FY 2023
IATSS Research Project Reporting and Award Ceremony Program

Date 12th April, 2024(Fri) 13:00 ～ 18:00 **Event Format** Hybrid (on-site + remote delivery)

Venue Keidanren hall, Keidanrenkaikan 2nd floor

FY 2023 IATSS Research Project Reporting Program

13:00	Opening Remarks	Kazuhiko Takeuchi President, IATSS
13:05	Report Theme① [2303A] Feasibility Study of Drivers Yielding Behavior to the Pedestrians at Unsignalized Crossing	Satoru Kobayakawa
13:50	Report Theme② [2304C] A cross-cultural study on health-related traffic accidents in Asian countries	Masaya Takahashi
14:35	[Break] 15min	
14:50	Report Theme③ [2306B] Research on Efficient Accident Prevention Measures Using Artificial Intelligence	Akinori Morimoto
15:35	Report Theme④ [2321A] Education activities for solving transportation problems in High Schools in middle Mountainous Areas	Yuto Kitamura
16:20	Concluding remarks	Tomohiro Ichinose Chairperson, Investigatory Research Department, Planning Committee

The 45th (FY 2023) IATSS Award Ceremony Program

16:40	Introduction of distinguished guests	
16:45	Opening Remarks	Kazuhiko Takeuchi President, IATSS
16:48	Selection Progress Report	Kazuhisa Ogawa Chairperson, Awards and Grants Department, planning committee
16:55	Presentation of Awards	
	Achievement Award：Dialogue with Residents Fosters a New Form of Public Transportation - Haga-Utsunomiya LRT will bring about the future of people and the city -	Utsunomiya City Haga Town Utsunomiya Light Rail Co.
	Literature Award：Walkable City in France: Designing a City That Makes You Want to Walk	Vincent Fujii Yumi
	Paper Award：Evaluation of risk factors for road accidents under mixed traffic: Case study on Indian highways（Research 46-4）	Sujata Basu Pritam Saha
17:07	Congratulatory address	Yoshinobu Kusunoki Director General of the National Police Agency Kanji Takizawa Deputy Director-General for Policies on Cohesive Society, Cabinet Office
17:17	Acknowledgments	Vincent Fujii Yumi Sujata Basu Pritam Saha
17:26	Dialogue with Residents Fosters a New Form of Public Transportation - Haga-Utsunomiya LRT will bring about the future of people and the city -	Utsunomiya City Haga Town Utsunomiya Light Rail Co.
17:36	Closing Remarks	Nobuyuki Kawai Executive Director, IATSS

※Program contents are subject to change.

Registration

https://iatss-en.hp.peraichi.com/

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International Association of Traffic and Safety Sciences

FY 2023
IATSS Research Project Reporting and Award Ceremony

Kazuhiko Takeuchi

President, IATSS
President, The Institute for Global Environmental Strategies (IGES)

As the warmth of spring arrives, I extend my heartfelt greetings to every one of you, wishing for your continued prosperity. I would also like to express my sincere gratitude for the exceptional understanding and support that you have consistently provided to our association's activities.

The Noto Peninsula Earthquake that occurred on New Year's Day resulted in significant damage and numerous casualties. I offer my deepest condolences to those who lost their lives, and I sincerely pray for the swift recovery of the affected areas.

High-quality transportation and its culture contribute to the development of industry and social activities, support the convenience and affluence of daily life, and play an important role in the rapidly advancing information society. In particular, the development of automobile transportation has brought about a qualitative and quantitative expansion of public and private mobility.

At the same time, however, we face serious issues such as traffic accidents, energy and resource consumption. Moreover, societal problems like aging of society, urban and rural decline, coupled with the urgent challenge of decarbonization to combat global warming, have become increasingly prominent. In the automotive industry, a once-in-a-century transition is said to be approaching, with the rise of E-Mobility challenging existing forms of mobility. The development of a sustainable and excellent mobility society requires further grand designs, research and investigation for practical problem-solving, and ongoing educational support.

The International Association of Traffic and Safety Sciences has been conducting research activities with the belief that it is an important responsibility to approach these matters from an interdisciplinary and international perspective. We sincerely request the continued support and cooperation of all stakeholders.

This year, we are once again hosting our Research Project reporting and award ceremony. Your attendance would be greatly appreciated.

Tomohiro Ichinose

IATSS member
Chair, Planning Committee,
Investigatory Research Department
Dean, Professor, Faculty of Environment and Information Studies, Keio University

In this season of early spring, I extend warm greetings to each of you, wishing you continued well-being and joy. I also express my sincere gratitude for the understanding and support you have consistently bestowed upon the research and investigation activities of the International Association of Traffic and Safety Sciences (IATSS).

Research and investigation activities stand as a cornerstone of our association, the IATSS. Members and special researchers from diverse fields such as traffic engineering, urban engineering, economics, education, law, public administration, psychology, information systems, mechanical engineering, environment and energy, medicine, regional and societal studies, culture, and the arts, contribute to a membership that truly reflects a rich variety of expertise.

The research projects, led by our members, involve multi-year investigations and studies related to transportation and safety, resulting in comprehensive reports. Our approach to research emphasizes "interdisciplinarity" and "internationality," while the outputs prioritize "practicality" and "foresight" that directly contribute to achieving our goals. Based on these four principles, our research projects aim to address a wide range of themes in pursuit of an ideal transportation society.

This year, we undertook a record-breaking 16 research projects covering various themes. During this presentation, we will report on the outcomes of four selected research projects.

While this presentation continues in the established hybrid format in the era of "With Corona," I encourage you to attend in person for lively discussions and interactions on this occasion.

Following the research presentation, we have planned an award ceremony recognizing outstanding contributions, exceptional works, and outstanding papers that have made significant contributions to traffic and safety. We sincerely look forward to seeing you at the conference.

FY2023 IATSS Research Project Reporting

2303A Project

Feasibility Study of Drivers Yielding Behavior to the Pedestrians at Unsignalized Crossing

《Background and Objectives》

The maintenance of traffic signals has been cited as an issue for sustainable traffic management, and the operation of pedestrian crossings without traffic signals may increase. On the other hand, the low rate of stopping at unsignalized pedestrian crossings has also been pointed out, and there is a need for countermeasures to address this issue. Overseas, efforts have been made to enhance pedestrian.

crossing convenience by implementing Rectangular Rapid Flashing Beacons (RRFB) that utilize flashing lights to alert drivers at crosswalk facilities. Therefore, this study examines the feasibility of introducing RRFBs at unsignalized pedestrian crosswalks in Japan, based on a review of how unsignalized pedestrian crosswalks are installed overseas and the measures taken to encourage vehicles to stop temporarily.

《Summary》

1) Survey of RRFB traffic in North America

- In North America, the introduction of Rectangular Rapid Flashing Beacons (RRFB) began around 2007, and by 2023, it was formally codified in the Manual on Uniform Traffic Control Devices (MUTCD).
- The decision for implementation is based on the traffic volume of vehicles and pedestrians.

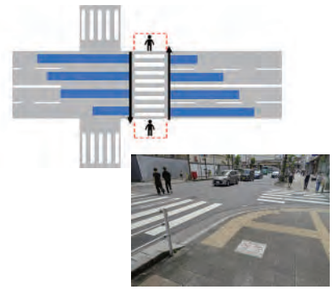
2) A Survey of Pedestrian Crossing Behavior at Unsignalized Crosswalks in Japan

- The average yielding rate based on a three-day/ten-hour traffic observation was 40.9%.
- Yielding rates were found to be higher for vehicles traveling in the lane closer to the pedestrian crossing position.
- Pedestrians tend to check whether vehicles are 'stopping' or 'proceeding' before initiating crossing.

Future Development

- To analyze the impact of pedestrians' indication of their intention to cross on the yield rate (stoppage rates), a pre-and-post study through a societal experiment with Rectangular Rapid Flashing Beacons (RRFB) is required.

On-site surveys and hearings in North America



Survey of Traffic Conditions at Unsignalized Intersections in Japan

2304C Project

A cross-cultural study on health-related traffic accidents in Asian countries

《Background and Objectives》

In recent years, it has been reported that the health condition of drivers is a major risk factor for traffic accidents, and the prevention of health-related accidents is recognized as an important issue for traffic accident prevention in Japan. However, measures to prevent health-related accidents, especially in the Asian region, have not yet been fully implemented.

In this project, we aimed to conduct post-viewing surveys on the awareness video created as part of the FY2020 social contribution project to verify its outreach effectiveness. In FY2023, we disseminated and raised awareness of each video in Japan, as well as conducted a questionnaire survey in Japan, China, and Thailand after viewing the educational videos to make international comparisons.

《Summary》

■ National Campaign for Preventing Health-Related Accidents

- The YouTube video view counts were as follows: 'Sleep Apnea Driving Scroll' with 6,039 views, 'Glaucoma Driving Scroll' with 4,681 views, 'Sleep Apnea Syndrome and Traffic Accidents' with 3,245 views, and 'Glaucoma and Traffic Accidents' with 41,349 views.

■ Post-viewing questionnaire for educational videos in Japan, China, and Thailand and its comparison

- The results of post-viewing surveys for the videos 'Sleep Apnea Driving Scroll' and 'Glaucoma Driving Scroll' conducted in Japan, China, and Thailand are as follows: In Japan, 393 respondents for 'Sleep Apnea Driving Scroll' and 815 for 'Glaucoma Driving Scroll.' In China, 99 respondents for each video. In Thailand, 98 respondents for each video.
- It was thought that there could potentially be more patients with sleep apnea and glaucoma in China and Thailand than in Japan.
- The awareness-raising video was highly rated in China and Thailand, and is a useful tool for preventing health-related accidents. It is hoped that this video will further promote awareness of the prevention of health-related accidents.

Driving Scroll with Sleep Apnea Syndrome

Driving Scroll with Glaucoma

Explore our collection of awareness videos in the 'Video Archive' section at the IATSS website.

https://www.iatss.or.jp/movie/

2306B Project

Research on Efficient Accident Prevention Measures Using Artificial Intelligence

《Background and Objectives》

The 11th Traffic Safety Basic Plan places priority on promoting traffic guidance and control that contributes to the deterrence of traffic accidents by improving traffic accident analysis based on geographical information and other factors. In addition, with the creation of the Digital Agency in 2021, there is an urgent need to proactively promote the digitization of government administration, and standardization and other measures are needed in the field of traffic safety as well.

Since 2014, the International Association of Traffic and Safety Sciences has published the "Traffic Enforcement Handbook" to provide ongoing information to those involved in traffic enforcement. There is a demand for greater efficiency using big data from the field of transportation administration.

Given this background, the objective of this project is to leverage rapidly advancing artificial intelligence (AI) and develop effective models to propose accident deterrence countermeasure locations.

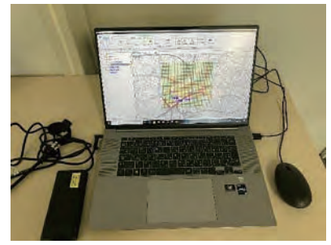
《Summary》

■ Trial Operation and Effectiveness Verification of the Traffic Guidance and Enforcement Activity Support System

- The 'Traffic Guidance and Enforcement Activity Support System' combines the 'Accident Risk Prediction Model' and the 'Enforcement Effectiveness Evaluation Model,' visualizing the calculated results in a sequence to assist in determining enforcement locations.
- With the cooperation of the Shinjuku Police Station, the prototype system built last year was operated on a trial basis for one month to verify the effectiveness of its introduction.
- Enforcement activities were conducted at 10 of the 12 locations proposed by the system. On the other hand, Enforcement activities were conducted at the discretion of police officers at four locations not proposed by the system.
- Analyze the changes in the situation of accidents and near-misses during the trial operation period of the system.

■ Improvement of basic model for practical use

- To address the lack of convergence of calculations by the AI, the model was improved by revising the compensation, hyperparameters, and measures.



Trial operation of the Traffic Guidance and Enforcement Activity Support System

Rate of enforcement activities conducted at proposed system locations

2321A Project

Education activities for solving transportation problems in High Schools in middle Mountainous Areas

《Background and Objectives》

Osaka Prefectural Toyonaka High School, Nose Branch is located in a middle mountainous area and faces "commuting issues" such as limited access to public transportation. Therefore, in FY2021 and FY2022, we implemented a project in collaboration with local governments and organizations to provide high school students with a new means of transportation, the electrically power assisted bicycle (e-bike), with the aim of improving their problem-solving skills by supporting their learning about transportation and developing solutions to local issues. Specifically, we have recorded image data of students' riding behavior, analyzed what kind of risky behavior they were engaging in, and conducted traffic safety education based on the results of this analysis.

This year's social contribution project was designed to encourage high school students to think about traffic safety education on their own, based on the results of previous surveys and research.

《Summary》

This year, high school students developed a traffic safety education program based on their knowledge and experience, and implemented it for junior high school students. Specifically, lectures were given at local junior high schools on safe bicycle riding, using educational materials developed by the high school students themselves.

In addition, high school students led workshops with road administrators, police, local residents, and road users to discuss feasible measures to achieve a safe and secure road environment. The workshop was attended by 19 students, 3 high school teachers, 3 from the town of Nose (Road Section and Community Traffic Department), 4 from Osaka Prefecture (road administrator), 1 police officer, and 1 ward mayor (representative of residents). Based on the discussion here, we were able to achieve a concrete result: reflective line-of-sight guide tacks were later installed by the Ikeda Engineering Office of Osaka to alert people to the ditch on the shoulder of the road.

In addition, we conducted a study on behavioral changes related to safe bicycle use among high school students, utilizing naturalistic data. Through this research, we observed an increase in helmet usage and positive changes in riding behavior for hazard avoidance.

Explaining the handling of measuring instruments

Traffic safety education for junior high school students