

UNDERREPORTING OF ROAD TRAFFIC ACCIDENTS: A BIBLIOMETRIC ANALYSIS FROM WEB OF SCIENCE DATABASE

(*Kemalangan Jalan Raya yang Tidak Terlapor: Analisis Bibliometrik dari Pangkalan Data Web of Science*)

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ABSTRACT

According to the 2030 Agenda for Sustainable Development Goals (SDGs), the 9th and 11th goals: "Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation," and "Make cities and human settlements inclusive, safe, resilient, and sustainable" are both the vision and mission of the result from this paper are accomplishing for. Although road traffic accidents are a common occurrence in most countries, there is evidence indicating that the number of actual accidents is not properly reported. The proof can be evaluated from a mismatched record between the police and hospital data. This concern has a significant impact on public safety and other components of a country as well. In layman's terms, "underreporting" is the act of reporting fewer numbers than the exact count. In justifying this prevailing research situation, this paper applies the Bibliometric Analysis using the Bibliometrix and Biblioshiny software packages to analyze and visualize the data of a search conducted in the Web of Science Core Collection Database yielded publication results spanning from 1970 to 2023. The results indicate (i) 4,915 papers using the keyword "underreporting", (ii) 33 papers using the keyword "underreporting of road traffic accidents", and (iii) 3 papers using the keyword "underreporting of road traffic accidents in Malaysia". This study is expected to provide an overview of underreporting of road traffic accidents. The impact of underreporting contributes to the setback of incomplete statistical analysis. Although official records are the most useful source of information and exactness, underreporting complements the computation of true results.

Keywords: underreporting; road traffic accidents; Bibliometric Analysis; Web of Science

ABSTRAK

Matlamat ke-9 dan ke-11 yang terkandung di dalam Agenda 2030 dari keseluruhan 17 Matlamat Pembangunan Lestari (SDGs) iaitu: "Membina infrastruktur kukuh, mempromosikan industri yang menyeluruh dan mampan serta merangsang inovasi" dan "Menjadikan bandar dan penempatan yang inklusif, selamat, kukuh dan mampan" merupakan visi dan misi yang ingin dicapai hasil dari kajian ini. Walaupun kemalangan jalan raya merupakan perkara biasa yang berlaku di kebanyakan negara, terdapat bukti yang menunjukkan bahawa sebilangan dari kejadian ini tidak dilaporkan dengan tepat. Ini dapat dibuktikan dari rekod yang didapati tidak sepadan di antara data polis dan data hospital. Kebimbangan ini memberi impak yang besar terhadap keselamatan awam dan komponen lain dalam sesebuah negara. Dalam istilah mudah, "tidak terlapor" adalah tindakan melaporkan jumlah yang lebih sedikit berbanding dari jumlah yang sebenar. Bagi mengesahkan kenyataan ini, Analisis Bibliometrik yang mengandungi pakej perisian Bibliometrix dan Biblioshiny digunakan untuk menganalisis dan menggambarkan keseluruhan data dari carian Pangkalan Koleksi Teras Web of Science dengan capaian penerbitan dari tahun 1970 hingga 2023. Hasil carian tersebut menunjukkan terdapat sebanyak (i) 4,915 manuskrip yang menggunakan kata kunci "tidak terlapor", (ii) 33 manuskrip yang menggunakan kata kunci "kemalangan jalan raya yang tidak terlapor", dan (iii) 3 manuskrip yang menggunakan kata kunci "kemalangan jalan raya yang tidak terlapor di Malaysia". Hasil dari kajian ini diharap dapat memberi

pendedahan tentang kemalangan jalan raya yang tidak dilaporkan. Isu ini merupakan penyumbang kepada analisis statistik yang tidak lengkap. Walaupun rekod rasmi merupakan sumber yang paling berguna dan sahih, maklumat dari data “tidak terlapor” melengkapkan pengiraan agar menjadi lebih sempurna.

Kata kunci: tidak terlapor; kemalangan jalan raya; Analisis Bibliometrik; Web of Science

References

- Alsop J. & Langley J. 2001. Under-reporting of motor vehicle traffic crash victims in New Zealand. *Accident Analysis & Prevention* **33**(3): 353-359.
- Aria M. & Cuccurullo C. 2017. Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics* **11**(4): 959-975.
- Boufous S., Finch C., Hayen A. & Williamson A. 2008. *Data linkage of hospital and police crash datasets in NSW*. Technical Report. Sydney: NSW Injury Risk Management Research Centre, University of New South Wales.
- Chadegani A.A., Salehi H., Yunus M.M., Farhadi H., Fooladi M., Farhadi M. & Ebrahim N.A. 2013. A comparison between two main academic literature collections: Web of Science and Scopus databases. *arXiv preprint arXiv:1305.0377*.
- Cobo M.J., López-Herrera A.G., Herrera-Viedma E. & Herrera F. 2011. An approach for detecting, quantifying, and visualizing the evolution of a research field: a practical application to the Fuzzy Sets Theory field. *Journal Informetrics* **5**(1): 146–166.
- Jing L., Shan W. & Zhang Y. 2021. A bibliometric analysis of road traffic injury research themes, 1928–2018. *International Journal of Injury Control and Safety Promotion* **28**(2): 266-275.
- Kamaluddin N.A., Abd Rahman M.F. & Várhelyi A. 2019. Matching of police and hospital road crash casualty records - a data-linkage study in Malaysia. *International Journal of Injury Control and Safety Promotion* **26**(1): 52-59.
- Maxwell O., Mayowa B.A., Chinedu I.U. & Peace A.E. 2018. Modelling count data; A generalized linear model framework. *American Journal of Mathematics and Statistics* **8**(6): 179-183.
- Md Isa Z., Ismail N.H., Ismail R., Mohd Tamil A., Ja'afar M.H., Nasir N.M., Miskan M., Abidin N.Z., Ab Razak N.H. & Yusof K.H. 2022. Assessing factors associated with non-fatal injuries from road traffic accidents among Malaysian adults: A cross-sectional analysis of the PURE Malaysia study. *International Journal of Environmental Research and Public Health* **19**(14): 8246.
- Mustaffa A.A. & Hokao K. 2013. Database development of road traffic accident case study Johor Bahru, Malaysia. *Journal of Society for Transportation and Traffic Studies* **3**: 1–8.
- Neish P. 2015. Linked data: what is it and why should you care? *The Australian Library Journal* **64**(1): 3-10.
- Nik Zamri N.S. & Zamzuri Z.H. 2019. Estimating the proportion of non-fatality unreported traffic accidents in Malaysia. *ASM Sc. J.* **12**(1): 239-245.
- Ninglasari S.Y. & Himmawan M.F. 2021. Mosque library: Bibliometrics Analysis based on Web of Science (WOS) database. *Library Philosophy and Practice (e-journal)* 6455.
- Paltrinieri A., Hassan M.K., Bahoo S. & Khan A. 2023. A bibliometric review of sukuk literature. *International Review of Economics and Finance* **86**: 897-918.
- Rezaein A., Shokohyar S. & Zolfaghari S. 2016. Clustering and classification of road accidents in Iran using data mining techniques. *International Journal of Business & Information* **11**(3): 365-383.
- Sami A., Moafian G., Najafi A., Aghabegi M.R., Yamin N., Heydari S.T. & Lankarani, K.B. 2013. Educational level and age as contributing factors to road traffic accidents. *Chinese Journal of Traumatology* **16**(5): 281-285.
- Samuel J.C., Sankhulani E., Qureshi J.S., Baloyi P., Thupi C., Lee C.N., Miller W.C., Cairns B.A. & Charles A.G. 2012. Under-reporting of road traffic mortality in developing countries: Application of a capture-recapture statistical model to refine mortality estimates. *PloS ONE* **7**(2): e31091.
- Schögl J.-P., Stumpf L. & Baumgartner R.J. 2020. The narrative of sustainability and circular economy - A longitudinal review of two decades of research. *Resources, Conservation, and Recycling* **163**: 105073.
- Sharma N., Bairwa M., Gowthamghosh B., Gupta S.D. & Mangal D.K. 2018. A bibliometric analysis of the published road traffic injuries research in India, post-1990. *Health Research Policy and Systems* **16**(1): 18.
- Shinar D., Valero-Mora P., van Strijp-Houtenbos M., Haworth N., Schramm A., Bruyne G.D., Cavallo V., Chliaoutakis J., Dias J., Frraro O.E., Fyhri A., Sajatovic A.H., Kuklane K., Ledesma R., Mascarell O., Morandi A., Muser M., Otte D., Papadaki M., Sanmartín J., Dulf D., Saplioglu M. & Tzamalouka G. 2018. Under-reporting bicycle accidents to police in the COST TU1101 international survey: Cross-country comparison and associated factors. *Accident; Analysis and Prevention* **110**: 177-186.

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- Singh P., Laksmi P.V.M., Prinjha S. & Khanduja P. 2018. Under-reporting of road traffic accidents in traffic police records - a cross-sectional study from North India. *International Journal of Community Medicine and Public Health* **5**(2): 579-584.
- Singh S.K. 2017. Road traffic accidents in India: Issues and challenges. *Transportation Research Procedia* **25**: 4708-4719.
- Touahmia M. 2018. Identification of risk factors influencing road traffic accidents. *Engineering, Technology & Applied Science Research* **8**(1): 2417-2421.
- van Eck N.J. & Waltman L. 2010. Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics* **84**: 523-538.
- Ward H., Lyons R. & Thoreau R. 2006. *Under-reporting of Road Casualties? Phase 1*. In Road Safety Research Report No. 69, London.
- Watson A., Vallmuur K. & Watson B. 2015. How serious are they? The use of data linkage to explore different definitions of serious road crash injuries. *Proceedings of the 2015 Australasian Road Safety Conference* in Gold Coast, Australia, pp. 1-10.
- Wu T.-P., Huang Y.-L., Liang F.-W. & Lu T.-H. 2015. Underreporting of maternal mortality in Taiwan: A data linkage study. *Taiwanese Journal of Obstetrics and Gynecology* **54**(6): 705-708.
- Xu X., Chen Q. & Zhu Z. 2022. Evolutionary overview of land consolidation based on bibliometric analysis in a Web of Science from 2000 to 2020. *International Journal of Environmental Research and Public Health* **19**(6): 3218.
- Ytterstad B., Gressnes T. & Harborg T. 2018. PW 1663 Injury surveillance in a hospital leads to complete traffic injury data, sustainable injury prevention, and update police underreporting. *Injury Prevention* **24**(2): A179.

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