Development Of Traffic Safety On Roads In The Progress Of Electric Bicycle Technology In The Jurisdiction Of The Bali Police

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Abstract

The widespread use of electric bicycles in Indonesia, which is starting to grow, hasgiven rise to pros and cons among the wider community. There are those who support it withthe aim of saving, but quite a few criticize it because it is used by more children and threatenssafety. Not to mention that there are a number of users who roam freely on the highway withoutpaying attention to a number of existing regulations. Progress in the transportation sector hasultimately encouraged developments in terms of legislation and transportation habits. The law isactually able to keep up with developments compared to the times. The current popularity ofelectric bicycles is progress in the field of transportation, but unfortunately this is not supportedby mature regulations.Although electric bicycles are very practical to use and make it easy for many peopleto ride them, even the elderly. It is also important to remember that electric bicycles are not yetincluded as the main mode of transportation and are registered in Indonesia because thecapacity of electric bicycles is limited and there are licensing issues. In this condition, theposition of electric bicycles can be said to face a legal vacuum as a result of things that are notregulated by law. There are no legal norms that specifically target vehicles with some criteriabeing motorized vehicles and others being non-motorized vehicles.

I. Introduction

Global warming, caused by an increase in the Earth's average temperature as are sul to fincreased green house gas emissions, has become a highly concerne dissue around the world. This increasein temperature can lead to significant environmental consequences, including rising sea levels, changes in extreme weather patterns, and decreased availability of natural resources. In contrast, the scarcity offossilfuelssuch ascoalandpetroleumraisesconcernsaboutdependence on limited resources and their negative effects on the environment.The vehicle industry plays a crucial role in developing sustainable solutionsto both problems. Eco-friendly vehicles, such as electric bicycles, areone of the solutions that are being developed. (Citra Fatwa Rahmadani, 2023). Electric motorcycles do not use fuel oil. Instead, they work withelectric motors powered by dynamosand accumulators because using electricpower as an energy source, electric bikes are a profitable and environmentally friendly alternative. Inaddition, inan effort to reduce green house gasemissions, thevehicle industry is concentratingon hybrid technology and hydrogen-powered vehicles. (Parinduri, 2018) The presence of electric bicycles brings a new mobility approach that also colors the transportation field globally. In its operation, electric bicyclesare indeed designed as an environmentally friendly means of transportation that encourages the use of renewable energy.

The source of energy in electric bicycles comes from rechargeable batteries, thus pollution due toe missions the use of motor vehicles such as HC (Hydrocarbons) 3.57g/km, CO (CarbonDioxide) 3.15g/km, CO21.82g/kmandNOx (Nit rogen Oxides) of 2.29 g/km can be avoided. In addition to being environmentally friendly, electric bicycles are also a compatible means of transportation to maintain The health of the body whenit is about to start an activity, so common reasons such as not having enough time to exercise can be circumvented in the most effective and efficient way.

The rise of the use of electric bicycles in Indonesia, which is starting to look growing, makes its use give rise to pros and cons in the wider community. There are thosewho supportthepurposeof saving, but not a few criticizeit because its use is more

children and threatens safety. Not to mention that there area number of users who roam freely on the highway without heeding. a number of existing regulations. (Nurizqa Salsabila, 2020) The progress of this transportation sector has finally encouraged the development in terms of legislation and transportation habits. The lawis actuallyable to keep up with the development compared to the development of the times. With the rise of electric bicycles, it is currently an advancein the field of transportation, but unfortunatelyit is not supported by mature regulations.

Although electric bicyclesare verypracticalto use and make it easierfor manypeopleto ride them, even for the elderly. Also keep in mind that electric bicyclesare not included as the main mode of transportation and are registered in Indonesia due to limited capacityof electric bicycles and licensing problems. In this condition, the position of electric bicycles can be said to face a legal vacuum as a result of things thatare not regulated by law. There is no legal norm that specifically targets vehicles with some criteria for motorized vehicles and othersfornon-motorized vehicles.(QorinaAqila, 2023)

For the safety of the user, do not use this electric bike on the highway. In addition, electric bicycles should only beuse don special road sort our is attractions with a maximum speed of 25 km/handare only operated by adults. However, electric bikes are stillused by many people, and children often ride them. The government is increasing lyproviding electric bicycles because of the large number of electric bicycles in the community, both in citie sand in rural areas. This electric bike is increasingly popular because of the demands of lifestyle and trends, as well asits affordable price for the middletoupper class.This is very worrying because the possibility of accidents involving electric bicycle usersis very large and causes many problems, many problems regarding the use of electric bicycles that cause many accidents, so it is interesting to conductre search morein-depthabout the Development of Traffic Safety on the Highway in the Advancement of Electric Bicycle Technology in the Jurisdiction of the Bali Police, wherethe purpose ofthe researchis specified to preparethe concept of safetyinthe use of electric bicycles.

Problem Formulation

1. How are the road safety arrangements for electric bicycle users in the jurisdiction ofthe Bali police ?
2. How to prevent and deal with the violation of electric bicycle users in thejurisdiction of the Bali Police ?

2. Research Method

This research uses an empirical juridical method with a qualitative approach . The resultsof this discussion led to the formation of the construction of the concept of Road Traffic SafetyDevelopment in the Advancement of Electric Bicycle Technology in the Bali Police region. Theconcept is further carried out SWOT analysis in which there is a consideration of the urgency ofRoad Safety Development in the Advancement of Electric Bicycle Technology in the Bali Policeregion . The end result is in the form of recommendations that will be poured into constructingthe concept more specifically and can be poured into the contents of lecture materials such asCriminal Law , Law and Society.

3. Results and Discussion

Regulations on Electric Bicycles and Electric Scooters in the Bali Police refer to theRegulation of the Minister of Communications Number PM 45 Year 2020 on Certain VehiclesUsing Electric Motor Drives . The regulation of electric scooters and electric bicycles isregulated specifically in Permenhub 45/2020. An electric scooter is defined as a specific vehiclewith a small wheel size with mechanical equipment in the form of an electric motor with two ormore wheels with a seat and a footboard and/ or pedals that are moved by the feet and/ or mechanical equipment in the form of an electric motor driving machine to run it. Meanwhile,an electric bicycle is a specific vehicle that has two wheels equipped with jghmechanicalequipment in the form of an electric motor.

When you use an electric scooter or electric bicycle , it is necessary to observe the safetyrequirements on the vehicle as stipulated in Permenhub 45/2020. For electric scooters , the safetyrequirements include :

a. Headlight
b. position lamp or reflector at the rear;

c. light reflectors on the left and right;
d. a brake system that functions properly;
e. horn or bell; and
f. a maximum speed of 25 km/h.

Meanwhile, the safety requirements for electric bicycles are:

a. headlight
b. a reflector or rear position light;
c. a brake system that functions properly;
d. reflectors on the left and right;
e. horn or bell; and
f. a maximum speed of 25 km/h.

Rules for Using Electric Bicycles and Electric Scooters on Roads

Everyone who uses an electric scooter or electric bicycle must fulfill the following conditions:

a. wearing a helmet;
b. the age of the user is at least 12 years old;
c. not allowed to carry passengers except for electric bicycles equipped with passenger seats;
d. not allowed to make motor power modifications that can increase speed;
e. understand and obey traffic rules including:
f. using vehicles, namely scooters and electric bicycles in an orderly manner with due regard to the safety of road users;
g. giving priority to pedestrians
h. maintaining a safe distance from other road users; and
i. driving certain vehicles with full concentration.

It should be noted that in scooter and electric bicycle users aged 12 to 15 years ,then vehicle users must be accompanied by an adult .

Further , electric scooters and bicycles can be operated on :

1. **special lanes** , namely bicycle lanes or lanes provided specifically for certain vehicles usingelectric motor drives ; and/ or
2. **certain areas** , which include residential areas , roads designated for car free days , tourist areas, areas around mass public transport facilities as part of certain vehicles using integrated electricmotors , office areas , and areas off the road .

If no special column is available , then electric scooters and bicycles can be operated on thesidewalk with sufficient capacity that is, it must accommodate a certain number of pedestriansand vehicles as well as pay attention to the safety of pedestrians.

Thus, basically, electric bikes and electric scooters cannot be used on public roads or highways, because their use must be in special lanes and special areas. If there is no dedicated lane on the road, then the rider can use the sidewalk provided that the sidewalk is wide so that it does not interfere with the safety of pedestrians.

Regarding the question about children using electric scooters and bicycles, basically children aged 12 years and above are allowed to ride them. With a note, children aged 12 - 15 years old must be accompanied by a parent or adult.

Potential Electric Bike Traffic violations

The potential for traffic violations that can happen to electric bicycle users includes severalaspects that need to be carefully observed (Yusnanda , 2023). First , is a violation related tospeed . Although electric bicycles have speed limits that have been arranged , there is still thepotential of using electric bicycles at speeds exceeding the set limit , resulting in trafficviolations (Surajiman et al., 2013) . Second , is a violation related to the use of safetyequipment . If electric bicycle users do not use equipment such as helmets , light reflectors ,or brake systems that work properly , then this can be considered a traffic violation thatthreatens the safety of themselves and other road users .

Violations can also occur related to the use of certain columns or areas that are not inaccordance with the rules (Hidayati & Hendrati, 2016). The use of electric bicycles in placesthat should not be allowed , such as sidewalks that do not have sufficient capacity or speciallanes that are not provided , can be considered a traffic

violation . In addition , violations canalso occur if electric bicycle users transport passengers without having a suitable passengerseat or if they make modifications that can increase the speed of the electric bicycle beyondthe permitted limit . This is in accordance with the violation committed on the DenpasarHighway, which violates use electric bikes on the road because there is no type test .However , many violators have electric bikes on the road . On average, it is used by schoolchildren , they do not use helmets, and the speed is more than 25 kilometers per hour.

Factors that are the main cause of traffic violations in electric bicycle users (Setyowati etal., 2018). First , the lack of knowledge of electric bicycle users about traffic regulations thatapply specifically to electric bicycles is a significant factor . A lack of understanding of therules can cause electric bike users to not comply with appropriate traffic restrictions andprocedures . Furthermore , the lack of awareness among electric bicycle users of theimportance of keeping themselves and other road users safe is also a contributing factor toviolations . Lack of understanding of the risks that can occur as a result of traffic violationscan make electric bicycle users more likely to break the rules . In addition , the lack ofsupervision by traffic officers is also a cause of violations . The absence of adequatesupervision can give electric bike users the opportunity to commit violations without fear will sanctions given .

Cases of violations related to the use of electric bicycles on the road are common these days. This is due to a mismatch between the facts on the ground and the applicable laws in Indonesia. The non-compliance of electric bicycle users can threaten their own safety and that of other road users. According to the IMRS data of the Korlantas Polri, from January 2023 to August 2023, there have been 107 recorded cases of accidents involving electric bicycles on the highway.Satria Virgian,2023)

Some jurisdictions may classify electric bicycles as motor vehicles, while others consider them as regular bicycles. These differences can affect the legal requirements that drivers must meet, such as the requirement to have a driver's license, vehicle registration, and compliance with motor vehicle safety standards. Many electric cyclists may be unaware of or ignore applicable rules, such as speed limits, use of designated lanes and safety requirements. This lack of knowledge and awareness can

increase the risk of accidents and conflicts with other road users.

Traffic Violation Prevention Strategy

A traffic violation is an act committed by someone who is driving a public vehicle or motorized vehicle and pedestrians that is contrary to the applicable laws and regulations (Nurfauziah & Krisnani, 2021). The importance of preventing traffic violations is urgent and relevant in maintaining the security and safety of all road users, including pedestrians (Buntara, 2019). This is because traffic violations can pose serious risks, such as traffic accidents, physical injuries and loss of life. In addition, traffic violations can also disrupt the smooth flow of traffic and create dangerous conditions for the general public. Prevention of traffic violations also contributes to maintaining an orderly and disciplined society. By preventing traffic violations, a safe, orderly, and respectful traffic culture can be created among road users (Rahawarin, 2017). This will support the creation of a more harmonious environment, free from the risk of accidents or incidents that could jeopardize the safety and well-being of the community.

Efforts to prevent traffic violations for electric bicycle users can be carried out through several strategic steps (Siregar et al., 2022). The first is to increase electric bicycle users' knowledge of traffic regulations that relate specifically to the use of electric bicycles. This can be done through counseling, information campaigns, and training on safe and appropriate traffic rules and procedures. Secondly, it is important to raise electric bicycle users' awareness of the importance of safety when riding. This involves campaigns to build awareness of the possible risks of traffic violations and the importance of prioritizing personal safety as well as that of other road users. Education on the use of safety equipment such as helmets, light reflectors, and working brake systems also needs to be emphasized. Furthermore, increased supervision by traffic officers plays an important role in preventing violations. Traffic officers can carry out special enforcement operations against electric bicycle users, give warnings or sanctions to those who violate the rules, and set a positive example about the importance of obeying traffic laws (Nasution, 2023). Consistent and integrated

implementation of these three measures is expected to create a safer and more orderly traffic environment for electric bicycle users. The combination of adequate knowledge, high awareness, and effective supervision will help prevent traffic violations and improve safety and harmony on the road (Rahmadhan, 2020).

It is very important for electric bicycle users to be educated about the applicable traffic rules. Users should have a strong understanding of how to use electric bicycles safely and correctly. This education can be done through various means, such as safety campaigns, counseling, and training. It is expected that electric bicycle users will be more cautious and compliant with current regulations. To ensure compliance with the current regulations, law enforcement is also very important. The rules made will not function properly without effective law enforcement. Therefore, violations of the rules must be strictly punished, such as fines or administrative sanctions. To create a culture of discipline among electric bike users, so consistent application of the law will help.

Therefore, a strong and comprehensive legal system is needed to increase the use of electric bicycles in Indonesia. To improve public compliance with traffic regulations, there should be clear rules regarding the sanctions that apply to the misuse of electric bicycles. The government should inform people about the regulations, classification, and infrastructure needed to support the use of electric bicycles.

3. Conclusion

Electric bicycles have become one of the most popular modes of transportation in Indonesia in recent years. Electric bicycles have many advantages compared to other modes of transportation, such as being more energy efficient, producing no pollution, and being easy to ride. However, electric bicycles also have the potential to cause traffic violations. Traffic violations that are often committed by electric bicycle users are not wearing helmets, not turning on lights at night, and not obeying traffic signs. Traffic violations committed by electric bicycle users can endanger themselves and other road users. Therefore, it is necessary to prevent traffic violations for electric

bicycle users. Efforts to prevent traffic violations for electric bicycle users can be done in various ways, namely increasing the knowledge of electric bicycle users about traffic regulations related to electric bicycles, increasing the awareness of electric bicycle users about the importance of safety when riding and increasing supervision by traffic officers.

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