IDENTIFYING COMPLIANCE LEVELS IN SAFETY BELT USAGE IN BANGKINANG CITY, KAMPAR REGENCY

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Abstract

Technology plays a pivotal role in the advancement of automobile production, particularly in enhancing vehicle safety. Effective car design contributes significantly to accident prevention and ensures the protection of both drivers and passengers in the event of collisions. Safety features such as seat belts are crucial in this regard, as they secure occupants inside the vehicle during impacts, thereby minimizing injury. According to AKBP Rido Purba, the extent of legal non-compliance is evident from the high incidence of traffic violations in the Kampar Regency. During the 2022 Lancang Kuning Safety Operation conducted by the Kampar Police Traffic Unit, a total of 669 violations were recorded. Among these, the most frequent violations included failure to wear a helmet (111 cases), failure to use a safety belt (81 cases), driving without a valid license (61 cases), and disregarding road markings and traffic signs (23 cases). This study aimed to assess the compliance level regarding the use of safety belts in Bangkinang City and to identify factors influencing compliance. The research focused on Bangkinang City within Kampar Regency. Samples consisted of 100 respondents selected through accidental sampling. Data collection employed a questionnaire, and analysis utilized the chi-squared test. Findings indicated a high average compliance score of 3.45, suggesting strong adherence to safety belt usage. Factors influencing compliance included internal variables such as knowledge, skills, and experience, alongside external factors like social influences and environmental conditions.

Keywords: Compliance, Safety Belt Usage.

INTRODUCTION

Technology plays a pivotal role in the advancement of automobile production, contributing to the creation of high-quality vehicles. Such vehicles assist drivers in accident avoidance and protect both drivers and passengers in the event of collisions (Astari & Banowati, 2020). To mitigate accidents, vehicles are outfitted with safety mechanisms, specifically seat belts. These safety features secure vehicle occupants, ensuring they remain inside the vehicle during collisions and minimizing the severity of impacts (Zaini *et al*., 2022).

Bangkinang City serves as the administrative center of Kampar Regency within Riau Province. As of 2022, the population of Bangkinang City was recorded at 38,182 individuals according to the Civil Registration Office of Kampar Regency (2022). Moreover, Kampar Regency boasts a total vehicle count of 566,341 units, comprising 40,319 passenger cars, 129 buses, 25,977 regular cars, and 499,561 motorcycles (Electronic Registration Identification, 2023). According to AKBP Rido Purba, the inadequate enforcement of traffic regulations is underscored by the substantial number of violations recorded in Kampar Regency. During the 2022 Lancang Kuning

Security Operation conducted by the Kampar Police Traffic Unit, a total of 669 violations were documented. Among these, fines were issued for 204 violations, while warnings were issued in 476 instances. The most prevalent violations included 111 cases of helmetless driving, followed by 81 cases of seat belt non-compliance, 61 cases of driving without a valid driver's license, and 23 cases of disregarding road markings and traffic signs. In 2022, the Kampar region reported a total of 255 accidents, with resolutions in 216 cases, accounting for 84.70%. Kampar Police Chief AKBP Didik Priyo Sambodo attributed human error as the primary cause of these accidents.

Research Objectives

This study aims to achieve the following objectives:

1. Assessing the compliance level of safety belt usage in Bangkinang City.

2. Identifying the factors that influence compliance with safety belt usage in Bangkinang City.

Research Benefits

The benefits of this study are as follows:

1. This study serves as a valuable reference for researchers seeking to understand the extent of compliance in safety belt usage.

2. For the authors, it offers an opportunity to apply theoretical knowledge acquired in academic settings to real-world transportation challenges.

3. This research provides valuable insights into safety belt usage patterns and levels of compliance.

Literature Review

Nathanael & Putranto (2018) conducted a study entitled "*Analysis of Compliance Levels among Drivers and Passengers of Private and Public Vehicles Regarding Seat Belt Usage.*" Their analysis revealed notable increases in seat belt usage percentages at four study locations, alongside significant decreases at three others. Survey findings highlighted that respondents' adherence to seat belt usage was influenced by police presence, travel location, and time of travel. The presence of law enforcement officers was particularly noted on Jl. Halim Perdanakusuma during data collection.

Anthony (2018) investigated "*Perceptions of Driving Safety Risks and Seat Belt Usage Behavior among Truck Drivers.*" The study's data processing and analysis concluded that factors such as skills, knowledge, and work environment significantly impact seat belt usage.

Zaini *et al*. (2022) conducted a study titled "*Compliance with Safety Belt Usage: A Case Study of Lecturers at the Islamic University of Riau, Pekanbaru.*" The study findings reveal that 75% of lecturers at the Islamic University of Riau who drive four-wheeled vehicles demonstrate good driving safety practices, while the remaining 25% exhibit lower levels of driving safety. These safety risks are influenced by various internal and external factors such as knowledge, skills, experience, social influences, and environmental conditions. Among lecturers driving four-wheeled vehicles, 95% correctly use safety belts, whereas 5% do not adhere to proper safety belt usage.

Almost all respondents are knowledgeable about seat belt regulations and road safety measures, unanimously agreeing that safety belts should be worn at all times and at any driving speed.

METHODS

This study adopted a survey methodology employing a quantitative approach. Data were gathered via questionnaires distributed to drivers of four-wheeled vehicles in Bangkinang City. The questionnaires employed a 5-point Likert scale ranging from "*very poor*" to "*excellent*," necessitating validity and reliability assessments. Validity testing was crucial to ensure the questionnaire's accuracy in capturing respondent data, while reliability testing was employed to assess its consistency in measuring research variables. Both validity and reliability tests were conducted using SPSS Version 16 statistical analysis software, employing the chi-squared test. The employed sampling technique was accidental sampling, where researchers randomly selected individuals encountered during data collection. The sample size was determined using Slovin's formula with a critical value of 10%.

Formula:

$$n = \frac{N}{1 + N_{e^2}}$$
$$n = \frac{66.425}{1 + (66.425)(0,1^2)}$$
$$n = 99,84 \approx 100$$

Therefore, the sample size for this study comprised 100 respondents.

The observation sites included four-wheeled vehicle drivers navigating through Bangkinang City, encompassing students, university students, civil servants/employees, and the general public, as determined by the sample size.
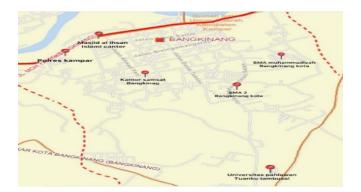

Figure 1. Research Location

Figure 2. Traffic Conditions in Bangkinang City

The data collected from these research sites consisted of questionnaire responses obtained from 100 respondents. The data collection involved observations and measurements in the field, including questionnaires distributed to students, university students, civil servants/employees, and the general public traveling through Bangkinang City.

According to Nuryadi *et al*. (2017), the chi-squared test can be computed using the following formula.

$$X^2 = \frac{\sum(f_0 - f_e)}{f_e}$$

Where:

X^2 = Chi-squared value

f_0 = Observed frequency

f_e = Expected frequency

Results and Discussion

Based on the sample size calculation, this study utilized 100 respondents. To determine the questionnaire's usability, a validity test was conducted. An instrument is deemed valid if its statements reliably measure what the questionnaire intends to assess. In the validity test, a sample of 100 respondents passing through the research location was surveyed. The critical *r* value obtained from $N - 2 = 100 - 2 = 98$ (referencing the *r* table with a significance level of 0.05) resulted in *r* critical = 0.1966. The validity is affirmed as all results indicate that the calculated *r* exceeds the critical *r*, validating the research instrument for data collection. Furthermore, a reliability test was conducted on the validated statement items. A variable demonstrates reliability if responses to questions consistently align. Instrument reliability assesses the consistency of responses to statement items among respondents. The calculations were performed using SPSS Version 16 software, showing a Cronbach's alpha value above 0.6, specifically 0.789. Therefore, it can be concluded that the variable measuring compliance in safety belt usage is considered reliable.

1. Safety Belt Usage

Table 1. Frequency Distribution of Safety Belt Usage

Items	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean
	F	Score	F	Score	F	Score	F	Score	
X6.1	47	188	45	135	5	10	3	3	3.36
X6.2	52	208	46	138	2	4	0	0	3.50
X6.3	52	208	46	138	2	4	0	0	3.50
Overall average									3.45

Source: Data Analysis, 2024

Based on data collected from respondents via questionnaires, the community of Bangkinang City demonstrates a highly positive attitude towards safety belt usage, reflected in an average score of 3.45 across all variables.

Notes:

X6.1: Community members consistently wear safety belts while driving, regardless of distance.

X6.2: Community members consistently encourage passengers to wear safety belts.

X6.3: Community members consistently wear safety belts while driving or as passengers in vehicles.

2. Chi-Squared Test

Table 4. Results of the Chi-Squared Test

Chi-Squared Tests					
	Value	*df*	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson's Chi-Squared	1.030[a]	1	.310		
Continuity Correction[b]	.029	1	.866		
Likelihood Ratio	.767	1	.381		
Fisher's Exact Test				.347	.347
Linear-by-Linear Association	1.019	1	.313		
N of Valid Cases	100				

Source: Data Analysis, 2024

In Table 2, a significance value of 0.310 (> 0.005) was found, indicating that there is a significant relationship between knowledge and safety belt usage.

3. Multicollinearity Test

Table 5. Results of the Multicollinearity Test

Coefficients^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Knowledge	.859	1.164
	Environmental Conditions	.775	1.290
	Experience	.496	2.015
	Ability	.626	1.598
	Social Influence	.918	1.089
a. Dependent Variable: Safety Belt Usage			

Source: Data Analysis, 2024

According to Table 3, the tolerance values for the variables "*Knowledge*," "*Environmental Conditions*," "*Experience*," "*Ability*," and "*Social Influence*" on Safety Belt Usage exceed 0.10. Moreover, the variance inflation factor (VIF) values are below 10, confirming that all variables satisfy the tolerance and VIF criteria. Hence, it can be concluded that there is no multicollinearity among the independent variables.

CONCLUSION

The compliance level for safety belt usage, averaging 3.45, reflects a high degree of adherence to safety belt protocols. This adherence is influenced by both internal and external variables such as knowledge, skills, experience, social influence, and environmental conditions.

RECOMMENDATIONS

In this research, knowledge and environmental conditions emerge as the factors exhibiting the highest values among others. Therefore, residents of Bangkinang City are encouraged to enhance their understanding of road safety continually and to foster favorable environmental conditions conducive to safety belt usage. This effort entails promoting awareness about the critical importance of wearing safety belts, given that some individuals only comply when encountering police or poor road conditions. It is anticipated that the community will prioritize consistent safety belt usage during all driving scenarios, both short and long distances, to mitigate potential risks associated with road safety. Law enforcement authorities are encouraged to conduct public safety awareness campaigns in Bangkinang City, underscoring governmental dedication to enhancing road safety measures.

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