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Transportation technology in society: Technology in Society Briefing

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1. Topic summary

The journal has a wide range of papers addressing societal issues related to transportation technologies and disruptive mobility. These encompass transportation vehicles, infrastructure, and organization. In addition, there are papers concerned with the automation and digitalization of transportation. Papers about vehicles include many about air vehicles and land vehicles, such as airplanes and drones, bicycles, cars, trains, trams, and trucks. Drones are the topic of the largest number of papers about one type of vehicle. By contrast, there is a lack of papers about waterborne vehicles. Papers about transportation infrastructure include airports, railways, and roadways, but there is a lack of papers about harbours, ports and waterways. Papers about the organization of transportation encompass logistics and supply chains. Papers about vehicle automation cover buses, cars, trains, and the connection of multiple vehicles. Digitalization papers include digital logistics and blockchain being applied to supply chains. Together, the papers address many societal issues concerned with transportation including accidents, agglomeration, ethics, governance, history, law, pandemic, policing,

politics, regulation, safety, social movements, and social psychology.

2. List of papers

• Vehicles

- H.F. Marx, **Unlocking the secrets of the first airplane to fly: the Wright Flyer Project story**, *Technology in Society*, 23(1) (2001) 1–9, [https://doi.org/10.1016/S0160-791X\(00\)00031-2](https://doi.org/10.1016/S0160-791X(00)00031-2)
- A.Z. Ibsen, **The politics of airplane production: The emergence of two technological frames in the competition between Boeing and Airbus**, *Technology in Society*, 31(4) (2009) 342–349, <https://doi.org/10.1016/j.techsoc.2009.10.006>
- M. Hård, A. Jamison, **Alternative cars: The contrasting stories of steam and diesel automotive engines**, *Technology in Society*, 19(2) (1997) 145–160, [https://doi.org/10.1016/S0160-791X\(96\)00061-9](https://doi.org/10.1016/S0160-791X(96)00061-9)
- E.C. Anania, S. Rice, M. Pierce, S.R. Winter, J. Capps, N.W. Walters, M.N. Milner, **Public support for police drone missions depends on political affiliation and neighborhood**

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demographics, *Technology in Society*, 57 (2019) 95–103, <https://doi.org/10.1016/j.techsoc.2018.12.007>

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- R. Nahuis, **The politics of innovation: Self-service on the Amsterdam trams**, *Technology in Society*, 27(2) (2005), 229–241, <https://doi.org/10.1016/j.techsoc.2005.01.007>
- C.D.M. Soares, L.A. Joia, D. Altieri, J.G.L. Regasso, **What's up? Mobile instant messaging apps and the truckers' uprising in Brazil**, *Technology in Society*, 64 (2021) <https://doi.org/10.1016/j.techsoc.2020.101477>
- **Infrastructure**
 - K.O. Kasim, S.R. Winter, D. Liu, J.R. Keebler, T.B. Spence, **Passengers' perceptions on the use of biometrics at airports: A statistical model of the extended theory of planned behavior**, *Technology in Society*, 67, (2021) 101806, <https://doi.org/10.1016/j.techsoc.2021.101806>
 - D.Wang, T. Zhang, **Engineering accidents in society: A comparison of Chinese and American railway accident investigation**, *Technology in Society*, 43 (2015) 69–74, <https://doi.org/10.1016/j.techsoc.2015.05.011>
 - C. Tang, M. Guan, J. Dou, **Understanding the impact of high speed railway on urban innovation performance from the perspective of agglomeration externalities and network externalities**, *Technology in Society*, 67 (2021) 101760, <https://doi.org/10.1016/j.techsoc.2021.101760>
 - A. S.Duggal, R. Singh, A. Gehlot, L.R. Gupta, S.V. Akram, C. Prakash, S. Singh, R. Kumar, **Infrastructure, mobility and safety 4.0: Modernization in road transportation**, *Technology in Society*, 67 (2021) 101791, <https://doi.org/10.1016/j.techsoc.2021.101791>.
- **Organization**
 - P.-C. Li, B.-W. Lin, **Building global logistics competence with Chinese OEM suppliers**, *Technology in Society*, 28(3) (2006) 333–348, <https://doi.org/10.1016/j.techsoc.2006.06.003>
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 - R. Rajesh, **Sustainable supply chains in the Indian context: An integrative decision-making model**, *Technology in Society*, 61 (2020) 101230, <https://doi.org/10.1016/j.techsoc.2020.10.1230>
- **Automation**
 - S. Epting, **Ethical requirements for transport systems with automated buses**, *Technology in Society*, 64 (2021) 101506, <https://doi.org/10.1016/j.techsoc.2020.101506>
 - Y.-C. Lee, A. Momen, J. LaFreniere, **Attributions of social interactions: Driving among self-driving vs. conventional vehicles**, *Technology in Society*, 66 (2021) 101631, <https://doi.org/10.1016/j.techsoc.2021.101631>
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 - F. Pütz, F. Murphy, M. Mullins, L. O'Malley, **Connected automated vehicles and insurance: Analysing future market-structure from a business ecosystem perspective**, *Technology in Society*, 59 (2019) 101182, <https://doi.org/10.1016/j.techsoc.2019.101182>
- **Digitalization**
 - B. Burroughs, W.J. Burroughs, **Digital logistics: Enchantment in distribution channels**, *Technology in Society*, 62 (2020) 101277, <https://doi.org/10.1016/j.techsoc.2020.101277>
 - H. Gupta, A. K. Yadav, S. Kusi-Sarpong, S.A. Khan, S.C. Sharma, **Strategies to overcome barriers to innovative digitalization technologies for supply chain logistics resilience during pandemic**, *Technology in Society*, 69 (2022) 101970, <https://doi.org/10.1016/j.techsoc.2022.101970>
 - Q. Pan, W. Luo, Y. Fu, **A csQCA study of value creation in logistics collaboration by big data: A perspective from companies in China**, *Technology in Society*, 71 (2022) 102114, <https://doi.org/10.1016/j.techsoc.2022.102114>
 - K.F. Oguntegbe, N. Di Paola, R. Vona, **Behavioural antecedents to blockchain implementation in agrifood supply chain management: A thematic analysis**, *Technology in Society*, 68 (2022) 101927, <https://doi.org/10.1016/j.techsoc.2022.101927>

3. Future research directions

Future submissions concerned with transportation technologies should be directed towards current gaps in the *Technology in Society* discourse. The most significant gap is the lack of papers concerned with societal issues related to waterborne transportation. For example, much of the world's cargo is carried in waterborne vessels, such as bulk carriers, container ships, and tankers, which load and offload at huge ports that can be visited by crews from many different parts of the world. There are ongoing efforts to automate vessels and ports, which have implications for seafaring and dockside communities throughout the world. Also, there are many societal issues related to cruise ships, which are so large that they can have communities of thousands of crew and guests. For example, the complexity of governance and regulation when at sea is increased by national jurisdiction varying as cruise ships travel through different waters. Compared to the lack of papers about waterborne transportation, the journal already has many papers concerned with drones, and any future submissions should offer new insights into societal issues that have not been addressed previously. As much of transportation is international, more papers are sought that address different societal interactions with the same vehicles as they pass through different countries that have different cultures and regulations.

4. Practice recommendations

The movement of people and the supply of goods throughout the world depends upon transportation, which involves a wide variety of vehicles, infrastructure, and organization that includes increasing automation and digitalization. *Technology in Society* transportation papers can provide practitioners with insights into important societal issues ranging from accidents and safety, law and regulation, to social movements and social psychology. Accordingly, reference to the journal's papers can provide practitioners with a broader view of factors that can affect the performance of transportation initiatives throughout the world. Practitioners can incorporate these into systems engineering that incorporates societal requirements alongside technical requirements for the development of high reliability transportation. In doing so, practitioners can draw upon examples in the journal of applications of theories of proven predictive value. These include the extended theory of

planned behaviour, and the unified theory of acceptance and use of technology.