. Including messages to pay attention to and obey traffic signs as well as messages that provide warnings to maintain road safety. At certain points at road crossings, billboards and banners are also installed warning road users, including motorbike riders, to always be careful on the road, wear a helmet and not use a cell phone when driving. Messages via radio broadcasts were also carried out by the police to remind road users, in collaboration with the government-owned radio station, namely Pro 2 Batam FM.

b. Data Processing Using PLS

1. Model Specifications

The structural model (inner model) and measurement model (outer model) in this research are formed based on the moderating effect of character values on the influence of motorcyclist awareness and attitudes on road safety. This model can be seen in Figure 1 below:

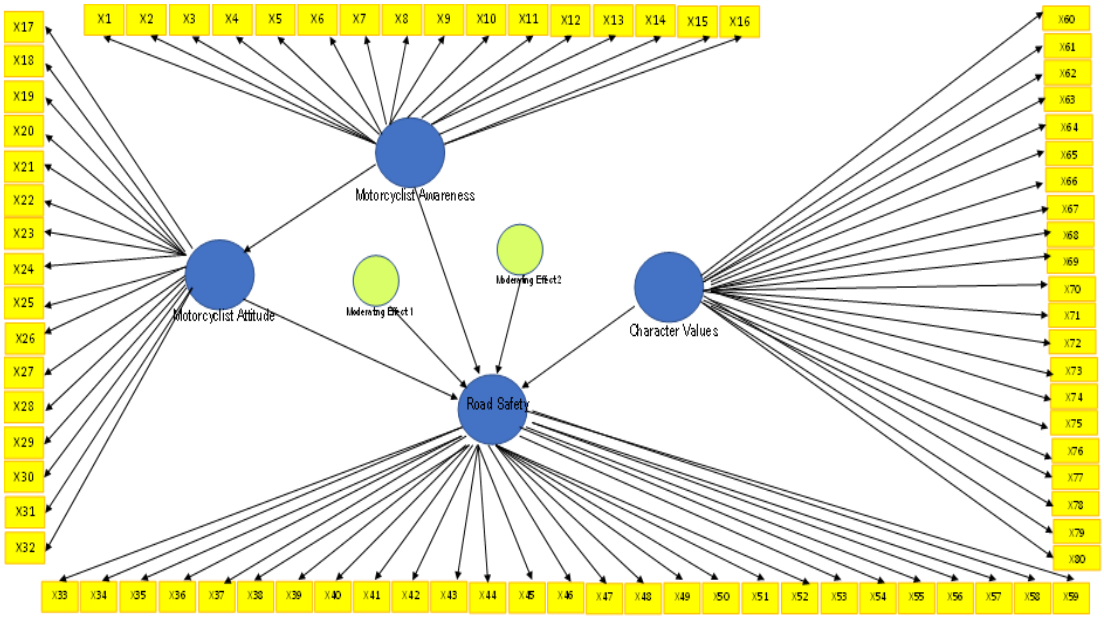

Figure 1. Model Specification

2. Estimation of Model Parameters

PLS-SEM model estimation was performed according to the variant-based PLS-SEM algorithm. The algorithm calculates path coefficients and other parameters by maximizing the variance that can be explained by endogenous variables. The data matrix is used as input in the estimation of the PLS-SEM model. Data for indicators can be obtained from questionnaire surveys or secondary databases

3. Evaluation of the Measurement Model

Evaluation of the measurement model aims to test the reliability and validity of question items in measuring the research variables of motorcyclist awareness, motorcyclist attitudes, road safety and character values. Evaluation of the measurement model was carried out using Composite Reliability Statistics (Internal Consistency), Average Variance Extracted (Convergent Validity), outer loading (Indicator Reliability), and Cross Loading (Discriminant Validity) ((Hair et al., 2014); (R. Marliana & Nurhayati, 2020)(R. Marliana & Nurhayati, 2020)). The results are depicted in the following table 4.

Tabel 4
Construct Reliability and Validity

Variable	Composite Reliability	Average Variance Extracted (AVE)
Motorcyclist awareness	0.976	0.723
Road Safety	0.958	0.467
Moderating Effect 1	1.000	0.894
Moderating Effect 2	1.000	0.867
Character Values	0.983	0.740
Motorcyclist Attitude	0.967	0.660

Information :
1. Moderating Effect 1:
Moderator Variables (Character Values) on the relationship between motorcyclist awareness and road safety
2. Moderating Effect 2:
Moderator Variables (Character Values) on the relationship between motorcyclist rider attitudes and road safety

The table 4 shows that the Composite Reliability Value for all variables is higher than 0.708. This means that the level of reliability achieved by the variables motorbike rider awareness, motorbike rider attitude, road safety, character values and the moderating effect is high. In other words, internal consistency for all constructs is quite high. Apart from the road safety variable, the Average Variance Extracted (AVE) value obtained shows the same thing. AVE values of more than 0.5 for several variables indicate that on average more than 50% of the variance of each indicator can be explained by their respective constructs. The AVE value for the road safety variable is less than 0.5 with a small difference of 0.033 which is still acceptable. Further, an examination of the outer loading value was performed for all indicators/question items on all research variables. The outer loading value on all indicators must be statistically significant with the minimum value being 0.708. In exploratory research, an outer loading value of 0.6 - 0.7 is still acceptable (Hair, 2014). However, when the obtained outer loading value is in the range of 0.4-0.7, it should be considered to be removed from the model. With a note, if the elimination or removal of the indicator from the model can increase the composite reliability value and the average variance extracted (AVE) value ((Hair et al., 2014); (R. Marliana & Nurhayati, 2020);(R. Marliana & Nurhayati, 2020)). Therefore, some indicators should be removed from the model because they have an outer loading value of less than 0.4. In addition, there are several indicators/question items that have an outer loading value of less than 0.6 but greater than 0.4, namely on the motorist awareness variable and the road safety variable. Those variables should be considered to be removed from the model if it can improve internal consistency or increase composite reliability and AVE values. Looking at the essence of the question on indicator X42 and X43 which is important information in the measurement of road safety variables, the respecification of the indicator model is still maintained. Thus, the respecification of the model is done by removing the following indicators: X4 on the Motorist Awareness variable, X2 and X32 on the variable

Attitude of motorcyclists, X46, X47, X49, X50, X55, X56, X57, X58 and X59 on road safety variables. The following picture shows the Estimation of the model after being specified by removing the indicators that do not meet the criteria.

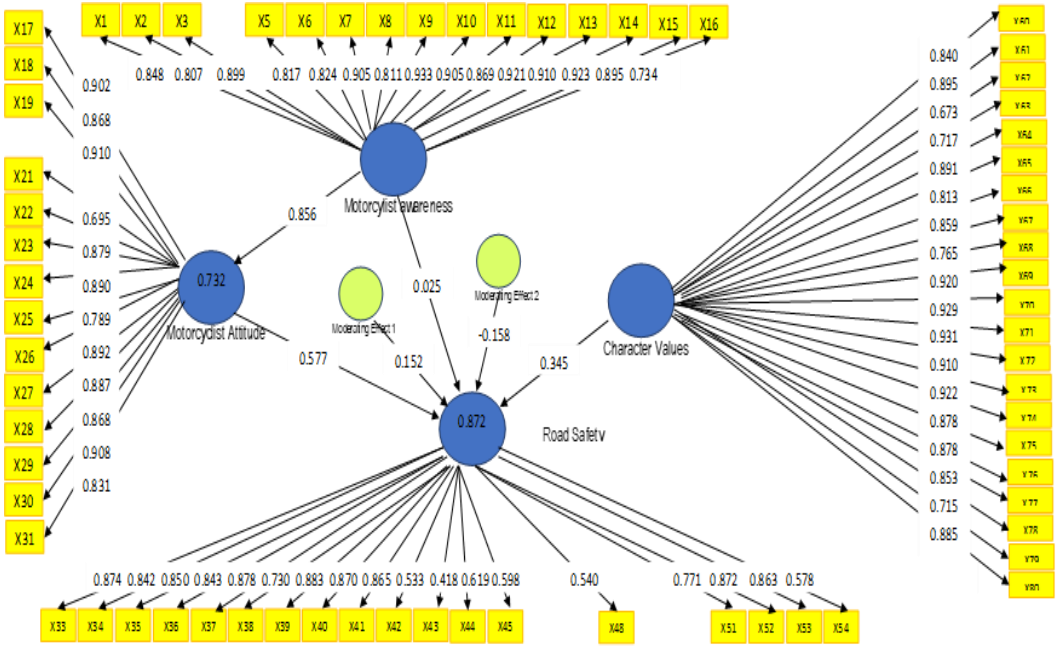

Figure 2. Model Respecification

4. Evaluation of Measurement Model Respecification Model

In the previous step it has been mentioned that the respecification of the model is done with the aim of increasing internal consistency which is shown by increasing the value of composite reliability and AVE. The respecification of the model carried out has been able to increase internal consistency with an increase in Composite Reliability and AVE values on the variables Motorist awareness, road safety and motorist attitude. Furthermore, the Discriminant Validity check was carried out through the Cross Loading value which aims to find out the extent to which each research variable differs from each other empirically. This is shown by the outer loading value of each indicator on each variable, which is the highest outer loading value compared to the value of the crossloading indicator/question item on other variables. The respecification model shows that all the outer loading values of each indicator/question item on each related variable is the highest value of the crossloading value on other variables. It can be concluded that discriminant validity has been achieved.

5. Significance and Relevance of Structural Relationships

Hypothesis testing was carried out using t test statistics with a significance level of 5% and one-party tests. The results of hypothesis testing are shown in Table 5 as follows.

Table 5
Significance of Research Hypothesis (One Tail)

Research Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Road User Awareness -> Road Safety	0.025	0.043	0.055	0.456	0.324
Road User Awareness -> Road User Attitudes	0.856	0.855	0.053	16.268	0.000
Moderating Effect 1 -> Road Safety	-0.158	-0.166	0.117	1.347	0.089
Moderating Effect 2 -> Road Safety	0.152	0.162	0.118	1.287	0.099
Character Values -> Road Safety	0.345	0.353	0.085	4.066	0.000
Road User Attitudes -> Road Safety	0.577	0.555	0.096	5.987	0.000

The results of the hypothesis test show that for H1: There is a positive influence of motorbike rider awareness on road safety. The t-statistic value obtained is 0.456 with a p-value of 0.324 indicating that the research hypothesis (H1) is rejected. The results of the hypothesis test show that for H2: There is a positive influence of motorbike riders' attitudes on road safety. The t-statistic value obtained was 5.987 with a p-value of 0.000 indicating that the research hypothesis (H2) was accepted. For Hypothesis 3: There is a positive relationship between motorbike rider awareness and motorbike rider attitudes the t-statistic value obtained was 16,268 with a p-value of 0.000 indicating that the research hypothesis (H3) was accepted. As for Hypothesis 4a: There is a significant influence of Character value on the relationship between motorcyclist awareness of road safety. The t-statistic value obtained is 1.347 with a p-value of 0.089 indicating that the research hypothesis (H4a) is rejected. For Hypothesis H4b: There is a significant influence of character values on the relationship between motorcyclist attitudes towards road safety. The t-statistic value obtained is 1.287 with a p-value of 0.099 indicating that the research hypothesis (H4b) is rejected. Furthermore, the magnitude of the joint (simultaneous) influence of the variables motorbike rider awareness, motorbike rider attitude, character values and their moderating effect on road safety is 0.872. In other words, 87.2% of the variance in changes in road safety is influenced by motorbike rider awareness, motorbike rider attitudes, character values and their moderating effects together, and the rest is influenced by other factors. This condition is demonstrated in the following table.

Table 7
Large Joint Influence (Simultaneous)

Dependent Variable	**R Square**	**R Square Adjusted**
Road Safety	0.872	0.870

Discussion

This research was carried out in Batam City, Riau Islands Province, Indonesia. The FGD data collection process was carried out in October 2022. The distribution of questionnaires in January-March 2023. Further, the observation process was carried out afterwards at three locations that were considered relevant to observe the attitude and behavior of motorcyclists. Based on the results obtained from data processing using PLS-SEM (table 1) it can be seen that the largest motorcyclist respondents are male (65%) and female (35%). Motorists are dominated by young people, 45.5% in the age group of 21-30 years, 28.4% in the age range of 17-20 years and 14.7% in the age group of 31-40 years. Most motorcyclist education is high school graduate (51.6%) followed by bachelor's degree graduate (36.9%) and diploma graduate (8.6%). Their professions are dominated by private enterprise workers (43%), students (40.1%) and government officials (5.4%). This shows that the motorcyclist respondents are dominated by men of productive age and with high school education and working as employees in the private sector. The profile of this respondent is in line with the image of Batam as an industrial city with a large number of private sector workers. The income level of the largest respondent's family is between Rp. 3,600,000-8,600,000 (56.5%) and < Rp. 3,500,000 (32.5%). This means that this level of income is below the regional minimum wage of the city of Batam in 2024, which is Rp. 4,685,050 (Diskominfo Kepri, 2023).

Respondents who have a license to drive a type C motorcycle (specific motorcycle license) are 71.4% while those who have driving licenses type A and B are around 34.4%. In order to obtain this driving permit, 72.4% of respondents took the qualification test. 82.4% of the total number of respondents have been driving a motorcycle for more than 2 years. 99.0% of respondents who admitted to understanding traffic rules. This amount is close to 100% of all respondents. From this result it can be concluded that motorcyclists understand the rules and traffic signs well. Regarding the violation of traffic rules, always violate 96.1% answer no, sometimes violate 65.5% answer no, almost never violate 64.1% answer no. Motorists drive according to the specified speed is always done by 53.3% of respondents, sometimes obeyed by 34.2% of respondents. Only 3.9% of respondents almost never ride a motorcycle according to the specified speed. Motorists who have been charged with evidence of violation once 28.4%, evidence of committing violations 2-3 times 7.8% and charged with evidence of committing violations 4-5 times only 1.2%. For motorcyclists who have had an accident once, 47.5% answered never and 54.3% answered never. Of motorcyclists who have had an accident more than once, only 22% answered that they had and 78% stated that they had never. A total of 91.7% of motorcyclists stated that they had never been the cause of an accident and 77.5% stated that they had been a victim of a traffic accident. The information provided by motorcyclist respondents shows the level of compliance with the prevailing traffic rules. Based on the questions asked regarding the possible forms of violations that have been committed so far by motorcyclists in the city of Batam, the most breaking through traffic lights, not wearing a helmet, turning in a prohibited place and going against the flow in one direction (table 2). These results strengthen the finding that awareness does not directly influence road safety which is reflected in compliance with traffic rules and signs. This condition is in line with

the findings of (Purnamasari, 2019): that the majority of respondents have a good understanding of traffic signs. That's a shame does not mean that they follow the rules despite having this understanding. Motorcyclists tend to be indifferent to the benefits and existence of traffic signs; sign violations are considered not scary even though it is punishable. Many of them have similar thoughts about something a shortcut, which is faster and easier than the right way.

The results of hypothesis testing using PLS-SEM on Table 6 show that, Hypothesis 1 (H1) is rejected. This means that there is no positive influence from motorcyclist awareness on road safety. This is reinforced by the very small influence of driver awareness on road safety, namely only 0.025. From the results of testing hypothesis 1, it can be concluded that there is a relationship between motorbike rider awareness and road safety, however this relationship is not statistically significant. This means that even though motorcyclist awareness increases, it will not have a significant impact on road safety. However, through the attitude of motorbike riders, there is a significant indirect effect of motorbike rider awareness on road safety of 0.494 with a t-statistic of 5.847 and a p-value of 0.000. The results of the FGD show that all informants stated that there is a lack of awareness among motorcyclists regarding road safety in Batam. The results of the observation also show that in three observation points there are still violations despite being in front of the ETLE camera and there are clear traffic signs.

From the profile of the respondents in this study, it was found that the number of respondents consisting of men was as much as 65.04%. The largest age group is 45.48% aged 21-30, followed by 28.36% aged 17-20. This shows that the age of motorcyclists is in the young and productive age group. In line with the results of (Joewono et al., 2015) who stated that the results of previous studies in developed countries, individual beliefs and attitudes, social norms, and perceived behavioral control have a significant influence on individual behavior in ignoring traffic rules. This condition is known to occur often among teenagers and students. Although basically they are aware that if there is a violation on the road, it will endanger the safety of the road. (Joewono & Susilo, 2017) in their study also found that young motorcyclists are affected by various levels of influencing factors in committing traffic rule violations compared to more mature motorcyclists. The study also concluded that bad habits on the road are the most influential factors for the younger generation. This situation is also in line with the study conducted by (Purnamasari, 2019) and (Alawiyah & Budimansyah, 2018) in their article also concluded that most traffic violations are committed by teenagers, because teenagers do not have good knowledge about traffic and lack emotional intelligence. According to Stein in (Alawiyah & Budimansyah, 2018), emotional intelligence is the individual's ability to recognize feelings, achieve and generate feelings to help the mind, understand feelings and interpret them, as well as deeply control feelings so as to help emotional and intellectual development. If it is related to Adkar's change model , which states that a person's change begins with awareness of something, in this case awareness of the importance of safety when driving on the road. Awareness is then supported by the desire to maintain safety, as well as knowledge and understanding regarding the traffic rules and signs that apply and must be obeyed. Only in the next stage after these four processes have been completed, there are reinforcing factors to maintain the changes that have been made. This reinforcing factor can come from within the motorcyclist or from external factors in the form of policies implemented by the police and examples from the surrounding environment, for example parents.

Hypothesis 2 (H2) is accepted. This means that there is a positive influence of motorbike riders' attitudes on road safety. This is reinforced by the large influence of driver attitudes on road safety which is moderate, namely only 0.577. The results of this hypothesis 2 test show that although there is an increase in better and more careful attitudes on the road, this will only have a "moderate" impact on road safety. Research conducted by (Joewono et al., 2019) found that young road users, especially young motorcyclists, are also known to be the most risky offenders. By looking at data on traffic accidents and their perpetrators over the past two decades, it can be concluded that young motorcyclists are consistently the most at-risk perpetrators. (Joewono et al., 2019) who cite literature in the field of psychology have researched the consistency of attitude which is the strength of attitude. Prislin (1996), quoted by Joewono et al (2019) explains that a strong attitude is an attitude that is stable over time, resistant to change, and provides a strong influence on information processing, open behavior, and the formation of new attitudes. Attitude persistence over time is positively related to the amount of experience with the attitude object, the certainty held by the attitude, the importance of the attitude, the internal consistency of the attitude, and the affective exaggeration of the attitude. In other words, the study of Joewono et al (2019) wants to show that young motorcyclists tend not to change their attitude in obeying road rules. This situation is in line with the study of (Ross et al., 2018), especially for "young male drivers", showing that attitudes towards unsafe behavior can be associated with the likelihood of engaging in distracted driving. Including behaviors such as engaging in a conversation on a cell phone while driving reduces attention to traffic. This result is also in line with the study of (Afelumo et al., 2021) with the conclusion that the overall attitude of respondents towards road safety and preventive measures is positive. The results of Wedagama's research (Wedagama, 2017) also found training and driving techniques and Motorcyclist attitudes are two important factors that negatively impact engagement motorcyclists in traffic violations and accidents. This means that the driver's attitude has a significant influence on road safety. Jothula and Sreeharshika (Jothula & Sreeharshika, 2021) show similar study results, majority of the participants were aware of road safety regulations. In spite of having positive attitude toward road safety measures by participants, they could not translate attitude into practice. Poor attitude was observed for wearing helmet for short-distance ride, pillion rider wearing helmet, and drink and drive.

Hypothesis 3 (H3) is accepted. This means that there is a positive influence from motorcyclist awareness on motorcyclist attitudes. This is reinforced by the large influence of motorbike rider awareness on motorbike rider attitudes, which is very large, namely 0.856. This means that the higher the motorcyclist's awareness of road rules and safety, the better the motorcyclist's attitude. These results are in line with research conducted by Alvisyahri (Alvisyahri et al., 2020), which examined the motorcyclist perception toward road safety according to awareness. It was found that, there was a positive correlation between Awareness of Motorcycle Riders and Riding Behavior as latent variables indicating that the awareness of motorcycle riders influences riding behavior and risk-taking behavior as part of attitude. The results of this hypothesis test are also in line with several other studies conducted by Yadollahi et al., (2019), (Leong Jie et al., 2019), (Hounkpe Dos Santos et al., 2022), (Yilmaz & Çelik, 2008), (Tabuñar, 2020), (Jothula & Sreeharshika, 2021), and (Purnamasari, 2019) as well as other studies that show a strong relationship between awareness and attitudes of road users.

Hypothesis 4a is rejected, this means that there is no significant influence of the Character value on the relationship between motorcyclist awareness of road safety. This means that even though motorbike riders have good character values, this does not mean that it will have an effect on the relationship between motorcyclist awareness of road safety. This is reinforced by the very small Influence of the Character value on the relationship between motorcyclist awareness of road safety, namely -0.158. Hypothesis 4b is also rejected, this means that there is no significant influence of the Character value on the relationship between motorcyclist attitudes towards road safety. This is reinforced by the very small influence of the Character value on the relationship between motorcyclist attitudes towards road safety, namely 0.152. However, it was concluded that character values had a positive influence on road safety with an influence of 0.345, a t-statistic value of 4.066 and a p-value of 0.000. The results of hypothesis testing 4a and 4b are strengthened by the informant's statement obtained in FGD activities, that the behavior of road users, especially motorcyclists, needs to be constantly monitored by the police, if the police are not there, violations will occur again. Road users are not aware and do not understand the rules on the road. This means that the awareness to obey the rules of the road does not come from the heart. Adkar's change model also shows that a person's awareness is shown by their knowledge of an object. If motorists do not realize that they must obey the rules and traffic signs to improve road safety. It means that motorcyclists who are dominated by young riders do not want to drive safely because they do not know about road safety. So that these drivers are not able to behave and strengthen the conditions that lead to road safety through compliance with traffic rules and signs. When related to the theory of planned behavior, (Payani et al., 2019) states in his article that the theory of planned behavior is related to intention, meaning that the possibility of someone carrying out certain activities or showing certain behavior depends on their intentions and motivation. The greater the intention and motivation the more likely it is to do so. The Theory of Planned Behavior proposes three main factors to assess a driver's intentions, a. Self-efficacy (perceived ability): self-efficacy is an ability to accomplish a specific behavior which is rated by the person depending on how much they are willing to do that behavior. It means how much they want to do something regardless to the fact that they are capable to do it or not. b. Attitude: studies show that if people find out that doing a specific behavior have some positive outcomes for them, they have more tendency to perform that particular behavior. In counter, if they found that it has some negative outcome it leads them to have a negative attitude toward that behavior. c. Social norms: psychological studies prove that most of the behaviors are associated with social norms. Which described as felling of pressure by society, family, friend and peers to comply or not comply with a particular behavior. In practice, the attitudes of motorbike riders in this study were heavily influenced by environmental factors. If observed, this behavior is imitated by peers, other drivers, and even parents. Many parents allow their children to ride motorbikes, without telling them about the restrictions that must be obeyed when riding. (Payani et al., 2019) in his article also states that the theory of planned behavior explains behavior as the result of intentions that fail to take into account the fact that some behavior is unplanned and sometimes irrational. He quotes from Gibbons and Gerrard (1995) who put forward a new theory about the willingness model which explains behavior change in particular among young people. Their study shows that young drivers' behavior is less predictable across the board different situations, due to their lack of driving experience and their more emotional attitude which forms the basis of their judgment and makes them take greater risks than other drivers.

Based on the results obtained, it is known that character values have a positive influence on road safety with a large influence of 0.345. This shows that a person's character values will influence their mindset towards traffic signs, road rules and road safety. The better a person's character, the safer he will be when riding a motorbike. The higher the discipline, responsibility, concern for the safety of others and the more religious he is, the greater his safety on the road will be.

Conclusion/Implications for Research/Policy

This study discovered that, the motorcyclist respondents are dominated by men of productive age and with high school education and working as employees in the private sector. Statistical test results show (1) there is no positive influence from motorcyclist awareness on road safety. This is reinforced by the very small influence of driver awareness on road safety, namely only 0.025. The t-statistic value obtained is 0.456 with a p-value of 0.324; (2) there is a positive influence of motorbike riders' attitudes on road safety. This is reinforced by the large influence of driver attitudes on road safety which is moderate, namely only 0.577. The t-statistic value obtained was 5.987 with a p-value of 0.000 indicating that the research hypothesis (H2) was accepted; (3) there is a positive influence from motorcyclist awareness on motorcyclist attitudes. This is reinforced by the large influence of motorbike rider awareness on motorbike rider attitudes, which is very large, namely 0.856 and the t-statistic value obtained was 16,268 with a p-value of 0; (4) there is no significant influence of the Character value on the relationship between motorcyclist awareness of road safety. The t-statistic value obtained is 1.347 with a p-value of 0.089 indicating that the research hypothesis (H4a) is rejected; (5) there is no significant influence of the Character value on the relationship between motorcyclist attitudes towards road safety. This is reinforced by the very small influence of the Character value on the relationship between motorcyclist attitudes towards road safety, namely 0.152. The t-statistic value obtained is 1.287 with a p-value of 0.099. However, it was concluded that character values had a positive influence on road safety with an influence of 0.345, a t-statistic value of 4.066 and a p-value of 0.000.

The suggestion that can be submitted to the authorities is that the duty of the police should be fully supported by involving stakeholders from academics, cross-religious figures, related government departments, schools, universities and especially parents who have the obligation to build and set a good example for their children in obeying the prevailing traffic rules. As well as instilling character values such as discipline, responsibility, religiousness and tolerance towards others, especially in obeying the rules and traffic signs to achieve safety on the road.

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