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Traffic emissions management using capacity formulation and multi-modal road space allocation

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The ever-rising traffic volumes and congestion in cities have long constituted concerns for traffic safety and the economy. Moreover, traffic has been recognized as a significant contributor to emissions leading to serious environmental and public health problems, becoming the greatest contributor to premature deaths. In response to global policies, this paper introduces unique evaluation of road capacity with studied impediment factors, demonstrating the need for better road space allocation. Speed and capacity formulation for each factor is a unique contribution to knowledge as presented. The developed formulation depicts poor road space allocation along Birmingham's routes as speed reduces by 13 km/h, and capacity reduction of 400 vehicles/lane/h. A proven method of integrating microsimulation and environmental assessment tools show that CO2 increases by 18%, NOx by 23%, and PM by 6%, with reduced traffic movement due to poor road space allocation. This analysis bridges the gap in knowledge so far reported on road space allocation, showing evidence of significant contribution to European Union Directive on air pollution exceedance. Lastly, evidence from this analysis is used to develop traffic management proposals for a more sustainable road space re-allocation. This provides a unique and measurable impact on the environment for the 'Birmingham Transport Plan'.

Biography

Amina B abubakar has completed his graduation in Cyprus International University, Nicosia 99258, His research interests include among Air pollution reducing methods. He has published more than 15 papers in reputed journals and has been serving as an editorial board member of repute..