Travel behaviour changes during the pandemic: Prague-Pilsen rail case study
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Abstract: The COVID-19 pandemic has affected many aspects of our everyday lives. Governments have taken numerous measures to contain the spread of the pandemic, which has had a direct impact on daily mobility, modal choice and the function of public transport. This study uses quantitative and qualitative data to describe how the pandemic influenced travel on the Prague-Pilsen (Praha-Plzeň) railway line. The results of the case study on the Prague-Pilsen railway line are consistent with experiences in other countries. 38% decrease in passenger numbers was found between 2019 and 2020. Although numbers are increasing again, they still have not reached the pre-pandemic level. The number of connections has also decreased by a third on average (2019 to 2020). We also conducted in-depth interviews with train passengers on the above-mentioned route. Two-thirds of passengers stated that the frequency of their journeys had not been affected by the pandemic. However, like the other participants, they described other changes caused by the pandemic. Fear of infection played an important role, and the inconvenience of overcrowding was mentioned several times. The switch from buses to trains was mentioned, as was the fact that more and more travellers prefer to travel first class. In some cases, changes in the temporality of trips were also documented. The survey suggests that respondents travel less frequently by train for systematic, functional, health or social reasons.

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Introduction

The COVID-19 pandemic has changed everyday lives and significantly affected daily mobility. The rapid spread of the disease has shown how strong the connections are between countries or even continents in the modern world. One of the many areas affected by the pandemic was transportation. Many international flights were cancelled in the hope of slowing or stopping the spread of the coronavirus infection, usually by placing restrictions by countries with smaller numbers of infected people. However, the disease

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spread almost everywhere, and more and more restrictions were imposed, especially since the spring of 2020, when COVID-19 was officially declared a pandemic.

Governments had to adopt a wide range of measures to control the spread of the disease and "flatten" the incidence curve (Awad-Núñez, 2021; Vrána et al., 2021). Many of these measures affected patterns of daily mobility. The pandemic had a serious impact on the functioning and perception of public transport. Lockdowns and lower ridership led to the collapse of public transport in several cities or even entire countries (Gkiotsalitis and Cats, 2021; Vickerman, 2021). As people are creatures of habit and tend to travel and commute in a stable pattern, changing the mode of transport can be unimaginable for some (Fu, 2021). However, after an initial decline in traffic, a shift to other modes of mobility, especially the car, has been observed (Eisenmann et al., 2021; Simunek et al., 2021).

The aim of this article is to assess how pandemic measures influenced mobility on rail-line Prague-Pilsen in the Czech Republic. This topic is explored through a case study on the mentioned railway line, where a survey of 29 passengers was conducted. We also use quantitative data on passengers and the number of connections to capture the changes in mobility more accurately.

The paper is structured as follows. First part entitled COVID-19 in the Czech Republic describes the pandemic situation in the country at the beginning of the pandemic; the next part provides an overview of applied data and methods used; the study continues with part three labelled Train travel in the midst of a pandemic, the analysis of quantitative and qualitative data focusing on travel behaviour on the Prague-Pilsen railway line; the discussion in part four elaborates on these findings and the main results are summarised in the conclusion.

1. COVID-19 in the Czech Republic

The COVID-19 infection was first confirmed in the Czech Republic on March 1, 2020, with 3 positive cases. The situation developed quite rapidly, and the total number of cases exceeded one thousand on March 22, 2020; the first death due to COVID-19 infection was documented on the same day. By the end of the month, more than 3000 cases had been confirmed. (Hale et al., 2021).

There were government decisions that affected mobility in the Czech Republic, such as the declaration of a state of emergency on March 12 (Gov-CZ, 2020a). This was followed by Resolution No. 215 on March 15, which prohibited the free movement of persons with certain exceptions (Gov-CZ, 2020b), which had an impact on overall mobility in the country. Evidence was collected by Simunek et al. (2021), who studied nationwide road traffic in the Czech Republic and found a significant decrease in mobility during the first three weeks of the pandemic. Similar results and a 50-60% decrease in mobility were found in Brno (the second largest city in the Czech Republic) according to Waze user data (Data.Brno, 2021). However, according to national data, traffic gradually returned to pre-pandemic levels even before the state of emergency ended (Bartuska and Masek, 2021; Simunek et al., 2021). This could be due to the government's recommendation to use options for individual mobility, such as the car. Other countries, such as the Netherlands and the United Kingdom, have also recommended avoiding public transportation (Shelat et al., 2022; Tirachini and Cats, 2020).
Public transportation (PT) was affected by the pandemic in a more serious manner. Many passengers stopped using PT temporarily or permanently (Fridrisek and Janos, 2022; Tirachini and Cats, 2020; Wielechowski et al., 2020). The drop in the number of PT users was more significant than in other modes, especially cars (Eisenmann et al., 2021). This is due to the high-risk environment that PT represents, due to several factors, including 1) high numbers of people in a confined space with limited ventilation, 2) a variety of surfaces that are frequently touched (ticket machines, handrails, door knobs, etc.), and 3) no access control to identify potentially ill people (UITP, 2020).

The Centres for Disease Control and Prevention guidelines recommend certain behaviours when using public transportation, such as hand hygiene, avoiding touching surfaces, and social (physical) distancing (CDC, 2020). Vrána et al. (2021) identified 30 measures taken on public transportation in the Czech Republic. Some of the measures were related to physical prevention of virus spread (e.g. wearing masks, disinfection, etc.), protection of personnel (rear door entry, front protective area for drivers), fare-related measures (no or visual check-in only, free transportation, etc.), reduction in the number of connections, and so on.

These measures show that the government, PT operators, and regional authorities have made great efforts to make public transportation a safe option for travellers. To show how stringent each country is in fighting the outbreak of COVID-19, the Stringency Index was introduced by the Blavatnik School of Government and the University of Oxford (Hale et al., 2021). Figure 1 shows the evolution of the index along with the daily number of new cases of COVID-19 in the Czech Republic. It shows that the Czech government responded very quickly at the very beginning of the pandemic in March 2020. Compared to the following outbreak waves (November 2020, March 2021), the first wave (March 2020) in the Czech Republic is almost not visible in the graph, as the number of new cases did not exceed 400 per day. It is visible the Stringency Index corresponds to the number of newly infected persons. The exception is the development of the index since October 2021, when vaccination was available and part of the population was vaccinated.

2. Overview of applied data and methods

In our study, we use both primary and secondary data. The primary data source is interviews with train passengers conducted in collaboration with Augur (2020), described in more detail below. The secondary data are open-access data provided by the relevant public bodies. These data focus on ridership and the number of connections on the Prague-Pilsen railway line. The source of the passenger data is the Ministry of Transport of the Czech Republic, which publishes the Transport Yearbooks (Ministry of Transport, 2022). We used data from the yearbooks from 2006 to 2021. The data on the number of connections were taken from the search engine on the website IDOS.cz (2022). The data on the number of connections were taken from four reference weeks:

- 2019: 25 May to 7 June; 9 to 22 November
- 2020: 23 May to 5 June; 9 to 22 November
- 2021: 24 May to 6 June; 8 to 21 November
- 2022: 23 May to 5 June
Both periods were chosen as normal demand periods without public holidays. Another set of secondary data is a dataset from the Oxford COVID-19 Government Response Tracker (Hale et al., 2021). This data is used to map the progress of the pandemic by the number of new daily cases of infected people by COVID-19 and also by the Stringency Index. This consists of 8 individual government measures (such as closing workplaces, closing schools, closing public transport, cancelling public events, restrictions on gathering size, stay-at-home requirements, public information campaigns, restrictions on internal mobility and restrictions on international travel). The index ranges from 0 to 100, with 100 being the most stringent. (Hale et al., 2021).

To describe travel at the time of the pandemic in as much detail as possible, we used primary data from in-depth interviews with passengers (Augur, 2020). This survey was conducted directly on trains from Prague to Pilsen or vice versa. It aimed at changes in the mobility and residential behaviour of passengers. Its main focus was on the response to the modernisation of the infrastructure on the mentioned route (Surmařová et al, 2022) and on the changes in travel behaviour due to COVID-19, which are described in this article. The interviewees were selected through a systematic random route selection on trains between Prague and Pilsen. The time frame for the interviews was a typical working
week, including weekends. The minimum sample was set at a total of 20 interviews with respondents. Twenty-nine semi-structured in-depth interviews with 19 women and 10 men were conducted from 15 to 30 October 2020. The collection of interviews was affected by the constraints imposed by the coronavirus in the Czech Republic, especially in terms of willingness to respond. The interviews were transcribed, and data were organized and evaluated by coding.

For context, the pandemic situation became more serious while the interviews were being collected. A next wave of the pandemic was expected, and the government started to apply the anti-covid policies again (Gov-CZ, 2020c). During the survey period, there was an average of 11.5 thousand new cases per day in the Czech Republic. The number of deaths from COVID-19 increased from 58 per day (15 October 2020) to 216 (30 October 2020) (Hale et al., 2021).

3. Train travel in the midst of a pandemic

Our case study focuses on the railway line from Prague (population 10.3 million), the capital of the Czech Republic, to Pilsen (population 168 thousand), the regional capital (CZSO, 2021). These two cities are 100 km apart, which provides a strong connection and the possibility of daily commuting.

The journey by car via the motorway takes 1 hour and 16 minutes (without congestion or other disruptions) (MAPY.CZ, 2022). The journey by train (to the city centres of the two cities) usually takes 1 hour and 20 minutes, the fastest connection even 6 minutes less (CD.CZ, 2022). The intensity of the relations between the cities can also be illustrated by the number of connections, which is 25 trains in one direction on weekdays (IDOS.CZ, 2022)

Figure 2 shows an annual passenger exchange between Pilsen and Prague. Only one route runs from the Pilsen region through the Central Bohemia region to the capital region of Prague. Despite the aggregated data set (NUTS-2), the number of passengers is very accurate. There is a positive trend in passenger numbers from 2003 to 2019, which can be attributed to the extensive modernisation of this railway line, resulting in shorter journey times and higher frequencies (Surmařová et al., 2022).

COVID-19 pandemic and subsequent restrictions led to a significant decrease in passenger numbers between Pilsen and Prague by 38.0% and in the Central Bohemia region by 37.3% between 2019 and 2020. In 2021, several restrictions were lifted and despite the COVID-19 threat, a slow increase (18.1%) in passenger traffic is recorded. The number of passengers in 2021 between Pilsen and Prague is in the same range as between 2017 and 2018, namely 650 thousand passengers, not yet reaching the pre-pandemic level.

To also illustrate the change in the offer of train connections, we have analysed the number of train connections of the portal IDOS.cz (2022). This server is a search engine for public transport in the Czech Republic and is very well-updated, which means that the cancelled connections are no longer available. This gives us information about how many connections have been cancelled.
The change in the number of train connections on the Prague-Pilsen route is analysed in four reference weeks for the years 2019-2022: 2 weeks in spring (May and June) and 2 weeks in autumn (November) (Figures 3 and 4). In 2019, the number of pre-pandemic connections is the highest in all four years. The impact of the pandemic is clearly reflected in a 32% decrease between spring 2019 and spring 2020. In spring 2020, anti-covid measures were very strict and Wednesday (office day) was the day when the number of connections decreased the most in spring. This period was the most affected one on the Prague-Pilsen route in both directions. The rest of the development is coherent with the course of the pandemic (see Figure 1). Autumn brought some weakening of the measures and thus a slight increase in connections. The most significant increase is on Wednesday, perhaps due to the offices reopening.

From 2021 onwards, the trend also follows the course of the pandemic. In spring 2021, we can see the same number of connections as in autumn 2020. The second wave of the pandemic ended in the spring 2021 and in the summer many activities returned to normal as restrictions were gradually lifted. This explains the highest number of connections in autumn 2021. This period was the most served, in fact, there was a 4.2% increase in both directions compared to autumn 2019 before the pandemic. However, the third wave of the pandemic hit the Czech Republic and in spring 2022 the number of train connections decreased again. During this time, the third wave slowly came to an end, with a record number of new cases of COVID-19 per day.

However, the fact that some connections were not cancelled at all does not necessarily mean that capacity remained the same. The operator, Czech Railways, has many contracts with regional or state authorities, which means that services must be dispatched.
Nevertheless, the operator can use shorter train sets when demand is low and the trains are almost empty. In many cases, this was the only strategy to save the finances of the legally obliged operators in such an unpredictable situation as the pandemic. However, it is important to mention that even though there was a decrease in demand, the capacity was reduced by operator only to the point where acceptable social distancing was provided. This and other aspects such as sufficient air conditioning made a railway inferior to other means of public transport in terms of safety. Due to this reason the trains sustained a key public transportation mode. This was also one of the reasons why this case study is focused on railway transportation.

It was revealed that the spring periods were riskier and it was not necessary to renew the initial number of connections compared to the pre-pandemic period, as demand was lower and there were fewer restrictions. Based on the analysis, we can consider both directions of the Prague-Pilsen route as equivalent in terms of applied measures and the reduction of connections.

**Figure 3. Number of train connections from Prague to Pilsen in spring (left) and autumn (right)**

![Graph of train connections from Prague to Pilsen](Note: IDOS.cz, 2022.)

**Figure 4. Number of train connections from Pilsen to Prague in spring (left) and autumn (right)**

![Graph of train connections from Pilsen to Prague](Note: IDOS.cz, 2022.)
3.1 Passenger survey results

The passenger survey on the Prague-Pilsen rail line showed that COVID-19 has affected people's lives, even in seemingly mundane activities such as commuting. As mentioned above, the survey (Augur, 2020) was primarily conducted to describe changes in passengers' behaviour and preferences after ten years of railway modernisation. However, the interviews were conducted during the COVID-19 pandemic and its impact was evident in the responses, which prompted us to discuss this issue further. Therefore, we would like to describe the impact of the COVID-19 pandemic from the perspective of rail passengers.

Two thirds of the participants stated that their frequency of travel had not changed during the pandemic. These are people who describe simply having to commute to work because they have to be physically on site and there are no opportunities for them to work remotely. On the other hand, some respondents said that nothing has changed for them for quite an opposite reason. They already worked remotely and the pandemic has only extended their time away from an office. Still, there is not much need for them to commute, but they do not mind doing so if necessary.

A third of the travellers interviewed said they travel less than before the pandemic. Their mobility was reduced for a variety of reasons. Some of the participants had no longer a purpose for travelling or the reason for travelling was somehow reduced. For example, restrictions on the operation of schools and school facilities have resulted in university classes being converted to an online form and school accommodations being closed due to government decisions (Gov-CZ, 2020d; Gov-CZ, 2020e). This meant that students were no longer allowed to physically attend their classes, which were normally held in Prague, so there was no longer a need to travel from Pilsen or vice versa. Other less travelling participants said that they were systematically restricted by the Czech government's decisions. The Resolution no. 1078, which prohibits the free movement of people, was mentioned several times. This decision restricts mobility to going to work or doing necessary tasks (shopping, healthcare, caring for family members, etc.) (Gov-CZ, 2020c). Some passengers mention that they no longer travel abroad due to this resolution and the complications associated with crossing the border (tests, quarantine that may be required, etc.).

One of the participants admitted that she travels less for altruistic reasons because of other members of her household. The participant was concerned about her grandmother, who was part of a particularly vulnerable group because of her age. The fear of exposing her to the virus was great enough to reduce travel to an absolute minimum. It became clear in the interviews that fear of infection also played an important role in some travellers' decisions. This suggests that respondents are less likely to travel by train for systematic, functional, health or social reasons.

It is also important to note that there may be a larger proportion of people who no longer travel by train at all or travel significantly less. The reason for this assumption is the fact that the surveys were conducted directly on the train and therefore more people were interviewed who had not changed their travel behaviour. Since the surveys were conducted in person, there might also have been a higher number of people who did not want to answer for fear of infection.
During the pandemic of COVID-19 people became more aware of their surroundings. Especially on public transport, where there is a high concentration of people who could be infected, the stress of becoming infected increased. Some of the passengers described in the interviews that they did not feel as comfortable as usual, mainly because of the other people on the train. Therefore, the decrease in passenger numbers was seen as a very positive effect. Passengers described that the trains were almost empty.

Several respondents described they specifically travel in first class to avoid crowding. However, on some connections, there was significant crowding even in first class. The shift of passengers from second to first class can be illustrated with this quote:

“It's more comfortable here (in first class). You don't know who will be sitting next to you there (in second class). Especially now. I thought about travelling second class for a while, but it was not possible. You don't know who will be sitting next to you, you don't have the privacy as here. First class is still better. During the coronavirus, first class was full on Sunday. Well, it was full because of COVID-19. Fridays and Sundays are different. I suspect that many people from Prague buy seat reservations to get a spot in first class.” (Man, 75 years old.)

The results of the interviews show not only the shift from second to first class, but also from buses to trains. The cancellation of services made it more complicated for passengers to plan their journey. The participants complained mostly about cancelled connecting connections which made their journey longer or even more expensive since they needed to use the services of several operators.

Several participants admitted that they switched from bus to train during the pandemic due to these cancellations and the lower reliability of buses. They also spoke of how the crowding on buses was much worse. Therefore, they felt safer on the train because there was more space and better hygiene conditions, including the opportunity to wash their hands at the train toilets.

Some respondents also developed new strategies to avoid crowds by travelling outside the morning and afternoon rush hours. In one case, the change in the temporality of travelling was also involuntary. This respondent described having to change the time of travel because the government had imposed a curfew after 9 pm:

“COVID-19 did not really affect how often I travel. But now that there is a curfew after 9 pm... Normally I would arrive in Prague after nine, but now I don't want to risk that and I go earlier in the day.” (Woman, 21 years old).

These changes in travelling temporality, mostly desynchronization, have been possible due to changes in lifestyle that the pandemic helped to develop. One of the respondents even described how she believes that in the post-pandemic world some novelties become the new normal and how daily homeoffice and teleworking should be more accepted. This could lead to smaller demand for commuting and therefore to fewer passengers or even fewer traffic congestions.

4. Discussion of survey findings in context of pandemic

Changes in transport behaviour due to external influences and disruptions are not uncommon. There are many challenges in daily mobility that people have to adapt to,
from mundane changes in plans to major events such as a volcanic explosion or a pandemic (Kvizda and Seidenglanz, 2014). The pandemic has affected everyday behaviour in many ways, especially mobility behaviour.

However, changes in commuting behaviour due to the accessibility of the workplace and altered working conditions are not new just because there is a pandemic. Flexible working hours and the ability to work from home existed before the lockdowns and restrictions (Moyano, 2016). The pandemic has only added to the positive aspect of teleworking because it allows for more social distancing.

The concept of social distancing (or physical distancing) is one of the most widely used non-pharmaceutical measures to prevent transmission of COVID-19. However, the 2-metre distance on public transport is very complicated to apply (Tirachini and Cats, 2020). "Each passenger on any given day may be characterized by one of the following states: susceptible (not infected), infected (and traveling), quarantined (infected and not traveling), and immune (and traveling again)" (Tirachini and Cats, 2020, p. 11). Although the number of potentially infectious passengers may be very small, fear of infection can be a significant motive for avoiding PT, as our survey showed. In particular, crowding on board, which was also a major concern for respondents, can be seen as a potential risk factor.

On-board crowding was one of the main research criteria in a study conducted in the Netherlands by Shelat et al. (2022). The authors identified two segments of travellers: 1) COVID Conscious and 2) Infection Indifferent. Respondents in the first group were more willing to wait for a connection (8.75 min/person on average), assuming that they would be in a less crowded vehicle. Respondents in the second group were willing to wait much less (1.04 min on average), which was comparable to pre-pandemic levels. There was also an overrepresentation of older and female respondents in the COVID Conscious group and of respondents with higher train use during the pandemic in the Infection Indifferent group. The characteristics typical of these two groups are also found in our survey. In particular, sensitivity to overcrowding, which respondents dealt with by transferring from buses to trains as well as by transferring to first class (Augur, 2020).

In the context of cities, there are many authors who point out the need to switch from public transportation to other modes, especially active mobility such as walking and cycling (Awad-Núñez, 2021; De Vos, 2020; Vickerman, 2021). However, the 100 km distance between Prague and Pilsen makes it impossible to implement this recommendation to use active forms of mobility. The only options to deal with the new challenges are therefore to switch to the car, to rely on public transport and accept a certain risk of infection, or not to travel at all. Which option each chooses can be influenced by a number of factors, from access to certain means of transport (spatial, financial, etc.) to the ability to work from home or the general attitude towards the pandemic.

There is a certain social injustice associated with automobility and even in most car-saturated societies there is a large proportion of the population that does not have access to a car (Sheller and Urry, 2000). This mobility gap and PT dependency is widespread in many countries (Hoyle and Knowles, 1998). It is therefore not surprising that even in times of COVID-19 this preconception influences travel behaviour. According to Tirachini and Cats (2020), with pandemic people have abandoned public transportation
in a non-uniform matter. High-income groups left PT in greater numbers, and less educated workers and women were also more negatively impacted. This was due to the ability to 1) work from home and 2) pay for alternative mean of transportation.

There was an unprecedented increase in teleworking during the pandemic (De Vos, 2020; Tirachini and Cats, 2020). However, only certain groups of the population could really stay at home. A large group of people has been labelled "essential services" (such as medical staff or workers in grocery stores, cleaning, logistics, etc.) and did not have the luxury of working from home, which was evident in our survey as well (Wilbur et al., 2020). This was especially a problem for people with low-income jobs (De Vos, 2020, Tirachini and Cats, 2020, Wilbur et al., 2020). Almlöf et al. (2021) found that people with the least resources have continued travelling with PT in Stockholm to the greatest extent, establishing a link between wealth and exposure risk.

PT is perceived to be riskier than private means of transportation, even with contribution of official guidelines and authorities advising against its use (Tirachini and Cats, 2020). The media also played an important role in influencing the modal choice. Especially at the beginning of the pandemic, when 24-hour news coverage of a virus outbreak was unavoidable. In some cases, the anxiety and fear could even cause media-induced trauma (Trnka and Lorencova, 2020).

Staying in PT not only entails a higher risk of infection, but also the need to follow new set of rules for safe travel. One of the rules mentioned by respondents was the wearing of masks. The mandatory wearing of masks in vehicles of PT and at stops and stations was reintroduced by the Government Resolution No. 1024 (Gov-CZ, 2020b). Wearing the mask was described by respondents as uncomfortable due excessive sweating and itching while wearing the mask. However, wearing the mask significantly reduced the likelihood of infection, especially when maintaining social distance in PT vehicles was complicated (Taylor and Asmundson, 2021; Tirachini and Cats, 2020). Some respondents used other strategies, such as avoiding rush hour when possible. Similar findings were made by Wilbur et al. (2020), whose case study found that the largest declines in ridership occurred during the morning and evening rush hours, flattening the curve throughout the day.

As some people had to continue using PT (by their own choice or simply because there was no other option for them), there were more complications than masks ahead. As described above, some connections were cancelled during the pandemic and especially during the state of emergency declared by the Czech government, which was perceived as a complication by survey participants (Gov-CZ, 2020g). Bus services were cancelled more frequently than rail services for various reasons. These reasons are explained in more detail by Vrána et al. (2021). Most importantly there is an ambivalence between private and public transport companies. It is even more important whether the companies have contracts with public authorities. The connections contracted in a regime of public service obligation are quite difficult to cancel in contrast with open access connections which are much easier to cancel. The open access connections are operated mostly by private carriers or bus companies. The pandemic of COVID-19 has led to fewer bus trips in the Czech Republic in general. According to the Ministry of Transport, the number of bus passengers decreased by 34% between 2019 and 2020 (Ministry of Transport, 2022b). The decline was even greater for connections not commissioned by regional or state authorities. The number of passengers on these privately operated connections fell by
53%, supporting the claim that private connections without a contract with the public sector are easier to cancel (ibid.).

**Conclusion**

COVID-19 pandemic has brought many challenges to the Czech Republic. The government has taken many measures to slow the spread of infection. The situation in the Czech Republic is described in the literature as comparable to that in the Netherlands, particularly in terms of a more liberal “lighter version of lockdown” or “intelligent lockdown” that urged people to limit their travel but still gave them many opportunities to move around (de Haas et al., 2020; Simunek et al., 2021).

The results of the case study on the Prague-Pilsen railway line were consistent with experiences from other countries. We found a 38% decrease in passenger numbers between 2019 and 2020. Even though passenger numbers are increasing again, they still have not reached pre-pandemic levels. Similarly, the number of connections has decreased by a third on average (2019 to 2020).

In the passenger survey, one third of respondents also said they travel less than before the COVID-19 outbreak. Two thirds of passengers described they were travelling the same frequency, some of them by choice, others because they are unable to work from home. Although the frequency of travel has not changed for some, there have been other changes that have affected their travel since the pandemic began. Fear of infection played an important role, and the inconvenience of crowding was mentioned several times. The switch from buses to trains was recorded, as was the increase in passengers preferring to travel first class. In some cases, changes in temporality of travel were also documented. Some respondents tried to avoid rush hours and there was also a case of avoiding the night hours because of the government curfew. In summary, the survey suggests that respondents were less likely to travel by train for systematic, functional, health or social reasons.

The cancellation of connections was also mentioned by many interviewees. Especially the cancellation of connecting trains caused problems for respondents. More cancellations were described for buses than for trains, which led to passengers perceiving buses as unreliable. As neither the number of connections nor the number of passengers has returned to pre-pandemic levels, the question arises about the future of public transport. Funding PT may be problematic if ridership does not increase again (either naturally or through lower occupancy rules should the pandemic return). Reducing service frequency or increasing fares could have a very negative impact and further limit the functionality of PT (Fridrís and Janos, 2022; Vickerman, 2021). This would be a huge step backwards on the case study route Prague-Pilsen, where modernisation was very expensive to ensure high service quality (Surmařová et al., 2022). Hopefully, there is a low chance of significant reduction of services due to existence of integrated timetables system. The goal is to provide a high quality of connections throughout the entire day, including times of light traffic. This system provides more connections and higher possibility for social distancing since the savings from slight reduction of connections are marginal (only operating costs can be reduced while fixed costs remain).
Improving PT is now more than ever a question of social equity (Tirachini and Cats, 2020). Increasing inequality in access to transport based on income, age, disability and other individual and social characteristics was a problem even before the pandemic, and it has now worsened (Vickerman, 2021). And although car use became more prominent during the pandemic, some studies suggest that once 'normality' returns, people are more inclined to accept restrictions on car use and increase space for pedestrians and cyclists on streets (Awad-Núñez, 2021). This shows that the pandemic is indeed a turbulent time, but it can also be a turning point towards more sustainable travel and a reorganisation of space and way of living. Propagation and subsidisation of public transport is now more important than ever to motivate people to return to it.

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