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Safety Driving Factors on Palm Oil Transporting Trucks

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ABSTRACT
As many as 67% of accident victims in 2011 were between the ages of 22 and 50, according to WHO data. There were around 400 thousand victims under the age of 25, with a death toll of 1000 children and teenagers every day on average throughout this time period. PT. Tapian Nadenggan Langga Payung was the focus of this study, which sought to identify the elements that contributed to the safety of oil palm transport trucks. Analytical research with a cross-sectional approach was the research design employed. There are 35 people in total, all of whom work as oil palm fruit truck drivers. In this case, total sampling was employed as the method of sampling. For the knowledge collected from the chi-square test findings, the p value (0.270) was found to be greater than the 0.05 threshold for p value (0.000) based on age and safe driving. Physical Fatigue, on the other hand, has a p value (0.000) 0.05 in the chi-square test. No one's age has any bearing on how safe they are on the road when driving. Driving oil palm transport trucks for PT. Tapian Nadenggan Langga Payung was made more dangerous by lack of experience and exhaustion. Companies should ask their employees, especially truck drivers, to participate in safety driving instruction before they get behind the wheel of a truck.

Keywords: Safety driving, Age, Knowledge, Physical fatigue

INTRODUCTION

When it comes to supporting and facilitating the growth of nations and states, transportation has taken on a new significance in the age of globalization (Boakye et al., 2022; Bezyak et al., 2020; Nelson & Sadowsky 2019). Production, distribution, and consumption are all intertwined in the economy of a community. Transportation capital is needed for these activities (Huang 2021). Transportation is the means through which raw resources are transported from the point of origin to the point of use (Nunes et al., 2020). Consumers also travel to the market or place of service because of transportation (Cochran, 2020). Although transportation has a positive impact on people, it can also have a negative impact in the event of an accident Accidents are the top cause of death in the world for those between the ages of 10 and 24, according to the World Health Organization (Porcu et al., 2020; Liao et al., 2022; Lyapin et al., 2019). After coronary heart disease and tuberculosis/TB, WHO considers road accidents in Indonesia to be the third leading cause of death in the country in the past two years (Asiri et al., 2021; Umniyatun et al., 2021; Islaeli et al., 2020). Human irresponsibility and an increase in motorized vehicle ownership are the primary causes of the country's rising accident rate. As of 2012, the Indonesian police reported that 109,038 accidents occurred in the country, resulting in 27,441 deaths and a possible socio-economic loss of roughly Rp. 203 trillion to Rp. 217 trillion every year (2.9 to 3.1%). In 2011, there were 109,776 accidents, with a mortality toll of 31,185.

There are more than 250 million workplace accidents and more than 160 million worker illnesses per year, according to the International Labour Organization (ILO). In addition, 1.2 million workers die each year as a result of work-related accidents and illnesses (Al Zarooni et al., 2022). Human and social costs of production are too high, according to the numbers. According to data from Jakarta, there were 98,711 incidents of workplace injuries and illnesses in 2010. There were 48,511 work-related accidents in the first half of 2011, according to data from the first quarter of 2011. According to the sources of the accident, machineries, transport planes and hand tools were the main culprits (Awan & Al, 2019). Collisions, contact with sharp objects resulting in scratches, wounds, punctures, and so on, and being hit by falling are the most prevalent types

of incidents. As a result, one of the measures to enhance drivers disciplined conduct is the provision of training on how to drive appropriately and safely (safety driving) (Xu et al., 2018). To further limit the number of accidents resulting from driver negligence, this strategy can be employed.

METHODS

The research design used is analytical research with a cross sectional approach, namely research that tries to explore how and why this phenomenon occurs the population in this study were all truck drivers transporting oil palm fruit at PT. Tapian Nadenggan Langga Payung totalling 35 people. Sampling in this study is to use the total population, namely all truck drivers at PT. Tapian Nadenggan Langga Payung. The sample in this study was 35 people.

RESULTS

Characteristics of Respondents

Table 1.
Distribution by Age of Oil Palm Truck Drivers

Age (Year)	Total	
	f	%
< 30 Years	4	11,4
30 - 40 Years	19	54,3
< 40 Years	12	34,3
Total	35	100,0

Source: Research Results

It can be seen that there are 19 truck drivers aged 30-40 years (54.3%), truck drivers aged <40 years are 12 people (34.3%) and truck drivers aged <30 year amounted to 4 people (11,4%).

Table 2.
Distribution by Education of Oil Palm Truck Drivers

Education	Total	
	f	%
Primary School	4	11,4
Junior high school	11	31,4
Senior High School	20	57,1
Total	35	100,0

Source: Research Results

It can be seen that there are 20 truck drivers with high school education (57.1%), 11 people with junior high school education (31.4%), and 4 people with elementary school education (11.4%).

Univariate Analysis

Table 3.
Distribution by Driver's License for Oil Palm Transporting Trucks

Driving license	Total	
	f	%
Do not have	7	20,0
Have	28	80,0
Total	35	100,0

Source: Research Results

It can be seen that there are 28 truck drivers who have a driver's license (80.0%) and 7 people who do not have a driver's license (20.0%).

Table 4.
Distribution by Knowledge of Oil Palm Transport Truck Drivers

Knowledge	Total	
	F	%
Well	11	31,4

Enough	12	34,3
Not enough	12	34,3
Total	35	100,0

Source: Research Results

It can be seen that there are 12 people with sufficient knowledge of truck drivers (34.3%), those with less knowledge are 12 people (34.3%) and those with good knowledge are 11 people (31.4%).

Table 5.

Distribution According to Physical Fatigue Knowledge of Oil Palm Transport Truck Drivers

Physical fatigue	Total	
	f	%
Light	14	40,0
Heavy	21	60,0
Total	35	100,0

Source: Research Results

It can be seen that the truck drivers who experienced severe physical fatigue were 21 people (60.0%) and those who experienced mild physical fatigue were 14 people (40.0%).

Table 6.

Distribution by Safety Driving on Oil Palm Transport Truck Drivers

Safety Driving	Total	
	f	%
Well	14	40,0
Not enough	21	60,0
Total	35	100,0

Source: Research Results

It can be seen that there are 21 people who are lacking safety driving for truck drivers (60.0%), and good safety driving for truck drivers is 14 people (40.0%).

Bivariate Analysis

Age Factor with Safety Driving on Oil Palm Transport Truck Driver

Table 7.

Cross Age Tabulation with Safety Driving on Oil Palm Transport Truck Drivers

Age	*Safety Driving*						*P Value*
	Good		Less		Total		
	f	%	f	%	f	%	
< 30 Years	1	2,85	3	8,57	4	11,42	0,270
30-40 Years	6	17,14	13	37,14	19	54,28	
> 40 Years	7	20	5	14,28	12	34,28	
Total	14	40,0	21	60,0	35	100,0	

Source: Research Results,

Above, it is known that from 19 people (54.28%) respondents aged 30-40 years with good safety driving behaviour are 6 people (17.14%), and safety driving behaviour is less totalling 13 people (37.14%). Of the 12 people (34.28%) of respondents aged > 40 years with good safety driving behaviour, there were 7 people (20%), and 5 people (14,28%). Of the 4 (11.42%) respondents aged < 30 years with good safety driving behaviour, 1 person (2.85%) and less safety driving behaviour amounted to 3 people (8.57%). The results of the chi-square test show the p value (0.270) > 0.05. Thus, it can be concluded that age does.

Knowledge Factors with Safety Driving on Oil Palm Transport Truck Drivers

Table 8.

Cross Tabulation of Knowledge with Safety Driving on Oil Palm Transport Truck Drivers

Knowledge	*Safety Driving*						*P Value*
	Good		less		Total		
	f	%	f	%	f	%	
Well	9	25,71	2	5,71	11	31,42	0,000
Enough	5	14,28	7	20	12	34,28	

Not enough	0	0	12	34,28	12	34,28
Total	14	40,0	21	60,0	35	100,0

Source: Research Results,

Above, it is known that from 12 people (34.28%) respondents who have less knowledge with less safety driving behaviour are 12 people (34.28%), and there are no respondents who have good safety driving behaviour. that of 12 people (34.28%) respondents who have sufficient knowledge with good safety driving behaviour are 5 people (14.28%). There are 7 people who have less safety driving behaviour (20.0%). that of 11 people (31.42%) respondents who have good knowledge with good safety driving behaviour are 9 people (25.71%). There are 2 people who have less safety driving behaviour (5.71%). The results of the chi-square test showed the p value (0.000) < 0.05. Thus, it can be concluded that Knowledge Affects Safety Driving on Oil Palm Transport Truck Drivers at PT. Tapian Nadenggan Langga Payung.

Factors of Physical Fatigue with Safety Driving on Oil Palm Transport Truck Drivers

Table 9.
Cross-Tabulation of Physical Fatigue with Safety Driving on Oil Palm Transport Truck Drivers

Physical Fatigue	***Safety Driving***						***P Value***
	Good		**less**		**Total**		
	f	**%**	**f**	**%**	**f**	**%**	
Mild	12	34,28	2	5,71	14	40,0	
Heavy	2	5,71	19	54,28	21	60,0	0,000
Total	14	40,0	21	60,0	35	100,0	

Source: Research Results,

Above, it is known that from 21 people (60.0%) respondents who experienced severe fatigue with good safety driving behaviour were 2 people (5.71%) and 19 people who had less safety driving behaviour (54, 28%). that of 14 people (40.0%) respondents who experienced mild fatigue with good safety driving behaviour amounted to 12 people (34.28%). There are 2 people who have less safety driving behaviour (5.71%). The results of the chi-square test show the p value (0.000) < 0.05. Thus, it can be concluded that Physical Fatigue Affects Safety Driving of Oil Palm Transport Truck Drivers.

Multivariate Analysis

Table 10.
Model Summary

Model	**R**	**R Square**	**Adjusted Square**	**Std. Error of The Estimate**
1	.793[a]	.629	.593	.317

Explanation on Model Summary

The R value of 0.793 indicates that the correlation between the dependent variable (safety driving) and the independent variable (Age, Knowledge, Physical Fatigue) is strong. Adjusted R 0.593 means that the independent variables (Age, Knowledge, Physical Fatigue) contribute 59.30% influence on the dependent variable Safety Driving.

Anova (F Test / Simultaneous Test)

Table 11.
ANOVA[b]

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**
Residual	5.284	3	1.761		
regression	3.116	31	0,101	17.523	0,000[a]
Total	8.400	34			

Predictors = (Constant), Physical Fatigue Category, Respondent Age, Knowledge Category. The calculated F value obtained is 17,523 with a significance of 0.000. With a probability of 0.000. Less than 0.05 (p = 0.05) then simultaneously (F test) there is an effect of the independent variables of age, knowledge and physical fatigue on the dependent variable, namely safety driving.

Coefficient (t test / Partial test)

Table 12.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.279	.313	-	.889	.381
respondent's age	.020	.087	.027	.235	.816
knowledge category	.180	.090	.298	2.008	.053
physical fatigue category	.568	.152	.568	3.740	.001

Dependent Variable: safety driving category

From the results of the coefficient table for the Age variable, the Sig value is 0.816 > from p: 0.05; means that there is no effect of Age Variable with Safety Driving. From the results of the coefficient table for the Knowledge variable, the value of Sig is 0.053 < from p: 0.05; means that there is an influence of Knowledge Variable with Safety Driving. From the results of the coefficient table for the Physical Fatigue Variable, the Sig value is 0.001 < from p: 0.05; means that there is an effect of Physical Fatigue Variable with Safety Driving.

DISCUSSION

Age factor with safety driving on oil palm transport trucks at PT. Tapian Padenggan Langga Payung based on table 7 above, it is known that from 19 people (54.28%) respondents aged 30-40 years with good safety driving behaviour are 6 people (17.14%), and safety driving behaviour is less totalling 13 people (37.14%). Of the 12 people (34.28%) of respondents aged > 40 years with good safety driving behaviour, there were 7 people (20%), and 5 people (14,28%). Of the 4 (11.42%) respondents aged < 30 years with good safety driving behaviour, 1 person (2.85%) and less safety driving behaviour amounted to 3 people (8.57%). The results of the chi-square test show the p value (0.270) > 0.05. Thus, it can be concluded that age does not affect safety driving for oil palm truck drivers at PT Tapian Nadenggan Langga Payung.

Knowledge factors with safety driving on oil palm transport trucks at PT. Tapian Nadenggan Langga Payung based on table 8 above, it is known that from 12 people (34.28%) respondents who have less knowledge with less safety driving behaviour are 12 people (34.28%), and there are no respondents who have good safety driving behaviour. that of 12 people (34.28%) respondents who have sufficient knowledge with good safety driving behaviour are 5 people (14.28%). There are 7 people who have less safety driving behaviour (20.0%). that of 11 people (31.42%) respondents who have good knowledge with good safety driving behaviour are 9 people (25.71%). There are 2 people who have less safety driving behaviour (5.71%).

The chi-square test yielded a p value of (0.000) 0.05 as a result. As a result, it can be inferred that Oil Palm Transport Truck Drivers at PT. Tapian Nadenggan Langga Payung were safer because of their knowledge. A person's actions are profoundly influenced by their level of cognitive or knowledge (Lomas et al., 2021; Balakrishnan & Arimand, 2019). Adopting a new behaviour requires information, awareness and a good attitude (Rowland et al., 2022; Yan et al., 2019) in order for it to be long-lasting and beneficial to one's life. Because of the lack of information and awareness in the behaviour, it won't endure long. The researcher's hypothesis is that information has a significant impact on safe driving (Ahmed et al., 2018; Dehkordi et al., 2019; Yang et al., 2021). The more one knows about safe driving, the better one's behaviour will be (Sun et al., 2020; Haramak & Nishino 2019; Fan et al., 2021). On the other hand, the less one knows about driving, (Farooq et al., 2019) the worse one is at it.

CONCLUSION

Knowledge and physical exhaustion both have an impact on oil palm transport truck drivers' ability to drive safely. Driving instruction that prioritizes the safety of both drivers and passengers is built on the foundation of safety driving. In order to improve the driver's awareness of all possible scenarios, safety driving is devised. Preparation and self-awareness go hand in hand with safe driving. It is hoped for truck

drivers to take part in safety driving training and increase awareness in driving to avoid accidents.

REFERENCES

Ahmed, M. M., & Ghasemzadeh, A. (2018). The Impacts of Heavy Rain on Speed and Headway Behaviours: An Investigation Using the SHRP2 Naturalistic Driving Study Data. *Transportation Research Part C: Emerging Technologies*, *91*, 371-384. https://doi.org/10.1016/j.trc.2018.04.012

Al Zarooni, M., Awad, M., & Alzaatreh, A. (2022). Confirmatory Factor Analysis of Work-Related Accidents In UAE. *Safety Science*, *153*, 105813. https://doi.org/10.1016/j.ssci.2022.105813

Asiri, A. M., Alomary, S. A., Alqahtani, S. A., Adam, I. F., & Amer, S. A. (2021). Determinants Of the Underlying Causes of Mortality During the First Wave Of COVID-19 Pandemic in Saudi Arabia: A Descriptive National Study. *International Journal of Environmental Research and Public Health*, *18*(23), 12647. https://doi.org/10.3390/ijerph182312647

Awan, M. S. K., & Al Ghamdi, M. A. (2019). Understanding The Vulnerabilities in Digital Components of An Integrated Bridge System (IBS). *Journal Of Marine Science and Engineering*, *7*(10), 350. https://doi.org/10.3390/jmse7100350

Balakrishnan, K., & Arjmand, E. M. (2019). The Impact of Cognitive and Implicit Bias on Patient Safety and Quality. *Otolaryngologic Clinics of North America*, *52*(1), 35-46. https://doi.org/10.1016/j.otc.2018.08.016

Bezyak, J. L., Sabella, S., Hammel, J., Mcdonald, K., Jones, R. A., & Barton, D. (2020). Community Participation and Public Transportation Barriers Experienced by People with Disabilities. *Disability And Rehabilitation*, *42*(23), 3275-3283. https://doi.org/10.1080/09638288.2019.1590469

Boakye, J., Guidotti, R., Gardoni, P., & Murphy, C. (2022). The Role of Transportation Infrastructure on The Impact of Natural Hazards on Communities. *Reliability Engineering & System Safety*, *219*, 108184. https://doi.org/10.1016/j.ress.2021.108184

Cochran, A. L. (2020). Understanding The Role of Transportation-Related Social Interaction in Travel Behaviour and Health: A Qualitative Study of Adults with Disabilities. *Journal of Transport & Health*, *19*, 100948. https://doi.org/10.1016/j.jth.2020.100948

Dehkordi, S. G., Larue, G. S., Cholette, M. E., Rakotonirainy, A., & Rakha, H. A. (2019). Ecological And Safe Driving: A Model Predictive Control Approach Considering Spatial and Temporal Constraints. *Transportation Research Part D: Transport and Environment*, *67*, 208-222. https://doi.org/10.1016/j.trd.2018.11.010

Fan, Y., Gu, F., Wang, J., Wang, J., Lu, K., & Niu, J. (2021). Safe driving: An Effective Abnormal Driving Behaviour Detection System Based on EMG Signals. *IEEE Internet Of Things Journal*.

Farooq, D., Moslem, S., & Duleba, S. (2019). Evaluation Of Driver Behaviour Criteria for Evolution of Sustainable Traffic Safety. *Sustainability*, *11*(11), 3142. https://doi.org/10.3390/su11113142

Haramak, T., & Nishino, H. (2019, May). An Improved Safe Driving Training System Based on Learning of Driving Behaviours. In *2019 IEEE International Conference on Consumer Electronics-Taiwan (ICCE-TW)* (Pp. 1-2). IEEE. https://doi.org/10.1109/ICCE-TW46550.2019.8991822

Huang, Q. (2021). Analysis On the Impact of Transportation Safety on Economic Development in The Context of Cooperative Development. *Advances In Transportation Studies*.

Islaeli, I., Purnamasari, A., Nofitasari, A., Said, F. M., & Hassan, H. C. (2020). Health Education on The Knowledge of First Aid in Traffic Accidents in Students at Tunas Husada High School Kendari, Indonesia. *Malaysian J. Med. Heal. Sci*, *16*(5), 38-42.

Jing, L., Shan, W., & Zhang, Y. (2022). Risk Preference, Risk Perception as Predictors of Risky Driving Behaviors: The Moderating Effects of Gender, Age and Driving Experience.

Journal of Transportation Safety & Security, 1-26. https://doi.org/10.1080/19439962.2022.2086953

Liao, X., Zhou, T., Wang, X., Dai, R., Chen, X., & Zhu, X. (2022). Driver Route Planning Method Based on Accident Risk Cost Prediction. *Journal of Advanced Transportation*, *2022*. https://doi.org/10.1155/2022/5023052

Lomas, T., Waters, L., Williams, P., Oades, L. G., & Kern, M. L. (2021). Third Wave Positive Psychology: Broadening Towards Complexity. *The Journal of Positive Psychology*, *16*(5), 660-674. https://doi.org/10.1080/17439760.2020.1805501

Lyapin, S. A., Rizaeva, Y. N., Kadasev, D. A., & Kadaseva, I. M. (2019, November). Improving The Efficiency of Accident Response Services in Intelligent Transportation and Logistics Systems. In *2019 1st International Conference on Control Systems, Mathematical Modelling, Automation and Energy Efficiency (SUMMA)* (Pp. 627-632). IEEE. https://doi.org/10.1109/SUMMA48161.2019.8947616

Nelson, E., & Sadowsky, N. (2019). Estimating The Impact of Ride-Hailing App Company Entry on Public Transportation Use in Major US Urban Areas. *The BE Journal of Economic Analysis & Policy*, *19*(1). https://doi.org/10.1515/bejeap-2018-0151

Nunes, L. J. R., Causer, T. P., & Ciolkosz, D. (2020). Biomass For Energy: A Review on Supply Chain Management Models. *Renewable And Sustainable Energy Reviews*, *120*, 109658. https://doi.org/10.1016/j.rser.2019.109658

Porcu, Fabio, et al. "Evaluating Bus Accident Risks in Public Transport." *Transportation Research Procedia* 45 (2020): 443-450. https://doi.org/10.1016/j.trpro.2020.03.037

Rowland, D., Zanello, G., Waliyo, E., & Ickowitz, A. (2022). Oil Palm and Gendered Time Use: A Mixed-Methods Case Study from West Kalimantan, Indonesia. *Forest Policy And Economics*, *137*, 102682. https://doi.org/10.1016/j.forpol.2021.102682

Sun, Y., Bi, Y., Han, Y., Xie, D., & Li, R. (2020). Research On Safe Driving Behaviour of Transportation Vehicles Based on Vehicle Network Data Mining. *Transactions On Emerging Telecommunications Technologies*, *31*(5), E3772. https://doi.org/10.1002/ett.3772

Umniyatun, Y., Nurmansyah, M. I., Farradika, Y., Purnama, T. B., & Hidayat, D. N. (2021). Motorcycle Risky Behaviours and Road Accidents Among Adolescents in Jakarta Metropolitan Area, Indonesia. *International Journal of Injury Control and Safety Promotion*, *28*(3), 339-346. https://doi.org/10.1080/17457300.2021.1928229

Xu, J., Liu, J., Sun, X., Zhang, K., Qu, W., & Ge, Y. (2018). The Relationship Between Driving Skill and Driving Behaviour: Psychometric Adaptation of The Driver Skill Inventory in China. *Accident Analysis & Prevention*, *120*, 92-100. https://doi.org/10.1016/j.aap.2018.07.032

Yan, Y., Dai, Y., Li, X., Tang, J., & Guo, Z. (2019). Driving Risk Assessment Using Driving Behaviour Data Under Continuous Tunnel Environment. *Traffic Injury Prevention*, *20*(8), 807-812. https://doi.org/10.1080/15389588.2019.1675154

Yang, Z., Sun, L., & Huo, Y. (2021). Adaptation Of the Safe Driving Climate Among Friends Scale in Chinese Drivers and Its Associations with Risky Driving Behaviours. *Transportation Research Part F: Traffic Psychology and Behaviour*, *78*, 299-307. https://doi.org/10.1016/j.trf.2021.02.019