

COVID-19 & Sustainable Transportation - Introduction?

Sustainable transport systems make a positive contribution to the environmental, social and economic sustainability of the communities they serve. However, while there are many challenges towards sustainability development (e.g., instability, implementation, governance), the most prominent one now is COVID-19. On the surface, one would think that COVID-19 would impede the progression towards more environmentally safe and sustainable transport. While it’s true that travel is far riskier due to potential virus spreading, COVID-19 has presented a unique opportunity to analyze the current status of transportation modes as well as urban transportation and convert them in a more resilient, sustainable manner. It also provides a chance for governments to be better prepared for future events like this.

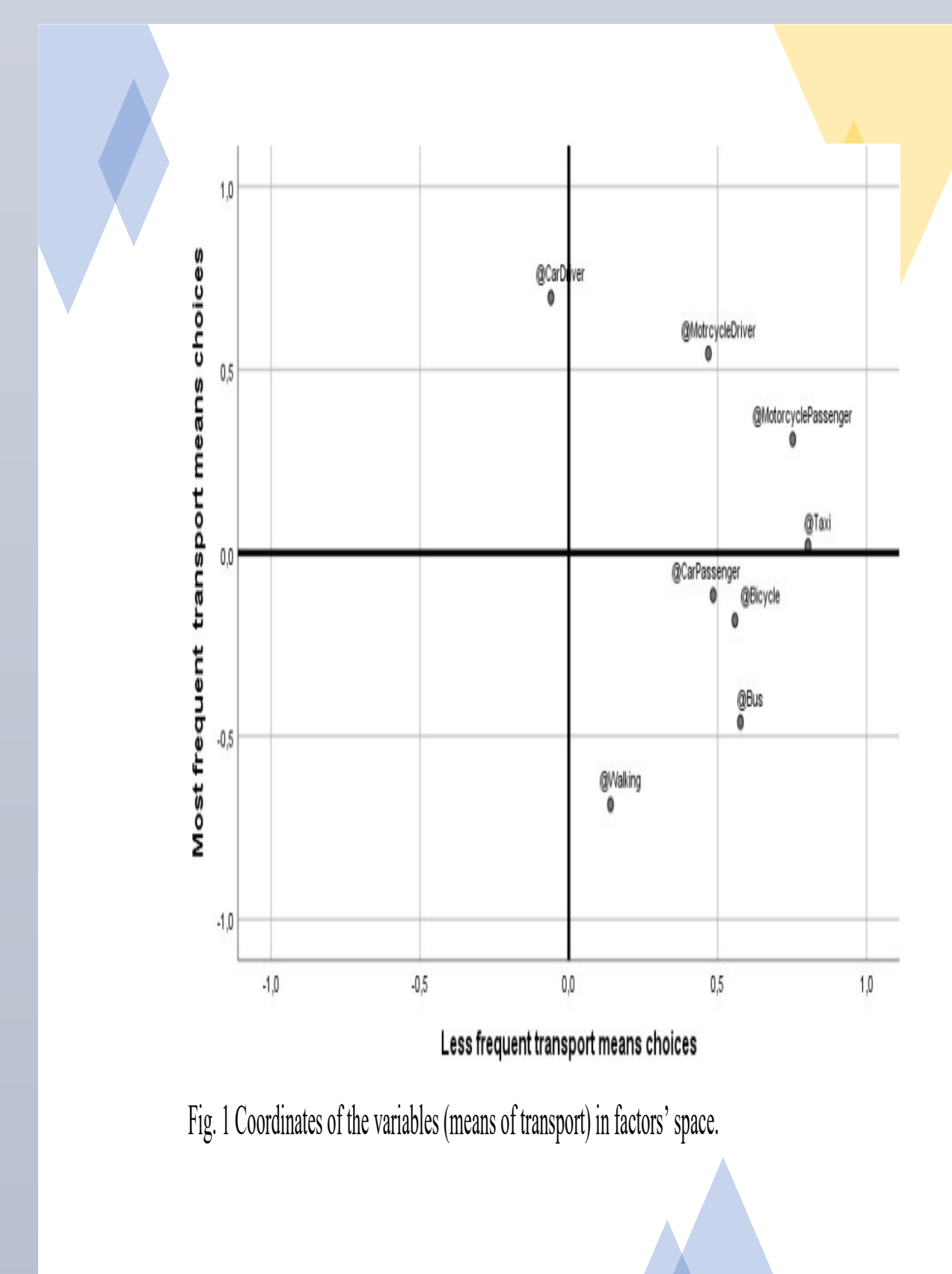
COVID-19 & Sustainable Transportation – Objectives (?s)

- What are the impacts, regionally and/or globally, that COVID-19 has on sustainable transportation?
- Can COVID-19 be used to further the development of sustainable transportation throughout the different modes of transport?

COVID-19 & Sustainable Transportation - Results

- Almost 40% of the study population in Chania and Rethymno uses a private vehicle on a regular basis
- The cities’ small size encourages green transportation, and almost 50% of the citizens choose walking for their daily commuting
- Around 30% of citizens have already decreased car usage and opt for alternative and sustainable transport modes (walking, cycling, public transport)
- The medium to long-term implications of the pandemic can influence the use stimulus packages for supporting economic recovery and energy transitions (e.g., renewable energy technology adoption)
- If overall electricity demand drops, the share of generation from renewable sources can be significantly increased and sustained due to a potential decrease in the need to use non-renewable energy sources to meet electricity demand
- Non-users of public transportation for leisure activities before the pandemic were found to be 4.7 times more likely to reduce their cycling frequency post lockdown compared to the respondents who used public transportation more than three times a day
- Both policy frameworks ASI (Avoid, Shift, Improve) and ASIF (Activity, Structure, Intensity, Fuel) work together to administer the following elements:
 - Reduce travel activity through innovations such as tele-working, tele-conferencing, and internet shopping or by shortening trip lengths through (non-transport) innovations such as compact cities and smart cities
 - Shift modal structure to reduce car use (conceptualized as changes in the relative size of regimes).
 - Reduce energy intensity and fuel carbon intensity by improving the energy efficiency of transport modes and technologies, either through accelerated incremental innovation or radical component substitution.

COVID-19 & Sustainable Transportation – Materials & Methods



COVID-19 & Sustainable Transportation – Conclusion

With people being forced to work from home, people in urban areas, like Chania and Rethymno, have displayed changes in behavioral travel patterns such as the decreased use of vehicles in favor of sustainable transport like walking or cycling (around 30%). With the prolonged severity of the pandemic still in play, COVID-19 has the benefit to implement policies like stimulus, ASIF, and ASI to influence the transition to green transportation via renewable technologies and resilient mobility strategies. ASI and ASIF also have the added benefit of reducing energy/fuel carbon intensity by improving energy efficiency of transport modes and technologies. To put it all simply, as severe as the pandemic has become, there’s no denying that COVID-19 has provided a once-in-a-lifetime opportunity for us to improve our transportation technologies and strategies as well as opening the mindset of the public to the significance and potential of green transportation.

References

- Campisi, Tiziana, Socrates Basbas, Anastasios Skoufas, Nurten Akgün, Dario Ticali, and Giovanni Tesoriere. “The Impact of COVID-19 Pandemic on the Resilience of Sustainable Mobility in Sicily.” MDPI. Multidisciplinary Digital Publishing Institute, October 23, 2020. <https://www.mdpi.com/2071-1050/12/21/8829/htm>.
- Griffiths, S., D. Furszyfer Del Rio, and B. Sovacool. “Policy Mixes to Achieve Sustainable Mobility after the COVID-19 Crisis.” Renewable and Sustainable Energy Reviews. Pergamon, March 10, 2021. <https://www.sciencedirect.com/science/article/pii/S1364032121002124>.
- Kanda, Wisdom, and Paula Kivimaa. “What Opportunities Could the COVID-19 Outbreak Offer for Sustainability Transitions Research on Electricity and Mobility?” Energy Research & Social Science. Elsevier, June 29, 2020. <https://www.sciencedirect.com/science/article/pii/S2214629620302413>.
- Newman, Carol. “Key Challenges to Sustainable Development.” FutureLearn. Accessed April 8, 2021. <https://www.futurelearn.com/info/courses/achieving-sustainable-development/0/steps/35495#:~:text=These%20key%20challenges%20are%3A,into%20sustainable%20long%2Dterm%20practices>
- Tarasi, Dimitra, Tryfon Daras, Stavroula Tournaki, and Theocharis Tsoutsos. “Transportation in the Mediterranean during the COVID-19 Pandemic Era.” Global Transitions. Elsevier, January 9, 2021. <https://www.sciencedirect.com/science/article/pii/S2589791820300384#tbl1>.

Acknowledgement & Contact

School Email: s0344127@salemstate.edu

Personal Email: coryshark2000@gmail.com

Postal Address: 6 Washington Street Salisbury, Mass. 01952