Behavioral change and the pandemic

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Key messages

- The pandemic is an unexpected, disruptive scenario that had a major impact on behavior, prompting also unexpected changes in the transport sector.
- Understanding the psychological and behavioral aspects of travel mode choices is extremely relevant to foster policies that are socially and behaviorally-oriented. Understanding the psychological and behavioral aspects of travel mode choices is extremely relevant to foster policies that are socially and behaviorally oriented.
- More than new technologies and infrastructure are necessary; policies for mobility need to take into consideration changes in people's attitudes, social norms, perceptions of control and habits surrounding mobility (Figure 1).

Introduction

Before the pandemic, the most disruptive scenarios when it came to transport included the concept of mobility-as-a-service (MaaS) and autonomous vehicles. Since early 2019, East Japan Railway Company has set up a MaaS strategy and design department in its Technology Innovation Headquarters to foster the development of MaaS and actively include rail transport services in the scenario.[1] The autonomous vehicle technology expansion has shown to be a promise for efficient, on-demand travel services with many trials being operated in cities around the world. However, no one was expecting a pandemic. COVID-19 is a disruptive scenario that poses many challenges for all sorts of behavior, from personal hygiene to travel.

According to psychological theory, people tend to behave in ways that are approved by their peers and their community (called social norms). In the pandemic scenario, the expected norm is that individuals will maintain social distance. This is socially influenced as well, as some cultures allow more proximity than others, and that is why it is relevant to have clear standard rules, such as using tactical design by visually delimiting the spaces where people can place themselves. It is also expected that people will sanitize their hands, and avoid unnecessary travel on public transport. It is also expected that people will sanitize their hands and avoid unnecessary travel on public transport.

An important aspect of social norms in normal times is that the expected behavior is not always explicitly described, and people automatically know how to behave, given their history of socialization (for example, from childhood, we learn how to take public transport, how to get in and out, and how to buy tickets). However, in the case of this pandemic, it becomes critical to state clearly the normative behavior to avoid the spread of the disease (for example, how to properly use masks and how far to place yourself from others).

There is a great difference between self-motivated behavioral change and behavioral change that occurs during extraordinary events. Most people faced, at least temporarily, a lack of reduced perceived behavior control. When facing a low perception of change and possibility to take active choices, people experience stress and tend to stick to behaviors that they are used to.

The SLOCAT analysis of Google mobility reports[2] illustrate what happens in situations of reduced perceived behavior control: low-income countries are less prepared to shift work conditions to teleworking and many people still have to maintain their travel habits during a pandemic. Moreover, in countries that have a high presence of informal and non-regulated jobs, the experience of lack of control over personal lives, tied to the reduced income, creates a scenario of uncertainty.

When we look at a post-pandemic scenario, the changes will still be reflected in people's behaviors. In the case of transport, we may expect an intensification of active travels, or a reduction of the use of public transport, higher usage of infrastructure for cycling or even a rebound effect for some specific kinds of trips, such as online food delivery.

After the advent of the pandemic, many cities started to invest in infrastructure dedicated to cycling and reduced the presence of cars in the streets. Rome is planning an increase in bike lanes, Barcelona has reduced parking spaces, and people in Europe have shown support for municipal initiatives to not return to the pollution levels of pre-COVID times.[3]

Meanwhile, the demand for on-demand and online services has also increased. For instance, the Didi Chuxing* ride-hailing, in partnership with Volvo Cars, has introduced an on-demand autonomous taxi service in a Shanghai suburb[4] and the business of online food delivery has already almost reached pre-pandemic levels.[5] Even though Didi Chuxing has launched interesting initiatives to cope with social distancing during the pandemic, such as free transport for medical workers and Didi bike -sharing has grown substantially, the services of ride-hailing and online food delivery contribute to car-centric mobility and reduces the possibility of shopping for food and groceries locally, contributing to more traffic.

Other cities, such as Gothenburg, Sweden, which have reduced parking fees during the pandemic, may have triggered the old habit of private car-centered mobility. In Korea, the car sales increased between March and April 2020, and in Beijing, the traffic has gone over the normal levels in the period of peak-hour morning, which characterizes a rebound effect. These phenomena will need more careful research on travel patterns to better understand people's reactions to post-pandemic scenarios.[6]

Case study #1: The Shenzhen bus group's experience

Shenzhen Bus Group (SZBG) started a set of efforts from different perspectives to cope with the spreading of the virus.[7] The company's strategy involved prevention, control and communication with staff and media to combat the virus. The SZBG is a good case to exemplify the importance of developing strategies that directly affects people's behavior in an efficient way. The efforts from SZBG target the problem from different perspectives: from sanitation to staff training and social support. With this approach, they were able to efficiently influence people's attitudes, behaviors and the social norms of the work environment. Moreover, their communication strategies gave support for people to perceive that they have a certain level of control over their work environment and their tasks, which are important ways to increase people's trust on the measures being taken as well as reduce the stress during the pandemic.

All employees were advised to participate in the online training via APP, the "Training Evaluation Management System". The training used a behavioral strategy to keep attendance

* Didi is the world's leading mobile transportation platform, headquartered in Beijing.

by a system of points reinforcement. This strategy was important to communicate the same message across all sectors of the company and avoid the emergency of less resilient sub-cultures inside the company. The homogenization of the training facilitates the communication among staff, it creates a sense of group, increases people's trust and helps to create a "new norm" to be followed in times of pandemic.

Concerning the users of the buses, a set of normative regulations took place: the buses carried not more than 50% of its capacity, the dispatch frequencies were reduced to avoid unnecessary trips, there were frequent and regular sanitization of the vehicles and mandatory use of face masks to enter the vehicle. These norms were published and updated, along with governmental information (e.g., number of confirmed cases and development of the infection cases) disseminated widely in media and information platforms. Information and training are important strategies to change people's attitudes and consequently their behaviors.

The Employee Assistance Programme and the hotline for counselling were strategies to support the staff and their families in cases of quarantine. The purpose was to avoid the staff and their peers to experience extreme anxiety and pessimistic feelings during the pandemic. Combined with the strict measures of sanitization and fleet control, the strategies adopted by SZBG provided a sense of control during the crises, giving support for users and staff.

Case study #2: The Pasig City efforts

Pasig City is a highly urbanized city in Metro Manila, Philippines. The main public transport in the country are jeepneys, buses, Public Utility Vehicles (PUVs) and tricycles. Even though there have been initiatives to foster the use of bicycles, the cycling culture hasn't been fully developed and the infrastructure needs to be improved. Today, a significant share of cyclists are women, but the ambition of the Department of Transport is to make cycling accessible to everyone.

In an interview, Robert Anthony Siy, head of the Department of Transport, said "many people still don't believe in walking and cycling", when mentioning the challenges faced by the department to implement initiatives to promote sustainable travel.[8] From a behavioral analysis standpoint, his speech expresses that people are less willing to travel by bike or walking. When attitudes are negative towards a behavior, it's unlikely that people will adopt it. Moreover, if this negative attitude is shared by the community, it reflects a social norm.

Along with the communication efforts, Pasig City has implemented many interesting projects that are great candidates for encouraging behavioral change, especially during the pandemic. In March, Pasig City in partnership with Global Electric Transport (GET) provided free transit riding for health frontline workers. The vehicles in this service were emission-free and they were sanitized and operated according to the national government's regulations during the pandemic.[9]

Public utility vehicle (PUV) drivers also have gotten monetary support starting in March[10], and people in need to travel for medical appointments to treat chronic diseases could reserve a tricycle by phone.[11] Economic support for drivers and transport assistance for medical appointments are important measures to reduce stress, to increase people's perceived control over the pandemic circumstances and to guarantee a minimum level of wellbeing for the population.

Post-pandemic, Robert Anthony Siy sees a necessity to invest in electrification and infrastructure. However, some challenges are to be faced by the Department of Transport. The

first is institutional; it's necessary to articulate and operationalize national transport planning into the municipal level. This entails having local ordinances in place and making policies explicit, so that other cities in the Philippines may replicate them.

There are also initiatives to help the informal transit sector to access capital, infrastructure and technology. This could help workers consolidate their jobs and provide better services. While e-mobility is doing fine in the private sector, the government still needs to catch up to have e-mobility in logistics, public transport and ride-hailing services. Improvements in infrastructures tend to make users' experience better and therefore, increase their intention to use it. Improving the facility to use electric vehicles, not only by economic incentives, but also access to parking and charging, increases the perceived ease of use of the vehicles. And, as long as more people start to use electric buses, cars and bikes, a social norm of fossil fuel-free vehicles may emerge.

Along with the investments in infrastructure, there is a need to look more closely at public transit users' needs. Understanding people's demand for public transportation, by gathering information on travel patterns, origins and destinations, preferences of modes, comfort, trust and perceived safety, is essential to deliver a better service. By meeting those needs, people will be encouraged to use more public transport services and change their habits.

Case study #3: Temporary bicycle lanes in Latin American cities

The pandemic set the possibility for increased cycling in big cities in South America. While Bogotá and Lima implemented temporary bike lanes as a measure to cope with social distancing and to avoid crowding in public transport[12;13], since 2017, the city of Fortaleza, Brazil is a reference for its increasing infrastructure in cycling lanes and bike sharing. It invested in road safety and the implementation of low-speed zones around schools and hospitals.[14]

However, those examples are not the reality for most of the cities in South America. But they could be great starting points to help other cities to replicate the phenomena of cycling. One example is the network Partnership for Healthy Cities, in which policy makers and urban planners can benefit by sharing their experiences and knowledge and overcome the main barriers surrounding the implementation of cycling lanes.[15]

The importance of these networks is that local leaders may show the population that efforts have been made surrounding cycling and to communicate the benefits of cycling during the pandemic. Once the infrastructure is in place, the efforts may be redirected to peoples' behaviors. For example, including in children's curriculum classes for cycling, implementing low-speed zones in order to increase perception of safety, nudging the acquisition of bikes with financial support, or reduced taxes to buy bikes.

Conclusion

The examples previously discussed show that crises such as the current pandemic scenario can open opportunities for changes, particularly when the new context highlights that old habits need to be changed. For the transport sector, it's clear that the investment in behavior-centered infrastructure and social actions are crucial to promote perceived behavior control across the population, as well as to build trust in the transport systems. This means that for each decision around investment in infrastructure, policy makers need also to consider

people's behaviors, attitudes, habits, perceptions and the social norms of the culture in place (Figure 1). Moreover, the planning and implementation of behavior-centered infrastructure need to be scientifically-oriented. Moreover, the planning and implementation of behavior-centered infrastructure need to be science-oriented. For instance, when a cycling lane is built, if people perceive that their peers are also using it, that it is safe and accessible, they will change their attitudes towards cycling and trust in the service.

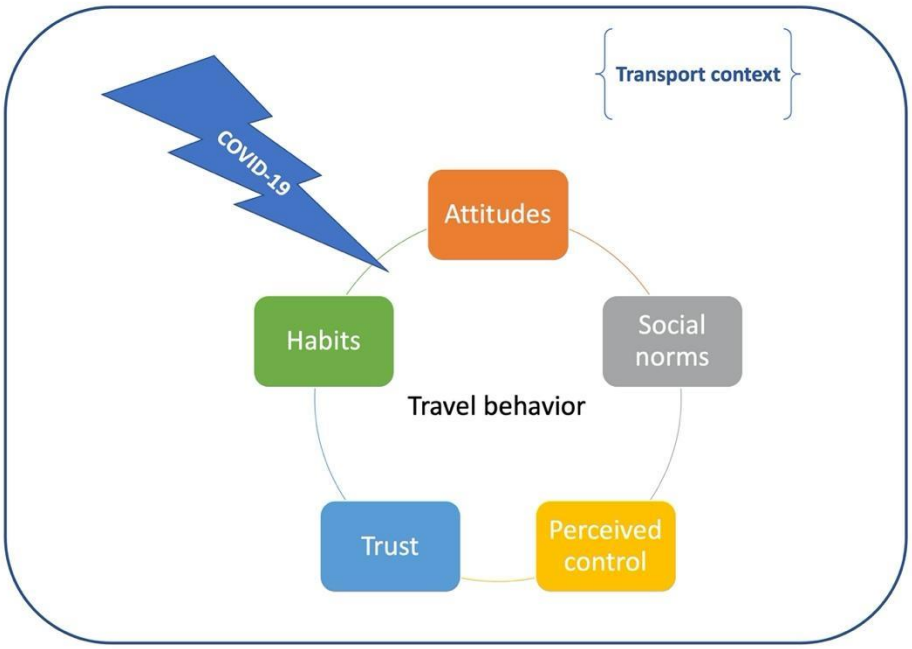

Figure 1. Underlying factors of travel behavior change in the pandemic context.

This crisis has made salient the social and normative aspects of behavior around public transportation. With proper nudging from the government (communication and infrastructure), sustainable patterns of mobility could be reinforced. A new culture of less car-centric travel behavior and more local accessibility to basic goods and services could be supported by current and new policies [6].

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