

Covid-19 pandemic and mobility perspectives. Trust, mobility practices and preferences insights from Melinda Interreg Project

Simone Caiello^{1*}, Matteo Colleoni¹, Elena Colli²

¹ CEMTET, Dipartimento di Sociologia e Ricerca Sociale, Università degli Studi di Milano-Bicocca

² Go-Mobility srl, Travel Behaviour and Communication

Background and introduction

The first part of 2020 has been an extremely disruptive period, where every country in the world, sooner or later, has been hit by an unexpected menace, occurred in the form of a serious pandemic. Mobility was one of the dimensions of our lives to be strongly hit by this new situation, unfolded firstly in a limitation in the use of public space, and so transports, until reaching the, almost, complete lockdown, the barely total immobility and confinement in our private homes.

Beside the many issues highlighted by this pandemic, the one of mobility limitation has more and more shown how this function is crucial for our living condition. Mobility is a tool to reach opportunities, maybe not present in our neighbourhoods, in the area surrounding our residential context (work, shops, ...) and for those who lack options of private mobility a safe public transportation system is of vital importance.

The reduction of mobility (see for example data provided by Google's Covid-19 Community Mobility Reports or Apple's Mobility Trend Reports) has also highlighted how much it contributes to the air pollution in our cities and territories, since during the lockdown the levels of NO₂ and SO₂ in particular have fallen to their minimum levels, improving the environmental conditions from this point of view (Sokhi et al., 2021; Bakola et al., 2022).

EU Interventions, as can be seen from the ELTIS Urban Mobility Observatory, have been addressed to guarantee the overall mobility system viability during the pandemic, working both on "soft" (regarding behaviours and habits) and "hard" (regarding physical dimension) solutions:

- To protect both staff and users. Safety on both Public Transport means and Mobility Spaces (like stations, airports, waiting rooms, etc...), thanks to distancing norms (reducing occupancy rates, regulation boarding, ...); disinfection procedures; service management in terms of frequency and schedules, e-ticketing.

- To inform on safety of behaviours, through awareness raising and information campaigns on how to correctly behave in public and during mobility in particular. Introduction of e-tools for mobility planning and information.

- To guarantee sustainability. Empowerment of active mobility through incentives to purchase of soft mobility tools (bicycles, scooters, ...); Solutions to reduce unnecessary trips (smartworking, digitalization of services, ...).

- To reshape public space. Reshape of mobility infrastructures and public areas in cities, reducing spaces for cars and increasing cycling and walking facilities and paths, to improve healthy mobility solutions

* Corresponding author: simone.caiello@unimib.it

- To better plan mobility. Re-discovering of the centrality of mobility management practices, crucial to coordinate interventions between local actors at territorial level as described by EPOMM experiences, to harmonize mobility rhythms with social and economic activities.

The role of local bodies is pivotal in implementing these changes, and as well the sharing of solutions and experiences between cities, regions, and countries, that means between different mobility cultures as well, that can be facilitated by the European Community Framework.

The risk of returning to higher numbers in car use was real and in the end, it was the final result of the recovery phase. In Italy data from the last Audimob report (Isfort, 2022) showed that private cars share recover and overcame the pre-Covid percentage, while PT and walking are still far to reach the previous levels. But this does not mean that we should stop working for a better future: positive signals come from the expansion of “two wheels” solutions, and further opportunities are yet to come, favored by the extension of digital-related technologies and applications, widely adopted during the pandemic.

The present paper provides the results from a brief survey run between May and June 2021, in the framework of the Interreg Alpine Space project Melinda (Mobility Ecosystem for Low-carbon and INnovative moDal shift in the Alps). The project aimed to better understand the demand for mobility of the populations of urban, peri-urban and rural contexts in the Alpine region in order to foster multimodality and modal shift in mobility behaviours, for a more sustainable mobility in the Alps. During the research activities the outbreak of COVID-19 pandemic forced the research consortium to reshape its own activities and perspectives, opening to the reflections about the next future potential changes in mobility practices and life preferences, that will be better described in the next paragraphs.

Theoretical framework

The research framework in which the study took place is a specific one, as already mentioned: the outbreak of the Covid-19 pandemic and its impact on the living conditions of people and on the functioning of socio-technical systems, in particular the mobility one. This aspect required the recall of a specific theoretical approach, belonging to the broader mobilities paradigm, risen in recent years: the emergency (im)mobilities (Adey, 2016). As also highlighted by Daconto et al (2020), mobilities research has always been interested in (im)mobilities issues emerged during disasters and emergencies, in order to understand in particular if and how those events improved or produced other forms of inequalities (Birtchnell, Büscher, 2011; Sheller, 2013; Cook, Butz, 2015; Adey, 2016).

Peter Adey states that, besides the aim of better understanding “how emergencies are governed, freighted with meaning and significance, and lived and experienced” (2016: 33), it is crucial also to understand how the emergency governance of mobility addresses “the organization of series of activities, practices, technologies and representations that work in concert to respond and plan so as to get things moving again” (ibidem: 36). In doing so he lists the seven dimensions of mobile emergencies analysis, allowing this analytical effort: anticipation, coordination, mobile machines, absence, inhuman, difference, times. Inside this framework we wanted to stress the role of trust belonging to the population towards the different main actors involved in the mobility system management during the crisis (Institutions, transport services providers and users) in ensuring safety. Trust is in fact one of the main factors enabling the response to crises, and played one of the most relevant roles in this case, both when addressed to Science in itself (Plohl et al., 2020) and its capacity in facing the pandemic, and when related to institutions in charge of putting in place initiatives (Fancourt et al., 2020; Oksanen et al, 2020; Sibley et al., 2020), also communicating the level of safety in order to enhance trust in users (Balog-Way et al., 2020).

The pandemic strongly challenged also the latest policies promoting sustainable mobility, as already mentioned, acting as a disincentive of collective mobility solutions. As showed by several studies (Fujii & Kitamura, 2003, Garvill et al., 2003) also temporary changes in the overall framework of daily lives can have an impact on people’s mobility behaviours, as the latest data on the Italian travel habits have shown (Isfort, 2022). In order to further address the perspectives about people preferences towards mobility in the next future after the pandemic the survey proposed several scenarios, in which asked respondents to define the preferred mobility solutions for common daily tasks. In this way we wanted to detect the potential shifts and attitudes towards different mobility-ideal types and styles.

Case study

As already said this paper presents results from the research activities run in the framework of Melinda (Mobility Ecosystem for Low-carbon and INnovative moDal shift in the Alps) Interreg Project, active between summer 2018 and summer 2021. The Covid pandemic forced the consortium to re-design partially research activities in order to address further questions regarding “how to guarantee a safe and sustainable mobility for now and for the future, considering the impact of Covid-19

outbreak". For the purpose a survey tool has been developed, based on the Vignette approach, a consolidated method on Social Sciences for the study of beliefs, values and norms (Morrison, 2015). Vignettes consists of short stories about hypothetical actors in specific circumstance, to whose actions or overall situation the interviewee is asked to respond (Finch, 1987). Vignettes are useful in particular for the analysis of cross-cultural aspects linked to specific situations (Soydan & Stål, 1994), and are often adopted for the evaluation of public policies (Rice et al., 2010).



Figure 1 – Melinda City Finder opening page

Adopting such a method then different ideal-typical situations, related to mobility practices, had been designed, recreating scenarios into which the respondents had to decide what to do or highlight what they would have preferred. These regarded:

- Preferences in mobility-related policy solutions (car-oriented; PT-oriented; Active mobility-oriented)
- Safety and security: trust in sanitizing procedures and tolerated degrees of crowding on PT
- Trust in (and ranking of) the «players» involved in guaranteeing safety in the mobility realm
- Promotion of sustainable mobility (biking), considering different active mobility incentive schemes
- Purchasing preferences for leisure activities
- Purchasing preferences for shopping for groceries

The framework “story” consisted in a hypothetical scenario in which the respondent had to move, going somewhere else, and had to choose the new residence according to mobility-related characteristics (no other domains were surveyed). This choice was based on research evidences providing insight in the relevance of contextual changes in life has enablers of changes in practices (also in terms of mobility). Bamberg et al (2003) highlight how the provision of seasonal tickets to newcomers moving from other contexts in the new ones resulted, at least partially, in an increase of mobility-related attitudes, beliefs and behaviours shift.

Analysis

The survey has been structured in several sections, regarding the different sub-topics to be addressed (respondents profile; Mobility culture/ideal-type; attitudes towards safety and sustainability in mobility). The respondents could answer in 4 different languages (English, French, German, Italian) in order to cover the various countries involved in the data collection, plus further potential respondents of other nationalities, thanks to the English version provision. The language selection helped us in detecting the national provenance of cases.

The survey, consisting in a CAWI tool, has been delivered through the communication channels of the project partners, and cannot be considered a representative inquiry on the national populations. Anyway the results can give few insights about the topics of interest among a quite big sample of individuals. In the end 830 people had been interviewed, mainly from Italy (522).

The most relevant results show that:

Safety and security

In a pandemic scenario where it is not possible to stand on the PT, people seems to generally tolerate also quite high degrees of crowding on the PT themselves. In fact about 56,6% of respondents would tolerate a crowding rate up to 3/4, 38,5% of the sample up to maximum 1/2, and only 4,9% just 1/4 of PT capacity. It happens that, once controlled for the cultural background, the figure changes: once again the highest level of trust is recorded among French speakers, followed by German, English and, last, Italian speakers.

When the object is the “communication” of safety, people show to generally trust providers and prefer the adoption of labels certifying cleaning procedures (45,2%) than videos directly describing what is usually done for sanitizing transport means (15%). Relevant, but less strong, is the attractiveness of cleaning procedures on spot (39,8%). Trust pattern changes according to the «cultural background»: certification labels for example are more relevant among French speaking respondents, while direct cleaning procedures among Italian ones.

When the attention is focused on the responsibility for safety management in mobility, the main responsible actors in the local context are Public Authorities, followed by transport providers as second best, with the relative highest mark, and then, as last, Users. When differences between countries are considered, the distribution significantly changes: English speakers consider as most responsible the users, while French speakers the authorities. German and Italian speakers seem to be closer in this case.

Promotion of sustainable mobility: mobility ideal-types and perspectives

The section related to the preferred mobility solutions for specific daily activities highlighted a variegated situation.

- Purchasing preferences for leisure activities: planning a dinner.

8 people on 10 prefer leisure activities framed into the neighbourhood context, while almost the same proportion is then divided into delivery-services-lovers and car-driven mobility leisure option. The cultural background is relevant since French speakers are most keen to 15 minutes city-model practices, while Italians towards car-driven practices. Higher is the degree of urbanity of the current residential context, lower the preference for car-driven and home-delivery practices. In terms of age Boomers are mostly car-driven focused, Gen X usually prefer 15 minutes city model, while Millennials home-delivery.

- Purchasing preferences for shopping for groceries

A similar figure is found also for buying groceries, even if a lower % is recorded for neighbourhood-style purchases, while online purchases (home-delivery) are double than before.

Again, French speakers show to prefer more the 15 minutes city-model practices, while German ones for this kind of purchases prefer car-driven behaviours, and Italians home-delivery. The relation between the degree of urbanity and the preferences for car-driven and home-delivery practices is confirmed. Also in this case Boomers are mostly car-driven focused, while Gen X usually prefer home-delivery and Millennials the 15 minutes city model.

Conclusions

The brief results of the survey could give interesting insights in the topic of safety-related policies for mobility emergencies, showing the general level of trust towards the mobility system (in particular towards the Authorities in charge of its management), more than providers and users. Anyway the cultural background (here addressed in terms of country of residence) is relevant and impact on these figures. A broad interest towards proximity-driven purchasing behaviour emerges as the most liked solution, giving further support to the 15 minutes city-model, but car-driven lifestyle is still present, and also home-delivery reaches important shares of preference (in particular for buying groceries, more than socializing practices), always with relevant differences among sub-populations.

Keywords: COVID-19; Mobility; Safe Mobility; Emergency mobility; Mobility Behaviours Change; Vignettes

Bibliographic references

- Adey, P. (2016). Emergency mobilities. *Mobilities*, 11(1), 32–48.
- Bakola M, Hernandez Carballo I, Jelastopulu E, Stuckler D. The impact of COVID-19 lockdown on air pollution in Europe and North America: a systematic review. *Eur J Public Health*. 2022 Nov 29;32(6):962-968. doi: 10.1093/eurpub/ckac118. PMID: 36074061; PMCID: PMC9494388.
- Balog-Way, D. H. P., & McComas, K. A. (2020). COVID-19: Reflections on trust, tradeoffs, and preparedness. *Journal of Risk Research*, 23(7–8), 838–848. <https://doi.org/10.1080/13669877.2020.1758192>
- Bamberg, S., Rölle, D., & Weber, C. (2003). Does habitual car use not lead to more resistance to change of travel mode? *Transportation*, 30, 97–108.
- Birchnell, T., & Büscher, M. (2011). Stranded: An eruption of disruption. *Mobilities*, 6(1), 1–9.
- Cook, N., & Butz, D. (2016). Mobility justice in the context of disaster. *Mobilities*, 11(3), 400–419.
- Daconto, L., Caiello, S., & Colleoni, M. (2020). Emergency (Im) Mobilities. Insights from the Covid-19 Pandemic in Italy. *Fuori Luogo. Rivista di Sociologia del Territorio, Turismo, Tecnologia*, 7(1), 27–35.
- Fancourt, D., Steptoe, A., & Wright, L. (2020). The Cummings effect: Politics, trust, and behaviours during the COVID-19 pandemic. *The Lancet*, 396(10249), 464–465. [https://doi.org/10.1016/S0140-6736\(20\)31690-1](https://doi.org/10.1016/S0140-6736(20)31690-1)
- Finch, J. (1987). The Vignette Technique in Survey Research. *Sociology*, 21(1), 105–114. <https://doi.org/10.1177/0038038587021001008>
- Fujii, S. and Kitamura, R. (2003) What Does a One Month Free Bus Ticket Do to Habitual Drivers? An Experimental Analysis of Habit and Attitude Change. *Transportation*, 30, 81-95. <https://doi.org/10.1023/A:1021234607980>
- Garvill, J., Marell, A., & Nordlund, A. (2003). Effects of increased awareness on choice of travel mode. *Transportation*, 30, 63–79.
- Isfort (2022), 19°Rapporto sulla mobilità degli Italiani, available at the address: https://www.isfort.it/wp-content/uploads/2023/01/221215_RapportoMobilita2022_Def-1.pdf
- Morrison, T. (2015). Using Visual Vignettes: My Learning to Date. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2015.2115>
- Oksanen A, Kaakinen M, Latikka R, Savolainen I, Savela N, Koivula A Regulation and Trust: 3-Month Follow-up Study on COVID-19 Mortality in 25 European Countries, *JMIR Public Health Surveill* 2020;6(2):e19218. URL: <https://publichealth.jmir.org/2020/2/e19218>. DOI: 10.2196/19218
- Plohl, N., & Musil, B. (2021). Modeling compliance with COVID-19 prevention guidelines: The critical role of trust in science. *Psychology, Health & Medicine*, 26(1), 1–12. <https://doi.org/10.1080/13548506.2020.1772988>
- Rice, N., Robone, S., & Smith, P. C. (2010). International Comparison of Public Sector Performance: The Use of Anchoring Vignettes to adjust Self-Reported Data. *Evaluation*, 16(1), 81–101. <https://doi.org/10.1177/1356389009350127>
- Sheller, M. (2013). The islanding effect: Post-disaster mobility systems and humanitarian logistics in Haiti. *cultural geographies*, 20(2), 185–204.

Sibley, C. G., Greaves, L. M., Satherley, N., Wilson, M. S., Overall, N. C., Lee, C. H. J., Milojev, P., Bulbulia, J., Osborne, D., Milfont, T. L., Houkamau, C. A., Duck, I. M., Vickers-Jones, R., & Barlow, F. K. (2020). Effects of the COVID-19 pandemic and nationwide lockdown on trust, attitudes toward government, and well-being. *American Psychologist*, 75(5), 618–630. <https://doi.org/10.1037/amp0000662>

Sokhi RS, Singh V, Querol X, Finardi S, Targino AC, Andrade MF, Pavlovic R, Garland RM, Massagué J, Kong S, Baklanov A, Ren L, Tarasova O, Carmichael G, Peuch VH, Anand V, Arbilla G, Badali K, Beig G, Belalcazar LC, Bolignano A, Brimblecombe P, Camacho P, Casallas A, Charland JP, Choi J, Chourdakis E, Coll I, Collins M, Cyrus J, da Silva CM, Di Giosa AD, Di Leo A, Ferro C, Gavidia-Calderon M, Gayen A, Ginzburg A, Godefroy F, Gonzalez YA, Guevara-Luna M, Haque SM, Havenga H, Herod D, Hörrak U, Hussein T, Ibarra S, Jaimes M, Kaasik M, Khaiwal R, Kim J, Kousa A, Kukkonen J, Kulmala M, Kuula J, La Violette N, Lanzani G, Liu X, MacDougall S, Manseau PM, Marchegiani G, McDonald B, Mishra SV, Molina LT, Mooibroek D, Mor S, Moussiopoulos N, Murena F, Niemi JV, Noe S, Nogueira T, Norman M, Pérez-Camaño JL, Petäjä T, Piketh S, Rathod A, Reid K, Retama A, Rivera O, Rojas NY, Rojas-Quincho JP, San José R, Sánchez O, Seguel RJ, Sillanpää S, Su Y, Tapper N, Terrazas A, Timonen H, Toscano D, Tsegas G, Velders GJM, Vlachokostas C, von Schneidemesser E, Vpm R, Yadav R, Zalakeviciute R, Zavala M. A global observational analysis to understand changes in air quality during exceptionally low anthropogenic emission conditions. *Environ Int*. 2021 Dec;157:106818. doi: 10.1016/j.envint.2021.106818. Epub 2021 Aug 20. PMID: 34425482.

Soydan, H., & Stål, R. (1994). How to use the vignette technique in cross-cultural social work research. *Scandinavian Journal of Social Welfare*, 3(2), 75–80. <https://doi.org/10.1111/j.1468-2397.1994.tb00060.x>