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HOW GERMAN SUPPORTS REGIONAL RAILWAY TRANSPORT: CASE STUDY OF 9 EUR TICKET AND 49 EUR TICKET

JAK NĚMECKO PODPORUJE REGIONÁLNÍ ŽELEZNIČNÍ DOPRAVU:
PŘÍPADOVÁ STUDIE 9 EUROVÉ A 49 EUROVÉ JÍZDENKY

Wolfgang Kloppenburg, Petr Wawrosz ¹

Wolfgang Kloppenburg po vystudování vysoké školy pracoval jako úředník v průmyslových podnicích. Posléze vystudoval ekonomii a působil na manažerských pozicích v řadě oblastí. Od roku 2004 je osobou samostatně výdělečně činnou, zejména jako manažerský konzultant. V roce 2019 absolvoval školení v oblasti insolvenčního práva a od roku 2023 může v oblasti insolvenční působit jako konzultant a certifikovaný poradce. Od roku 2020 je Ph.D. studentem na Vysoké škole finanční a správní. Petr Wawrosz vystudoval ekonomii na Vysoké škole ekonomické v Praze a právo na Právnické fakultě University Karlově. Několik let působil jako ekonomický novinář. Od roku 2002 začal pracovat jako vysokoškolský pedagog na Vysoké škole finanční a správní. V roce 2012 získal titul Ph.D. a v roce 2019 titul docent – obé na Národohospodářské fakultě Vysoké školy ekonomické v Praze. Mezi jeho odborné a výzkumné zájmy patří ekonomie, kulturní inteligence a korupce.

Wolfgang Kloppenburg after graduating from high school, he trained as an industrial clerk and then studied economics graduating with a degree in business administration. He held various management positions in different sectors. Since 2004 self-employed as a management consultant with a focus on interim management. In 2019, training in insolvency law took place with the final examination to become a certified ESUG advisor (DIAI) and in 2023 he successfully graduated as a restructuring consultant and renovation moderator. He is Ph.D. candidate at the University of Finance and Administration. Petr Wawrosz graduated at University of Economics, Prague, Czech Republic and Faculty of Law, Charles University, Prague, Czech Republic. He worked some years as an economic journalist. From 2002 he has taught as an university teacher at the University of Finance and Administration. He obtained Ph.D title in 2012 and the title “associate professor” in 2019 – both from Faculty of Economics, University of Economics, Prague, Czech Republic. His professional and research interests include economics, cultural intelligence, corruption and other microeconomic and macroeconomic issues.

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Abstract

Due to Covid 19 regional railway transport in Germany faced a decline in passenger demand. The volume of passengers in million passenger-kilometer dropped from 102,026 in 2019 to 58,822 in 2020 and stays at this level in the next year. Even the end of the pandemic in the first half of 2022 did not lead to the reverse trend in passenger numbers development. Many railway companies faced big losses due to the decline and asked for some form of help. German government therefore introduced the so-called 9-Euro-Ticket in the months of June, July and August 2022. It was the monthly ticket costed 9 EUR valid in regional transport in the mentioned months. The government further increased its support of regional transport by 2,5 billion EUR to cover all costs with increasing numbers of passengers who did not pay the full price of their travel. The ticket can be seen as a success – 52 million of them were sold. The article analyzes the development of passenger's numbers in months when the ticket was introduced, mentions some problems connected with high numbers of passengers and also discusses what happened in the period after the validity of the ticket, namely concentrates on the so-called Deutschlandticket that costs 49 EUR per month and is valid in months from May to August 2023.

Key words: 9 Euro Ticket, regional railway transport, Germany, passenger numbers, regionalization funds, 49 Euro-Ticket (Deutschlandticket)

Abstrakt

Regionální železniční doprava v Německu v důsledku pandemie Covid 19 zažila pokles cestujících – jejich počet měřený v miliónech osob-kilometrů poklesl ze 102,026 v roce 2019 na 58,822 a na této úrovni se pohyboval i v následujícím roce. Mnoho železničních společností v důsledku daného vývoje utrpěly ztrátu a žádaly vládu o pomoc. Německá vláda zavádla proto tzv. 9eurový lístek. Jednalo se o měsíční lístek na železniční dopravu, který stál 9 euro a bylo možno jej zakoupit v měsících červen, červenec a srpen 2023. Na tento lístek šlo jezdit jakýmkoliv vlakem regionální železniční v Německu. Vláda dále poskytla na podporu železniční dopravy částku 2,5 mld. EUR. Zavedení lístku lze hodnotit jako úspěch – celkem jich bylo prodáno 52 miliónů. Článek analyzuje, jak zavedení lístku ovlivnilo počet cestujících, zmiňuje některé problémy, které byly se zavedením lístku spojeny, a vývoj po skončení platnosti lístku včetně zavedení nového měsíčního lístku od května 2023, který stojí 49 EUR. Klíčová slova: 9eurový lístek, regionální železniční doprava, Německo, počet cestujících, 49 eurový lístek

Introduction

Between June 1 and August 31, 2022, the local public transportation system in Germany offered a special promotion known as the 9-Euro-Ticket (Bundestag, 2022). The monthly pass, which cost nine euros and was good throughout Germany, was significantly less expensive than regular season passes. The initiative aimed to both reduce the burden on frequent users of public transportation and attract new users. The 9-Euro-Ticket should address the question of whether lower fares and an easier ticketing process can encourage more people to utilize public transportation and help the world meet its ambitious climate goals. The ticket should relieve German citizens of the burden of rising energy expenses, particularly those brought on by the

conflict in Ukraine. Given the rise in energy prices, the offer should also serve as a motivation for automobile owners to switch to public transportation.

52 million 9 Euro Tickets were sold, proving the success of the product. Additionally, for each of the three months, the 9-Euro-Ticket was automatically issued to the roughly ten million season ticket holders (VDV, 2022). This volume of travelers reduces carbon dioxide emissions by 1.8 million tons from an environmental protection perspective (VDV, 2022). It has also been shown that the air quality has significantly improved in urban areas. According to studies done at the University of Potsdam (Gohl and Schrauth, 2022) air pollution levels decreased as a result of the low-cost ticket's adoption by as much as 7%.

The article's objectives are to examine how the ticket affected the number of travelers, identify some related issues, explain how the ticket was financed, and talk about what happened when the ticket expired. The structure of the article is as follows. The first chapter focuses on the topic of how the ticket affected passenger counts, particularly in road and train transportation. The second and third chapters provide an overview of certain issues relating to the ticket as well as the question of how the ticket was financed. The fourth chapter covers what happened after the ticket expired. The key points are summed up in the conclusion.

The ticket impact on passenger data

The ticket gave the railroad firms the opportunity to regain many passengers they had lost to the pandemic. Due to the increase in passengers, regional railroad (SPNV) firms with net contracts or transport contracts with incentive systems saw a significant improvement in their financial performance. The public transportation authority is still in charge of the revenue risk in a gross contract. The transportation company deducts the fare revenue and uses the order charge to cover its own operating expenses. However, if the public transportation authority and the transportation provider agree on an incentive, such as one for attracting more passengers, a gross incentive contract is made. In a net contract, the transportation company is in charge of financing the revenue risk by paying a smaller order fee and keeping the fare revenue (DB Regio, 2017). Additionally, people who had never taken a train before were drawn to the ticket offer. In general, the passenger number development indicates that the introduction of the 9-Euro-Ticket increased the number of passengers in SPNV between June and August 2022. However, after the ticket's expiration in September 2022, these numbers once again declined. In comparison to the period prior to the pandemic, there were, on average, over a quarter (+24%) more rail trips with a length of at least 30 kilometers made from Monday through Friday from June to August 2022. Over two times as many rail rides were taken on the weekends (+105%). The Federal Statistical Office conducted a focused review of mobility data and found that between June and August 2022 and the equivalent time in 2019, railway rides over 30 km increased on average by 43%; the increases were significantly higher on weekends. Short- and medium-distance excursions were used by the majority of the extra passengers (Destatis, 2022).

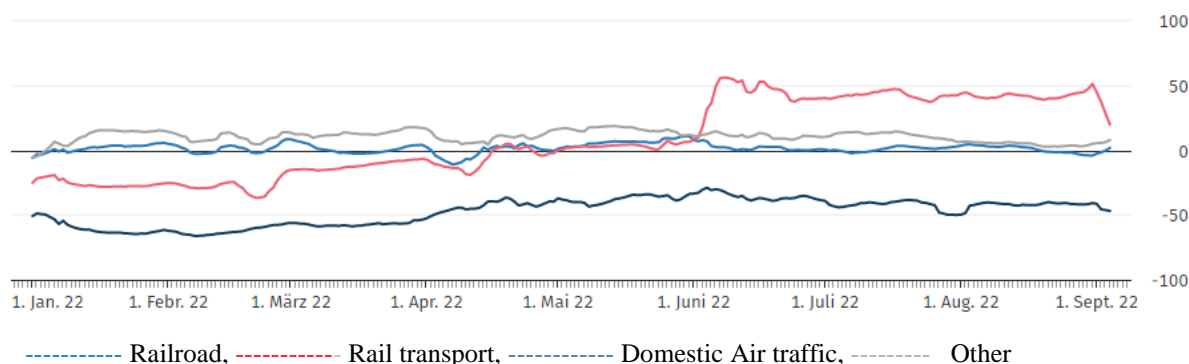


Figure 1 – Change in mobility in Germany in 2022 by mode compared to 2019
Source: own work based on Statista (2022)

When looking at travel lengths, it is clear that during the 9-Euro-Ticket era, the quantity of train trips under 300 kilometers increased dramatically. For instance, between June 1 and August 31, 2019, the average number of rail journeys between 30 and 100 kilometers increased by 43%. For medium distances (100 to 300 kilometers), a 57% increase was observed. On the other hand, the number of journeys made over fewer than 30 kilometer distances during a week was precisely the same as last year and just slightly (+7%) higher on the weekends. Therefore, it can be deduced from the statistics that during the time of the 9-Euro ticket, significantly more train trips under 30 kilometers were canceled than during the same period in 2019. After the 9-Euro-Ticket expires in September 2022, the number of daily movements in rail transportation will once again reach the level of 2019. These figures suggest that since other methods of payment were more expensive, rail passengers rarely used the 9-Euro-Ticket, which is valid for local and regional transportation, for extensive and time-consuming journeys. Once the 9-Euro-Ticket expired, mobility decreased to its pre-crisis level if all distance learning courses are taken into account. By September 1, 2022, however, it had already fallen below that level by less than one-fifth (-19%). On August 31, 2022, train travel between 30 and 100 kilometers was still two-thirds (+67%) above the level of 2019. The number of passengers will decline once the ticket expires, according to surveys of ticket buyers conducted throughout the period of validity. According to Horpenaikova (2022), only 9% of those with a 9-euro ticket anticipated using public transportation more frequently once the offer expired. Another 38% anticipated to continue using public transportation, 40% wanted to travel less, and 14% expected to stop using it altogether.

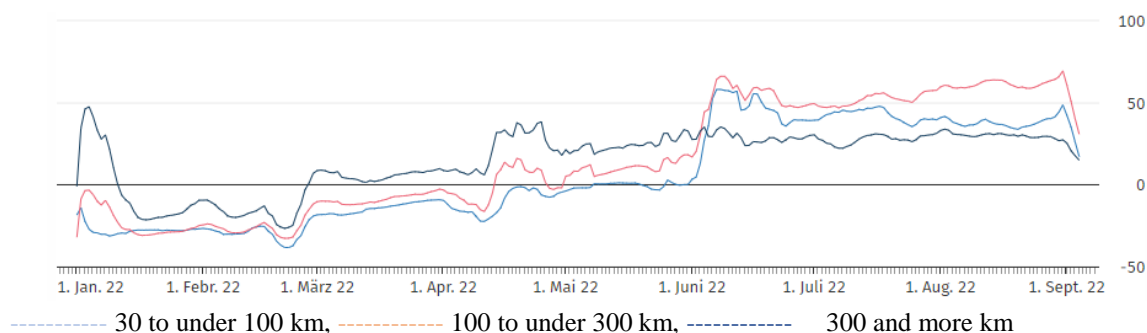


Figure 2 –Change in mobility in Germany in 2022 by distance compared to 2019
Source: own work based on Statista (2022)

Use of the 9-Euro-Ticket ought to have an impact on other modes of transportation, like vehicle travel. The federal statistical office looked specifically at the data from mobile phones indicating changes in the number of drivers. The Teralytics company collected and provided the Statistic Federal Office with access to anonymized and aggregated data from Telefónica's mobile network. The market share of Telefónica, one of the three mobile communication service providers in Germany, is around one-third countrywide, however it may be higher or lower in certain regions. As a result of the various regional market shares, variations may occur. According to the data provider, extrapolation is employed to try to represent the full German population. Anonymized and aggregated mobile-funk data from position changes are used to calculate movements when stays at the start and objective locations last for at least 30 minutes. It is possible to draw daily conclusions regarding the use of different forms of transportation while going more than 30 kilometers thanks to mobile phone data. Data on the configuration of road and rail lines, as well as patterns in the synchronous connections of various mobile radio devices, are used to establish the mode of transportation (Destatis, 2022). The figure demonstrates that there was no appreciable decline in other types of transportation to go along with the increase in train travel. From these figures, it can be inferred that the ticket particularly attracted individuals who would not have used a train if it hadn't been invented. Horperniakova's research from 2022, which asked respondents about the purpose of their trip, also found that the majority of tickets were used for leisure travel, with 60% of respondents using them for weekend excursions and leisure activities, 34% for leisure travel during the week, and 21% for vacation travel. Less people used tickets for commuting: 18% did so to go to work or for training.

Data from specific routes provide credence to the findings presented above. Two routes are taken in the paper based on Teralytics' analysis (2023): Düsseldorf to Köln and Berlin to Rostock. In order to get to Rostock for a vacation, most people choose the first route from Berlin. Here, the nine-Euro-ticket period is contrasted to the months that precede and follow it (the entire months of May and September through February). The duration of the ticket is associated with a slight rise in road journeys, but the increase in train travels is notable - over 250% on specific weekdays.

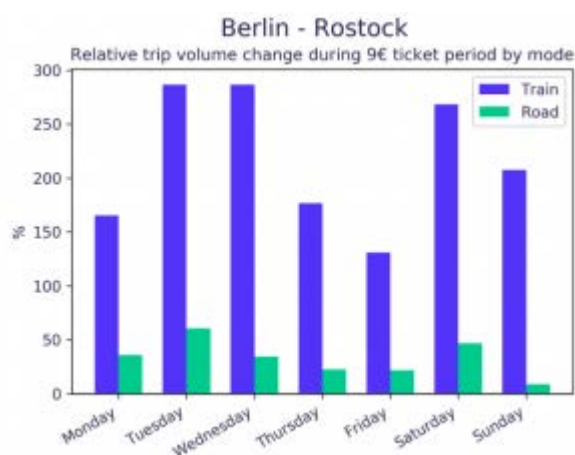


Figure 3 – Berlin – Rostock: Relative trip volume change during the 9-Euro-Ticket period by mode.
Source: own work based on Teralytics (2023)

The second route, Düsseldorf to Köln, is one of the busiest commuter routes in Germany. The 45 km travel from city center to city center has good train and road connections. It would be fascinating to see if the effort reduced road travel. Yes, according to the data, there is a noticeable 10% drop in road traffic on weekdays. The effects of more individuals working from home after the epidemic may be ruled out as the cause of the drop in road transport since this comparison spans May to September 2022.

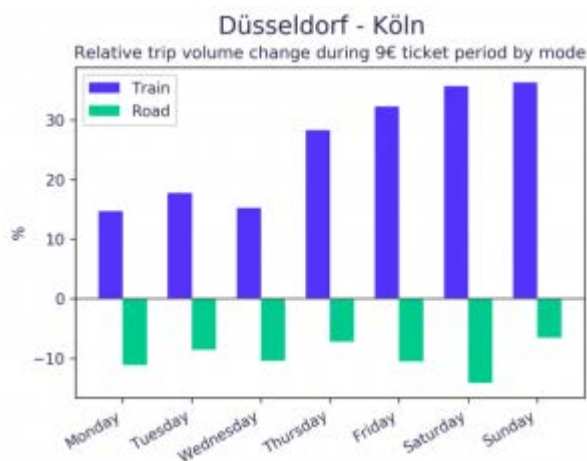


Figure 4 –Düsseldorf – Köln: Relative trip volume change during 9-Euro-Ticket period by mode.
Source: own work based on Teralytics (2023)

Problems relating to the ticket

Unfortunately, there were also issues with 9-Euro-Ticket. Despite the fact that all railway companies made their capacity accessible, the high demand could not always be met. Sometimes this resulted in crowded trains and circumstances where not every passenger could find a seat. The light barrier was occasionally unable to work because people were standing in the boarding zones, which prevented the doors from closing on their own. Overcrowded trains caused departures to be delayed. As a result, contractual fines for tardiness or passengers asserting their rights could have a severe impact on the railway firms' financial performance. For instance, DB Regio's punctuality rating decreased to 88.5 percent in June 2022 from 98.3 percent the previous month based on a six-minute cut-off (ZDF, 2022). The 9-Euro-Ticket-related departure delays are likely to be the primary culprit.

The EVG trade union asserts that there were commuter issues in addition to advantages like high demand and straightforward tickets, which are a welcome change from the complicated "small-small" of the German tariff system. One disadvantage was that the railroad network could not have been prepared for the passenger service. Lack of trains, a shortage of railroad operating personnel, and the numerous construction sites that made up the railway infrastructure all contributed to capacity constraints. Because of this, there were crowded trains, dangers on the platforms, and an uptick in passenger hostility overall (EVG, 2022).

An illustration of this kind of circumstance is the one in Thuringia. The abolition of the 9-euro-Ticket was welcomed by regional railroad carrier Erfurter Bahn. The demand for resources

could hardly be met. Local public transportation was now twice as popular. When the 9-Euro Ticket expires at the end of August 2022, transportation businesses in Thuringia will be looking for relief. According to MDR AKTUELL's interview with the managing director of the Erfurt and Southern Thuringia Railway, since June 2022, passenger numbers have dramatically increased. Technical and human resources, however, were barely meeting demand. On routes like Saalfeld-Erfurt, Erfurt-Ilmenau, or Eisenach-Meiningen, he claimed, there are about 600 workers and 100 railcars operating, many of whom are close to fatigue. When September starts and the 9-Euro-Ticket disappears, the managing director says that the staff is content (MDR, 2022). There are several issues with passenger screening. Due to the 9-Euro-Ticket, the customer service workforce in the regional trains of the railway companies is at capacity. It was frequently challenging to conduct ticket checks on crowded trains, and there were often tumultuous circumstances. The incidence of disease drastically increased. The elevators were broken, the onboard restrooms were broken, or the trains had been damaged by heavy use. The risk of illness increased dramatically as many train drivers and conductors neared their breaking thresholds (WDR, 2022). Additionally, some railway companies stopped transporting bicycles due to the overwhelmingly high demand. A second bicycle ticket was necessary because the 9-Euro-Ticket did not cover the carrying of bicycles. In contrast, many federal states or transportation associations typically permit the free transit of bicycles throughout the day or during specific hours. In Germany, there was a discernible increase in verbal abuse aimed at railroad staff during the summer of 2022, when the 9-Euro-Ticket was in effect. According to DB (Bahnblogstelle, 2022) there were over 3,000 verbal assaults between June and August 2022.

On the other hand, DB Regio's local and regional transportation services, as well as those of the other railway operators, saw a significant drop in passengers traveling without a valid ticket. One of the reasons for this was the reasonable price. Additionally, it appears that the aforementioned issues did not result in unhappiness among passengers. According to Heineke et al.'s survey from 2022, customer satisfaction levels among frequent users of public transportation before the 9-Euro-Ticket were constant when compared to other polls conducted prior to the ticket's introduction. Only 41% of consumers who only occasionally use public transportation say they are happy with their experience once they have paid for the ticket. Only 23% of infrequent users, in comparison, said they were content with public transportation prior to the introduction of the ticket. More than 70% of those who responded to the study and purchased such a ticket stated they would use public transportation more frequently in the future.

Payment for the ticket

The federal government has added 2.5 billion euros to the regionalization budgets of the federal states to pay for the 9-Euro-Ticket. This enables the federal states to pay the transportation providers as the ticket price was heavily subsidized and the railroad firms subsequently suffered a loss of revenue. The so-called Kiel Key is used to determine how to distribute regionalization funding.

As a distribution key for the regionalization subsidies for local public transportation that the federal government distributes to the federal states, the German Conference of Transport

Ministers decided on the Kiel Key in October 2014. This key, which covers half of the population and half of the SPNV services sought in railway kilometers, was agreed upon by the federal states. In comparison to the previous financial distribution, federal states that experience disadvantages as a result of the Kiel Key application receive more funds.

The federal government gives regionalization funding to the federal states each year to assist in covering the cost of regional rail passenger service. In Germany, local rail passenger transportation was handed over from the federal government to the federal states during the railway reform of 1994–1996. Since that time, the "orderer-provider system" has allowed the federal states to determine which routes and how much local public transportation is provided. Local rail passenger service is paid for using a combination of public money and fare income. The federal states receive a portion of the federal tax revenue. These monies are referred to as regionalization funds (RegG) in accordance with the Regionalization Act. The regionalization funds are specifically designated for local public transportation, therefore the federal states are limited in how they can use them. Most of the money is spent on placing orders for train services or paying railroad companies for those services. However, a portion of the regionalization money are also utilized to upgrade the train system or buy new cars. The increase in regionalization payments by the federal government in the amount of €2.5 billion finally compensated for a substantial portion of the financial losses suffered by the SPNV enterprises as a result of the low fare. With the release of the annual financial statement for the fiscal year 2022, a more thorough presentation from the railway undertakings may be anticipated.

After the end of 9-ticket and introduction of 49 ticket

Due to the enormous demand, transportation professionals, associations, customers, and others have urged for an extension of the 9-Euro-Ticket. After the 9-Euro-Ticket's expiration, the state of Berlin adopted the 29-Euro-Ticket, which will be in effect until April 2023. The Berlin federal state will now accept the Deutschlandticket as of May 1.

The federal government announced that it would give the states an additional 1.5 billion euros per year for a nationally valid local transportation ticket on September 4, 2022, in exchange for at least an equal financial contribution from the states. The topic of discussion was a monthly pass with a potential price range of 49 to 69 euros (NDR, 2023). In general, it was accepted that in order to prevent misallocations, a price is required that, while remaining affordable to the general population, somewhat regulates a demand that is close to being uncontrolled. According to a survey conducted by the Technical University of Munich and the Bavarian School of Public Policy (Innovation in Brings 2022), survey respondents in the Munich metropolitan area would be ready to pay an average of 52.39 euros for an equivalent ticket. The sum is somewhat greater than the 47.74 euro national survey average. According to such statistics, it appears that the 49-Euro-Ticket satisfies German citizens' expectations of an inexpensive price and can once again be linked to success and rising passenger numbers. However, the availability of transportation must also be increased, and the railway firms must hire more operating staff, which they do not already have and cannot increase so quickly.

The 49-Euro "Deutschlandticket" was agreed upon by the Federal Government and the Minister Presidents of the Federal States on November 2, 2022. The decision by the federal government

to introduce the 49-Euro Deutschlandticket was part of the third assistance package. It will take the place of the 9-Euro-Ticket, which was available from June to August 2022 and was designed to make public transit more appealing. Travelers can effortlessly cross national and tariff boundaries without having to deal with numerous local transport rates thanks to the affordable, ticket within the context of regional transport.

However, railway experts still see some problems ahead for the railway companies - as was already the case with the 9-Euro-Ticket - especially is the capacity of the train's equipment, which cannot be increased quickly and the problem of the many construction sites in the rail infrastructure network. Furthermore, the many construction sites of DB Netz should be mentioned, which do not lead to the overall stability of railway operations. Due to the introduction of the Deutschlandticket, the DB Regio General Works Council has called for more security measures for railway staff, such as the increased deployment of railway police officers and an increase in the number of customer service representatives. Furthermore, the works council leader demanded that trains be taken out of service if the video recording did not work (Bahnblogstelle, 2023). Overall, it is difficult to meet such a high demand as it was during the 9-Euro-Ticket era. However, the German government said that the 49-Euro-Ticket would nonetheless be made available on May 1, 2023, and sales of it began on April 3. As a result, the public transportation authorities work to prepare for the potential increase in demand for Deutschlandticket. For example, they mandate a 200% train attendant quota in numerous news transit tenders, particularly in the evening (ntv, 2023).

Demand for the Deutschlandticket is very high, as the first few days since its introduction have shown. The Deutschlandticket must be purchased by subscription, with the option of a monthly cancellation period. A total of 7 million passengers have purchased a Deutschlandticket, of which 2 million are new customers and 5 million are existing passengers who have exchanged their subscription (VDV, 2023). The transport associations hope that the subscription to the ticket will lead to longer-term customer loyalty.

The transportation businesses' revenue losses as a result of the decreased prices are something that both the federal government and the federal states seek to make up for. The federal states will pay the remaining 1.5 billion euros of the ticket's price each year from 2023 to 2025; the federal government will contribute 1.5 billion euros.

Conclusion

The June, July, and August 2022 dates covered by the 9-Euro-Ticket were in Germany. Using a national local public transportation subscription, passengers can easily travel throughout Germany on buses and trains with just one ticket, crossing all network boundaries and tariff districts. This decreases prices for frequent and long-distance commuters, as well as residents of urban regions and surrounding communities, which is extremely advantageous for Germany's public transportation system. As a result, the environment and the people of Germany are protected from the negative effects of rising inflation.

The 9-Euro-Ticket has the following consequences on transportation operators overall: In terms of passenger demand, the 9-Euro-Ticket was a complete success. Passengers showed a lot of

interest in it, but there were also some issues. Due to the federal government's hasty decision, transportation businesses were unable to adequately plan for the operating procedures.

They had to decline some requests for transportation, particularly those from cyclists. High property damage (toilets, chairs, etc.) can be considered as the primary deficit. It was incredibly challenging to clean both the inside and outside of the cars. Additionally, the ticket increased the operating personnel's rate of illness, particularly among the customer service staff. The following problems were typically highlighted by the ticket's detractors or opponents (The Germany Way, 2023):

1. The crowded buses, trams, commuter trains, and regional trains, which add additional stress to an already overburdened infrastructure.
2. The decline in car use was confined to bigger cities and was only temporary.
3. They argued that genuine enhancements to the public transportation system, such as quicker and more direct connections, were what was most required. Before the creation of the ticket, certain opponents, like the German Tourist Association, brought up these arguments, and the events that followed showed that they were accurate.

The ticket served as a practical transportation experiment that made it possible to study how people behaved when the cost of certain forms of transportation increased. It demonstrated how a low cost may draw in new customers without affecting the amount of cars transported. Other regions had similar findings. For instance, the Estonian city Tallinn made public transportation free in 2013, however this action did not result in a decrease in car journeys. Although more people are using public transportation, more than half of commutes to work are still performed by automobile (Punamäe, 2022). According to the Mayor of Tallinn, Mihhail Kolvart, there is always discussion about the free public transport in Tallinn, which only applies to the capital of Estonia. However, the surveys would show that the citizens are satisfied with the service. The city has purchased new buses for city transport. Furthermore, a new tram line is being built in the city centre, which should be completed in the summer of 2024 (FAZ, 2023).

The Federal Government also decided to launch the Deutschlandticket for 49 euros with the third relief package. It is intended to replace the 9-Euro Ticket. The railroad businesses have had plenty of time to get ready for the change. It won't be able to expand the operating crew or the fleets of vehicles, though. The "flat rate for regional transport" will make it simple for commuters and tourists to cross national and tariff boundaries without having to navigate a maze of various local transport prices. The introduction took place on 1 May 2023. It is reasonable to anticipate that demand will decline as a result of the 49-Euro-Ticket. For those who have season tickets, the fare is still reasonable, but for many infrequent visitors or groups who have taken "adventure trips" through Germany (such as a trip from Munich to Sylt using solely regional transportation), the cost may be prohibitive. However, in addition to the current subscribers, an incredibly favorable trend has already begun with effect for the month of May 2023, as an additional 2 million travelers have acquired the Deutschlandticket.

Since it became possible to purchase a Deutschlandticket, there have been reports from various cities about long queues at the sales and service points of the transport companies. According to the VDV, a good half of the tickets have been ordered via smartphone so far. The other half

are issued as chip cards. With a transitional period until the end of the year, the ticket may also be issued in paper form with a digitally readable QR code. There may be delays in ordering a Deutschlandticket chip card because not enough cards could be procured everywhere. In the foreseeable future, up to 30 million chip cards will be required for public transportation. Delays in delivery are unavoidable, according to VDV President Wortmann, given the crisis in the semiconductor industry, the high demand for chips across numerous industries, and the conflict in Ukraine (ZDF, 2023).

The federal government will provide €1.5 billion, or half of the cost of the ticket. The federal states will contribute the remaining half. The parties concerned in this proportion shall also be responsible for any potential additional expenditures.

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