

# Analysis of the Influence of Perception on Safety Riding Behavior in the Sumbawa Community

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**Abstract:** Unsafe driving behavior can have several negative impacts on society. Motorcyclists who exhibit safe and law-abiding driving behaviors are essential in minimizing the risk of accidents on the road. Perception plays a crucial role in driving safety, as it allows individuals to interpret and comprehend information received through their senses. This ability is crucial in identifying potential hazards and making quick decisions to avoid accidents. This study aims to analyze the influence of perceptions on safe driving behavior. Additionally, it observes the driving behavior of motorcyclists between urban and rural areas in Sumbawa. The research adopts a quantitative approach with a comparative study design. The sample consists of 100 respondents selected through purposive sampling and divided into two regions. The statistical analysis using simple linear regression in SPSS version 16.0 shows a significance value of 0.04 with an 8.1% influence for perception on safe driving behavior. The T-test results for safety riding observations in urban and rural areas in Sumbawa indicate a T-test of 0.886. In conclusion, there is a significant but very weak influence between perception and safe driving behavior. The observation results show no difference in driving behavior between urban and rural areas in Sumbawa.

**Keywords:** Behavior; Perception; Safety Riding

## Introduction

Unsafe riding can have several negative impacts on public health. Traffic accidents are a very serious issue that occurs in many countries especially in developing countries, where complex transportation issues often become a major concern. Currently, the global death rate due to traffic accidents stands at 1.24 million per year. However, estimates indicate that this number will triple to 3.6 million per year by 2030 (Bastuti & Alfatiyah, 2022). The number of traffic accidents with the motorcyclists involved is significant and is even on the rise (Topol & Dragan, 2016).

The study conducted by (Chand, 2015), titled "Drivers' Attitude Towards Risk-Taking Behavior, "

measures drivers' views and attitudes towards various behavioral factors that can contribute to road accidents, including adherence to traffic rules, distractions, and negligence. The research utilizes a descriptive and exploratory research design to examine how drivers react to these risk-taking behaviors. Risky driving behavior is one aspect or variable of dangerous driving behavior. Essentially, this behavior encompasses all forms of dangerous driving or driving behavior but is not intentionally shown to harm themselves or other drivers. Also included in this risky driving behavior are those that have the potential to endanger other drivers, passengers, as well as pedestrians and other road users (Yanuvianti et al., 2020).

Global research indicates that many individuals are unaware of their driving behavior and the factors that

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influence their behavior while driving (ARMARTPUNDIT et al., 2010). Traffic accidents are the leading cause of death among young people aged 15-29 years. Approximately 90% of these fatalities occur in low- and middle-income countries, as these nations account for about half of the world's vehicles. Half of those who lose their lives in traffic accidents are vulnerable road users, such as pedestrians, cyclists, and motorcyclists (Setyowati et al., 2019).

Here are three ways in which unsafe riding can affect public health. Firstly, it can be increased risk of accidents and injuries. Unsafe riding practices, such as not wearing helmets or protective gear, disregarding traffic rules, and riding under the influence of alcohol or drugs, can significantly increase the risk of accidents and injuries. These accidents can result in severe physical injuries, including head trauma, fractures, and internal injuries, which can have long-term consequences on the health and well-being of individuals. Secondly, burden on healthcare systems. The increase in accidents and injuries due to unsafe riding practices can significantly burden healthcare systems. Treating injuries resulting from accidents requires medical resources, including emergency services, hospitalization, surgeries, and rehabilitation. This can strain healthcare facilities and divert resources away from other critical healthcare needs (Dube et al., 2021). Lastly, Impact on mental health. Unsafe riding practices and the resulting accidents can also have a negative impact on mental health. Individuals who have been involved in accidents may experience trauma, anxiety, and depression. Accidents' physical and emotional toll can lead to long-term psychological consequences, affecting individuals' overall well-being and quality of life (Azizah et al, 2022).

Promoting safe riding practices through education, enforcement of traffic laws, and infrastructure improvements is important to mitigate these negative effects on public health. By prioritizing safety and adopting responsible riding behaviors, individuals can contribute to a safer and healthier community (Joewono and Kubota, 2006). Perception plays a crucial role in safety riding. It is the ability to interpret and make sense of the information received through the senses. Perception is essential in identifying potential hazards and making quick decisions to avoid accidents. Perception plays a crucial role in safety riding. Good perception allows riders to identify potential hazards, react quickly, and avoid accidents. Visual and auditory perception, reaction time, and risk perception are all important factors in safety riding. Riders should be aware of their perception and take steps to improve it if necessary (Sagberg, F., & Bjørnskau, T., 2006).

Perception in the context of safe riding refers to the ability of a rider to interpret and make sense of the information received through the senses. Perception is

essential in identifying potential hazards and making quick decisions to avoid accidents. Perception affects safe riding in several ways, including visual perception, auditory perception, reaction time, and risk perception (Rosenbloom et al., 2008). Visual perception is the most important sense in riding, as it allows riders to see the road, other vehicles, and potential hazards. Poor visual perception can lead to accidents. Auditory perception is also important in safe riding, as it allows riders to hear other vehicles, horns, and sirens. Poor auditory perception can lead to accidents. Reaction time is another factor affected by perception. Good perception allows riders to react quickly to potential hazards, reducing the risk of accidents. Risk perception is the ability to assess the level of risk associated with a particular situation. Good risk perception allows riders to avoid potentially dangerous situations (Slovic, 2016).

Studies have shown that advanced training can improve motorcycling hazard perception skills. Additionally, riders' perceptions and experiences of riding and risk can influence their advice for safety (Alvisyahri et al, 2020). Riders' perceptions of risk when riding can also vary based on age and riding experience (Alvisyahri et al, 2020). In conclusion, perception is a crucial factor in safe riding. Good perception allows riders to identify potential hazards, react quickly, and avoid accidents. Visual and auditory perception, reaction time, and risk perception are all important factors in safe riding. Riders should be aware of their perception and take steps to improve it if necessary. Hazardous situations significantly impact every dimension of risk perception and risky driving behavior (Maulina et al., 2018).

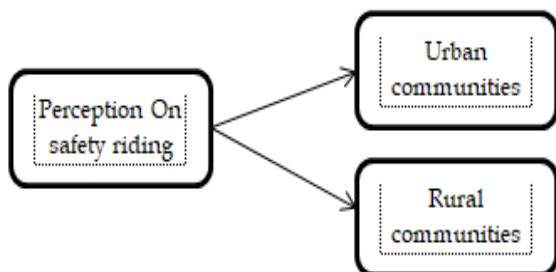
Driver age is not significantly correlated with hazard assessment, but individual differences in the perception of risky driving behaviors that violate norms can predict hazard assessment. This indicates that sensitivity to driving-related risks, in general, plays a crucial role in safety perception. In both urban and rural settings, there is a significant relationship between hazard assessment and inherent safety risk, with low-risk changes consistently considered less hazardous than high-risk impact changes; however, the effect is more pronounced in urban environments. The type of object also influences assessment, with certain objects consistently rated as more safety-relevant. In urban environments, changes involving pedestrians are significantly rated as more hazardous than all other objects, while in rural settings, changes involving animals are rated as significantly more hazardous. It is noteworthy that hazard assessments are found to be higher in urban driving environments compared to rural ones, even when similar changes are observed in both settings (Cox et al., 2017).

The purpose of this study is to analyze the influence of perceptions on safe driving behavior. In addition, this study also observes the driving behavior of motorcyclists between urban areas and rural areas. This is intended to determine whether there are differences between the two areas.

**Method**

This research is classified as a comparative quantitative study. Quantitative research is a quantitative approach where the data is in numerical form and processed using statistical methods. Quantitative tools were discussed in terms of their suitability for conducting comparative analyses, as they are believed to simplify complexity, identify and categorize similarities and differences, and enhance the generalizability of findings (Reale, 2013). A comparative study is conducted to determine the degree of difference in variables between two different groups. The objective of this research is to examine the influence of perception on Safety Riding among urban and rural communities.

This study focuses on two population groups residing in urban and rural areas of Sumbawa Regency. The research sample consists of 100 respondents, with 50 individuals in each group, selected using purposive sampling technique.



**Figure 1.** Conceptual Framework

The criteria for selecting the 100 respondents are as follows: 1) Residents living in Sumbawa, and 2) Willing to participate as respondents. The data collection method aims to reveal facts about the variables under investigation. Data is collected through the distribution of questionnaires using Google Forms and observation sheets. Statistical tests used in this research include simple linear regression to examine the influence of perception on Safety Riding and independent samples t-test to analyze the differences in Safety Riding behavior between urban and rural communities.

**Result and Discussion**

*Respondent Characteristics Data*

**Table 1.** Respondents' Educational Level

Education	Group		Total
	Urban	Rural	
Primary/Junior High school	0	1	1
Senior High School	16	12	28
D3	7	13	20
Bachelor's Degree	25	23	48
Master's/Doctoral Degree	2	1	3
Total	50	50	100

Table 1 illustrates that the majority of respondents in both groups have a Bachelor's Degree (S1) education level.

**Table 2.** Respondent Characteristics Based on Gender

Gender		Group		Total
		Urban	Rural	
Gender	Male	13	13	26
	Female	37	37	74
Total	50	50	100	

Table 2 indicates that the majority of respondents, both in urban and rural groups, are females.

**Table 3.** Respondent Age

Age (Years)		Group		Total
		Urban	Rural	
Age (Years)	<18	1	1	2
	18-25	38	24	62
	26-35	11	19	30
	36-45	0	6	6
Total	50	50	100	

Table 3 explains that both in urban and rural areas, the majority of respondents fall within the age range of 18-25 years.

**Table 4.** Characteristics Based on Motorcycle Types

Motorcycle Type		Group		Total
		Urban	Rural	
Motorcycle Type	Scooter	38	42	80
	Standard (Bebek)	3	2	5
	Trail	1	2	3
	Do Not Own a Motorcycle	8	4	12
Total		50	50	100

Table 4 indicates that both urban and rural groups have the same predominant motorcycle type, which is the scooter (Matic).

**Table 5.** Characteristics Based on Driver's License

		Group		Total
		Urban	Rural	
Driver's License	No Driver's License	27	15	42
	< 1	4	3	7
	1-5	9	9	18
	>5	10	23	33
Total		50	50	100

Table 5 indicates that in the urban group, the majority of respondents do not have a driver's license, while in the rural group, the majority have held a driver's license for more than 5 years.

**Table 6.** Characteristics Based on Age of Commencing Driving

		Group		Total
		Urban	Rural	
Age of Commencing Driving (Years)	< 15	13	13	26
	15-17	24	18	42
	18-20	12	13	25
	21-24	0	4	4
	>25	1	4	5
Total		50	50	100

**Table 7.** Bivariate Test Results of Perception's Influence on Safety Riding

Variable	Sig.	R-square
Influence of Perception on Safety Riding	0.04	8,1 %

Table 7 Indicates that the significance value shows a significant relationship between perception and safe driving behavior. This is indicated by the significance value of  $0.04 < 0.05$ . The R-square value, which represents the influence of the perception variable on behavior, is only 8.1%. This indicates a weak influence, suggesting that there may be other unexamined factors that have a greater impact on driving safety.

**Table 8.** Bivariate Test Results of Respondents' safety riding between Urban and Rural Areas

Mean	Urban	4.28
	Rural	4.22
T-Test		0.886

Table 8 The observation results indicate that there is no difference in driving behavior between urban and rural areas.

Motorcyclists who exhibit safe and law-abiding driving behaviors are essential in minimizing the risk of accidents on the road. The results of this study show that there is a significant relationship between perception of safety riding and driving behavior. The bivariate test results demonstrate a significance value of 0.04, which is smaller than the set alpha ( $\alpha$ ) of 0.05. This indicates that the relationship between perception and driving behavior is statistically significant. Traffic accidents are typically caused by a combination of individual and environmental factors. Young motorcyclists have a significantly higher number of fatalities in traffic accidents involving motorcycles (Siti Zun Nurain & Mohd Razelan, 2022).

Negative perceptions of danger are reflected in their belief that they can drive at high speeds on the road without accidents, as long as they use standard safety equipment, influencing their behavior while driving on the highway. Unsafe driving behavior can harm both the riders and others. emphasize the importance of continuously nurturing positive perceptions to strengthen them and improve safety-related behaviors (Setyowati et al., 2019). They engage in risky driving behavior, which is one aspect of dangerous driving behavior (Yanuvianti et al., 2020). The elevated fatality rate among motor vehicle drivers and riders is impacted by the perception of a reduced risk of accidents during driving (Irawan et al., 2021).

Based on the study titled "The Relationship Between Risk Perception and Driving Safety Behavior on the Risk of Motorcycle Accidents in Palangka Raya City," the research findings reveal that risk perception has a significant positive relationship with driving safety behavior, and driving safety behavior has a positive relationship with the risk of accidents (Wiranatha et al., 2021). This is also consistent with research conducted by Hartoyo et al (2022) on the simultaneous correlation of workload, fatigue, work stress, and traffic conditions with safety driving perception. Driving that prioritizes safety, considering the well-being of drivers and other road users, is carried out to reduce traffic accidents and their consequences (Prima et al., 2015). Safety is an endeavor conducted to address traffic accidents resulting from various factors, including human elements.

Perception of driving safety refers to an individual's process of interpreting safety while driving. Good motorcyclists should possess a positive perception. Analyzing the R-square value of 8.1%, we can conclude that perception of driving only accounts for 8.1% of the influence on driving behavior. This indicates that there are other factors that have a greater impact on driving



behavior compared to perception. Other factors that may influence driving behavior include educational level, driving experience, knowledge of traffic regulations, traffic conditions, and the availability of road infrastructure.

The safety factor in riding is significantly influenced by the determinants of traffic violations and the completeness of safety attributes. This indicates that if drivers comply with traffic regulations, it will affect safety riding, such as being cautious and focused while driving, paying attention to rear-view mirrors, and being considerate of other road users (Anggraini et al., 2022). The majority of motorcyclists' habits involve intentionally committing traffic violations. The habit of violating traffic rules has become a cultural norm among motorcycle riders in Indonesia, as there is a very low societal discipline in following traffic regulations (Lady et al., 2020).

This study conducted observations on riders in urban and rural areas. Several aspects were observed, including the use of mobile phones while driving, wearing helmets correctly, using helmets that meet safety standards (SNI), complying with the appropriate age for driving, obeying traffic signs and speed limits, using turn signals when turning or stopping, checking mirrors when changing lanes, and maintaining a safe distance from other vehicles. Table 8 shows the observation results, indicating no difference in driving safety behavior between residents in urban and rural areas. Safe driving behavior is crucial for all motor vehicle drivers to prevent traffic accidents. In addition to practicing safe driving, conducting vehicle inspections is highly important for motorcycle riders as it relates to safety and comfort while driving. Pre ride inspections are essential to avoid unsafe conditions while driving (Muryatma, 2018).

Driving two-wheeled vehicles should be supported by good driving knowledge, so that traffic regulations can be adhered to and road safety can be achieved. Furthermore, the enforcement of driving standards such as helmet usage and valid driving documents should also be considered (Saputra et al., 2021). Most accidents at traffic light junctions involve motorcycles and other vehicles (Uttra et al., 2020). An individual's safe motorcycle driving actions consist of three crucial behaviors, including obeying traffic laws and regulations, not drinking and driving, and wearing a proper helmet while riding a motorcycle (Yothayai et al., 2011).

Safety riding behavior includes three aspects: before, during, and after riding. Behavior such as checking the motorcycle's brakes, tires, lights, and mirrors is essential to determine their functionality and suitability, enabling proper maintenance and repair of the motorcycle. While riding, one of the behaviors

includes carrying necessary documents like a driver's license (SIM C) and vehicle registration (STNK), and wearing safety apparel such as a jacket, shoes, gloves, and a mask. One of the post-riding behaviors is regularly servicing the motorcycle. Based on research conducted by (Prima et al., 2015), it was found that 74% of respondents do not perform pre-ride checks on their vehicles, and only 47% always use safety apparel while riding.

This study also found that there is no difference in driving behavior between urban and rural areas. This indicates that awareness and safe driving behavior are not dependent on geographical location but are more related to individual perceptions and awareness of driving safety. The perceived safety of the environment affects an individual's perception of safety, and this effect diminishes in rural areas (Sales et al., 2021). Self-reported risk-taking behavior of rural and urban drivers related to driving behaviors that may lead to fatal accidents, as well as attitudes toward safety interventions using a large-scale survey (Rakauskas et al., 2009). Compliance with traffic regulations is lower in rural areas compared to urban areas, and this has contributed to an increased risk of fatalities and traffic accidents in rural areas (Bukova-Zideluna et al., 2019).

The results of this research have important implications for the development of road safety programs. The traffic safety campaign is not entirely supported by the existing regulations (KARTIKA et al., 2009). Road safety program development should consider psychological factors and individual perceptions of driving safety. Additionally, these programs should be adapted to meet the needs of communities in various locations, both in urban and rural areas.

This research contributes to the understanding of the importance of driving perceptions and how they influence driving behavior. However, the study has some limitations. The research sample may not fully represent the entire population of drivers in urban and rural areas. Furthermore, the study only focused on the perception factors related to safety riding and did not consider other factors that may influence driving behavior.

## Conclusion

This research indicates that there is a significant but very weak influence between perception and safe driving behavior, suggesting that there are other unexplored factors that have a greater impact on driving safety. The observation results show that there is no difference in driving behavior between urban and rural areas. Recommendations for further research include

delving deeper into variables related to factors influencing safety riding and exploring the reasons for the lack of difference in safety riding between urban and rural areas.

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#### Author Contributions

Conceptualization: Rafi'ah, data curation: Iga Maliga, funding acquisition: Ana Lestari, methodology: Herni Hasifah, visualization: Validation: Asri Reni Handayani, writing-original draft: Rafi'ah-Iga Maliga, writing-review & editing: Iga Maliga.

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#### Conflicts of Interest

No Conflicts of interest.

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