

Innovative Road Safety Management at Roi Et Highway District

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Received: April 17, 2022; Revised May 16, 2022;

Accepted: May 17, 2022; Published online: May 30, 2022

Abstract

The purpose of this research is to examine road safety management in the Roi Et Highway District and investigate road safety management guidelines in the Roi Et Highway District. This research applies a combination of quantitative and qualitative methods. The research sampled 400 drivers of automobiles on Roi Et Province's roadways, with only Roi Et Province-registered vehicles. Six senior supervisors at the Roi Et provincial level involved in road maintenance or traffic were significant informants in the in-depth interview.

The survey discovered that the public's perception of the variables influencing the Roi Et Highway District's road safety management is that the agency always inspects and fixes damaged roads to keep them in excellent condition. For guidance on establishing safety management systems to address road safety concerns: 1) Engineers wish to upgrade the road layout to a "Smart Road" with automated warning lights and to raise the road standards. 2) In terms of education, public relations, and involvement, the public should raise knowledge and alter driving behavior about driving concerns. 3) Law enforcement should be vigorously enforced, including public education on the law or enforcement in order to effectively enhance the discipline of road driving. 4) Training should be conducted to ensure that the emergency medical system in Roi Et Province has the necessary knowledge and abilities, and the local service unit should have a first aid unit. Additionally, the number of rescuers should be proportionate to the size of the hospital in order to deliver services promptly. 5) Assessment and information systems should include a thorough method for assessing local safety supervision. There is information exchange across departments as well as a real-time system at the area and provincial levels.

Keywords: Road Safety Management, Roi Et Highway District, Road Problems

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Introduction

Several heads of state and government attended the United Nations General Assembly in September 2015 and endorsed the 2030 Agenda for Sustainable Development (2030 Agenda for Sustainable Development). One of the Sustainable Development Goals (SDGs) (Article 3.6) is to halve global road traffic fatalities and injuries by 2030. Road traffic injuries are a prominent cause of death worldwide, accounting for more than 300,000 deaths among those aged 15–29. Additionally, traffic accidents impose a significant financial strain on the country’s economy and on individual families. Numerous significant sections of the Sustainable Development Goals address the relationship between road accidents and the rest of the world’s environment and development.

However, according to the World Health Organization’s 2013 Global Status Report on Road Safety, Thailand’s death rate from road accidents is the third highest in the world, at 38.1 deaths per 100,000 inhabitants. It is only second to Niue and the Dominican Republic. Most recently, in 2015, the same report stated that Thailand had been upgraded to No. 1 with the highest rate of road traffic fatalities in the world, or 36.2 deaths per 100,000 inhabitants; Malawi was ranked No. 2 with a rate of 35 deaths per 100,000 residents. Additionally, the Bureau of Policy and Strategy of the

Ministry of Public Health reported that 14,789 people died in road accidents in Thailand in 2013, a rate of 22.89 deaths per 100,000 inhabitants. Additionally, Thailand averages 13,000 road accident deaths every year, 1,000,000 injuries, and 100,000 cumulative impairments, according to the Ministry of Public Health’s statistical report.

According to the World Health Organization, Thailand had the world’s third highest death rate per 100,000 population in 2011. At the provincial level, Roi Et Province has a booming economy, a 546.949-kilometer-long national highway that sees a high volume of traffic, and serves as a gateway to adjacent provinces. They discovered that the statistics for road accidents were comparable to those at the national level, with characteristically consistent with the national road accident determinants of speeding, “cutting someone off” while driving, and driving backwards. Motorcycles were shown to be the most accident-prone vehicles. However, the accident rate in Roi Et province decreased from 2011 to 2012, but the death rate increased then decreased in 2013 (Supaporn Tassanapong, 2015). However, according to Roi Et province’s road accident statistics, from October 2019 to September 2020, there were 290 road accident fatalities, or approximately 22.22 individuals per 100,000 inhabitants. In comparison to 2019 statistics, the mortality toll reduced by approximately 3%. (2019 data of 299 people).

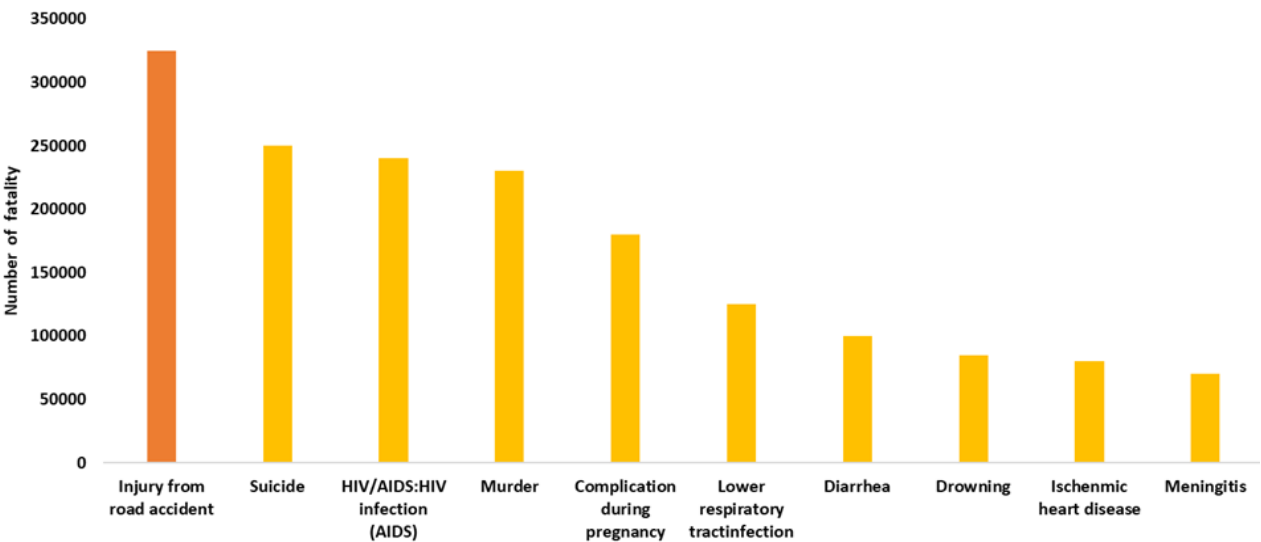


Figure 1. shows the 10 leading causes of death among people aged 15–29 years in 2012

Source: World Health Organization, Global Estimates, 2014

According to the aforementioned statistics on accident fatalities, it is critical to maintain road safety. As can be seen, Roi Et Province has consistently advocated for the prevention and reduction of road accidents, as well as for the establishment of road safety organizations within government bodies. 1. To conduct a year-round campaign to prevent and minimize traffic accidents in which the governor of Roi Et establishes a policy for the government to serve as a positive role model for the people. 2. Geographically, in the event of an accident, the district administrative office, the local police station, the district public health, and local government entities shall coordinate to promote road accident prevention and reduction. Additionally, it delves into detail at the community/village level, resolving risk points collaboratively, public relations, campaigning, establishing community measures, and enforcing regulations. 3. Take action to avoid and mitigate road accidents, with the goal of halving the number of accidents, injuries, and fatalities, particularly in high-risk locations. 4. In the municipality of Roi Et, an extensive road safety driving operation and public relations campaign are being conducted to educate the public and enforce traffic discipline for the safety of road users, in accordance with the principles "New way of life, safe driving no accident."

From the above reasons, the researcher is interested in studying road safety management guidelines of Roi Et Highway District. This is to bring the results of information about the factors of accidents on highways of Roi Et Province to improve in planning to reduce accidents on highways of Roi Et Province to be more effective in the future.

Research Objectives

1. To study road safety management of Roi Et Highway District
2. To obtain guidelines for road safety management of Roi Et Highway District

Literature Reviews

The researcher investigated

- 1) the principles and theories of road safety management in the Roi Et Highway District; the re-

searcher implemented measures 5E in accordance with the Thailand Road Safety Action Plan 2004 – 2008 (Department of Local Administration, Ministry of Interior, n.d.), which includes E1 – Engineering and E2 – Environment. E2 is for instructional purposes, whereas E3 is for enforcement purposes. Evaluation and Information are categorized as E5, whereas Emergency Services are classified as E4. 2) The concept of security protection was developed with Vichit Punyahotra's (1993) Domino Theory. 3) The notion of roadway safety regulations 4) Enhancing Road Safety 5) The context of the Province of Roi Et and the Roi Et Highway District; and 6) Additional research or data.

Scope of Research

1) Scope of work: just the highway area of Roi Et Province, as Roi Et Province is an economic zone under government guidance to promote as a tourist destination, which must rely on road transportation as the primary mode of travel with linkages to other provinces and neighboring countries.

2) Demographic scope: This study included 435,202 motor vehicle drivers on Roi Et Province's highways who were registered in Roi Et Province (Transportation Statistics Group, Planning Division, Department of Land Transport, 31 March 2021), or 435,202 people. The authors employed Taro Yamane's formula for computational methods with a 95% confidence level, a 5% margin of error, and a sample size of 400 participants to generate the samples used in this investigation.

3) Scope of work: The researcher intends to examine the Roi Et Highway Province's road safety management guidelines through the examination of policies and procedures, the working procedures of agencies or other related documents, theoretical notions regarding safety, and related research.

4) Timeframe: The researcher conducted the investigation for nine months, from September 2020 to May 2021.

Research Methodology

This mixed method research using quantitative and qualitative research methods, which are detailed as

Research Conceptual Framework

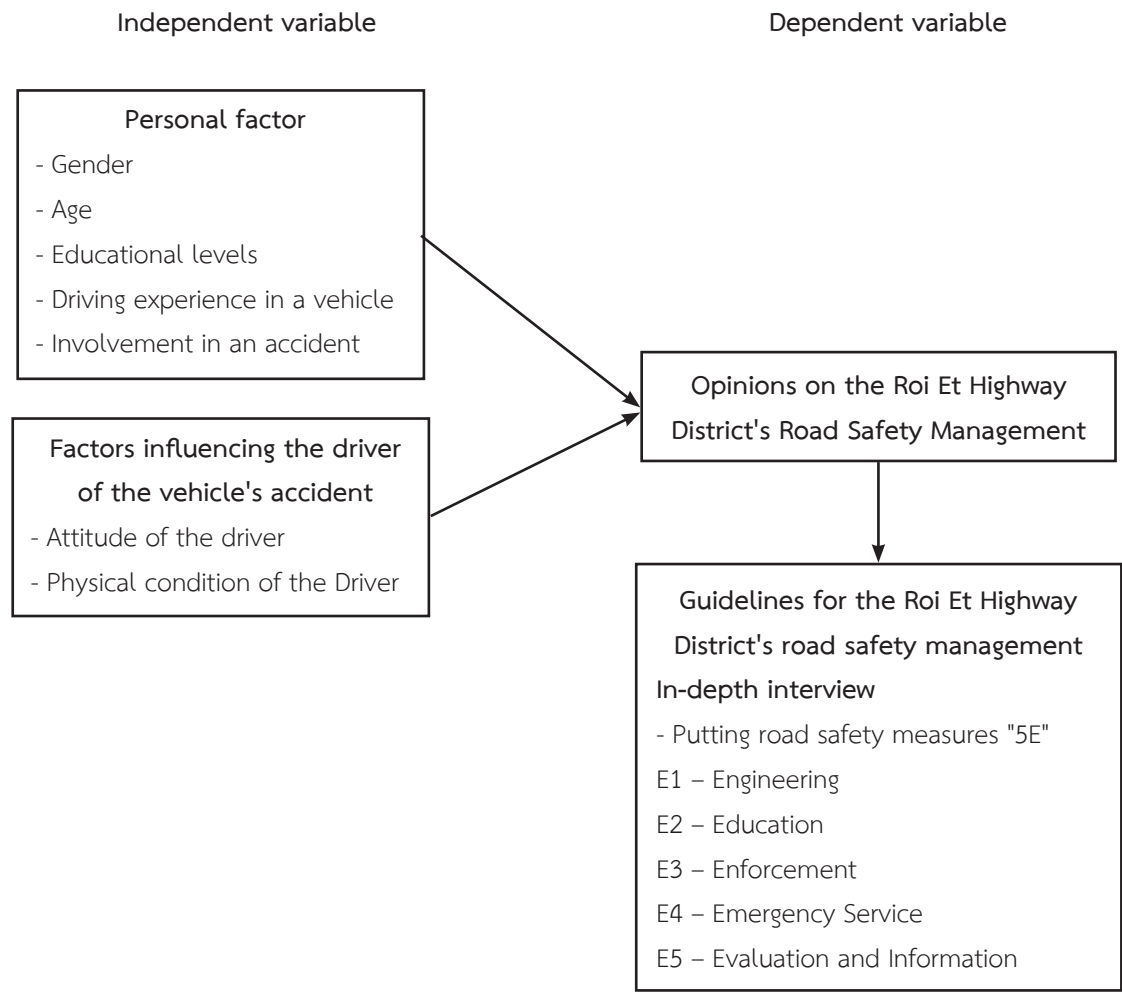


Figure 2. Research Conceptual Framework

follows.

Quantitative Research

The researcher collected baseline data using a quantitative research method in order to accomplish two research objectives: 1) To evaluate road safety management in Roi Et Province, a questionnaire was utilized for quantitative research, followed by field research using the questionnaire. 2) To conduct research and develop strategies to address road concerns in the Roi Et Highway District.

1. To study the solutions and prevention of road problems in Roi Et Highway District

The population for this study was restricted to motorists registered to drive motorbikes, cars, pickup trucks, and vans on Roi Et Province's highways. Additionally, private and public buses and trucks with six or more wheels total 435,202 vehicles (Transport Statistics

Group, Planning Division, Department of Land Transport, March 31, 2021) or represent a 435,202-person population. The technique of non-probability sampling was used to select and sample the samples. Purposive sampling was used to produce a random sample from the said population. A total of 400 individuals were included in the sample (calculated using the Taro Yamane formula).

The questionnaire was utilized in the quantitative research study; it was a closed-ended questionnaire divided into three sections, namely: Part 1: A questionnaire was distributed to residents of Roi Et province who are pedestrians or have a vehicle to drive on the highway. The questionnaire collected information about the respondents' gender, age, education level, driving experience, and experience with an accident. Part 2: Contributing Factors to Driver Accidents A questionnaire

is a scoring system that evaluates the driver's attitude and physical condition. Part 3: Opinion Questionnaire on the Roi Et Highway District's Road Safety Management. Quantitative data analysis employs descriptive statistics and the research program SPSS for Windows. The sample correlation/mean difference test, the t-test, dependent, and one-way ANOVA were employed in the general analysis, depending on the measurement level and kind of variable analyzed. The quantitative data analysis results were subsequently used to develop an interview form.

Qualitative Research

After completing the quantitative research, the researcher conducted in-depth interviews and then used the results of the quantitative data analysis to build an interview form for a qualitative study to address research aim number three. The in-depth interviews were conducted with the Provincial Governor, the Deputy Director (Engineering) of the Roi Et Highway District, the Director of the Roi Et Rural Highway District, the Director of the Roi Et Hospital, the Deputy Commander of the Roi Et Provincial Police (Traffic), and the Chief of the Roi Et Provincial Disaster Prevention and Mitigation Provincial Office, a total of six individuals.

The in-depth interview was conducted using questions pertaining to the Roi Et Highway District's road safety management requirements. It is an unstructured or open-ended interview, a form of research that is flexible and open-ended, or one in which keywords are used to lead the interview. By analyzing the data from the in-depth interviews, the researcher was able to incorporate the data from the in-depth interviews into the data analysis and processing process, as well as the data collection process from the study and research data from the document, by utilizing the qualitative research approach. Additionally, the researcher conducted a reflection process synchronously with the in-depth interview process, more precisely, the reflection process in each phase or at each stage. Additionally, the researchers will analyze the data collected during the in-depth interviews by categorizing them according to the phenomenon in order to reach a conclusion that will serve as guidelines for the Roi Et highway district's road

safety management.

Research Results

From the study, the researcher can explain the research results according to the objectives as follows.

1. Road Safety Management of Roi Et Highway District

The researcher studied the road safety management of Roi Et Highway District by studying the behavior of factors affecting the accidents of motorists. It is divided into two aspects: driver attitude and driver physical condition, using a quantitative study method. The results of the study can be summarized as follows.

Personal information about respondents

Personal determinants of 400 respondents. The results showed that 233 respondents were male, 58.2 percent, and 167 female, 41.8 percent. The mean age of the respondents was 38.75 years. The educational levels of the respondents were at bachelor's degree, below bachelor's degree, and postgraduate respectively. Respondents had an average of 14.2 years of driving experience. Of the 147 respondents, 36.8% of the respondents had no road accidents, and 253 people had experienced accidents, representing 63.2 percent. The most common accidents include driving a vehicle into another vehicle on the highway.

Factors influencing the driver of the vehicle's accident

The results of the study of factors affecting motorists' accidents were divided into two aspects: 1) The attitude of the drivers in the sample group had a high level of opinion (mean = 4.51). The point that is most opinionated is that driving at high speeds increases the risk of accidents. 2) Regarding the physical condition of the drivers, the sample group had a high level of opinion (mean = 4.13). The most common issue is not getting enough rest and the need to drive further affecting driving performance.

Opinions on the Roi Et Highway District's road safety management in terms of road safety management

The findings of the study of attitudes toward road safety management in the Roi Et Highway District can be categorized as follows: 1) The department con-

ducts routine inspections and maintenance of damaged roadways to keep them in good condition 2) The agency should perform routine inspections of the traffic warning devices to ensure proper operation 3) The agency should clearly designate the traffic line so that the driver's recognition and awareness 4) The agency should regularly check the safety at the turning point or at the intersection 5) The agency conducted an analysis of the hazard zones in order to generate a hazard map 6) The agency maintains a quality control procedure to guarantee that building materials used in road construction meet the agency's standards 7) The agency should enforce rigorously any encroachment or hindrance on public roadways and walkways 8) The agency should expand and widen road boundaries 9) The proper departments are assigned to clean and keep the road surface

free of trash, rocks, soil, and sand 10) Bicycle-specific routes should be added for rider safety, respectively. Each issue has an opinion level and an average value in Table 1.

From the study, the researcher can explain the research results according to the objectives as follows.

2. Road Safety Management Guidelines in Roi Et Highway District

The researcher studied the road safety management approach in Roi Et Highway District by applying the quantitative results as an in-depth interview with people involved in road safety management in Roi Et Province. The results of the study can be summarized as follows:

1) Highway conditions: At the moment, the road traffic problem in Roi Et is caused by two factors: 1.

Table 1. Overall opinion effect on road safety management of Roi Et Highway District

Safety Management Issues	Mean	S.D.	Level of comment
1. The agency has a hazard analysis to create a hazard map.	4.16	0.77	High
2. The agency always inspects and repairs damaged roads to keep them in good condition.	4.35	0.62	Highest
3. The agency has a quality control of construction materials to be correct and in accordance with the agency's road construction standards.	4.15	0.68	High
4. The agency is assigned to clean-up the road surface so there is no debris, rocks, soil, or sand on the road surface.	4.01	0.75	High
5. Bicycle-specific routes should be added for the safety of riders.	3.94	0.80	High
6. The agency should expand the road area to be wider.	4.05	0.67	High
7. The agency should strictly enforce any act of encroachment or obstruction on roads and sidewalks.	4.13	0.73	High
8. The agency should regularly check the safety at the turning point or at the intersection.	4.20	0.65	High
9. The agency should ensure that road warning devices are working effectively.	4.31	0.58	Highest
10. The agency should mark the traffic lines so that the drivers of vehicles can see them clearly.	4.28	0.63	Highest
Total	4.12	0.36	High

External influences include road surface conditions and lighting, while internal factors include changing driving behaviors as a result of traffic lane extension, U-turns in prohibited locations, reverse driving, and contempt for traffic rules.

2) Roi Et Highway District: Due to the service of public transit system does not fully provided, so the number of private automobiles has increased. When agricultural trucks are driven on rural roads in the early morning or at night, they do not have access to traffic lights, which results in accidents.

3) Guidelines for setting up measures for safety management to alleviate road safety problems consist of five areas:

3.1 Engineer: The approach to road safety engineering must be applied to convert the road layout to a Smart Road with automatic warning lights, so that when a vehicle approaches, a light signal will activate, and to raise the road surface requirements. Concerning road border upgrades, unlike the Department of Highways, the Department of Rural Roads does not have road boundaries to improve danger areas. Local highways are the most frequently engaged in accidents. Local highways are less standardized since decision-making of authority for maintenance is delegated to the subdistrict administration. The most prevalent issues include a lack of shoulders, shoulders that are not up to quality, and a lack of lighting.

3.2 Public relations education and participation: Risk awareness should be a priority, as well as public knowledge of driving-related issues. If everyone concerns about risk personal, they tend to be more focused and change their driving behavior accordingly. For instance, recruiting teachers as volunteers to assist in the management of the school's front entrance by organizing training to educate volunteers on how to appropriately transmit knowledge to the public about road safety. Public education about traffic symbols, U-turn points, and traffic lights. Additionally, when construction begins, the provincial public relations office will notify the public and post warning signs in advance.

3.3 Law Enforcement: Road construction laws are enforced by permitting highway segments to collect

illegal signs. In other circumstances, law enforcement is insufficient to enforce the truck's weight, and police traffic enforcement should be viewed as a warning to locals to recognize and acknowledge any illegal action before filing a formal fine. The majority of time, people encounter concerns with law enforcement, such as wearing helmets. People rationalize wearing helmets in order to avoid police arrests, instead of comply with the law. If the public is informed about the law or law enforcement, the driver will be aware of a warning by officers or penalized from misconduct, the villages, as a result, will become more disciplined.

3.4 Emergency medical system: In some sections of Roi Et province, the local administrative entities lack a rescue vehicle. Some may not understand the critical nature of having a rescue truck on hand to assist people. Roi Et Hospital has organized training, acquired a vehicle for patient transport, and received financial support from the Ministry of Public Health's Emergency Health Division. Additionally, there are three resuscitation levels: elementary, basic, and intermediate or advanced. The majority of hospital rescuers and advanced rescuers are required to be accompanied by a team physician. There should be a First Aid Unit and EMS, also known as FR (First Responder), in each neighborhood that can provide a rapid response, which will enhance survival rates, and hospital-based high-level rescuers should form multiple teams. Previously, statistics stated that when accidents and deaths happened as a result of that occurrence, as well as whether deaths occurred on the scene of the accident or in the hospital, since the high rate of hospital deaths indicates that the emergency medical system has evolved.

3.5 Assessment and Information Systems: Two issues remain: 1) In terms of systems that have not been evaluated comprehensively and the information given is insufficient. Sharing geospatial information (GIS) with authorities responsible for road safety entails agreeing on the system's implementation. When insufficient information is provided as a result of inconsistent assessment of the information by each agency due to differing perceptions of the circumstance, some agencies consider the incident to be non-accidental action, and

each unit's reporting purpose is different. As a result, it imposes a restriction on the sharing of information by government agencies. 2) The system's development should not be limited to the province. Records should be distributed throughout the district information system to ensure that information regarding any location or district experiencing an accident is easily accessible. The establishment of a centralized system will enable the mapping of data and the provision of a real-time picture of previous accidents. The individuals responsible for road safety should have access to information or records.

Discussion

From the study, the researcher can summarize the research findings according to the objectives as follows:

1. Road Safety Management of Roi Et Highway District

The researcher studied the road safety management of Roi Et Highway District by studying the behavior of factors affecting the accidents of motorists. It can be divided into two aspects: driver attitude and driver physical condition, which can be summarized and discussed as follows.

Personal information about respondents

It was discovered that males had a more favorable attitude toward road safety management than females. The younger age group had a more negative attitude toward road safety management. Beyond a twenty-year period, the average is lower than the average for people aged 50 and over. According to the level of driving experience, postgraduates had more favorable attitudes about safety management than those with bachelor's and lesser degrees. According to Vichit Punyahotra's (1993) study, the cause of accidents is decided by a person's background. According to the Domino Theory, injuries from accidents are caused by a person's absence, a person's background, and the external environment when driving.

Factors impacting the driver of the vehicle's accident

Part 2: The results of the study of factors affecting motorists' accidents were divided into two aspects,

namely the driver's attitude and the driver's physical condition.

1) Driver Attitude: It was discovered that driving at excessive speeds increased the likelihood of being involved in an accident. This is consistent with Surasak Boonklang's (1996) study on the personal characteristics influencing drivers who reverse owing to long U-turns. This is congruent with Kittiwat Chatsriho's (2014) paper, "Models and Measures of Road Safety Promotion: A Case Study of Highway No. 24 in Ubon Ratchathnai Province." The survey discovered that reverse driving is the main cause of road accidents, chatting and texting on the phone, and also recklessly watching red lights while driving at night. The above acts constitute a breach of traffic regulations, which is considered as a dangerous act.

2) The driver's physical condition: insufficient sleep, pre-driving intoxication, driving for more than six hours continuously, stress-induced temptation to drive, and pre-driving medication. The behaviors outlined above result in road accidents, which is consistent with a study conducted by Worawet Suwanrada (2005) on road traffic accident-related losses in Thailand. According to the survey, drivers' dangerous driving behavior is the top cause of road accidents.

In conclusion, the research of the elements that contribute to automobile accidents investigates the drivers' attitudes and physical circumstances. It is congruent with the Swiss Cheese idea, in that the driver's risky conduct, such as excessive driving or physical inadequacies, resulting in the creation of a crash gap. Moreover, if road conditions are unsafe, a lack of oversight by the appropriate authorities will result in the holes in the cheese matching, resulting in traffic accidents. Thus, in order to prevent mishaps, it is necessary to avoid or take activities that do not correspond to the holes in the cheese. For instance, the driver must adhere to the legal speed limit and inspect the driver's body prior to driving. Departments responsible for roads or traffic must conduct road inspections, monitor or manage accident prevention, and enforce the law strictly.

Opinions on road safety management of Roi Et Highway District in terms of safety management

It was found that the department inspects and maintains damaged roadways on a regular basis to ensure they are in excellent condition, provide effective road warnings, and adequate road markings to allow the driver of the vehicle to see properly. Organizations should undertake regular safety checks at U-turns and intersections, as well as conduct hazard analysis to build a hazard map. The quality of construction materials should be monitored to ensure that they meet the agency's road construction standards, and any acts that encroach on roads and walkways should be reined in. Improvement of driver safety, road borders should be widened and bicycle-specific routes added, according to a study by Chet Ratchadapunnathikul and Patchara Santad (2016: 23–41). The activities taken by the aforementioned authorities are aimed at improving road safety, in accordance with research conducted by the Office of Transport and Traffic Policy and Planning (OTP) (2010: 1–2). Measures 5E are directly related to the topic E1: Engineering. Road preparation on a physical level, including the correction of black spots on roads through road safety checks. It is an accident management method that incorporates ideas and experience obtained through investigating and resolving incidents in locations or areas prone to accidents. It is a proactive method to problem solving as well as a means of identifying “dangers” and correcting them before resulting in accidents, deaths, or injuries. According to the Institution of Highways and Transportation (IHT), this is more about preventing problems than solving them (1996).

2. Road Safety Management Guidelines in Roi Et Highway District

The researcher studied the road safety management approach in Roi Et Highway District by applying the quantitative study results as an in-depth interview with people involved in road safety management in Roi Et Highway District. The results can be summarized and discussed as follows:

1. Highway conditions, Roi Et Highway District: Currently, traffic problems are caused by two factors: External influences include road surface conditions

and lighting; and internal aspects include driver actions such as making U-turns in restricted areas, driving backwards, and violating traffic rules. Consistent with Surasak Boonklang's (1996) study, the elements that contribute to highway accidents and accident prevention measures discovered that three critical components contribute to road accidents: 1) individuals (car drivers, passengers, and pedestrians), 2) vehicles, and 3) highway conditions. The Roi Et Highway District is another component in traffic accidents since the public transportation infrastructure is not yet completely operational, which has resulted in a rise in the number of private automobiles. According to Dusit Janthayanont's (2019) study, the “National Road Traffic Management Strategy” promoted the use of public transportation, walking, and cycling to assist alleviate traffic congestion. Additionally, consolidation current information enables the control and reduction of traffic accidents.

2. A part in identifying solutions to road safety issues. In the case of an accident in the province, hospital workers, disaster prevention and relief professionals, and police officers will be assembled to the region to investigate the cause of the accident. This is consistent with the study conducted by Pichai Taneeranon, Yodphon Tanaboribun, and Lamduan Srisakda (2005: 5–8), who introduced the concept of road safety monitoring through a proactive approach and collaboration amongst authorities responsible for road safety management.

3. Guidelines for establishing safety management procedures aimed at resolving road safety issues in five areas:

3.1 Engineering: A road safety engineering strategy necessitates the transformation of roadways into smart roads. When a car approaches with a light signal, an automatic warning light illuminations, and the road standard has been raised. It is a method of ensuring the safety of accident-prone areas that is consistent with the Cheese Theory's safety idea.

3.2 Public relations education and participation: Risk awareness should be a priority, as should public knowledge of driving-related issues. Because if everyone understands that the issue is personal, they will be

more focused and change their driving behavior accordingly. For instance, recruiting teachers as volunteers to assist in the management of the school's front entrance by organizing training to educate volunteers on how to appropriately transmit knowledge to the public about road safety. This is consistent with a research conducted by the Office of Transportation and Traffic Policy and Planning (OTP) (2010: 1–2), which linked 5E measures directly to E2 – Education to promote road safety.

3.3 Law Enforcement: Road construction laws have been enforced by allowing the highway category to collect illegal signage. In other instances, the truck's weight is not strictly enforced, and it is prudent to utilize traffic law enforcement as a warning to the people. This is congruent with the findings of Worawet Suwanrada's 2005 study on road traffic accidents in Thailand. According to the report, efficient law enforcement can reduce accidents.

3.4 Emergency medical systems must be prioritized, both in terms of equipment and emergency vehicles. A First Aid Unit or EMS, often known as a FR (First Responder), should be stationed in the neighborhood to enable promptly service and lower accidental fatality rates. Consistent with the findings of the Office of Transportation and Traffic Policy and Planning (2010: 1–2), 5E measures have been applied directly to E4—Emergency Service, or enhancements to the system for assisting those who have been involved in an accident in a timely manner.

3.5 Assessment and Information Systems: There are still two issues: 1) systems are not evaluated comprehensively, and 2) the information given is insufficient. Sharing geospatial information (GIS) with authorities responsible for road safety entails agreeing that

the system should be implemented by allowing for real-time visualization of information about accidents that have occurred. The access to information or records should be limited to officials or agencies responsible for road safety management.

Suggestion

Suggestions for applying the research results

1. Provincial governments should work cooperatively to regulate road safety in accordance with the 5E Strategy in order to prevent road accidents.
2. A coordinated mechanism for collecting data on accident statistics should be established. All units participating in road safety operations have access to data that will be utilized to prepare for road accident prevention.
3. Law enforcement officers must carry out their responsibilities seriously, fairly, uniformly, and equitably.
4. By utilizing technology to assist in the enforcement of harsh rules, such as speed cameras, traffic lights, and speed signs, offenders can be apprehended.

Suggestions for further research

1. There should be research conducted on the development of a central action plan for the management of road safety in Roi Et Province.
2. A survey of people's knowledge and understanding of road use should be conducted, as well as a promotion of people's awareness of the risks associated with driving.
3. To compare operations, a study of road safety management in similar provincial areas should be executed.

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