

Application Form of EASTS IRG

Date of Submission: 2018/06/01

<p>1. Name of IRG: Motorcycle Traffic and Safety</p>
<p>2. List of research members</p> <p>1) a) Name of representative: Dr. HSU, Tien-Pen b) ID number of :EASTS Regular Member: tw-95-18-0034 c) Affiliation: Institute of Civil Engineering, National Taiwan University d) E-mail: hsutp@ntu.edu.tw e) Tel: +886-2-33664273, Mobile: +886-933909041 f) Country/Region & Address: NTU, Roosevelt Road Sec.4 No.1 Taipei 10617, Taiwan</p> <p>2) a) Name: Dr. WEDAGAMA, Dewa Made Priyantha b) ID number of :EASTS Regular Member: ID-09-17-0048 c) Affiliation: Department of Civil Engineering, Udayana University, Bali, Indonesia d) E-mail: priyantha@civil.unud.ac.id e) Tel: +62-361-703385, Mobile: +6281337540638 f) Country/Region & Address: Udayana University, Kampus Bukit Jimbaran, Bali, Indonesia, 80361</p> <p>3) a) Name: Dr. Lee Vien, Leong b) ID number of :EASTS Regular Member: my-06-18-0014 c) Affiliation: School of Civil Engineering, Universiti Sains Malaysia d) E-mail: celeong@usm.my e) Tel:+604-5996286, Mobile: +019-4466863 f) Country/Region & Address: School of Civil Engineering, Engineering Campus, Universiti Sains Malaysia, 14300 Nibong Tebal, Penang, Malaysia</p> <p>4) a) Name: Dr. Ricardo de Guzman Sigua b) ID number of :EASTS Regular Member: ph-95-17-0005 c) Affiliation: Institute of Civil Engineering, University of the Philippines d) E-mail: rdsigua@up.edu.ph e) Tel:+639178398191 f) Country/Region & Address: Philippines</p> <p>5) a) Name: Dr. KANITPONG, Kunnawee b) ID number of :EASTS Regular Member: TH-95-18-0092 c) Affiliation: Thailand Accident Research Center (TARC), Asian Institute of Technology d) E-mail: kanitpon@ait.ac.th e) Tel: +66-81-558-2694 f) Country/Region & Address: Thailand</p> <p>6) a) Name: Dr. TRAN VU TU b) ID number of :EASTS Regular Member: VN-17-17-0011 c) Affiliation: Ho Chi Minh city University of Technology and Education d) E-mail: tutv@hcmute.edu.vn e) Tel:+84 931282881</p>

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f) Country/Region & Address: Vietnam
3. Name of contact person other than representative: Same as representative person
4. Keywords (Maximum: 5 words) Motorcycle, Traffic Safety, Traffic Management, Vehicle Management
5. Purpose and Mission of IRG: By conducting the study on the state-of-the-art of the motorcycle traffic development in each country in order to understand the different problems of motorcycle traffic in different countries and then based on it, through the research to share the experience of motorcycle traffic management among the countries, in order to contribute ourselves to enhance the traffic management efficiency and safety of motorcycle in Asian countries.
6. Target year for completion (Research period is suitable within four years.): Towards 2022 by conducting a series of comparative studies on motorcycle related issues annually, such as driving risk behavior, accident occurrence and safety countermeasure, motorcycle traffic system design and vehicle management system for motorcycle etc. among Asian Countries.
7. Research plan: (Oct, 2018 - Sep, 2019) <i>Topic 1: A comparative study on motorcycle driving risk behavior among Asian Countries</i> Abstract: Each country to use same questionnaire survey to ask for the driver risk perception under various traffic situation and using Structural Equation Modeling to discuss the risky behavior that may cause accidents. The result of factor analysis can show significant factors and risk perception effect. The result of each country can be combined together to make the comparison study on the motorcyclist risky perception and behavior among the countries. Reference : 1. Priyantha Wedagama (2015), Analysis Self-Reported Risky Behavior of Motorcyclists in Bali using Structural Equation Modelling, Journal of the Eastern Asia Society for Transportation Studies, Vol.11, pp.2015-2027. https://doi.org/10.11175/easts.11.2015 2. Sarm, S.A. and Kanitpong, K., "Analysis of Factors Affecting the Severity of Motorcycle Casualties in Phnom Penh Using Bayesian Approach," the Asian Transport Studies, Vol.4, No.2, pp.430-443, 2016. https://www.jstage.jst.go.jp/article/eastsats/4/2/4_430/article/-char/en 3. Baral, S. and Kanitpong, K., "Factors Affecting the Severity of Motorcycles Accidents and Casualties in Thailand by Using Probit and Logit Model, the Journal of Eastern Asia Society for Transportation Studies, Vol.11, pp.2175-2188, 2015,". https://www.jstage.jst.go.jp/article/easts/11/0/11_2175/article/-char/en 4. Doan Thanh Tan, Tran Vu TU, Kazushi Sano "A Study on Motorcycle Equivalent Unit in Urban Streets" Asian Transport Studies (ATS), 2018 (in publishing) 5. Tran Vu Tu, Vo Trong Bo, "Simulation of bus lanes in motorcycle-dominated traffic flow by using

agent-based model” International journal for traffic and transport engineering, ISSN 2217-5652, Vol. 7, Issue 2, pp. 232-242, 2017

6. Sigua, R. G. (2009). Motorcycle involvement in road crashes in Metro Manila, Journal of the Eastern Asia Society for Transportation Studies, Vol. 8, pp 1934-1943. .
<https://www.jstage.jst.go.jp/browse/easts/-char/en>
7. Ricardo Sigua, Glenn Simon Latonero, Sahid Kamid, Sherman Avendano “A Study on Lane Capacities of Motorcycles Under Controlled Conditions”, Proceedings of the Eastern Asia Society for Transportation Studies, 2017.

(Oct, 2019- Sep, 2020)

Topic 2: A comparative study on motorcycle accident occurrence at accident prone intersections and safety countermeasure

Abstract: To select five accident prone intersections in each country, and to investigate the collision types, and then, based one it to generate the proposal of improvement countermeasures. Then, to compare the outcomes with each other to find out the different features of motorcycle involved accidents and expected improvement countermeasures in different countries.

Reference:

1. Hsu, Tien.-Pen., Wen, K.-L., Motorcycle Accident-Prone Types at Intersections and Innovative Improvement Design Guideline. Journal of the Eastern Asia Society for Transportation Studies Vol. 10, Dec. 26, 2015, PP.1-20. <https://doi.org/10.11175/easts.11.2126>
2. Wedagama, D.M.P and Dissanayake, D., Analysing Motorcycle Injuries on Arterial Roads in Bali using a Multinomial Logit Model. Journal Eastern Asia Society for Transportation Studies Vol. 8, 2009, pp. 1892-1904 <https://doi.org/10.11175/eastpro.2009.0.363.0>
3. Jensupakarn, A. and Kanitpong, K., “Influences of Motorcycle Rider and Driver Characteristics and Road Environment on Red Light Running Behavior at Signalized Intersections,” Accident Analysis and Prevention, Vol. 113, pp.317-324, 2018
<https://www.sciencedirect.com/science/article/pii/S0001457518300563>

(Oct, 2020 - Sep, 2021)

Topic 3: A comparative study on traffic system design for motorcycle among Asian Countries – PCE, Street layout and Motorcycle Traffic regulation

Abstract: Using selected typical streets in the urban area in each country to investigate the street layout for motorcycle usage, unlike traditional design concept based on car usage, such as motorcycle exclusive lane, head start waiting zone for two wheeler, two stage left turn, left turn and right turn regulation for motorcycle, signal timing by considering motorcycle, PCE value analysis for motorcycle, motorcycle banned street lane and so on, to compare with each other for discussing the possible better street layout for motorcycle.

Reference:

1. Hsu, Tien-Pen., Motorcycle Traffic Safety Management in Taiwan: A Segregated Flow Concept, Proceeding of International Conference on Transportation Systems Planning and Operation (TRANSPO2004), Chennai, India, 2004

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<https://www.space.ntu.edu.tw/navigate/s/3A71B0A8CBF54583B4A248C93FCCB7F1QQY>

2. Wedagama, D.M.P Time Headway Modelling of Motorcycle-Dominated Traffic to Analyse Traffic Safety Performance and Road Link Capacity of Single Carriageways, Jurnal Teknik Sipil Institut Teknologi Bandung, Vol. 24, No.1, 2017. pp. 27-34. <http://dx.doi.org/10.5614%2Fjts.2017.24.1.4>
3. Leong, L.V. and Lee, J.H., Impact of Motorcyclists' Travel Behavior on Delay and Level-of-Service at Signalized Intersections in Malaysia, In: Stanton N., Landry S., Di Bucchianico G., Vallicelli A. (eds) Advances in Human Aspects of Transportation. Advances in Intelligent Systems and Computing, vol 484. Springer, Cham, 2016, pp. 1165-1178. https://doi.org/10.1007/978-3-319-41682-3_95,

(Oct. 2021 - Sep, 2022)

Topic 4: A comparative study on motorcycle vehicle management system among Asian Countries

Abstract: Analysis and comparison of the vehicle management system of motorcycle among the countries, including the motorcycle driver license rule and requirement for the driver license, fine of violation rule against motorcycle and the vehicle inspection requirement of motorcycle in each country and then to compare with each other.

Reference:

1. Hsu, T-P., Reviews on Motorcycle Traffic Management System in Taiwan, National Taiwan University, Publication Sponsored by Honda Taiwan, 2017.
<https://www.space.ntu.edu.tw/navigate/s/9AB35C53CF8448A0A375A4313C6D7058QQY>
2. Wedagama, D.M.P., Local Motorcyclists' Intentions towards Traffic Violations and Speeding, Journal of the Eastern Asia Society for Transportation Studies Vol. 12, 2017, pp. 1871-1883 <https://doi.org/10.11175/easts.12.1871>
3. Leong, L.V. and Sadullah, A.F., A Study on the Motorcycle Ownership, Journal of the Eastern Asia Society for Transportation Studies, Vol. 7, 2007, pp. 528-539.
<https://doi.org/10.11175/easts.7.528>

8. Research funds:

Every member will study by their own research fund until other resources available.

Source of research funds(*)	Approximate amount (US\$)
ICRA	US\$ 10,000

*: (ex.) ICRA (Research grant of EASTS), Grants-in-aid for Scientific Research of Ministry of Education, Culture, Sports, Science and Technology (Japan), and etc..

All applications are to be delivered to:
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