

Antecedents of Road Rage in Bangkok

¹Waiphot Kulachai, ²Layla Kurniawati, ³Patipol Homyamyen, ⁴Pakorn Prechaporn

¹*Suan Sunandha Rajabhat University, Thailand, waiphot.ku@ssru.ac.th*

²*The Government Institute of Home Affairs, Indonesia, laylakurniawati@ipdn.ac.id*

³*Rajamangala University of Technology Suvarnabhumi, Thailand, patipol.h@rmutsb.ac.th*

⁴*Small and Medium Enterprise Development Bank of Thailand, Thailand, prechaporn@hotmail.com*

Abstract

The purpose of this study is to investigate the antecedents of road rage in Bangkok, Thailand. To identify the antecedents of road rage in Bangkok, this study proposed four factors effecting antecedents of road rage. These factors include; frustration level, aggressive behavior, personality disorder and cultural norms. For this purpose, data collection is made by conducting a survey in Bangkok, Thailand. The 5-point Likert scale is used for data collection among the people involved in road rage. Partial Least Square-Structural Equation Modeling (PLS-SEM) is employed for data analysis. It is found that; aggressive behavior of the people leads to the individual road rage behavior. Furthermore, personality disorder also causes to increase the intention of individual road rage behavior. It is also observed from the results, culture norms also have the potential to promote individual road rage behavior. However, frustration level of an individual has no effect. Thus, this study identified that; aggressive behavior, personality disorder and cultural norms are the major antecedents of individual road rage behavior in Bangkok, Thailand.

Keywords: Frustration level, aggressive behavior, personality disorder, cultural norms, road rage behavior Bangkok.

1. INTRODUCTION

Road rage is an aggressive or angry behaviour shown by motorists (Love, Kannis-Dymand, Davey, & Freeman, 2022). These behaviours comprise rude as well as verbal insults (Ryu, Kim, Kim, Lee, & Lee, 2022), physical threats or unsafe driving methods targeted at other drivers, pedestrians or cyclists in an effort to intimidate or release frustration. The activity of road rage is existing globally which has negative consequences. It has negative outcomes for the society because road rage causes to influence the other people living in the society. The individual behavior towards the road rage activities causes huge losses. The inappropriate driving of vehicles on the road also lead to the violation of traffic rules.

Therefore, the violation of rules causes to the huge damage in case of accidents. There are number of cases registered globally which shows the losses due to the road rage behavior of the individuals. Road rage behavior also involve verbal insults which causes to increase in disputes among the general public. Furthermore, physical threats are also the important part of road rage behavior which may also lead to the violation of rules and lead to destroy the peace in certain community.

Similar with other nations, road rage is also one of the problems in Thailand. There are number of cases registered in Thailand related to the road rage. Most importantly, the road rage is most common in Bangkok. The Bangkok is one of the famous cities globally, where a huge

number of people visits in each year to perform various activities related to the tourism (Klinsrisuk & Pechdin, 2022; Zhang, Khan, Kumar, Golpîra, & Sharif, 2019). However, the road rage behaviour of people in this city is quite disturbing to the people. In Bangkok, the violation of traffic rules due to the aggressive road rage behaviour led to create disturbance. This is one of the major problems in Bangkok, Thailand which has several negative consequences. It is also observed that the driving in Bangkok is stressful. One of the major causes to stressful driving in Bangkok is road rage. The increasing behavior of people in road rage (Smart, Stoduto, Mann, & Adlaf, 2004) decreasing the peaceful driving in Bangkok and increase the level of stress among the other drivers. Thailand's roads are the most hazardous globally. It is not just a number but a very actual human disaster. For various foreigners staying Thailand and thinking of driving, it is very much worth taking to consider at the risks involved in driving, particularly in Bangkok. Furthermore, the roads of Thailand are officially considered most dangerous worldwide. One of the most important reasons is road rage behaviour of the people.

Hence, it is important to identify the solution of this problem in Bangkok. In this way, the current study is an attempt to highlight the antecedents of road rage behaviour. The identification of road rage behaviour antecedents can help to resolve the issue of

road rage. The current study, observed the role of frustration level among the individuals as possible antecedents of road rage. Along with frustration level, this study also observed the role of aggressive behavior among the people. Aggressive behavior among the people may lead to the aggressive driving as well as verbal insults and physical threats. Similarly, cultural norms in any society lead to several activities. Additionally, this study observed the role of personality disorder in individual road rage behaviour. Hence, this study proposed four factors which may lead to the individual road rage behaviour. These factors include; frustration level, aggressive behavior, personality disorder and cultural norms. Thus, the purpose of this study is to investigate the antecedents of road rage in Bangkok, Thailand. To achieve this purpose, this study investigated the role of frustration level, aggressive behaviour, personality disorder and cultural norms in individual road rage behaviour.

2. Literature Review

The framework of the current study is presented in Figure 1. In this framework, this study considered four independent variables as the antecedents of the individual road rage behaviour in Bangkok, Thailand. These antecedents include; frustration level, aggressive behaviour, personality disorder and cultural norms. The individual road rage behaviour is considered as dependent variable.

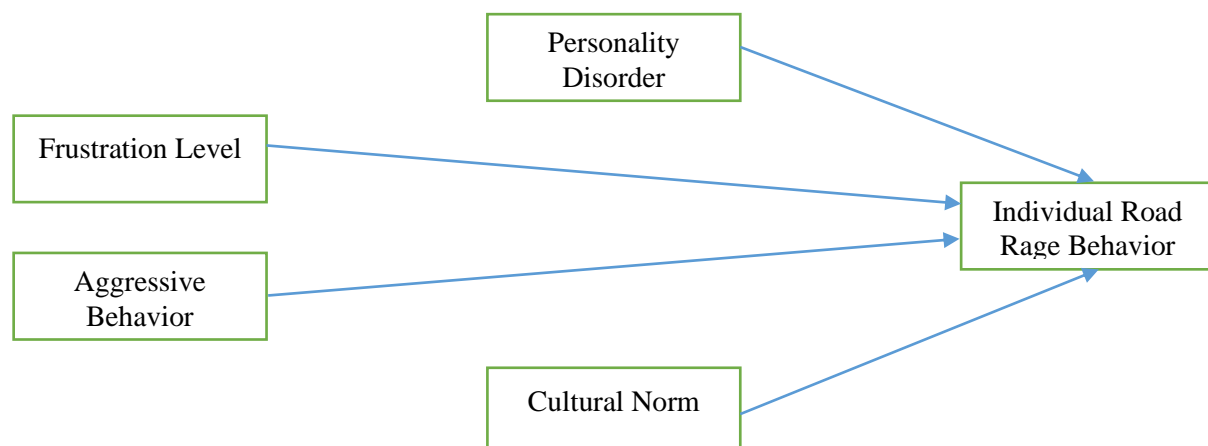


Figure 1. *The relationship between frustration level, aggressive behaviour, personality disorder, cultural norms and individual road rage behaviour*

There are several psychological factors which may have influence on the daily activities of an individual. In psychology, frustration is a common emotional response to opposition, related to anger, annoyance and disappointment. The psychological factors also have influence on the individuals Road rage Behaviour. Most of the times, the road rage behaviour effect on the psychological factors. Among other psychological factors, frustration is also one of the factors which has major influence on road rage behaviour. Frustration is based on the emotional response of an individual (Hosseini, GOODARZI, AHMADIAN, & YARAHMADI, 2020; Levine, Brabander, Moore, Holding, & Koestner, 2022). It is grounded on anger along with the disappointment. This type of emotional response led to the individuals towards unpredictable activities. The unpredictable activities could be road rage activities. Furthermore, it can be further described as frustration is based on the feeling of being upset which causes to increase Road rage behaviour. In this way the current study proposed that the decrease or increase in frustration level have direct influence on road rage behaviour. High level of frustration among the individuals has a potential to increase Road rage behaviour.

Hypothesis 1. Frustration level has relationship with individual road rage behavior.

In social psychology, aggression can be explained any behaviour (Dinwoodie, Zottola, & Dodman, 2021) or act expected at harming any person or animal or detrimental physical property. For instance, aggressiveness include; physical violence, shouting, swearing, along with the harsh language. Previous studies indicated that aggressive behaviour has significant effect on various activities (Drummond, Sauer, & Ferguson, 2020; Herpertz et al., 2021). Similarly aggressive behaviour may lead and individual towards Road rage behaviour. The performance of unpredictable activities which may lead to any harm to a human or any other property could be based on aggressive behaviour. Thus, aggressive behaviour has the possibility to increase individual Road rage behaviour.

Hypothesis 2. Aggressive behavior has relationship with individual road rage behavior.

The mental state of an individual also responsible of various activities of an individual (Perrottelli, Giordano, Brando, Giuliani, & Mucci, 2021). A healthy mental state generally influences positively on human activities however on the other hand, mental state me also lead to the negative effect. The personality disorder can be explained as a mental disorder (Trull, Tragesser, Solhan, & Schwartz-Mette, 2007; Trull, Vergés, Wood, Jahng, & Sher, 2012). Generally mental disorder is based on the unhealthy pattern of thinking which effect on the behaviour of an individual. A personality disorder is a type of mental disorder in which an individual has a rigid and unhealthy pattern of thinking, functioning and behaving. A person with a personality disorder has trouble perceiving and relating to situations and people. As highlighted in previous that mental disorder has significant influence on behavior (Coyle, Shaver, & Linehan, 2018). Similarly, mental disorder also has effect on behavior in relation to the individual Road rage activities. The increase in mental disorder or personality disorder can increase the behavior of an individual towards road rage and personality disorder can decrease the intention of an individual towards Road rage activities. Therefore, this study proposed that mental disorder has relationship with individual Road rage behavior.

Hypothesis 3. Metal disorder has relationship with individual road rage behavior.

Cultural norms are the values related to any specific society. The shared expectations as well as rules that lead a specific behaviour of people within a community, society or social group. Cultural norms are learned as well as reinforced from parents, different friends, teachers along with the other individuals while growing up in a society. Along with various other factors, cultural norms also have influence on behavior of the people (Gelfand & Harrington, 2015; Gupta et al., 2018). Behavior is also shape up through culture of the society as reported in previous studies. Similarly, the behavior related to the road rage could be

shaped through cultural norms. As cultural norms are developed through growth of any individual in relation to the family as well as friends, therefore, individual road rage behavior can also be shaped by family and friends with the passage of time. Thus, there is a relationship between cultural norms and road rage behavior.

Hypothesis 4. Cultural norms have relationship with individual road rage behavior.

3. Research Methodology

The current study is a questionnaire-based study in which quantitative research approach is employed. The use of quantitative research approach is based on the nature of the current study. The objective developed in the study is based on quantitative approach. Because the selection of research method is majorly based on the research questions as well as research of objective. Therefore, by considering research questions and research objectives while selecting the research approach this study selected quantitative research. Cross-sectional design is followed in the study to collect data.

The current study distributed 450 questionnaires among the people for data collection. The population of the study is more than 10000 and previous studies recommended that in this type of population the sample size must be equal or higher than 382. In this way, the current study selected 450 sample size to collect data. The response of the study is the people involved in various road rage activities in Bangkok Thailand. Finally, this study distributed the questionnaire among people involved in road rage activities in Bangkok. From total distributed questionnaires by the current study, 180 questionnaires were received for data analysis.

The development of questionnaires is based on five variables considered by the current study. The first part of the questionnaire to collect data is grounded on the general information related to the respondents. The second section of the questionnaire is based on the scale items related to the key study variables, namely; frustration level, personality disorder, cultural norms and individual road rage behavior. Related to various issues and their behavior towards road rage can be increased due to the frustration level. The aggressive behavior in the study is measured by considering the nature of the respondents towards aggression. Various questions are asked from the respondents related to the culture of the society to measure the cultural norms. Furthermore, they study measured personality disorder by considering the health issues in relation to the respondents. Most importantly the mental health issues are considered to measure personality disorder. Finally, to measure individual road rage behavior the current study considered the intention of the people living in Bangkok towards road rage activity.

4. Findings

Data screening is important in any research study (Ahmad Mahmoud, Ahmad, & Poespowidjojo, 2018) as it help to resolve various errors in the data which can influence the result. Data statistics are given in Table 1. While data screening, it is observed that frustration has three missing values. Aggressive behavior has two missing values. Furthermore, cultural norms found three missing values. All these missing values are removed from the data before data analysis. Outlier in the data is also considered and found that personality disorder has five outliers, however, other variables have no outlier. Outlier is also removed from the study before data analysis.

Table 1. *Data Statistics*

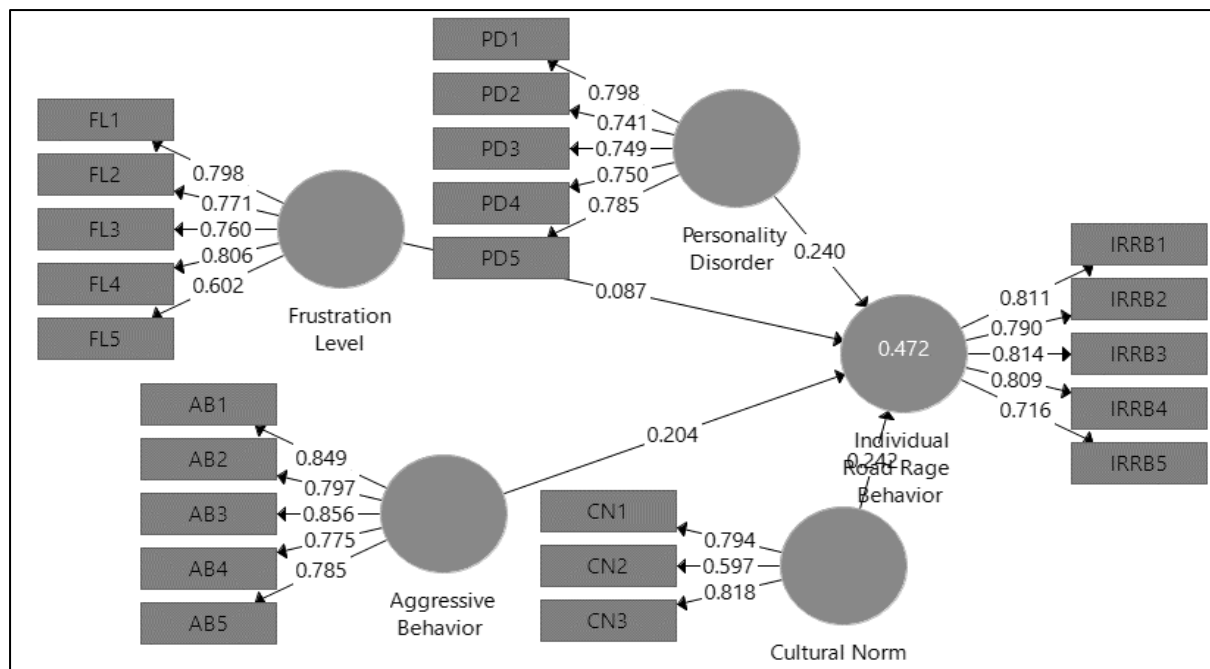
	No.	Missing	Mean	Median	Min	Max	SD	Kurtosis	Skewness
FL1	1	0	2.026	2	1	5	2.028	3.324	1.667
FL2	2	0	1.826	2	1	5	0.954	1.781	2.358

FL3	3	0	1.964	2	1	5	2.041	1.897	1.292
FL4	4	0	2.04	2	1	5	1.109	2.459	1.422
FL5	5	0	2.06	2	1	5	1.275	0.548	2.269
AB1	6	0	1.958	2	1	5	0.907	2.823	1.205
AB2	7	0	2.086	2	1	5	1.035	0.972	1.212
AB3	8	0	1.964	2	1	5	1.02	1.399	2.302
AB4	9	0	1.91	2	1	5	1.002	1.272	1.299
AB5	10	0	2.018	2	1	5	1.047	0.888	1.165
PD1	11	0	1.88	2	1	5	1.043	0.845	2.234
PD2	12	0	1.97	2	1	5	1.14	1.263	1.358
PD3	13	0	1.76	2	1	5	0.943	2.696	1.579
PD4	14	0	1.898	2	1	5	0.983	1.261	1.238
PD5	15	0	2.156	2	1	5	1.083	0.173	0.941
CN1	16	0	1.743	2	1	5	0.854	3.88	1.686
CN2	17	0	1.976	2	1	5	1.094	1.387	1.349
CN3	18	0	2.078	2	1	5	1.143	0.887	1.232
IRRB1	19	0	2.018	2	1	5	1.052	0.876	1.115
IRRB2	20	0	2.21	2	1	5	1.198	0.103	0.98
IRRB3	21	0	2.066	2	1	5	1.143	0.446	1.107
IRRB4	22	0	2.275	2	1	5	1.236	-0.531	0.727
IRRB5	23	0	2.305	2	1	5	1.237	-0.444	0.819

4.1 Partial Least Square-Structural Equation Modeling (PLS-SEM)

PLS-SEM is employed in this study for data analysis (Basco, Hair Jr, Ringle, & Sarstedt, 2021; Joe F Hair Jr, Howard, & Nitzl, 2020). By considering the advantages of PLS-SEM, this data analysis approach is most suitable in the current study. Figure 1 indicated the measurement model of PLS-SEM in which the factor loading is examined. Frustration level is examined through five scale items having loading between 0.602-0.806. Aggressive behavior is measured through five scale items with factor loading between 0.775-0.856. Personality disorder is measured by using five scale items with factor loading between 0.741-

0.798. Cultural norms are considered by using three scale items having factor loading between 0.597-0.818. Finally, individual road rage behavior is measured through five items with factor loading between 0.716-0.814. All the loadings are also given in Table 2 which shows that; scale items related to frustration level, aggressive behavior, personality disorder, cultural norms and individual road rage behavior is higher than 0.5. Therefore, all the items are retained.



Note: FL = Frustration Level, AB = Aggressive Behavior, PD = Personality Disorder, CN = Cultural Norms, IRRB = Individual Road Rage Behavior

Figure 2. *Measurement Model*

Table 2. *Factor Loadings*

Variables	Items	Loading	Alpha	CR	AVE
Aggressive Behaviour	AB1	0.849	0.871	0.907	0.661
	AB2	0.797			
	AB3	0.856			
	AB4	0.775			
	AB5	0.785			
Cultural Norm	CN1	0.794	0.794	0.784	0.552
	CN2	0.597			
	CN3	0.818			
Frustration Level	FL1	0.798	0.804	0.865	0.564
	FL2	0.771			
	FL3	0.76			
	FL4	0.806			
	FL5	0.602			
Individual Road Rage Behaviour	IRR1	0.811	0.849	0.892	0.622
	IRR2	0.79			
	IRR3	0.814			

	IRRB4	0.809			
	IRRB5	0.716			
Personality Disorder	PD1	0.798	0.823	0.876	0.585
	PD2	0.741			
	PD3	0.749			
	PD4	0.75			
	PD5	0.785			

Note: FL = Frustration Level, AB = Aggressive Behavior, PD = Personality Disorder, CN = Cultural Norms, IRRB = Individual Road Rage Behavior

This study not only considered the factor loading, the composite reliability (CR) is also addressed. Furthermore, average variance extracted (AVE) is addressed by the current study to examine the convergent validity. CR above 0.7 and AVE above 0.5 confirm the discriminant validity. It is evident from the

Table 2 that CR is above 0.7 and AVE is above 0.5. Additionally, it is also important to examine discriminant validity which is given in Table 3 and Table 4. HTMT0.9 is used to examine discriminant validity as shown in Table 3 all the values are less than 0.7. Cross-loading is given in Table 4.

Table 3. *HTMT*

	Aggressive Behaviour	Cultural Norm	Frustration Level	Individual Road Rage Behaviour	Personality Disorder
Aggressive Behaviour					
Cultural Norm	0.849				
Frustration Level	0.863	0.802			
Individual Road Rage Behaviour	0.686	0.848	0.673		
Personality Disorder	0.85	0.729	0.769	0.727	

Table 4. *Cross-Loadings*

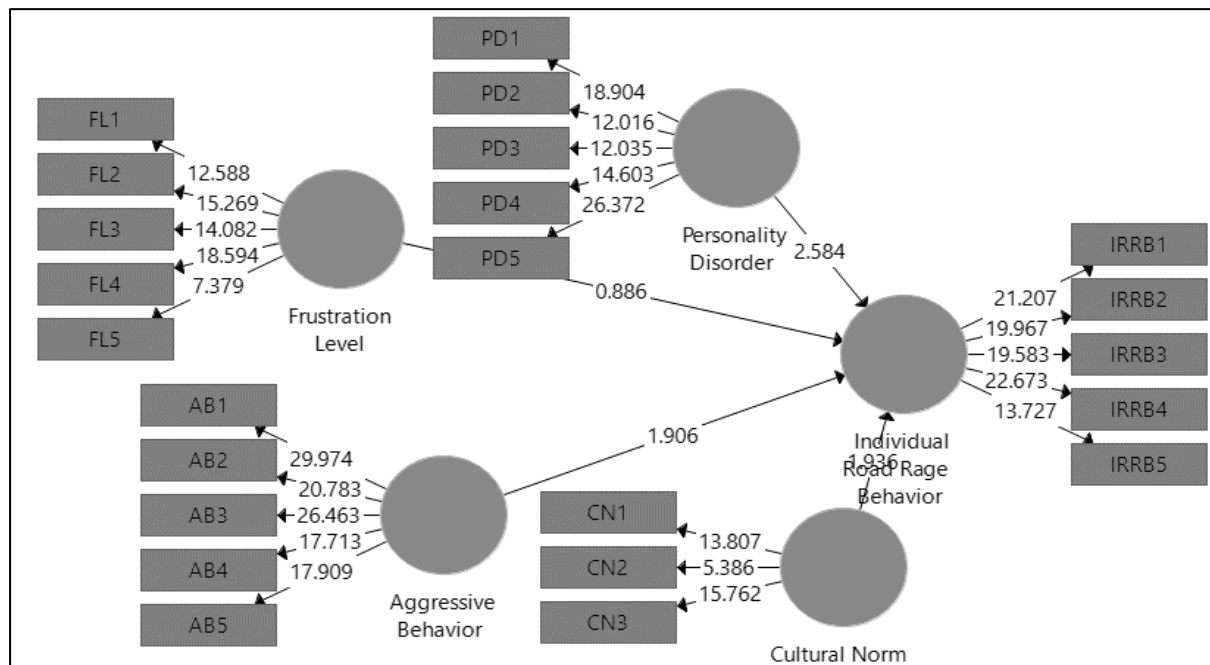
	Aggressive Behaviour	Cultural Norm	Frustration Level	Individual Road Rage Behaviour	Personality Disorder
AB1	0.849	0.569	0.61	0.443	0.513
AB2	0.797	0.547	0.589	0.481	0.552
AB3	0.856	0.603	0.632	0.524	0.568
AB4	0.775	0.527	0.556	0.484	0.641
AB5	0.785	0.527	0.521	0.521	0.668
CN1	0.609	0.794	0.597	0.486	0.599
CN2	0.424	0.597	0.515	0.329	0.424
CN3	0.49	0.818	0.589	0.542	0.581
FL1	0.504	0.546	0.798	0.408	0.446
FL2	0.512	0.569	0.771	0.51	0.416
FL3	0.528	0.572	0.76	0.358	0.475
FL4	0.474	0.648	0.806	0.435	0.444
FL5	0.501	0.507	0.602	0.383	0.584

IRRB1	0.593	0.555	0.612	0.811	0.551
IRRB2	0.459	0.516	0.457	0.79	0.444
IRRB3	0.466	0.441	0.455	0.814	0.494
IRRB4	0.526	0.513	0.408	0.809	0.53
IRRB5	0.294	0.406	0.394	0.716	0.399
PD1	0.587	0.539	0.397	0.422	0.798
PD2	0.595	0.609	0.545	0.451	0.741
PD3	0.426	0.525	0.499	0.468	0.749
PD4	0.494	0.567	0.384	0.455	0.75
PD5	0.663	0.544	0.542	0.551	0.785

Note: FL = Frustration Level, AB = Aggressive Behavior, PD = Personality Disorder, CN = Cultural Norms, IRRB = Individual Road Rage Behavior

To test the study hypotheses, PLS structural model is used which is presented in Figure 3. In this process, PLS bootstrapping is employed which is recommended in PLS-SEM (Joseph F Hair Jr et al., 2021; Purwanto & Sudargini, 2021). T-value 1.64 is considered to check whether the hypotheses are supported or not supported. Total four hypotheses are tested in this process and results are given in Table 4. The effect of frustration level is considered in relation to the individual road rage behavior. However, the results indicated that the relationship between frustration level and

individual road rage behavior is not significant. The relationship between aggressive behavior is also considered in relation to individual road rage behavior. This relationship is significant with t-value 1.906. Additionally, the effect of personality disorder is also examined on individual road rage behavior. It is found that personality disorder has significant effect on individual road rage behavior with t-value 2.584. Finally, the relationship between cultural norms are also has significant relationship with individual road rage behavior with t-value 1.936.



Note: FL = Frustration Level, AB = Aggressive Behavior, PD = Personality Disorder, CN = Cultural Norms, IRRB = Individual Road Rage Behavior

Figure 3. *Structural Model*

Table 5. *Direct Effect Results*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Aggressive Behaviour -> Individual Road Rage Behaviour	0.204	0.19	0.107	1.906	0.029
Cultural Norm -> Individual Road Rage Behaviour	0.242	0.245	0.125	1.936	0.027
Frustration Level -> Individual Road Rage Behaviour	0.087	0.102	0.099	0.886	0.188
Personality Disorder -> Individual Road Rage Behaviour	0.24	0.25	0.093	2.584	0.005

5. Conclusion

The purpose of this study was to investigate the antecedents of road rage in Bangkok, Thailand. The effect of frustration level, aggressive behavior, personality disorder and cultural norms is considered in relation to the individual road rage behavior. Data was collected by using a questionnaires and data analysis was carried out by using Partial Least Square (PLS).

The current study considered frustration level of individuals as very first antecedent of individual road rage behavior. Therefore, the first hypothesis is proposed in which the relationship between frustration level and individual road rage behavior is considered. Results indicated an insignificant relationship between frustration level and individual road rage behavior. The frustration level has no effect on individual road rage behavior. This study proved that frustration level is not an antecedent of individual road rage behavior. The current study considered aggressive behavior as second antecedent of individual road rage behavior. In this way, this study proposed the relationship between aggressive behavior and individual road rage behavior in hypothesis two. The results of this hypothesis indicated that aggressive behavior has significant relationship with individual road rage behavior. It shows that the increase in aggressive behavior can increase the individual road rage behavior. In this regard, the study shows positive effect of aggressive behavior on road rage behavior. This study proposed personality disorder as third antecedent of

individual road rage behavior. The results of this hypothesis three shows that personality disorder has significant effect on individual road rage behavior. Any individual having personality disorder generally involve in road rage behavior activities. Higher the Personality disorder higher will be the road rage behavior. Therefore, personality disorder is the third antecedent of individual road rage behavior. Finally, the study proposed cultural norms as third antecedent. It is proposed in hypothesis four which shows that cultural norms have significant and positive effect on road rage behavior. Therefore, the unique culture of societies also helps the individuals to involve in various road rage behavior activities. Therefore, cultural norms are the fourth antecedent of individual road rage behavior. Finally, the current study concluded that there are three antecedents of individual road rage behavior in Bangkok Thailand. These antecedents include; aggressive behavior, personality disorder and cultural norms.

6. Implications

It is shown in the literature that various studies carried out road rage phenomena in various parts of the world. However, the road rage behavior among the individuals is rarely addressed by previous studies. Road rage is considered through different aspects but the behavior related to the individuals Road rage is less addressed in the literature, therefore, this study contributed to the literature by investigating the road rage behavior of the people. Most importantly, the study considered

in Bangkok Thailand which is rare in the literature. The study identified three antecedents of individual road rage behavior which is not considered in previous study. All the various studies investigated the factors in different aspects, however, none of the study considered these elements as antecedents of individual road rage behavior in Bangkok Thailand. With the help of the results of the study the practitioners can discourage road rage behavior. Most importantly the management of Bangkok can discourage aggressive behavior of the individuals. Furthermore, the cultural norms should be promoted in right way and not to involve in these activities. Additionally, the issue of personality disorder among the individuals can be resolved to decrease the level of individuals related to road rage behavior.

Reference

- [1] Ahmad Mahmoud, M., Ahmad, S., & Poespowidjojo, D. A. L. (2018). The role of personality and intrapreneurial behavior on individual performance: Data screening and preliminary analysis. *Asian Journal of Multidisciplinary Studies*, 6(2), 38-46.
- [2] Basco, R., Hair Jr, J. F., Ringle, C. M., & Sarstedt, M. (2021). Advancing family business research through modeling nonlinear relationships: Comparing PLS-SEM and multiple regression. *Journal of Family Business Strategy*, 100457.
- [3] Coyle, T. N., Shaver, J. A., & Linehan, M. M. (2018). On the potential for iatrogenic effects of psychiatric crisis services: The example of dialectical behavior therapy for adult women with borderline personality disorder. *Journal of consulting and clinical psychology*, 86(2), 116.
- [4] Dinwoodie, I. R., Zottola, V., & Dodman, N. H. (2021). An investigation into the effectiveness of various professionals and behavior modification programs, with or without medication, for the treatment of canine aggression. *Journal of Veterinary Behavior*, 43, 46-53.
- [5] Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society open science*, 7(7), 200373.
- [6] Gelfand, M. J., & Harrington, J. R. (2015). The motivational force of descriptive norms: For whom and when are descriptive norms most predictive of behavior? *Journal of Cross-Cultural Psychology*, 46(10), 1273-1278.
- [7] Gupta, M., Uz, I., Esmaeilzadeh, P., Noboa, F., Mahrous, A. A., Kim, E., . . . Azam, A. (2018). Do cultural norms affect social network behavior inappropriateness? A global study. *Journal of Business Research*, 85, 10-22.
- [8] Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110.
- [9] Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*: Springer Nature.
- [10] Herpertz, S., Matzke, B., Hillmann, K., Neukel, C., Mancke, F., Jaentsch, B., . . . Steinmann, S. (2021). A mechanism-based group-psychotherapy approach to aggressive behaviour in borderline personality disorder: findings from a cluster-randomised controlled trial. *BJPsych open*, 7(1).
- [11] Hosseini, G. A., GOODARZI, M., AHMADIAN, H., & YARAHMADI, Y. (2020). Presenting a causal model of divorce in married men referred to counseling centers based on irrelevant communication beliefs and individual differentiation with the mediating role of sexual function and marital frustration.
- [12] Klinsrisuk, R., & Pechdin, W. (2022). Evidence from Thailand on Easing COVID-19's International Travel Restrictions: An Impact on Economic Production, Household Income, and Sustainable Tourism Development. *Sustainability*, 14(6), 3423.
- [13] Levine, S. L., Brabander, C. J., Moore, A. M., Holding, A. C., & Koestner, R. (2022). Unhappy or unsatisfied: distinguishing the role of negative affect and need frustration in depressive symptoms over the academic year and

- during the COVID-19 pandemic. *Motivation and Emotion*, 46(1), 126-136.
- [14] Love, S., Kannis-Dymand, L., Davey, J., & Freeman, J. (2022). Metacognition, rumination and road rage: an examination of driver anger progression and expression in Australia. *Transportation research part F: traffic psychology and behaviour*, 84, 21-32.
- [15] Perrottelli, A., Giordano, G. M., Brando, F., Giuliani, L., & Mucci, A. (2021). EEG-based measures in at-risk mental state and early stages of schizophrenia: a systematic review. *Frontiers in psychiatry*, 12, 582.
- [16] Purwanto, A., & Sudargini, Y. (2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) Analysis for Social and Management Research: A Literature Review. *Journal of Industrial Engineering & Management Research*, 2(4), 114-123.
- [17] Ryu, H., Kim, C., Kim, J., Lee, S. J., & Lee, J. (2022). Understanding the Road Rage Behavior and Implications: A Textual Approach Using Legal Cases in Korea. Available at SSRN 4057845.
- [18] Smart, R. G., Stoduto, G., Mann, R. E., & Adlaf, E. M. (2004). Road rage experience and behavior: vehicle, exposure, and driver factors. *Traffic injury prevention*, 5(4), 343-348.
- [19] Trull, T. J., Tragesser, S. L., Solhan, M., & Schwartz-Mette, R. (2007). Dimensional models of personality disorder: Diagnostic and Statistical Manual of Mental Disorders Fifth Edition and beyond. *Current Opinion in Psychiatry*, 20(1), 52-56.
- [20] Trull, T. J., Vergés, A., Wood, P. K., Jahng, S., & Sher, K. J. (2012). The structure of Diagnostic and Statistical Manual of Mental Disorders (text revision) personality disorder symptoms in a large national sample. *Personality Disorders: Theory, Research, and Treatment*, 3(4), 355.
- [21] Zhang, Y., Khan, S. A. R., Kumar, A., Golpîra, H., & Sharif, A. (2019). Is tourism really affected by logistical operations and environmental degradation? An empirical study from the perspective of Thailand. *Journal of cleaner production*, 227, 158-166.