Inception Report

Research Grant 2021

ASIAN TRANSPORTATION RESEARCH SOCIETY

Road Rage: Causes, Impacts, Legal Measures, and Road Traffic Accidents

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Table of Contents

Page

Lists of Figures

Page

List of Tables

Page

List of Abbreviations and Acronyms

ADB	Aggressive driving behaviors
AOD	Anonymity of other drivers
CFA	Confirmatory factor analysis
ETA	Experience of traffic accident
HT	High temperature
IOC	The index of item – objective congruence
MV	Make of vehicle
PRC	Poor road condition
PRR	Perpetrator of road rage
SD	Standard deviation
SEM	Structural equation modeling
TC	Traffic congestion
VRR	Victimization of road rage
WHO	World Health Organization

CHAPTER I INTRODUCTION

1.1 Rationale

Road traffic accident has become a major problem in many countries as it causes many deaths and injuries. According to the Global Status Report on Road Safety 2018 (WHO, 2018) reported that the number of road traffic deaths worldwide remains unacceptably high. There were about 1.35 million deaths each year and most of them were children and young adults. The most vulnerable group of road traffic accident are pedestrians, cyclists, and motorcyclists. Thailand has also been affected by a great number of road traffic accidents. During 2015-2019, the number of road traffic accidents had increased from 69,394 to 99,087 accounting for 42.79%. The number of traffic deaths had increased from 6,273 to 8,648 or approximately 37.86% increase. In addition, the number of injuries increased by 237.20% from 18,120 in 2015 to 61,101 in 2019 (Ministry of Land Transport, 2020). The main causes of road traffic accidents in Thailand consists of exceeding speed limit, dangerous lane changing, driving too close to leading vehicle, inexperience or new driver, not giving to right of way, and drink driving (National Statistical Office, 2014). Some main causes are associated with road rage, usually defined as aggressive or angry driving behaviors, such as rude gestures, verbal insults, physical altercation, deliberately driving in an unsafe or threatening manner, or making threats (Xu et al., 2017). In addition, Stephens and Ohtsuka (2014) found that road rage and illusion of control beliefs (feelings of control over the situation) accounted for 37 percent of the variance in hostile driving behavior scores.

Road rage constitutes a broad range of aggressive driving behaviors, ranging from milder behaviors, such as verbally expressing anger through closed windows or using the lights of the vehicle to express frustration, to using hostile hand and facial gestures, screaming, honking, firing gun shots, hitting vehicles and chasing vehicles, which can result in criminal acts, intentional violence and even murder (Dula & Geller, 2003; Wells-Parker et al., 2002). Tasca (2000) defined such behaviors as a behavior which is deliberate, likely to increase the risk of collision and motivated by impatience, annoyance, hostility and/or attempt to save time.” There are some situational factors that have been linked with incidents of road rage include increasing congestion on roads (Sharkin, 2004), high temperature (Shinar, 1998), poor road conditions (Galovski & Blanchard, 2004), make of vehicle (Smart, Stoduto, Mann, & Adlaf, 2004) and anonymity of other drivers (Ellison, Govern, Petri, & Figler, 1995).

In Thailand, there are many road rage cases appearing in newspaper, television, and social medias. Earlier this year, a passenger van driver was wounded in a road-rage

incident on Saturday 9, 2021, after shots were fired by a man who later claimed the van had cut in front of his car (Bangkok Post, 9 January 2021). Another case is reported by Taylor (2021) “angry passenger attacks motorbike driver following collision in Pattaya.” This case was occurred on the 12th of January 2021. However, research on this issue is quite rare. We, therefore, would like to examine antecedents and impacts of road rage as well as legal measure to deal with this problem. Furthermore, we would like to examine relationship between road rage and road traffic accidents as well as illustrated in the proposed conceptual framework.

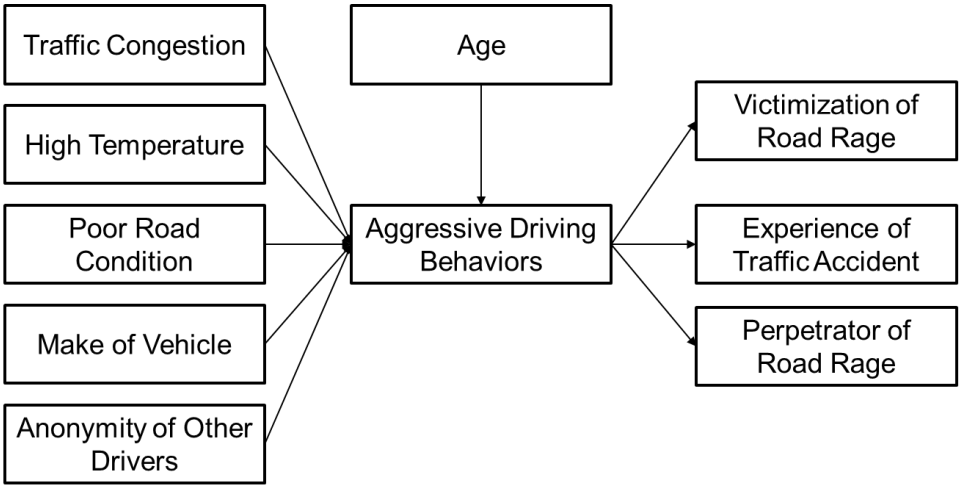

Figure 1 Proposed conceptual framework

1.2 Research Questions

1. What are the causes of road rage?
2. What are the impacts of road rage?
3. What are suitable legal measures to handle with road rage issue?
4. Is there a relationship between road rage and road traffic accidents?
5. What suggestions and recommendations should be proposed to policy makers?

1.3 Objectives

The objectives of this study are as followings:

1. To examine causes of road rage.
2. To examine impacts of road rage.
3. To examine legal measures against road rage.
4. To find out relationship between road rage and road traffic accident.
5. To provide suggestions and recommendations to policy makers.

1.4 Research Benefits

1. The findings of this research will catch attention from public to place importance on road rage issue.
2. The findings of the study can be used as an evident in policy making process to deal with road rage issue in Thailand.
3. Researchers and scholars can apply the findings in their research in the future.

CHAPTER 2 METHODOLOGY

2.1 Research Design

This research is a mixed-method research consisting of quantitative and qualitative technique.

2.2 Quantitative Research

2.2.1 Population

The population of this study is road users in Bangkok.

2.2.2 Sample

The analysis using structural equation modeling (SEM) technique requires a large sample size. Hence, the samples of this study are road users in Bangkok derived from G*Power program. The power analysis for a chi-square test was conducted in G-Power to determine a sufficient sample size using an alpha of 0.05, power of 0.80, a large effect size (w = 0.5) (Faul et al., 2013) and 1,081 degrees of freedom. Based on the aforementioned assumptions, the desired sample size is 1,159.

2.2.3 Research Tool

Questionnaire was employed as a research tool. It consists of 10 parts as followings;

1. Demographic information
2. Traffic congestion
3. High temperature
4. Poor road condition
5. Make of vehicle
6. Anonymity of other drivers
7. Aggressive driving behaviors
8. Victimization of road rage
9. Experience of road traffic accident
10. Perpetrator of road rage

2.2.4 Validity

Each item will be assessed by transportation experts giving the item rating of 1 for clearly measuring, -1 for clearly not measuring, and 0 for unclear measuring. Finally, the index of item – objective congruence (IOC) will be calculated using the formula developed by Rovinelli and Hambleton (as cited in Kotchapong, 2008) for each item of the questionnaire.

Prasitrattasin (2007) suggested that the IOC index higher than .50 is determined as valid. Hence, any item with IOC index lower than .50 will be deleted or the statements will be revised in accordance with the recommendations of the experts.

2.2.5 Reliability

The reliability of each measurement, measure of internal consistency, will be examined employing Cronbach's alpha coefficient (Cronbach, 1951). George and Marry (as cited in Gliem & Gliem, 2003) suggested that the Cronbach's alpha coefficient >.90 – Exccellent, >.80 – Good, >.70 – Acceptable, >.60 – Questionable, >.50 - Poor, and <.50 – Unacceptable.

2.2.6 Data Collection

During July-September 2021

2.2.7 Data Analysis

The primary data will be collected using questionnaires as a research tool. Well-trained research assistants are assigned to collect data. Then, descriptive statistics such as frequency, percentage, mean, median, and standard deviation (SD) will be applied in data analysis. In addition, confirmatory factor analysis (CFA) will be employed in order to test the construct validity of each measurement model. Finally, structural equation modeling (SEM) technique using statistical software will be employed to examine relationship between each latent variable.

2.3 Qualitative Research

2.3.1 Key Informants

There are 20 key informants who had experienced road rage incidents. Snowball sampling was used to select the key informants. Criteria for selecting key informants are defined as follows:

1. Being a road user in Bangkok.
2. Experienced in road rage in the past 10 years as perpetrator or victim.
3. Willing to cooperate or participate in this study.

2.3.1 Research Tool

In-depth interview using semi-structured interview.

2.3.2 Data Collection

During July-September 2021.

2.3.3 Data Analysis

Narrative analysis will be employed in this study. This method is used to analyze content from various sources, such as interviews of respondents, observations from the field, or surveys. It focuses on using the stories and experiences shared by people to answer the research questions.

CHAPTER 3 RESEARCH PLAN

3.1 Project Schedule

This project is a 1-year project.The timeframe of this research is scheduled as illustrated in Table 1.

Table 1 Timeframe

Activities	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Review of literature	■											
Inception report submission	■											
Questionnaire Validation		■										
Progress report			■									
Data collection				■	■							
Data analysis						■						
Interim report presentation & submission							■					
Roundtable discussion & workshop								■				
Final report presentation & comments									■			
Final report preparation & submission										■	■	■

3.1 Project Expenditure

The total budget of the project is 350,000 (Three hundred and fifty thousand Baht) and the expenditure of this project is illustrated in Table 2.

Table 2 Project expenditure

No.	Description	Cost/Unit	Unit	Amount (Baht)
1	Project leader	3,000	12	36,000
2	Research assistants	6,000	12	72,000
3	Expenses for project meeting (3 project members x 12)	1,000	36	36,000
4	Survey Data collection	980	100	98,000
5	In-depth interview	2,000	20	40,000
6	Transportation & Petrol	3,000	30	90,000
7	Office and computer supply	5,000	1	5,000
8	Document & Copy	5,000	1	5,000
9	Secretariat's participation portion	10,000	1	10,000

10	Advisor	10,000	1	10,000
11	Data coding & analysis	40,000	1	40,000
12	Publishing proportion of the report book	20,000	1	20,000
Total				462,000

3.3 Project oversight

The project oversight component of this research has been designed to track and provide guidance, comments, and recommendations at key stages of the project from different perspectives.

1. Project advisors – two advisors are assigned to provide independent assessment and review of major outputs. Then, they responsible for giving comments and recommendations on technical excellence and relevance.

2. Consultative forum – to ensure the relevance and completeness of the findings, this forum or roundtable discussion will be held in order to gain comments and recommendations from various perspectives.

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