

วิชาที่รับผิดชอบ

ระดับปริญญาตรี	Soil Mechanics and Laboratory, Reinforced Concrete Structure and Laboratory, Transportation Planning and Highway Design, Structural Analysis, Construction Materials, and Surveying.
ระดับบัณฑิตศึกษา	Advanced Statistical Methods for Transportation, Multivariate Statistical Analysis, Advanced Pavement and Highway Design, Computer Programming Languages for Statistical Analysis and Simulation (R and Python), and Computer Software for Advanced Statistical Analysis (SPSS, Mplus, NLOGIT including LIMDEP).

โครงการด้านการจราจรและการขนส่ง

- 1) Project entitled “Road Safety Audit: National Road 23 Roi Et-Yasothon under the Greater Mekong Subregion Highway Expansion Phase 2 Project”. Funded by Department of Highways (DOH) and Asian Development Bank (ADB). Budget of 500,000 THB. (Roles: site auditor and report)
- 2) Project entitled “Investigation of factors associated with fatal motorcycle-crashes”. Funded by Suranaree University of Technology (SUT). Budget of 200,000 THB. (Role: main researcher) (September 2021-September 2022)
- 3) Project entitled “Injury-severities investigation associated with speeding-driving related crashes”. Funded by Suranaree University of Technology (SUT). Budget of 200,000 THB. (Role: main researcher) (September 2021-September 2022)
- 4) Project entitled “Temporal instability assessment of Factors Impacting Motorcycle Crash Severities”. Funded by Suranaree University of Technology (SUT). Budget of 200,000 THB. (Role: main researcher) (September 2022-September 2023)
- 5) Project entitled “Investigating the effects of adverse weather condition on crash injury-severities”. Funded by Suranaree University of Technology (SUT). Budget of 200,000 THB. (Role: main researcher) (September 2022-Janurary 2024)
- 6) Project for the safety inspection procedures prior to opening traffic on Intercity Motorway No. 81, under Contract No. กท./จ.49/2567 dated February 22, 2567, from February 23, 2567 to December 18, 2567 (300 days), serving as an Assistant Civil Engineer.

รางวัลและทุนการศึกษา

- พ.ศ. 2565 ทุนการศึกษาแบบเต็มจำนวนจาก Department of Infrastructure, Transport, Regional Development and Communications, of Australian Government, เพื่อเข้าร่วมการประชุม the 2022 Australasian Road Safety Conference 28th – 30th September, Christchurch, New Zealand
- พ.ศ. 2563 ทุนการศึกษาจากรัฐบาลไทยแบบเต็มจำนวนสำหรับศึกษาในระดับปริญญาเอก
- พ.ศ. 2561 ทุนการศึกษาจากรัฐบาลไทยแบบเต็มจำนวนสำหรับศึกษาในระดับปริญญาโท
- พ.ศ. 2555 ทุนการศึกษาจำนวน 75% จาก Paragon International University สำหรับระดับปริญญาตรี

กองบรรณาธิการของวารสาร

Guest Editor for the Special Issue “**A Safer and More Sustainable Tomorrow: Roles of Transport Safety, Efficient Service Quality, and Low-Carbon Development**” in journal “*Sustainability*” [ISSN: 2071-1050, Cite Score – Scopus Q1 (Geography, Planning and Development), and Impact Factor: 3.9 (2022)] (November 2022–November 2023). This SI published **13** research papers.

การประชุมนานาชาติ

- 1) **Se C.**, Champahom T., Jomnonkwao S., and Ratanavaraha V. (2024). XGBoost-based Prediction Model for Train Passenger Numbers: Evaluating the Effect of the COVID-19 Pandemic. The 31st International Conference on Neural Information Processing (ICONIP 2024) is set to be held in Auckland, New Zealand, from December 2nd to December 6th, 2024. (In press)
- 2) **Se C.**, Champahom T., Jomnonkwao S., and Ratanavaraha V. (2024). SHAP-based Ensemble Learning for Assessing Key Factors Influencing Intention to Use Intercity Railway Service. The 31st International Conference on Neural Information Processing (ICONIP 2024) is set to be held in Auckland, New Zealand, from December 2nd to December 6th, 2024. (In press)
- 3) **Se C.**, Champahom T., Jomnonkwao S., Karoonsoontawong A., Boonyoo T., and Ratanavaraha V. (2024). Deep Learning-Based Convolutional Neural Network for Crash Severity Prediction. THE 13TH CONFERENCE ON INFORMATION TECHNOLOGY AND ITS APPLICATIONS, July 19-20, 2024 - Da Nang City and Hoi An City, Viet Nam
- 4) **Se C.**, Champahom T., Jomnonkwao S., and Ratanavaraha V. (2020). Fatal motorcycle crashes analysis in Thailand: Accounting for unobserved heterogeneity. 2022 Australasian Road Safety Conference 28th – 30th September, Christchurch, New Zealand
- 5) **Se, C.**, Wisutwattanasak, P., Champahom, T., & Jomnonkwao, S. (2023). Difference Between Male and Female Motorcyclist-Injury Severity: Accommodating Unobserved Heterogeneity in

the Data. Proceeding of The 28th National Convention on Civil Engineering: Post-Pandemic Challenges on Civil Engineering, 28, 28, TRL30-1.

ผลงานทางวิชาการ/ ผลงานวิจัยในวารสารวิชาการระดับนานาชาติ

- 1) **Se C.**; Champahom T.; Jomnonkwao S.; Banyong C.; Sukontasukkul P.; Ratanavaraha V. (2020). Hierarchical binary logit model to compare driver injury severity in single-vehicle crash based on age-groups. *International Journal of Injury Control and Safety Promotion*, 28(1), 113-126
- 2) **Se C.**; Champahom T.; Jomnonkwao S.; Chaimuang P.; Ratanavaraha V. (2021). Empirical comparison of the effects of urban and rural crashes on motorcyclist injury severities: A correlated random parameters ordered probit approach with heterogeneity in means. *Accident Analysis and Prevention*, 161, 106352
- 3) **Se C.**; Champahom T.; Jomnonkwao S.; Chonsalasin D.; Ratanavaraha V. (2024). Modeling of single-vehicle and multi-vehicle truck-involved crashes injury severities: A comparative and temporal analysis in a developing country. *Accident Analysis and Prevention*, 197, 107452
- 4) **Se C.**; Champahom T.; Jomnonkwao S.; Karoonsoontawon A.; Ratanavaraha V. (2022). Analysis of driver-injury severity: a comparison between speeding and non-speeding driving crash accounting for temporal and unobserved effects. *International Journal of Injury Control and Safety Promotion*, 29(4), 475-488
- 5) **Se C.**; Champahom T.; Jomnonkwao S.; Karoonsoontawong A.; Boonyoo T.; Ratanavaraha V. (2024). Deep Learning-Based Convolutional Neural Network for Crash Severity Prediction. *Lecture Notes in Networks and Systems*, 882 LNNS, 75-86
- 6) **Se C.**; Champahom T.; Jomnonkwao S.; Karoonsoontawong A.; Ratanavaraha V. (2021). Temporal stability of factors influencing driver-injury severities in single-vehicle crashes: A correlated random parameters with heterogeneity in means and variances approach. *Analytic Methods in Accident Research*, 32, 100179
- 7) **Se C.**; Champahom T.; Jomnonkwao S.; Kronprasert N.; Ratanavaraha V. (2022). The impact of weekday, weekend, and holiday crashes on motorcyclist injury severities: Accounting for temporal influence with unobserved effect and insights from out-of-sample prediction. *Analytic Methods in Accident Research*, 36, 100240
- 8) **Se C.**; Champahom T.; Jomnonkwao S.; Ratanavaraha V. (2020). Driver injury severity in single-vehicle run off road crash on 2-lanes and 4-lanes highway in Thailand. *Engineering and Applied Science Research*, 47(4), 393-400
- 9) **Se C.**; Champahom T.; Jomnonkwao S.; Ratanavaraha V. (2020). Risk factors affecting driver severity of singlevehicle run off road crash for Thailand highway. *Engineering Journal*, 24(5), 207-216

- 10) **Se C.**; Champahom T.; Jomnonkwao S.; Ratanavaraha V. (2023). Empirical examination of interdependent relationship between usage of seatbelt restraint system and driver-injury severity of single-vehicle crashes in Thailand using a joint econometric analysis. *Traffic Injury Prevention*, 24(6), 503-510
- 11) **Se C.**; Champahom T.; Jomnonkwao S.; Ratanavaraha V. (2022). Motorcyclist injury severity analysis: a comparison of Artificial Neural Networks and random parameter model with heterogeneity in means and variances. *International Journal of Injury Control and Safety Promotion*, 29(4), 500-515
- 12) **Se C.**; Champahom T.; Jomnonkwao S.; Ratanavaraha V. (2024). Examining factors affecting driver injury severity in speeding-related crashes: a comparative study across driver age groups. *International Journal of Injury Control and Safety Promotion*, 31(2), 234-255
- 13) **Se C.**; Champahom T.; Jomnonkwao S.; Wisutwattanasak P.; Laphrom W.; Ratanavaraha V. (2023). Temporal Instability and Transferability Analysis of Daytime and Nighttime Motorcyclist-Injury Severities Considering Unobserved Heterogeneity of Data. *Sustainability (Switzerland)*, 15(5), 4486
- 14) **Se C.**; Champahom T.; Laphrom W.; Jomnonkwao S.; Ratanavaraha V. (2023). Analysis of factors influencing crash injury severities at highway–rail grade crossings accommodating for unobserved heterogeneity. *Frontiers in Built Environment*, 91255762
- 15) **Se C.**; Champahom T.; Wisutwattanasak P.; Jomnonkwao S.; Chanpariyavatevong K.; Ratanavaraha V. (2024). Modeling of motorcyclist injury severities: A comparison between crashes on main-, frontage-, and standard-lane of roadway. *IATSS Research*, 48(3), 288-298
- 16) **Se C.**; Champahom T.; Wisutwattanasak P.; Jomnonkwao S.; Ratanavaraha V. (2023). Temporal instability and differences in injury severity between restrained and unrestrained drivers in speeding-related crashes. *Scientific Reports*, 13(1), 9756
- 17) **Se C.**; Sunkpho J.; Wipulanusat W.; Tantisevi K.; Champahom T.; Ratanavaraha V. (2024). Modeling motorcycle crash-injury severity utilizing explainable data-driven approaches. *Transportation Letters*.
- 18) **Se C.**; Woolley J.; Champahom T.; Jomnonkwao S.; Boonyoo T.; Karoonsoontawong A.; Ratanavaraha V. (2025). Modelling the interdependent relationship of motorcyclist injury severity and fault status: A recursive bivariate random parameters probit approach. *Transport Policy*, 163, 370-383.
- 19) **Se, C.**, Champahom, T., Theerathitichaipa, K., Seefong, M., Jomnonkwao, S., Ratanavaraha, V., ... & Karoonsoontawong, A. (2025). Assessing the interdependence of rider fault-status and injury severity in motorcycle rear-end crashes: insights from bivariate probit and XGBoost-SHAP models. *International Journal of Injury Control and Safety Promotion*, 32(1), 61-75.

- 20) **Se, C.**, Champahom, T., Jomnonkwao, S., Boonyoo, T., Karoonsoontawong, A., & Ratanavaraha, V. (2025). Pickup truck crash severity analysis via machine learning: policy insights for developing countries. *International Journal of Injury Control and Safety Promotion*, 1-21.
- 21) Champahom T.; Banyong C.; Hantanong N.; **Se C.**; Jomnonkwao S.; Ratanavaraha V. (2023). Factors influencing the willingness to pay for motorcycle safety improvement: A structural equation modeling approach. *Transportation Research Interdisciplinary Perspectives*, 22, 100950
- 22) Champahom T.; **Se C.**; Aryuyo F.; Banyong C.; Jomnonkwao S.; Ratanavaraha V. (2023). Crash Severity Analysis of Young Adult Motorcyclists: A Comparison of Urban and Rural Local Roadways. *Applied Sciences (Switzerland)*, 13(21), 11723
- 23) Champahom T.; **Se C.**; Jomnonkwao S.; Boonyoo T.; Leelamanothum A.; Ratanavaraha V. (2023). Temporal Instability of Motorcycle Crash Fatalities on Local Roadways: A Random Parameters Approach with Heterogeneity in Means and Variances. *International Journal of Environmental Research and Public Health*, 20(5), 3845
- 24) Champahom T.; **Se C.**; Jomnonkwao S.; Boonyoo T.; Ratanavaraha V. (2023). A Comparison of Contributing Factors between Young and Old Riders of Motorcycle Crash Severity on Local Roads. *Sustainability (Switzerland)*, 15(3), 2708
- 25) Champahom T.; **Se C.**; Jomnonkwao S.; Kasemsri R.; Ratanavaraha V. (2023). Analysis of the Effects of Highway Geometric Design Features on the Frequency of Truck-Involved Rear-End Crashes Using the Random Effect Zero-Inflated Negative Binomial Regression Model. *Safety*, 9(4), 76
- 26) Champahom T.; **Se C.**; Laphrom W.; Jomnonkwao S.; Karoonsoontawong A.; Ratanavaraha V. (2024). Modeling User Intentions for Electric Vehicle Adoption in Thailand: Incorporating Multilayer Preference Heterogeneity. *Logistics*, 8(3), 83
- 27) Champahom T.; **Se C.**; Laphrom W.; Watthanaklang D.; Jomnonkwao S.; Ratanavaraha V. (2025). Empirical comparison of the effects of other party's vehicle type on motorcyclists' injury severity. *Journal of Traffic and Transportation Engineering (English Edition)*.
- 28) Champahom T.; **Se C.**; Uttra S.; Laphrom W.; Jomnonkwao S.; Ratanavaraha V. (2025). Development of emerging solution for distracted driving: A random parameter ordered probit model approach. *Case Studies on Transport Policy*, 19, 101379
- 29) Champahom T.; **Se C.**; Watcharamaisakul F.; Jomnonkwao S.; Karoonsoontawong A.; Ratanavaraha V. (2024). Tree-based approaches to understanding factors influencing crash severity across roadway classes: A Thailand case study. *IATSS Research*, 48(3), 464-476

- 30) Champahom T.; Wisutwattanasak P.; Chonsalasin D.; **Se C.**; Jomnonkwao S.; Ratanavaraha V. (2025). Comparing Electric Vehicle Adoption Intentions Across Vehicle Types in Thailand: An Extended UTAUT2 Model with Government Participation. *Transport Policy*, 163, 408-435
- 31) Champahom T.; Wisutwattanasak P.; **Se C.**; Banyong C.; Jomnonkwao S.; Ratanavaraha V. (2023). Analysis of Factors Associated with Highway Personal Car and Truck Run-Off-Road Crashes: Decision Tree and Mixed Logit Model with Heterogeneity in Means and Variances Approaches. *Informatics*, 10(3), 66
- 32) Chanpariyavatevong A.; **Se C.**; Timtong A.; Boongsod W.; Wiangkham A. (2024). Investigating Cryogenic and Heat Treatment Effects on Hardness and Wear of Uncoated Carbide Inserts: A Microstructure and AI Approach. *Journal of Materials Engineering and Performance*
- 33) Chanpariyavatevong K.; Champahom T.; **Se C.**; Jomnonkwao S.; Ratanavaraha V. (2024). The intervention design to promote active travel mode among children and adolescents: A systematic review. *Heliyon*, 10(4), e26072
- 34) Hantanong N.; Jomnonkwao S.; Champahom T.; **Se C.**; Ratanavaraha V. (2024). Assessing the Self-Report Instruments of Younger Versus Older Riders Involved in Near-Miss Motorcycle Incidents. *Civil Engineering Journal (Iran)*, 10(2), 628-654
- 35) Jomnonkwao S.; Champahom T.; **Se C.**; Hantanong N.; Ratanavaraha V. (2023). Contributing factors to near-miss experiences of motorcyclists in Thailand: A random parameter probit model approach. *Heliyon*, 9(12), e22625
- 36) Jomnonkwao S.; Hantanong N.; Champahom T.; **Se C.**; Ratanavaraha V. (2023) Analyzing Near-Miss Incidents and Risky Riding Behavior in Thailand: A Comparative Study of Urban and Rural Areas. *Safety*, 9(4), 90
- 37) Laphrom W.; Champahom T.; **Se C.**; Nanthawong S.; Wisutwattanasak P.; Ratanavaraha V.; Jomnonkwao S. (2024). Assessing Risky Riding Behaviors Among Food Delivery Motorcyclists in Thailand: Insights from the Motorcycle Rider Behavior Questionnaire and Health Belief Model. *Logistics*, 8(4), 125
- 38) Laphrom W.; **Se C.**; Champahom T.; Jomnonkwao S.; Wipulanusat W.; Satiennam T.; Ratanavaraha V. (2024). XGBoost-SHAP and Unobserved Heterogeneity Modelling of Temporal Multivehicle Truck-Involved Crash Severity Patterns. *Civil Engineering Journal (Iran)*, 10(6), 1890-1908
- 39) Seefong M.; Wisutwattanasak P.; **Se C.**; Theerathitichaipa K.; Jomnonkwao S.; Champahom T.; Ratanavaraha V.; Kasemsri R. (2023). Big Data Analytics with the Multivariate Adaptive Regression Splines to Analyze Key Factors Influencing Accident Severity in Industrial Zones of Thailand: A Study on Truck and Non-Truck Collisions. *Big Data and Cognitive Computing*, 7(3), 156

- 40) Seefong M.; Wisutwattanasak P.; **Se C.**; Theerathitichaipa K.; Jomnonkwao S.; Champahom T.; Ratanavaraha V.; Kasemsri R. (2024). A study of motorcycle riders related to speeding behavior in Thailand's Industrial zones. *Scientific Reports*, 14(1), 29889
- 41) Suksanguan U.; Champahom T.; Jomnonkwao S.; **Se C.**; Ratanavaraha V. (2022). Predicting the selection of industrial waste disposal service in cement kiln using a random parameters approach with heterogeneity in means and variances. *Process Safety and Environmental Protection*, 164, 142-153
- 42) Sunkpho J.; **Se C.**; Wipulanusat W.; Ratanavaraha V. (2025). SHAP-based convolutional neural network modeling for intersection crash severity on Thailand's highways. *IATSS Research*, 49(1), 27-41
- 43) Theerathitichaipa K.; Wisutwattanasak P.; **Se C.**; Seefong M.; Jomnonkwao S.; Champahom T.; Ratanavaraha V.; Kasemsri R. (2024). Assessment of Disparity in Accessing Railway Stations in Thailand: an Application Geographic Information System Network Analysis. *Journal of Geovisualization and Spatial Analysis*, 8(1), 6
- 44) Wisutwattanasak P.; Champahom T.; Jomnonkwao S.; Aryuyo F.; **Se C.**; Ratanavaraha V. (2023). Examining the Impact of Service Quality on Passengers' Intentions to Utilize Rail Transport in the Post-Pandemic Era: An Integrated Approach of SERVQUAL and Health Belief Model. *Behavioral Sciences*, 13(10), 789
- 45) Wisutwattanasak P.; Jomnonkwao S.; **Se C.**; Champahom T.; Ratanavaraha V. (2023). Correlated random parameters model with heterogeneity in means for analysis of factors affecting the perceived value of road accidents and travel time. *Accident Analysis and Prevention*, 183, 106992
- 46) Wisutwattanasak P.; Jomnonkwao S.; **Se C.**; Ratanavaraha V. (2022). Influence of Psychological Perspectives and Demographics on Drivers' Valuation of Road Accidents: A Combination of Confirmatory Factor Analysis and Preference Heterogeneity Model. *Behavioral Sciences*, 12(9), 336
- 47) Wisutwattanasak P.; **Se C.**; Champahom T.; Kasemsri R.; Jomnonkwao S.; Ratanavaraha V. (2024). Factors Affecting Single and Multivehicle Motorcycle Crashes: Insights from Day and Night Analysis Using XGBoost-SHAP Algorithm. *Big Data and Cognitive Computing*, 8(10), 128
- 48) Khan, A., Ahmed, S., Khattak, N. U., Hoy, M., & Se, C. (2025). Effect of Nanoclay on the Performance Characteristics of SBS-Modified Asphalt Concrete Mixtures. *Coatings*, 15(9), 984.
- 49) Sum, S., Se, C., Champahom, T., Jomnonkwao, S., Sinha, S., & Ratanavaraha, V. (2025). A Random Forest and SHAP-based analysis of motorcycle crash severity in Thailand: Urban-Rural and Day-Night perspectives. *Transportation Engineering*, 100369.

- 50) Champahom, T., Se, C., Laphrom, W., Jomnonkwao, S., Kasemsri, R., & Ratanavaraha, V. (2025). Determinants of crash injury severity for delivery riders: Insights from an error components mixed logit model with heterogeneous means and variances. *IATSS Research*, 49(2), 180-190.
- 51) Banyong, C., Hantanong, N., Nanthawong, S., Se, C., Wisutwattanasak, P., Champahom, T., ... & Jomnonkwao, S. (2025). Machine Learning-Based Analysis of Travel Mode Preferences: Neural and Boosting Model Comparison Using Stated Preference Data from Thailand's Emerging High-Speed Rail Network. *Big Data and Cognitive Computing*, 9(6), 155.
- 52) Champahom, T., Banyong, C., Janhuaton, T., Se, C., Watcharamaisakul, F., Ratanavaraha, V., & Jomnonkwao, S. (2025). Deep Learning vs. Gradient Boosting: Optimizing Transport Energy Forecasts in Thailand Through LSTM and XGBoost. *Energies*, 18(7), 1685.
- 53) Chonsalasin, D., Champahom, T., Se, C., Uttra, S., Watcharamaisakul, F., Jomnonkwao, S., & Ratanavaraha, V. (2025). Analyzing Motorcycle Traffic Violations in Thailand: A Logit Model Approach to Urban and Rural Differences. *Future Transportation*, 5(1), 26.
- 54) Janhuaton, T., Nanthawong, S., Wisutwattanasak, P., Banyong, C., Se, C., Champahom, T., ... & Jomnonkwao, S. (2025). Data-Driven Forecasting of CO2 Emissions in Thailand's Transportation Sector Using Nonlinear Autoregressive Neural Networks. *Big Data and Cognitive Computing*, 9(3), 71.



ข้าพเจ้า Dr. Chamroeun Se (ลายมือชื่อ)