

**PANDEMIC ERA TRAVEL BEHAVIOR OF NOVO ECIJANO: PERCEPTION  
AND PREFERENCE TO USE PUBLIC AND SHARED TRANSPORT  
SERVICES**

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## ABSTRACT

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**PANDEMIC ERA TRAVEL BEHAVIOR OF NOVO ECIJANO: PERCEPTION AND PREFERENCE TO USE PUBLIC AND SHARED TRANSPORT SERVICES**

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This study aimed to determine the perception and preferences for utilizing Public and Shared Transport Services during the Pandemic Era. There were 100 respondents for this research. The respondents were commuters from San Jose City and the Science City of Munoz, Nueva Ecija. The researchers used a descriptive research survey to collect data to determine the results of the pandemic era on the travel behavior of Novo Ecijanos in terms of perception and preferences in a mode of transportation. The results indicated that Novo Ecijanos prefer public transportation due to the unavailability of private vehicles. Moreover, the respondents stated their comfort to travel using public and shared transportation services amidst the pandemic. In addition, the commuters prefer to use private or carpooling if this becomes prevalent in Nueva Ecija.

**Keywords:** *Pandemic; commuters; travel behavior; preferences, perception*

## LITERATURE CITED

- Abdullah. Et al (2020). Exploring the impacts of COVID-19 on travel behavior and mode preferences. *Transportation Research Interdisciplinary Perspectives*, 8, 100255. <https://doi.org/10.1016/j.trip.2020.100255>
- Abdullah, M., Dias, C., Muley, D., & Shahin, M. A. (2020). Exploring the impacts of COVID-19 on travel behavior and mode preferences. *Transportation Research Interdisciplinary Perspectives*, 8, 100255. <https://doi.org/10.1016/j.trip.2020.100255>
- Ajzen, "From intentions to actions: A theory of planned behavior," in *Action control*, ed: Springer, 1985, pp. 11-39.
- American Public Transportation Association. A profile of public transportation passenger demographics and travel characteristics reported in on-board surveys 20006 (May) (2007), pp. 1
- Bass, P., Donoso, P., & Munizaga, M. (2011). A model to assess public transport demand stability. *Transportation Research Part A: Policy and Practice*, 45(8), 755–764. <https://doi.org/10.1016/j.tra.2011.06.003>
- Beck, M. J., & Hensher, D. A. (2020). Insights into the impact of COVID-19 on household travel and activities in Australia – The early days under restrictions. *Transport Policy*, 96, 76–93. <https://doi.org/10.1016/j.tranpol.2020.07.001>
- Cahigas, M. (2022). Understanding the perceived behavior of public utility bus passengers during the era of COVID-19 pandemic in the Philippines: Application of social exchange theory and theory of planned behavior. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9125046/>
- C.-H. Wen, P.-L. Chou A latent class nested logit model of intercity bus carrier choice *J. East. Asia Soc. Transp. Stud.*, 9 (2011), pp. 382-394
- Chuenyindee, T. (2024). Public utility vehicle service quality and customer satisfaction in the Philippines during the COVID-19 pandemic. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8743388/>
- Chuenyindee, T., Ong, A. K. S., Ramos, J. P., Prasetyo, Y. T., Nadlifatin, R., Kurata, Y. B., & Sittiwatethanasiri, T. (2022). Public utility vehicle service quality and customer satisfaction in the Philippines during the COVID-19 pandemic. *Utilities Policy*, 75, 101336. <https://doi.org/10.1016/j.jup.2022.101336>

- Cools, M., Moons, E., Creemers, L., & Wets, G. (2010). Changes in Travel Behavior in Response to Weather Conditions. *Transportation Research Record*, 2157(1), 22–28. <https://doi.org/10.3141/2157-03>
- Das, S., Boruah, A., Banerjee, A., Raoniar, R., Nama, S., & Maurya, A. K. (2021). Impact of COVID-19: A radical modal shift from public to private transport mode. *Transport Policy*, 109, 1–11. <https://doi.org/10.1016/j.tranpol.2021.05.005>
- De Oña, J., De Oña, R., Eboli, L., & Mazzulla, G. (2013). Perceived service quality in bus transit service: A structural equation approach. *Transport Policy*, 29, 219–226. <https://doi.org/10.1016/j.tranpol.2013.07.001>
- Dick Ettema, Margareta Friman, [...], and Tommy Gärling. Season and Weather Effects on Travel-Related Mood and Travel Satisfaction. 2017; 8: 140. [PMC free article] [PubMed] [Google Scholar] [Ref list]
- Doshi P. The elusive definition of pandemic influenza. *Bull World Health Org.* 2011;89:532–538. [PMC free article] [PubMed] [Google Scholar] [Ref list] Dick Ettema, Margareta Friman, [...], and Tommy Gärling. Season and Weather Effects on Travel-Related Mood and Travel Satisfaction. 2017; 8: 140. [PMC free article] [PubMed] [Google Scholar] [Ref list]
- D’Ovidio, F., Leogrande, D., Mancarella, R., Schinzano, A., & Viola, D. (2014). A Multivariate Analysis of the Quality of Public Transport Services. *Procedia. Economics and Finance*, 17, 238–247. [https://doi.org/10.1016/s2212-5671\(14\)00868-5](https://doi.org/10.1016/s2212-5671(14)00868-5)
- Eboli, L., Mazzulla, G., 2011. Performance Indicators for an Objective Measure of Public Transport Service Quality. *European Transport, Transporti Europei* (2011) Issue 51, paper No 3, ISSN 1825-3997
- Elsevier, B. V. (2017a). *Measuring Comfort in Public Transport: A case study for İstanbul*.
- Fumagalli, L. A. W., Rezende, D. A., & Guimarães, T. A. (2021b). Challenges for public transportation: Consequences and possible alternatives for the Covid-19 pandemic through strategic digital city application. *Journal of Urban Management*, 10(2), 97–109. <https://doi.org/10.1016/j.jum.2021.04.002>
- Furuhata, M., Dessouky, M., Ordóñez, F., Brunet, M., Wang, X., & Koenig, S. (2013). Ridesharing: The state-of-the-art and future directions. *Transportation Research Part B-methodological*, 57, 28–46. <https://doi.org/10.1016/j.trb.2013.08.012>

- Gnerre, M. (2022, March 31). Risk perception and travel satisfaction associated with the use of public transport in the time of COVID-19. The case of Turin, Italy. PLOS ONE. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0265245>
- Gregorio, X. (2020). Movement of people in Luzon restricted as an island placed under 'enhanced' community quarantine. CNN Philippines.
- Goodwin, R., S.O. Gaines, L. Myers, F. Neto Initial psychological responses to swine flu Int. J. Behav. Med., 18 (2) (2011), pp. 88-92
- Guzman, L. (2022). User expectations and perceptions towards new public transport infrastructure: evaluating a cable car in Bogotá. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8795283/>
- Hotle, S., Murray-Tuite, P., & Singh, K. (2020). Influenza risk perception and travel-related health protection behavior in the US: Insights for the aftermath of the COVID-19 outbreak. *Transportation Research Interdisciplinary Perspectives*, 5, 100127. <https://doi.org/10.1016/j.trip.2020.100127>
- Healthcare workers' attitudes to working during pandemic influenza: a qualitative study BMC Publ. Health, 9 (1) (2009), p. 56
- Intelligent Transport. (2021b, June 17). Cleanliness and safety key to getting passengers back onto buses. <https://www.intelligenttransport.com/transport-news/126097/bus-survey-transport-focus/>
- J. Ives, S. Greenfield, J.M. Parry, H. Draper, C. Gratus, J.I. Petts, S. Wilson
- Kökalan, Ö., & Tutan, A. (2021). Passenger Satisfaction Scale for Public Transportation. *Transportation Research Record*. <https://doi.org/10.1177/0361198120961382>
- Kumar, A. (2022, November 16). *What is Time? Definition, Uses, Conversion, Measurement, Example*. SplashLearn - Math Vocabulary. <https://www.splashlearn.com/math-vocabulary/time/time>
- Kim, C., Cheon, S. H., Choi, K., Joh, C. H., & Lee, H. J. (2017). Exposure to fear: Changes in travel behavior during MERS outbreak in Seoul. *KSCE Journal of Civil Engineering*, 21(7), 2888–2895. <https://doi.org/10.1007/s12205-017-0821-5>
- Konstantinos Gkiotsalitis & Oded Cats (2021) Public transport planning adaption under the COVID-19 pandemic crisis: literature review of research needs and directions, *Transport Reviews*, 41:3, 374-392, DOI: 10.1080/01441647.2020.1857886

- Le Loo, L.Y., Corcoran, J., Mateo-Babiano, D., Zahnow, R., Transport mode choice in South East Asia: investigating the relationship between transport users' perception and travel behavior in Johor Bahru, Malaysia. *J. Transp. Geogr.*, 46 (Jun. 2015), pp. 99-
- Lohmann, M., & C. Hübner, A. (2012). Tourists' Weather Perceptions and Weather Related Behavior. A Qualitative Pilot Study with Holiday Tourists to Martinique. *Études Caribéennes*, 19. <https://doi.org/10.4000/etudescaribeennes.5323>
- L. Eriksson and S. E. Forward, "Is the intention to travel in a pro-environmental manner and the intention to use the car determined by different factors?," *Transportation research part D: transport and environment*, vol. 16, pp. 372-376, 2011.
- Madhuwanthi et al. (2016b) Madhuwanthi, R. a. M., Marasinghe, A., Rajapakse, R. J., Dharmawansa, A. D., & Nomura, S. (2016b). Factors Influencing to Travel Behavior on Transport Mode Choice. *International Journal of Affective Engineering*, 15(2), 63–72. <https://doi.org/10.5057/ijae.ijae-d-15-00044>
- Mayo, F.L., Taboada, E.B. (2020). Ranking factors affecting public transport mode choice of commuters in an urban city of a developing country using analytic hierarchy process: The case of Metro Cebu, Philippines. *Transportation Research Interdisciplinary Perspectives*. Volume 4, March 2020, 100078
- Mayo, F. L., Maglasang, R. S., Moridpour, S., & Taboada, E. B. (2021). Exploring the changes in travel behavior in a developing country amidst the COVID-19 pandemic: Insights from *Metro Cebu, Philippines*. *Transportation Research Interdisciplinary Perspectives*, 12, 100461. <https://doi.org/10.1016/j.trip.2021.100461>
- Mazilu, M.R., & Mitroi, S. (2010). Demographic, Social, Economic and Geographic Features – Shaping Factors of The Tourist Market. *Romanian Economic and Business Review*, 5, 159-166.
- M.Z. Sadique, W.J. Edmunds, R.D. Smith, W.J. Meerding, O. De Zwart, J. Brug, P. Beutels Precautionary behavior in response to perceived threat of pandemic influenza Emerg. Infect. Dis., 13 (9) (2007), p. 1307
- Mercado, N. A. (2020, March 19). *Without public transport, workers resort to walking for hours*. Inquirer News. <https://newsinfo.inquirer.net/1243803/without-public-transport-workers-resort-to-walking-for-hours>
- News, A. (2020, November 17). Public Transport Can Bounce Back from COVID-19 with New and Green. Asian Development Bank. <https://www.adb.org/news/public-transport-can-bounce-back-covid-19-new-and-green-technology-says-ADB>

- Ngoc, A. M., Hung, K., & Vu, T. A. (2017). Towards the Development of Quality Standards for Public Transport Service in Developing Countries: Analysis of Public Transport Users' Behavior. *Transportation Research Procedia*, 25, 4560–4579. <https://doi.org/10.1016/j.trpro.2017.05.354>
- N.N. Ghani, M.Z. Ahmad. Transport mode choice: are latent factors important?
- Nurdden, A. Effect of transportatoin policies on modal shift from private car to public transportation in Malaysia. *J. Appl. Sci.*, 7 (7) (2007) Proceedings of the Eastern Asia Society for Transportation Studies. The 7th International Conference of Eastern Asia Society for Transportation Studies (2007), p. 124
- Noor, E. (2020). Willingness to ride and perceptions of autonomous public transit. <https://www.sciencedirect.com/science/article/abs/pii/S0965856420305929>
- Okamura, T., Kaneko, Y., Nakamura, F., Wang, R. Passengers' attitudes to the service items of jeepneys in Metro Manila by different lifestyles *J. East. Asia Soc. Transp. Stud.*, 10 (2013), pp. 1384-1395
- Public Utility Jeepney Modernization Health Impact/Benefit Assessment. (n.d.). <https://air.emb.gov.ph/wp-content/uploads/2021/11/Public-Utility-Jeepney-Modernization-Health-Impact.pdf>
- Richter, C., & Keuchel, S. (2012). Modelling Mode Choice in Passenger Transport with Integrated Hierarchical Information Integration. *Journal of Choice Modelling*. [https://doi.org/10.1016/s1755-5345\(13\)70045-9](https://doi.org/10.1016/s1755-5345(13)70045-9)
- Satiennam, T., Jaensirisak, S., Natevongin, N., Kowtanapanich, W. Public transport planning for a motorcycle dominated community. *J. East. Asia Scoeity Transp. Stud.*, 9 (2011), pp. 970-985
- Scott C. & Dr. Ben W. (2012). Will privacy concerns associated with future transport systems restrict the public's freedom of movement?
- Statista Research Department. (2023). Popular modes of transportation Philippines 2022. Statista.
- Suau-Sanchez, P., Voltes-Dorta, A., Cugueró-Escofet, N. An early assessment of the impact of COVID-19 on air transport: Just another crisis or the end of aviation as we know it? *J. Transp. Geogr.*, 86 (2020), p. 102749, [10.1016/j.jtrangeo.2020.102749](https://doi.org/10.1016/j.jtrangeo.2020.102749)

- Sunga, A., Diaz, C. E. D., & Napalang, S. G. (2018). The Influence of Rainfall on Mode Choice and Departure Time of Commuters: The Case of Ortigas CBD Workers. *ResearchGate*. <https://doi.org/10.11175/easts.12.771>
- Thamizh Arasan, V., Vedagiri, P. Modelling modal shift from personal vehicles to bus on introduction of bus priority measure Eastern Asia Society for Transportation Studies (The 8th International Conference of Eastern Asia Society for Transportation Studies), 7 (2009)
- The Lancet Planetary Health. (2021). A Pandemic Era. *The Lancet Planetary Health*, 5(1), e1. [https://doi.org/10.1016/s2542-5196\(20\)30305-3](https://doi.org/10.1016/s2542-5196(20)30305-3)
- Thigpen, C. (2020). Rethinking Travel in the era of COVID-19: Survey Findings and Implication for Urban Transportation, <https://www.li.me/second-street/rethinking-travel-in-the-era-of-covid-19-new-report-shows-global-transportation-trends-support-for-micromobility>, Accessed on June 26, 2020
- Tiglao, C. (2019). The Quality of Service Perception among Public Transport Users in Metro Manila Considering Dominance of Paratransit Modes. [https://easychair.org/publications/preprint\\_download/ghnm](https://easychair.org/publications/preprint_download/ghnm)
- Tsavidari, Despoina, Vasileia Klimi, Georgios Georgiadis, Grigorios Fountas, and Socrates Basbas. 2022. The Anticipated Use of Public Transport in the Post-Pandemic Era: Insights from an Academic Community in Thessaloniki, Greece. *Social Sciences* 11: 400. <https://doi.org/10.3390/socsci11090400>
- Ulrich Matchi Aïvodji, Sébastien Gambs, Marie-José Huguet, Marc-Olivier Killijian. Meeting points in ridesharing: A privacy-preserving approach. *Transportation research. Part C, Emerging technologies*, 2016, 72, pp.239 - 253. <https://doi.org/10.1016/j.trc.2016.09.017>
- Vicente, P., Reis, E., Profiling public transport users through perceptions about public transport providers and satisfaction with the public transport service *Public Transp.*, 8 (2016), pp. 387-403
- Weiss, M. (2014). The College Experience of Commuter Students and the Concepts of Place and Space. Retrieved on January 03, 2018, Retrieved from [http://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1233&context=oa\\_diss](http://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1233&context=oa_diss)
- World Health Organization, “WHO Coronavirus (COVID-19) Dashboard,” 2021. <https://covid19.who.int/>
- X. Sun, S. Wandelt, C. Zheng, A. Zhang. COVID-19 pandemic and air transportation: Successfully navigating the paper hurricane. *J. Air Transp. Manag.*, 94 (2021), p. 102062, [10.1016/j.jairtraman.2021.102062](https://doi.org/10.1016/j.jairtraman.2021.102062)