

Numan Ahmad

Assistant Professor

National Institute of Transportation

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About

Dr. Numan Ahmad is working as Assistant Professor in the National Institute of Transportation. Dr. Numan Ahmad has a PhD in Transportation Engineering. Dr. Numan Ahmad has published 43 research articles & conference papers having a citation count of 268, carried out 0 projects and filed 0 intellectual property.

Qualifications

PhD in Transportation Engineering	2019 - 2021
University of Tennessee - Knoxville , United States	
MS in Statistics and Data Science	2018 - 2021
University of Tennessee - Knoxville , United States	
MS in Transportation Engineering	2013 - 2016
NUST, Islamabad , Pakistan	
B.Sc (Hon) in Civil Engineering	2009 - 2013
UET Peshawar , Pakistan	

Experience

Assistant Professor	2022- Present
National Institute of Transportation	
Postdoctoral Scholar	2021 - 2022
Larson Transportation Institute (LTI) , Pennsylvania State University	
Graduate Teaching Assistant	2021 - 2021
Department of Civil and Environmental Engineering, University of Tennessee , University of Tennessee Knoxville	
Graduate Teaching Assistant	2019 - 2020
Department of Civil and Environmental Engineering, University of Tennessee , University of Tennessee Knoxville, U.S.	
Graduate Research Assistant	2018 - 2021
Department of Civil and Environmental Engineering, University of Tennessee , University of Tennessee Knoxville, U.S.	
Highway Engineer	2016 - 2017
Transport Planning and Traffic Engineering Unit, Peshawar , Transport and Mass Transit Department, Government of KPK Peshawar, Pakistan	
Lecturer	2014 - 2016
School of Engineering and Applied Sciences , SEAS, ISRA University Islamabad, Pakistan	

Research Articles

Empirical Analysis to Investigate the Factors Influencing the Installation of Recharging Infrastructure for Commercial Electric Fleet	2025
Numan Ahmad Zia Ur Rehman Saad Ammar Shah Syed Kamran Hussain Shah	
Arabian Journal for Science and Engineering, Pages 1-15	
Impact Factor: 2.600   Quartile: 2	
DOI: <a href="https://doi.org/10.1007/s13369-025-10019-x">https://doi.org/10.1007/s13369-025-10019-x</a>	
Exploring the influence of rider age and experience on motorcycle crash risk: Evidence from a case-control study	2025
Muhammad Adeel Numan Ahmad Behram Wali Asad J. Khattak	
Journal of Transportation Safety and Security	
Impact Factor: 2.4   Quartile: 3	

DOI: <a href="https://doi.org/10.1080/19439962.2024.2435297">https://doi.org/10.1080/19439962.2024.2435297</a>	
<b>The role of human errors and violations in pedestrian-related crashes: Harnessing a unique database and accounting for heterogeneity</b> <i>Numan Ahmad Asad J. Khattak</i> <i>Journal of Safety Research</i> , Volume:91, Pages 136-149 <b>Impact Factor: 3.900   Quartile: 1</b> DOI: <a href="https://doi.org/10.1016/j.jsr.2024.08.009">https://doi.org/10.1016/j.jsr.2024.08.009</a>	2024
<b>Understanding the role of driver behaviors and performance in safety-critical events: Application of machine learning</b> <i>Numan Ahmad Asad J. Khattak Hamparsum Bozdogan</i> <i>Journal of Transportation Safety &amp; Security</i> , Pages: 40 <b>Impact Factor: 2.4   Quartile: 3</b> DOI: 10.1080/19439962.2024.2368113	2024
<b>Feasibility of utilizing recycled concrete aggregate blended with waste tire rubber and drywall waste as pavement subbase material</b> <i>Afaq Ahmed Syed Kamran Hussain Shah Numan Ahmad Umair Ali Adnan Anwar Malik Muhammad Jawed Iqbal</i> <i>Journal of Material Cycles and Waste Management</i> , Volume 26(4), Pages 2278-2293 <b>Impact Factor: 2.700   Quartile: 3   Citations: 5</b> DOI: 10.1007/s10163-024-01967-x	2024
<b>On the need to address fixed-parameter issues before applying random parameters: A simulation-based study</b> <i>Numan Ahmad Tanmoy Bhowmik Vikash V. Gayah Naveen Eluru</i> <i>Analytic Methods in Accident Research</i> , Volume 41, Article Number 100314 <b>Impact Factor: 12.9   Quartile: 1   Citations: 1</b> DOI: <a href="https://doi.org/10.1016/j.amar.2023.100314">https://doi.org/10.1016/j.amar.2023.100314</a>	2024
<b>Exploring the Effect of Visibility Factors on Vehicle–Pedestrian Crash Injury Severity</b> <i>Laura Harris Numan Ahmad Asad Khattak Subhadeep Chakraborty</i> <i>Transportation Research Record</i> , Volume 2677, Issue 11, Pages 24-35 <b>Impact Factor: 1.7   Quartile: 3   Citations: 3</b> DOI: 10.1177/03611981231164070	2023
<b>How is the duration of distraction related to safety–critical events? Harnessing naturalistic driving data to explore the role of driving instability</b> <i>Numan Ahmad Ramin Arvin Asad J. Khattak</i> <i>Journal of Safety Research</i> , Volume 85, Pages 15-30 <b>Impact Factor: 4.1   Quartile: 1   Citations: 7</b> DOI: <a href="https://doi.org/10.1016/j.jsr.2023.01.003">https://doi.org/10.1016/j.jsr.2023.01.003</a>	2023
<b>Exposure of road users to the traffic noise in urban environment: insights from a mega metropolitan city</b> <i>Afzal Ahmed Farah Khan Muhammad Ahmed Muhammad Ali Ismail Numan Ahmad</i> <i>International Journal of Environmental Science and Technology</i> , Pages 1-10 <b>Impact Factor: 3.1   Quartile: 3</b> DOI: 10.1007/s13762-023-04924-7	2023
<b>Copula-based bivariate count data regression models for simultaneous estimation of crash counts based on severity and number of vehicles</b> <i>Numan Ahmad Vikash V. Gayah Eric T. Donnell</i> <i>Accident Analysis and Prevention</i> , Volume 181, Article Number 106928 <b>Impact Factor: 5.9   Quartile: 1   Citations: 7</b> DOI: 10.1016/j.aap.2022.106928	2023
<b>Heterogeneous ensemble learning for enhanced crash forecasts – A frequentist and machine learning based stacking framework</b> <i>Numan Ahmad Behram Wali Asad Khattak</i> <i>Journal of Safety Research</i> , Volume 84, Pages 418-434 <b>Impact Factor: 4.1   Quartile: 1   Citations: 20</b> DOI: <a href="https://doi.org/10.1016/j.jsr.2022.12.005">https://doi.org/10.1016/j.jsr.2022.12.005</a>	2023
<b>Exploring pathways from driving errors and violations to crashes: The role of instability in driving</b> <i>Numan Ahmad Ramin Arvin Asad Khattak</i>	2023

<i>Accident Analysis and Prevention</i> , Volume 179, Article Number 106876	
<b>Impact Factor:</b> 5.9   <b>Quartile:</b> 1   <b>Citations:</b> 11	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2022.106876">https://doi.org/10.1016/j.aap.2022.106876</a>	
<b>Toward better measurement of traffic injuries – Comparison of anatomical injury measures in predicting the clinical outcomes in motorcycle crashes</b>	2022
<i>Behram Wali Numan Ahmad Asad Khattak</i>	
<i>Journal of Safety Research</i> , Volume 80, Pages 175-189	
<b>Impact Factor:</b> 4.1   <b>Quartile:</b> 1   <b>Citations:</b> 8	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.jsr.2021.11.013">https://doi.org/10.1016/j.jsr.2021.11.013</a>	
<b>Understanding how relationships between crash frequency and correlates vary for multilane rural highways: Estimating geographically and temporally weighted regression models</b>	2021
<i>Amin Mohammadnazar Iman Mahdina Numan Ahmad Asad J Khattak Jun Liu</i>	
<i>Accident Analysis and Prevention</i> , Volume 157, Article Number 106146	
<b>Impact Factor:</b> 6.376   <b>Quartile:</b> 1   <b>Citations:</b> 33	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2021.106146">https://doi.org/10.1016/j.aap.2021.106146</a>	
<b>Built environment, driving errors and violations, and crashes in naturalistic driving environment</b>	2021
<i>Numan Ahmad Behram Wali Asad Khattak Eric Dumbaugh</i>	
<i>Accident Analysis and Prevention</i> , Volume 157, Article Number 106158	
<b>Impact Factor:</b> 6.376   <b>Quartile:</b> 1   <b>Citations:</b> 20	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2021.106158">https://doi.org/10.1016/j.aap.2021.106158</a>	
<b>A taxonomy of driving errors and violations: Evidence from the naturalistic driving study</b>	2021
<i>Asad Khattak Numan Ahmad Behram Wali Eric Dumbaugh</i>	
<i>Accident Analysis and Prevention</i> , Volume 151, Article Number 105873	
<b>Impact Factor:</b> 6.376   <b>Quartile:</b> 1   <b>Citations:</b> 67	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2020.105873">https://doi.org/10.1016/j.aap.2020.105873</a>	
<b>Injury severity analysis of pedestrian and bicyclist trespassing crashes at non-crossings: A hybrid predictive text analytics and heterogeneity-based statistical modeling approach</b>	2021
<i>Behram Wali Asad Khattak Numan Ahmad</i>	
<i>Accident Analysis and Prevention</i> , Volume 150, Article Number 105835	
<b>Impact Factor:</b> 6.376   <b>Quartile:</b> 1   <b>Citations:</b> 27	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2020.105835">https://doi.org/10.1016/j.aap.2020.105835</a>	
<b>Is Effective Enforcement of Seatbelt Law Helpful in Reduction of Road Crash Fatalities: An Exploratory Empirical Analysis using Aggregate Data</b>	2020
<i>Numan Ahmad Anwaar Ahmed Akhtar Ali Shah</i>	
<i>Proceedings of the Pakistan Academy of Sciences: Pakistan Academy of Sciences A: Physical and Computational Sciences</i> , Volume 56(4), Pages 31-41	
<b>Impact Factor:</b> N/A	
<b>DOI:</b> <a href="https://www.paspk.org/proceeding-article/is-effective-enforcement-of-seatbelt-law-helpful-in-reduction-of-road-crash-fatalities-an-exploratory-empirical-analysis-using-aggregate-data/">https://www.paspk.org/proceeding-article/is-effective-enforcement-of-seatbelt-law-helpful-in-reduction-of-road-crash-fatalities-an-exploratory-empirical-analysis-using-aggregate-data/</a>	
<b>Examining correlations between motorcyclist's conspicuity, apparel related factors and injury severity score: Evidence from new motorcycle crash causation study</b>	2019
<i>Behram Wali Asad Khattak Numan Ahmad</i>	
<i>Accident Analysis and Prevention</i> , Volume 131, Pages 45-62	
<b>Impact Factor:</b> 3.655   <b>Quartile:</b> 1   <b>Citations:</b> 42	
<b>DOI:</b> <a href="https://doi.org/10.1016/j.aap.2019.04.009">https://doi.org/10.1016/j.aap.2019.04.009</a>	
<b>An ordered-probit analysis of enforcement of road speed limits</b>	2018
<i>Behram Wali Anwar Ahmad Numan Ahmad</i>	
<i>Proceedings of the Institution of Civil Engineers - Transport</i> , Volume 171, Issue 4, Pages 225-234	
<b>Impact Factor:</b> 0.792   <b>Quartile:</b> 4   <b>Citations:</b> 17	
<b>DOI:</b> <a href="https://doi.org/10.1680/jtran.16.00141">doi.org/10.1680/jtran.16.00141</a>	
<b>Pedestrian's exposure to road traffic crashes in urban environment: A case study of Peshawar, Pakistan</b>	2018
<i>Akhtar Ali Shah Numan Ahmad Ahn Byung Ha</i>	
<i>Journal of the Pakistan Medical Association</i> , Volume 68, Issue 4, Pages 615 - 623	
<b>Impact Factor:</b> 0.642   <b>Quartile:</b> 4	
<b>DOI:</b> 29808053	

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- Investigating the Association of Post-Crash Medical Conditions and Human Factors with Motorcyclists Injuries: Insights from Fine Injury Data From Hospital Records** 2025  
*Zia Ur Rehman Numan Ahmad Afzal Ahmed Wasim Irshad Kayani*  
*Transportation Research Board (104th Annual Meeting)*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgram/Details/23055>
- Exploring the Associations of Rider Age and Experience on Motorcycle Injury Crash Risk: Evidence from A Case-Control Study** 2024  
*Muhammad Adeel Numan Ahmad Behram Wali Asad Khattak*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** Nil
- Modeling Injury Severity Score as a More Precise Measure of Motorcyclist Injuries: A Correlated Random Parameter Corner Solution Framework** 2023  
*Behram Wali Asad Khattak Numan Ahmad*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** Nil
- Copula-Based Bivariate Count Data Regression Models for Simultaneous Estimation of Crash Counts Based on Severity and Number of Vehicles** 2023  
*Numan Ahmad Vikash V. Gayah Eric Donnell*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/19475>
- Predicting Safety-Critical Events Using Driver Behaviors and Performance: Application of Machine Learning** 2023  
*Numan Ahmad Asad J. Khattak Hamparsum Bozdogan*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/19297>
- Strategies for Reducing Motorcyclist Injuries in Tennessee: Relevance of Evidence-Based Countermeasures that Work** 2023  
*Steve Lee Numan Ahmad Jerry Everett Asad J. Khattak*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/19155>
- Rigorous Simulation-Based Statistical Analysis to Compare Fixed and Random Parameter Count Data Models: Examining the Contribution of Independent Variables vis-à-vis Random Parameters** 2023  
*Numan Ahmad Tanmoy Bhowmik Vikash V. Gayah Naveen Eluru*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/19395>
- Adoption of Electric Vehicles: Is the Commercial Transportation Sector Interested?** 2022  
*Steve Lee Numan Ahmad Asad Khattak*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** Nil
- EXPLORING EFFECT OF VISIBILITY FACTORS ON VEHICLE-PEDESTRIAN CRASH INJURY SEVERITY** 2022  
*Laura M. Harris Numan Ahmad Asad Khattak Subhadeep Chakraborty*  
*Transportation Research Board*, res.country(233,)  
**Citations:** N/A  
**DOI:** <https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17578>
- A Hybrid Text Analytics and Heterogeneity-Based Statistical Modeling Approach for Analysis of Trespassing Crashes at Non-Crossings Involving Vulnerable Users** 2022

<p><i>Behram Wali Asad Khattak Numan Ahmad</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17567">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17567</a></p>	
<p><b>Heterogeneous Ensemble Learning for Enhanced Crash Forecasts – A Frequentist and Machine Learning based Stacking Framework</b></p> <p><i>Numan Ahmad Behram Wali Asad Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17594">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17594</a></p>	2022
<p><b>How Many Electric Vehicle Owners Will Repurchase a Similar Vehicle?</b></p> <p><i>Steve Lee Numan Ahmad Sanghoon Son Asad J. Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17425">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17425</a></p>	2022
<p><b>How is the duration of distraction related to safety-critical events? Harnessing naturalistic driving data to explore the role of driving instability</b></p> <p><i>Numan Ahmad Ramin Arvin Asad Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17569">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/17569</a></p>	2022
<p><b>Heterogeneity in Naturalistic Driving Errors, Violations, and Crash Risk in Diverse Environmental Context</b></p> <p><i>Asad Khattak Numan Ahmad Behram Wali</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/15681">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/15681</a></p>	2021
<p><b>Exploring Pathways from Driving Errors and Violations to Crashes: The Role of Speed Volatility</b></p> <p><i>Numan Ahmad Ramin Arvin Asad Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/15681">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/15681</a></p>	2021
<p><b>Developing Safety Performance Functions for Rural Multilane Highways in Tennessee: Accounting for Unobserved Heterogeneity</b></p> <p><i>Behram Wali Numan Ahmad Asad Khattak Amin Mohammadnazar</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> Nil</p>	2020
<p><b>Application of geographically and temporally weighted regression models for estimating Safety Performance Functions of multilane rural highways in Tennessee</b></p> <p><i>Amin Mohammadnazar Numan Ahmad Iman Mahdinia Asad J. Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/14060">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/14060</a></p>	2020
<p><b>The Proclivity of Commercial Transportation Sector to Adopt Alternative Fuel Vehicles in the Future: Application of Machine Learning Methods</b></p> <p><i>Numan Ahmad Behram Wali Asad Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/13431">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/13431</a></p>	2020
<p><b>Towards Better Measurement of Traffic Injuries – Comparison of Anatomical Injury Measures in Predicting Poor Clinical Outcomes in Motorcycle Crashes</b></p> <p><i>Behram Wali Numan Ahmad Asad Khattak</i>  <i>Transportation Research Board , res.country(233,)</i></p> <p><b>Citations:</b> N/A  <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/13923">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/13923</a></p>	2020

<b>Consumer Preferences for Automation, Electrification, and Car-Sharing</b> <i>Asad Khattak Numan Ahmad Behram Wali</i> <i>Transportation Research Board, res.country(233,)</i> <b>Citations:</b> N/A <b>DOI:</b> Nil	2020
<b>A Taxonomy of Naturalistic Driving Errors and Violations and Its Variations Across Different Land-Use Contexts – A Path Analysis Approach</b> <i>Asad Khattak Behram Wali Numan Ahmad</i> <i>Transportation Research Board, res.country(233,)</i> <b>Citations:</b> N/A <b>DOI:</b> <a href="https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/11753">https://annualmeeting.mytrb.org/OnlineProgramArchive/Details/11753</a>	2019
<b>A Heterogeneity Based Case-Control Analysis of Motorcyclist’s Injury Crashes: Evidence from Motorcycle Crash Causation Study</b> <i>Behram Wali Asad Khattak Aemal J. Khattak Numan Ahmad</i> <i>Transportation Research Board, res.country(233,)</i> <b>Citations:</b> N/A <b>DOI:</b> Nil	2019

### Editorial Activities

<b>Accident Analysis and Prevention</b> Reviewed Papers for Journals <b>Impact Factor:</b> 5.9	2025
<b>Accident Analysis and Prevention</b> Reviewed Papers for Journals <b>Impact Factor:</b> 5.9	2023
<b>Accident Analysis and Prevention</b> Reviewed Papers for Journals <b>Impact Factor:</b> 5.9	2023
Reviewed Papers for Journals <b>Impact Factor:</b> N/A	2023
Reviewed Papers for Journals <b>Impact Factor:</b> N/A	2023
<b>Accident Analysis and Prevention</b> Reviewed Papers for Journals <b>Impact Factor:</b> 5.9	2023