

Imagine the financial barrier to public transport use disappears. The impact of the 9-Euro-Ticket on the mobility and social participation of low-income households with children

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ABSTRACT

From June to August 2022, the financial barrier to public transport use almost completely disappeared in Germany due to the 9-Euro-Ticket. It enabled anyone with access to public transport infrastructure across Germany to use public transport for 9 euros per person per month. As this completely changed the conditions for public transport use, especially for low-income households with children, the following research questions arise: (1) what effect does the 9-Euro-Ticket have on the travel practices and social participation of low-income households with children? (2) how and by what were the travel practices shaped by the 9-Euro-Ticket? and (3) what happened to the interviewees' travel practices after the measure expired? To answer these questions, twelve qualitative interviews were conducted with low-income households with children in the Hanover region.

This study found that the 9-Euro-Ticket removed the financial constraint of public transport use, changed the travel practices of most interviewees and had a wide range of positive meanings. The respondents associate the 9-Euro-Ticket with freedom, joy at being able to offer their children something, along with financial and psychological relief. Additionally, the 9-Euro-Ticket enabled the interviewees to engage in leisure activities, to visit relatives, contributed to integration, had an empowering effect, especially for women and children, and thus represents a measure to increase social participation. After the three months of the 9-Euro-Ticket, financing public transport use challenges low-income households again and financial constraints prevent them from reaching certain places and engaging in out-of-home activities.

1. Introduction

Mobility is essential for social participation (Schwanen et al., 2015). However, as transport use is linked to cost, low financial means may limit mobility and social participation. This is true despite a sufficiently developed transport infrastructure. The result is an increased risk of transport-related social exclusion for people on low incomes (Lucas, 2012, 2019; Social Exclusion Unit, 2003). In Germany, 21 % of people are at risk of poverty or social exclusion and, in the European Union, households with dependent children have a higher risk of being affected by poverty than households without (EU, 2022) and thus of being restricted in their mobility and participation.

In Germany, 22% of all households live without a private car, but the proportion rises to 53% for very low and 37% for low economic status respectively. This highlights that households without a car, in particular, and on low incomes are often dependent on public transport (Nobis and Kuhnimhof, 2018). Discounts make financing tickets easier for some

vulnerable groups, e.g. agreements regarding reduced-price tickets for students, pupils, pensioners and those receiving social benefits (GVH Online, 2022). However, most discounts are usually individual arrangements in certain federal states or tariff zones of different transport associations (Busch-Geertsema et al., 2021).

From June to August 2022, the financial barrier to public transport use almost completely disappeared in Germany, as the 9-Euro-Ticket enabled anyone with access to public transport infrastructure to use local and regional public transport for 9 euros per person per month. The 9-Euro-Ticket was not linked to any subscription, but could be purchased flexibly on a monthly basis (German Federal Government Online, 2022b). With this measure as part of a tax relief package, the German Federal Government tried to mitigate the effects of rising energy prices (German Federal Government Online, 2022a). On the Government's Website, an additional reason for the 9-Euro-Ticket is that public transport is an environmentally friendly alternative to the car. Remarkably, besides the financial relief for everyone, no arguments

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were mentioned regarding the benefits of this to society (German Federal Government Online, 2022d). In total, 52 million 9-Euro-Tickets were sold in three months (German Federal Government Online, 2022b). Additionally, there were more than 10 million subscribers whose monthly passes were automatically adapted to the conditions of the 9-Euro-Ticket (VDV & DB AG, 2022). Almost half of those who did not purchase the 9-Euro-Ticket rated it as a very attractive offer and one out of ten journeys with the 9-Euro-Ticket replaced a car journey (VDV & DB AG, 2022). This indicates that transport affordability might be a decisive element in the transition towards an environmentally friendly transport system.

Studies on the 9-Euro-Ticket published so far are quantitative and, with one exception (Hille and Gather, 2022), do not primarily focus on low-income households (Föllmer et al., 2023; Krämer et al., 2022; Nobis et al., 2022; VDV & DB AG, 2022). But as transport affordability challenges low-income households with children (Rozynek et al., 2022) and the 9-Euro-Ticket completely changed the conditions of public transport use for them in particular, there is a need for more in-depth analysis on the impact of the ticket on low-income households' travel practices using qualitative methods. From this research gap, the following questions arise: (1) what effect does the 9-Euro-Ticket have on the travel practices and social participation of low-income households with children? (2) how and by what were the travel practices shaped by the 9-Euro-Ticket? and (3) what happened to the interviewees' travel practices after the measure expired? To answer these questions, twelve qualitative interviews were conducted with low-income households with children in the Hanover region.

The remainder of this article is structured as follows. Section 2 covers the research background on the effects of low financial resources on public transport use. It also compares different lower-cost public transport tickets and provides information about the 9-Euro-Ticket. The third section presents the research design. Section 4 reveals the results. This paper ends with discussion and conclusions in section 5 and policy recommendations in section 6.

2. Theory and research background

2.1. The effect of limited financial resources on public transport use and social exclusion

People on low incomes depend on public transport and use it more than people with higher incomes (Föllmer and Gruschwitz, 2019). However, financing public transport use is challenging for those on low incomes (Bondemark et al., 2021; Inguglia et al., 2020). Researchers investigated reasons for travelling without a valid ticket and found that some people who cannot afford a ticket are forced to commit fare evasion (Perrotta, 2017; Schwerdtfeger, 2019). This is problematic, as they are at risk of being caught and having to pay fines, which then puts additional strain on their financial situation, or even of being prosecuted, which can result in imprisonment (Schwerdtfeger, 2019). Some evaders are not (only) forced, but protest against what they regard as overpriced tickets by deliberately using public transport without a valid ticket (González and Codocedo, 2019; Nygård, 2018; Schwerdtfeger, 2019; Sträuli and Kębliowski, 2022). Buying single tickets instead of monthly passes in order to avoid paying more money for a ticket all at once and combining different activities on one day are strategies outlined in studies on low-income people's travel practices (Bondemark et al., 2021; Rozynek and Lanzendorf, 2023). Rozynek et al. (2022) examined the travel practices of low-income households with children in the Hanover Region. They found that, even with discounted tickets, public transport use is financially challenging and may lead to reduced or even no public transport use, renunciation of other areas of life and an increase in the risk of transport-related social exclusion. Similar conclusions are reported from the cities of Hamburg and Berlin (Aberle et al., 2022; Daubitz and Aberle, 2020). Consequently, a relatively well-developed public transport infrastructure is not sufficient on its

own. Ticket prices are also critical regarding whether people on low incomes can benefit from the infrastructure or not.

As financial poverty limits mobility, the social participation of people on low incomes is also at risk. This is because people generally have to leave their homes to go to places of everyday life and financial poverty can become a barrier to mobility and, therefore, also to participation for people on low incomes (Lucas et al., 2016; Rozynek et al., 2022). Thus, people on low incomes are at a high risk of being affected by transport-related social exclusion (Social Exclusion Unit, 2003), a multidimensional process linked to transport disadvantages which may cause negative effects on economic, social, cultural and political life as well as on the health of individuals or groups (Schwanen et al., 2015). Therefore, analysing the impact of the 9-Euro-Ticket, i.e. the almost complete removal of the financial barrier to using public transport from the perspective of people on low incomes, helps to assess the potential of such a measure to reduce the risk of transport-related social exclusion.

2.2. Fare-free and partially fare-free public transport use

There are different ticketing systems for public transport use all over the world. Kębliowski (2020: 2810) divides the different forms of cost elimination for public transport use into five forms: (a) temporary, (b) temporally-limited, (c) spatially-limited, (d) socially-limited and (e) fully fare-free public transport (FFPT). (a) Temporary fare-free public transport lasts for at least one month but no longer than twelve. This form may appear when fully fare-free public transport is abandoned after not producing the desired results and does not include daily or short-term fare-free campaigns, such as reactions to high air pollution. (b) Temporally-limited fare-free public transport appears when using public transport is free of charge at certain times, e.g. night buses in Gießen (Germany) (Rhein-Main Verkehrsverbund, 2023a). (c) Spatially-limited fare-free public transport means that only some routes or not all transport modes are free of charge, e.g. the Free MallRide in Denver (USA) (Regional Transportation District, 2023) or the trolley buses in Miami (USA) (City of Miami, 2023). (d) Socially-limited fare-free public transport enables certain groups to use public transport free of charge, for example children, students, disabled, older or unemployed people. (e) Fully fare-free public transport is defined as a "system implemented as a vast majority of routes as services provided within a given PT network, available to the vast majority of its users, most of the time, and for a period of at least 12 months" (Kębliowski, 2020: 2810).

One of the best known examples of fare-free public transport is the case of Tallinn (Estonia), where public transport use is free for the city's residents (Cats et al., 2017). However, there are around one hundred locations worldwide with fare-free public transport (see Kębliowski, 2020 for an overview) and the number continues to rise, even leading to talk of a fare-free public transport "boom" as in Poland and Brazil (Fernandes Pereira et al., 2023; Štraub, 2019; Štraub et al., 2023; Vermander, 2021). To the best of my knowledge, there have only been two cases of ticketless public transport in Germany in recent years. The first was in Templin (near Berlin) where two bus lines and two secondary lines could be used without tickets from 1997 to 2002 (Storchmann, 2003) and the second, in Lübben (near Berlin), having one fare-free bus line from 1998 for two years (Dellheim, 2018). In addition, there is the reduction of ticket prices for certain groups in Germany. For example, in the Hanover Region (Germany), people receiving social benefits may buy public transport tickets at a reduced price (GVH Online, 2022) and, in the Rhine-Main region, some companies offer 'job tickets' to their employees at a reduced price (Rhein-Main Verkehrsverbund, 2023b).

Previous studies on (partially) fare-free public transport have focussed on various aspects of the introduction and operation of systems without traditional fares (see Dellheim and Prince, 2018 for an overview). These include the reasons for FFPT implementation (e.g. Fernandes Pereira et al., 2023; Štraub, 2019), geographical location (e.g. Fernandes Pereira et al., 2023; Kębliowski, 2020; Štraub et al., 2023), influence on travel behaviour and transport mode choice (e.g.

Abou-Zeid and Ben-Akiva, 2012; Bull et al., 2021; Busch-Geertsema et al., 2021; Cats et al., 2017; De Witte et al., 2006; Fujii and Kitamura, 2003; Storchmann, 2003), environmental, social and economic aspects (e.g. Franklin, 2018; Liu et al., 2023) and user experience (e.g. Rambaldini-Gooding et al., 2023; Sträuli, 2023). Reducing the negative environmental effects of (car) traffic and/or increasing the mobility of citizens are globally the most frequently stated reasons for the introduction of FFPT (Kębłowski, 2020; Straub, 2019). In some cases, the aims are complementary or explicit: reducing traffic-related negative impacts, improving people's welfare, promoting mode shift, marketing, increasing the attractiveness of tourist areas or responding to falling passenger numbers (e.g. during the Covid-19 pandemic) (Fernandes Pereira et al., 2023; Kębłowski, 2020; Straub, 2019).

The 'map of fare-free public transport' (Kębłowski et al., 2023) gives an overview of where FFPT are implemented globally with most registered cases in the United States, Brazil, Poland and France. In the many examples of reduced-price tickets and partially fare-free systems, differences in spatial characteristics are evident. While there are examples that are limited to small areas, such as fare-free inter-campus buses at universities in the United States (Volinski, 2012), others apply on a regional level, such as the cost-free ticket for all state employees in the German state of Hesse (Busch-Geertsema et al., 2021) and for tourists in the Yangtze River Delta (Liu et al., 2023), or on a national level, as in Slovakia with fare-free, long-distance transport throughout the country for children, students and pensioners (Tomeš et al., 2022), in Malta for residents who own a 'Tallinja Card' (Malta Public Transport, 2024) and in Luxembourg for everybody (Official portal of the Grand Duchy of Luxembourg, 2024).

Existing studies on (partly) free public transport use and its influence on travel behaviour and transport mode choice have shown varied results, such as: more public transport use (Busch-Geertsema et al., 2021; Cats et al., 2017; Fujii and Kitamura, 2003), no change in car use (Busch-Geertsema et al., 2021) or even more car traffic (Cats et al., 2017), modal shift towards informal transport modes (Liu et al., 2023), public transport use at the cost of walking and cycling (Storchmann, 2003), long-term effects on travel behaviour (Fujii and Kitamura, 2003) and short-term changes during the validity of the measure (Thøgersen and Møller, 2008).

It is obvious that especially vulnerable groups benefit from (partially) fare-free public transport. This is the case for low-income people, older people, young adults and unemployed persons in Tallinn (Cats et al., 2017), for older and young people in Slovakia and the Czech Republic (Tomeš et al., 2022), for older people in Wollongong (Australia) (Rambaldini-Gooding et al., 2023) and for lower income employees in Germany (Busch-Geertsema et al., 2021). Moreover, studies reveal that ticket checks are not non-discriminatory in terms of class, race and gender, underlining the theoretical potential of FFPT to reduce transport-related inequalities (Mujcic and Frijters, 2021; Sträuli and Kębłowski, 2022), which is also demanded by citizens' initiatives (Nygård, 2018).

Nevertheless, to the best of my knowledge, there is no published study that examines the effect of a nationwide (partially) fare-free public transport offer or reduced ticket prices on the travel practices and social participation of low-income households with children. Accordingly, this study's qualitative in-depth analysis on the 9-Euro-Ticket's impact on the mobility and participation of low-income households with children makes a complementary contribution to the existing state of research on (partially) fare-free public transport use.

2.3. The 9-Euro-Ticket: A temporary nearly fare-free public transport ticket

The German Federal Government intended to mitigate rising energy prices and the associated higher costs for food and transport due to the war Russia is waging against Ukraine with a tax relief package (German Federal Government Online, 2022a). One of its components was the

9-Euro-Ticket. This was a discounted public transport ticket ("9 [euros] for 90 [days]" ticket or 9-Euro-Ticket) (German Bundestag, 2022) for nine euros a month valid nationwide in June, July and August 2022 (German Federal Government Online, 2022d). In addition to easing the financial burden on citizens, the measure was intended to incentivise a switch to public transport and contribute to energy savings (German Bundestag, 2022). From September onwards, different tariff zones applied again for public transport. Political discussions at federal level in October 2022 resulted in the implementation of a "Deutschlandticket" (49-Euro-Ticket) as the objective for 2023 (German Federal Government Online, 2022c). This has been valid since May 2023 (German Federal Government Online, 2023).

A nationwide quantitative study with no poverty focus shows that those purchasing the 9-Euro-Ticket corresponded to a cross-section of the German population (Nobis et al., 2022). However, people in urban areas were more likely to buy this ticket than people in rural regions. One explanation for this is the varying quality of public transport infrastructures (Follmer et al., 2023). It is apparent that the ticket was of great importance for leisure activities and excursions, with most respondents using it at the weekend, but also during the week and for holiday travel (Nobis et al., 2022). The ticket was used for personal errands and shopping trips, less so for work-related commuting (Nobis et al., 2022). Still, the 9-Euro-Ticket was mainly used locally. The results so far indicate that the low price in combination with its simplicity (one price, one area of validity, no subscription) were the key selling points (Follmer et al., 2023; Hille and Gather, 2022; Krämer et al., 2022; Nobis et al., 2022; VDV & DB AG, 2022).

A quantitative study in the city of Erfurt focusing on low-income people demonstrates that the 9-Euro-Ticket increased mobility and contributed to more social participation. The respondents mainly named shopping (64 %), visiting friends and relatives (50 %), day trips (46 %), other leisure trips (35 %), commuting to work and educational trips (32 %), holidays and tourist trips (22 %) and accompanying trips (19 %) as trip purposes (Hille and Gather, 2022). Moreover, the respondents attributed the following to the 9-Euro-Ticket: improvement of their quality of life, financial relief, strengthening of social contacts, more leisure activities, fulfilling basic needs, such as visits to the doctor or shopping, and promoting the self-determined mobility of children and adolescents (Hille and Gather, 2022).

3. Material and methods

This study took place in the Hanover metropolitan region in the federal state of Lower Saxony (Germany). The recruitment of interviewees began in the city of Ronnenberg. This city was chosen because, compared to other municipalities in the Hanover Region, it has a higher proportion of people affected by or threatened with financial poverty (Region Hannover, 2015). Also, the author already had contact with social organisations in Ronnenberg working with households with children, i.e. there were fruitful circumstances for reaching the group of low-income households with children. A total of 12 interviews were conducted between September and November 2022. Nine interviewees lived in Ronnenberg, one resided in Wennigsen, but spent most of her daily life in Ronnenberg, and two lived in Gehrden. Those living in Gehrden were also included in this study, as the responsibilities of some social institutions that provided interviewees with benefits are not limited to the borders of the municipality of Ronnenberg.

Ronnenberg and Gehrden have a relatively good public transport infrastructure (Map 1). Ronnenberg is relatively well connected to its neighbouring municipalities and especially to the city of Hanover by cycle paths, footpaths and roads as well as by bus, tram and train connections. In comparison to Ronnenberg, Gehrden is only connected to the public transport system by bus routes, i.e. without a train or tram-line. Therefore, in this research area, it was possible to investigate the effect of the 9-Euro-Ticket, i.e. the almost complete removal of the financial barrier without the non-use of public transport being due to a

Table 1
Overview of interviewees.

ID*	Age of children	Relationship	Household net income (in EUR)	Receiving social benefits (X = yes)	Employment situation	Citizen-ship	9-Euro-Ticket (X = yes)			Transport mode options			Walking is possible (x = yes)
							06/2022	07/2022	08/2022	Driving licence (x = yes)	Car available (x = yes)	Bicycle ownership (x = yes)	
#1M3	28	Married	901–1500		Care work	Somalian	X	X	X	X		Day ticket	X
#2M2	44	Married	1501–2000	X	Care work	Sri Lankan	X	X		X		-	X
#3M3X	35	Married	2001–2600	X	Full-time job	German	X	X	X			Day ticket	X
#4SM1X	39	Single	501–900	X	Voluntary work	German	X	X	X			Monthly pass	X
#5SM2X	32	Married, but separated	1501–2000	X	Part-time job	German	X	X	X			Day ticket	X
#6M1	28	With partner	1501–2000		On parental leave	German	X	X		X		-	X
#7(S)M1	35	Married, but living without partner	501–900	X	Care work	Ukrainian	X	X	X			Day ticket	X
#8SM1	28	Divorced	501–900	X	Part-time job	Ukrainian	X	X	X			Day ticket	X
#9SM1	40	Single	1501–2000	X	Part-time job	German	X	X	X			Day ticket	X
#10SM5X	41	Married, but separated	501–900	X	Side job	Slovenian	X	X	X			Day ticket	X
#11MF5	43 ^a	Married	901–1500	X	Full-time job ^a	Syrian			X ^a			Day ticket	X
#12M3	31	Married	901–1500	X	Care work	Iraqi	X	X	X			Day ticket	X

*ID= Number #1–12 + SM (Single female mother) or M (female Mother) or MF (female Mother and male Father) + Number of children + X (interviewed in 2020 and 2022) or no X (interviewed in 2022 only).

^a Age, employment situation and driving licence refers to the male father.

^b For two months, but in which remained unclear.

lack of public transport infrastructure.

There was a preliminary sampling plan (Witzel and Reiter, 2012) for this study, as people had to fulfil the following criteria: (i) being affected or threatened by financial poverty, (ii) living with children under the age of 18 and (iii) having purchased the 9-Euro-Ticket for at least one month. Potential interview partners, i.e. people who met these criteria, were referred by gatekeepers, such as employees of a debt counselling centre, a family centre, a kindergarten, a community centre, a food bank and a social counselling centre. Additionally, flyers were placed in the institutions listed above as well as on bulletin boards of discounters. Furthermore, the snowball technique (Flick, 2009) was used to find participants and interviewees of an earlier study (Rozynek et al., 2022) were asked to take part. As an incentive, people received a voucher for the zoo and a free bike repair. This research design enabled a total of twelve qualitative problem-centred interviews to be conducted (Witzel and Reiter, 2012).

Eleven mothers, of whom six were single parents (one, #7(S)M1 is currently a single parent because her husband is at war in Ukraine), and one parent couple (#11MF5) were interviewed (Table 1). There is a supposed bias, as only one male person’s perspective (#11MF5) was included in the sample. The recruitment process was gender-neutral looking for people who met the three criteria and the potential interviewees were further restricted because they had to be willing to be interviewed as well as actually be able to do so. Financial poverty is a sensitive topic that not everybody wants to talk about, especially in a recorded interview setting. Moreover, households with children often face time pressure, which meant that not all potential interviewees found time for an interview. Additionally, language barriers could prevent an interview in advance, as the interviews could (without an interpreter) only be conducted in German, English or Polish. When, despite these obstacles, people accepted an interview invitation, the fact that they were women was useful for two reasons. Firstly, in Germany, women make three times as many accompanying journeys (e.g. with children) and twice as many shopping trips as men (Nobis and Kuhnimhof, 2018), i.e. women themselves are more likely to be involved in the complex travel patterns that characterise households with children (Scheiner and Holz-Rau, 2017). Secondly, the results of a previous study (Rozynek et al., 2022) prove that mothers can describe their own travel practices, those of their children and joint travel practices, and additionally also provide basic information about the mobility of any existing partners. The mothers interviewed were therefore, so to speak, the mouthpiece of the household. Nevertheless, readers should keep in mind that the results are based on the perspective of the interviewees, i.e. mainly on mothers and only in one case on a father.

The semi-structured interview guide contained three topics related to the 9-Euro-Ticket: (i) its relevance for social participation, (ii) the effects on travel practices and (iii) the role of financial relief. Ten interviews were conducted in German. A translation app was used occasionally for one of the interviews. Another was conducted in English and one had a Kurdish language interpreter present. All twelve interviews were fully transcribed. Interviewees also completed a standardised short questionnaire (Witzel and Reiter, 2012) with socio-demographic and mobility-related questions (see Table 1). Postscripts were written for all interviews, i.e. notes referring to relevant aspects before, during and after the actual interview (Witzel and Reiter, 2012). These postscripts and short questionnaires helped to record at which point theoretical saturation was reached, i.e. at the point when additional interviews would not have contributed to any new insights relevant to the research question (Flick, 2009; Przyborski and Wohlrab-Sahr, 2014). The short questionnaires provided information on transport mode options before and after the 9-Euro-Ticket and the postscripts provided information on the use of the 9-Euro-Ticket, i.e. the change caused by the 9-Euro-Ticket and the meanings of this ticket for the respondents were documented. Therefore, an initial rough categorisation - “ad-hoc interpretations of the interviewer and a brief overall assessment of the interview” (Witzel and Reiter, 2012: 2) - was possible by comparing the effects of the

9-Euro-Ticket on the mobility of previous interviewees with new interviewees during the ongoing recruitment process. Please note that there was no predetermined minimum or maximum number of interviewees; instead, interviews were conducted until “no new information or themes are observed in the data from the completion of additional interviews” (Boddy, 2016: 427). The numbering of the interviews (Table 1) reflects the order of the interviews, i.e. it can be seen that despite the three binding criteria (low income, having a child and bought a 9-Euro-Ticket), the heterogeneity of households with children was nevertheless addressed in the research process: variation in number and age of children, age of interviewee, job situation, relationship, household composition, driving licence ownership, car and bicycle availability, purchase of the ticket in 1, 2, or 3 months as well as origin of the interviewees.

Qualitative content analysis (Kuckartz, 2014) with inductive and deductive coding was used to analyse the data. I coded the data deductively, based on the element-based approach of practice theory (Shove et al., 2012) using materials, competences and meanings as an analytical lens. Materials are defined as “objects, infrastructures, tools, hardware and the body itself” (Shove et al., 2012: 23), competences as “skill[s], know-how and technique[s]” (Shove et al., 2012: 14) and meanings as “symbolic meanings, ideas and aspirations” (Shove et al., 2012: 14), as “emotion[s] and motivational knowledge” (Shove et al., 2012: 23) and as the “social and symbolic significance of participation” (Shove et al., 2012: 23). Additionally, codes emerged inductively from the material itself. The coding process was run through several times, as new codes kept emerging. The analysis followed the main categories of materials, competences and meanings related to the use of the 9-Euro-Ticket, including the respective inductive subcategories. Thereby, an analysis of the temporal dimension was carried out, i.e. which changes in travel practices the interviewees described as a consequence of the 9-Euro-Ticket and how their travel practices differed after the period of validity of the 9-Euro-Ticket.

4. Results

Addressing the first research question, the 9-Euro-Ticket had three different effects on travel practices and social participation among the respondents: the 9-Euro-Ticket (i) did not change the public transport use and, therefore, the travel practices and social participation of low-income households with children, (ii) it expanded the public transport use and, thereby, changed the travel practices and social participation of low-income households with children or (iii) it enabled low-income households with children to use public transport and fundamentally changed their travel practices and social participation. Each effect is described separately in sections 4.1, 4.2 and 4.3. To answer the second question, section 4.4 contains a more detailed analysis at the travel practices element level (materials, competences and meanings) to illustrate how and by what travel practices were shaped by the 9-Euro-Ticket. Section 4.5 addresses the third question regarding what happened to the interviewees’ travel practices after the 9-Euro-Ticket expired.

4.1. The 9-Euro-Ticket did not change the public transport use and, therefore, the travel practices and social participation of low-income households with children

Only two respondents (#5SM2X, #6M1) reported that the 9-Euro-Ticket did not change their public transport use and thus their travel practices and social participation. They did not buy the 9-Euro-Ticket immediately and hardly used public transport during the validity period. The reason for this is that public transport use had not been an essential part of their previous travel practices and the reduced ticket price was not enough to make a difference. One interviewee (#6M1) has a one-year-old child with whom she mainly walks and reports that her social contacts are also within walking distance. She uses the car as a

passenger for weekly grocery shopping and public transport only a maximum of 1–3 times per month. Her partner is mobile by car and did not buy the ticket. The other interviewee, a working single mother, is dependent on driving due to time constraints; she also walks or cycles locally and uses public transport less often than monthly. Compared to fuel costs, using the 9-Euro-Ticket would have brought her savings, but she could not shift to public transport due to her complex travel patterns and time constraints. She explains: “The distance I have to travel to work and [...] also to the child minder, that’s not feasible at all with public [transport]. I have to start at 7.30 a.m.. And [the child] has to be at the childminder’s no later than 7.15 a.m. [...] We wouldn’t be able to manage that. [...] Well, [a] bus stop is near my work, but the childminder is simply not nearby. [...] We would have saved a lot of money.” (#5SM2X).

Nevertheless, they both (#5SM2X, #6M1) purchased the 9-Euro-Ticket in one month to make one trip each. In one case (#6M1), the price of 9 Euros was cheaper than the regular ticket price for the journey to and from the city of Hanover, which was for the mother’s leisure activities. She explains that this trip would have taken place anyway: “Yes, I went with my friend [...] to the Schützenfest here in Hanover. And that was the only trip. And, for me, it was actually cheaper than if I had bought two single tickets.” (#6M1). In the other case (#5SM2X), one of the children bought the 9-Euro-Ticket for leisure trips organised by a social organisation. This resulted in cost savings for the mother. The interviewee purchased the 9-Euro-Ticket for herself on the last day of the month, i.e. shortly before the ticket expired, in order to visit the children’s grandmother. This trip would not have taken place otherwise because the usual ticket price is not affordable: “It was a nice trip to grandma’s, [which] we can’t afford normally. [...] It really costs a lot otherwise. Well, you can get to Hanover, but then to Gifhorn, we’ve never done that before.” (#5SM2X).

4.2. The 9-Euro-Ticket expanded the public transport use and, thereby, changed the travel practices and social participation of low-income households with children

The effect that the 9-Euro-Ticket expanded the public transport use and, thereby, changed the travel practices and social participation of low-income households with children was reported by three respondents (#4SM1X, #10SM5X, #11MF5¹). For them, public transport was already an essential part of their travel practices. These respondents already bought a reduced-price monthly pass (#4SM1X) or reduced-price day tickets (#11MF5), as they receive social benefits for commuting to work. One respondent (#10SM5X) no longer needed public transport to commute because she lost her job during the pandemic, but she regularly purchases reduced-price day tickets to attend mandatory appointments at authorities and further education courses. The 9-Euro-Ticket allowed all three respondents to save money and, in one case (#10SM5X), additionally relieved the financial and time pressure of having to do errands in one day in order to save money, as it was affordable to travel spontaneously. The interviewee explains: “Yes, I [travelled] more often [when I had] the ticket. [...] Otherwise [without a 9-Euro-Ticket]: Quick, the [ticket] is still valid for today; let’s go. [With] the 9-Euro-Ticket [...] I could go any time.” (#10SM5X).

For all three interviewees, the use of public transport widened from commuting or doing necessary errands alone by themselves to include trips with family members, especially leisure trips, as tickets for their children (#4SM1X, #10SM5X, #11MF5) and their partner (#11MF5) were now affordable: “[The] 9-Euro-Ticket was really great. I [travelled] all the way to Stuttgart with this ticket. [...] With the whole family. It was great. [...] Dortmund too. [...] My cousin lives there and we visited him.” (#11MF5). A fundamental factor in this context is that in the research area children only travel free of charge up to the age of 6 and

¹ In this case, it is the impact of the 9-Euro-Ticket on the father.

pay the same prices as adults from the age of 15. This is a financial challenge for low-income families, especially those with many children: "[The 9-Euro-Ticket] was great for my family. Because there [are] seven of us. And, as for adults, you can say there are four of us." (#11MF5).

4.3. The 9-Euro-Ticket enabled low-income households with children to use public transport and fundamentally changed their travel practices and social participation

For eight respondents (#1M3, #2M2, #3M3X, #7(S)M1, #8SM1, #9SM1, #11MF5,² #12M3), public transport use was not an essential part of their travel practices before the 9-Euro-Ticket. They either never or only occasionally used public transport before. Two interviewees (#2M2, #9SM1) did not use public transport at all, but instead tended to use their own car, walked or cycled. With the 9-Euro-Ticket, they rediscovered public transport for themselves. One mother (#9SM1) reports: "I actually wanted to try out [...] whether I can function without a car [...] so I basically use my car to get to work. [...] Although I also have a suburban train connection [near home]. [...] The suburban train also stops at my work, but at impossible times for me personally. That's why I make the journey by car. [...] Since the 9-Euro-Ticket appeared, I decided that I don't really need the car any more. Because the car is just [...] an expense for me." (#9SM1).

Three respondents (#3M3X, #7(S)M1, #8SM1) do not own cars and are mainly actively mobile, i.e. they cycle and walk. They occasionally used public transport with day tickets when they had appointments or errands in the city of Hanover, but this rarely happened. With the 9-Euro-Ticket, they travelled more by public transport, especially with their children and for leisure trips. One interviewee (#3M3X) reports that they were able to make trips by public transport that would otherwise have taken place on foot or by bicycle: "The best example, you go grocery shopping. Do you go by bike or do you walk with the trailer? We didn't think about it [when the 9-Euro-Ticket was available], we went to the bus stop and took [...] the bus there. [...] This is quite unusual. [...] Because you are always just fixated on walking and cycling. And now all of a sudden you could use the train or the bus whenever you want. [...] And it's also a new experience. [...] It felt good being able to take the bus." (#3M3X).

Three respondents (#1M3, #11MF5, #12M3) do not hold driving licences, two cannot cycle (#1M3, #12M3) and one shares a bike with her husband (#11MF5). They are mainly mobile on foot, which can be defined as "forced walking", as there is no alternative way for them to be mobile. Therefore, the 9-Euro-Ticket increased their activity radius and allowed them to travel frequently by public transport. One mother (#1M3) describes this effect by saying: "[With the] 9-Euro-Ticket, I just always w[ent] out every day." (#1M3).

4.4. How the 9-Euro-Ticket shaped materials, competences and meanings of travel practices

The analysis of the practices along the three elements of materials, competences and meanings provides insight into how the effects (see sections 4.1-4.3) of the 9-Euro-Ticket on the interviewees' travel practices came about. The three elements of travel practices are interrelated, but I explain them separately for a more comprehensive understanding. The element of materials pertains to objects, such as transport modes, infrastructure and other people as carriers of practices. Competences refer to the interviewees' skills, knowledge and know-how. Meanings include respondents' attributions, associations, feelings, emotions, ideas and aspirations linked to the 9-Euro-Ticket (Fig. 1).

Materials. All respondents were physically able to use public transport with the 9-Euro-Ticket and had public transport stops close to their homes. However, some interviewees complained about the

sometimes inadequate frequency of the departures, unreliability in keeping to the timetable and overcrowded carriages, platforms as well as buses during the period of the 9-Euro-Ticket. Thereby, two material-related fears were mentioned: the fear of overcrowded trains, especially for children (#4SM1X, #9SM1), and, in one case (#10SM5X), the fear of a Covid-19 infection. However, the risks of infection and also the children's fear of crowding were tolerated in order to benefit from the 9-Euro-Ticket for trips that otherwise would not have taken place for financial reasons. One mother explains: "Because of Covid, [I was] a bit scared. [...] We have to take care of ourselves. So many people. [...] But anyway, we wanted to go [...] [and] we went. [...] Even that [was a] bit weird. But what could we do?" (#10SM5X). Various locations within the Hanover Region, but also cities and regions further away, were mentioned as destinations for leisure trips. The latter were either day trips or possible due to overnight stays at the homes of acquaintances or relatives so that no accommodation costs were incurred. An interviewee states: "I visited a friend who lives in Lübeck. [...] We spent a week on holiday there [...]. Then, we visited my mother [...] in Saxony-Anhalt. Stayed there overnight as well." (#9SM1). During the leisure trips that took place together with their children, two mothers (#9SM1, #10SM5X) reported that, due to the low ticket price, they had money left over to spend in the gastronomic establishments at the railway stations. This was a highlight for her children and they were happy to be able to finance this: "Then, the kids could have something to eat at [fast food chain] [...] So, the [children] could eat out for a change." (#10SM5X).

Competences. Knowledge about the existence of the 9-Euro-Ticket was fundamental for using it. The interviewees gained this knowledge in different ways. One mother learned about it through social media (#9SM1), others through neighbours (#7(S)M1), their children (#3M3X) and another was convinced by a bus driver to buy the 9-Euro-Ticket instead of a regular one (#10SM5X). It is particularly striking that the interviewees (#3M3X, #4SM1X, #5SM2X, #6M1, #10SM5X, #11MF5) were very surprised and sceptical as to whether the information that one can use public transport throughout Germany for the price of nine euros was actually true. One interviewee states: "I didn't believe it [...]. I thought it was a joke. Because, actually, there is never any relief. Much too good to be true. [...] But then it happened. One was surprised after all." (#5SM2X). Additionally, knowing how to use public transport was a prerequisite. Some of the interviewees already had this knowledge, but it was extended by experiences on the more distant routes. For example, one interviewee (#9SM1) reported that she learned what a seat reservation is and where it is displayed by using a long-distance train. Furthermore, the abolition of fare zones allowed the interviewees to make mistakes, i.e. the fear of accidentally crossing a fare boundary, e.g. by getting on the wrong bus and thus travelling without a valid ticket, disappeared: "[There is a risk that] I [might] take the wrong train. So, when I had the 9-Euro-Ticket, I was reassured because, no matter where I changed, I didn't have to pay extra money." (#8SM1). This was particularly important for people who had not previously used public transport and for people who had not lived in Germany all their lives and still had to get to know their local public transport. Moreover, the ticket made it affordable to explain public transport travel to younger children and thus encourage them to become independent travellers. Older children of the interviewees used the ticket independently with their friends and travelled throughout Germany. Two respondents (#2M2, #3M3X) told this with pride and expressed their joy about all the things their children experienced: "The things my daughter did. All these excursions [...]. I was proud that she [her child with friends] did it just like that, took advantage of [this ticket]." (#3M3X).

Meanings. The meanings reveal that there are predominantly positive attributions for using public transport with the 9-Euro-Ticket. The interviewees expressed joy at being able to use public transport at an affordable price and some even expressed gratitude. One mother reports: "We visited a lot of different places and didn't have to think about how to get there or how much it would cost. And I am grateful for that."

² In this case, it is the impact of the 9-Euro-Ticket on the mother.

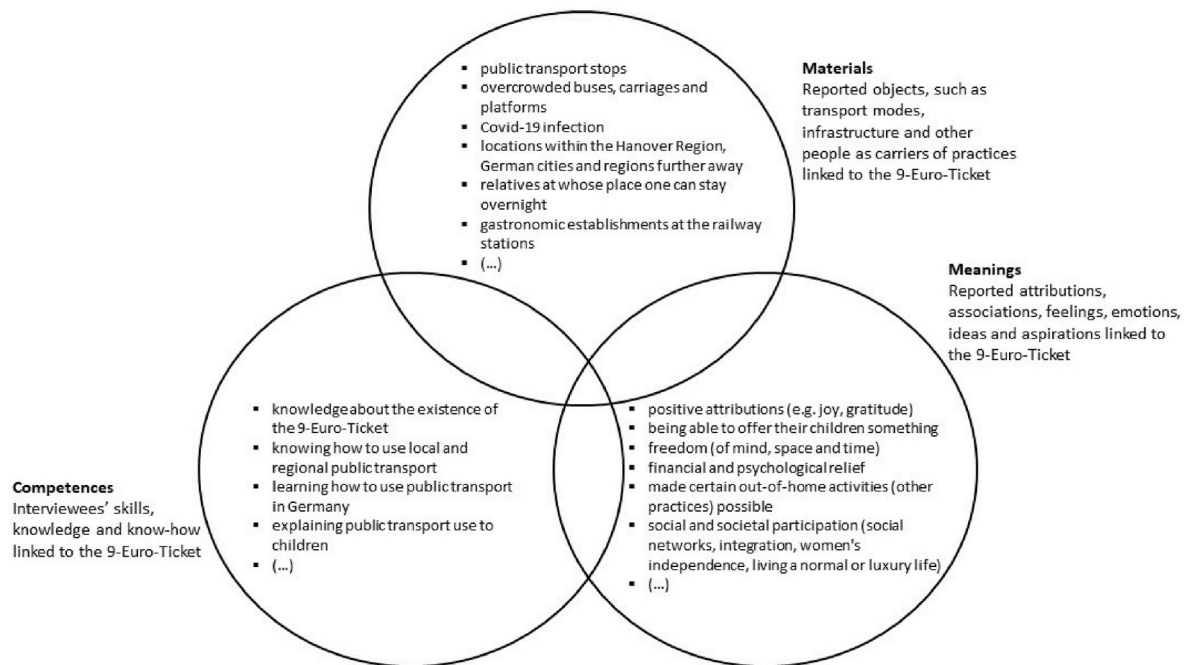


Fig. 1. Materials, competences and meanings analysed for the 9-Euro-Ticket from the perspective of low-income households with children (own data; figure based on Shove et al., 2012).

(#4SM1X). The low price brought financial relief to those already using public transport, which has had a positive effect on their financially strained situation. For those who had previously not used public transport or rarely used it, there was not necessarily any financial relief. But spending nine euros per person seemed to be worth it, as they were able to undertake trips that would not have been financially possible for them. An interviewee explains: "[The trip to Bremen was] something new [...]. Otherwise, [at regular ticket prices] [...] we couldn't afford [to travel on public transport]. That's why [the 9-Euro-Ticket] was a great offer." (#12M3).

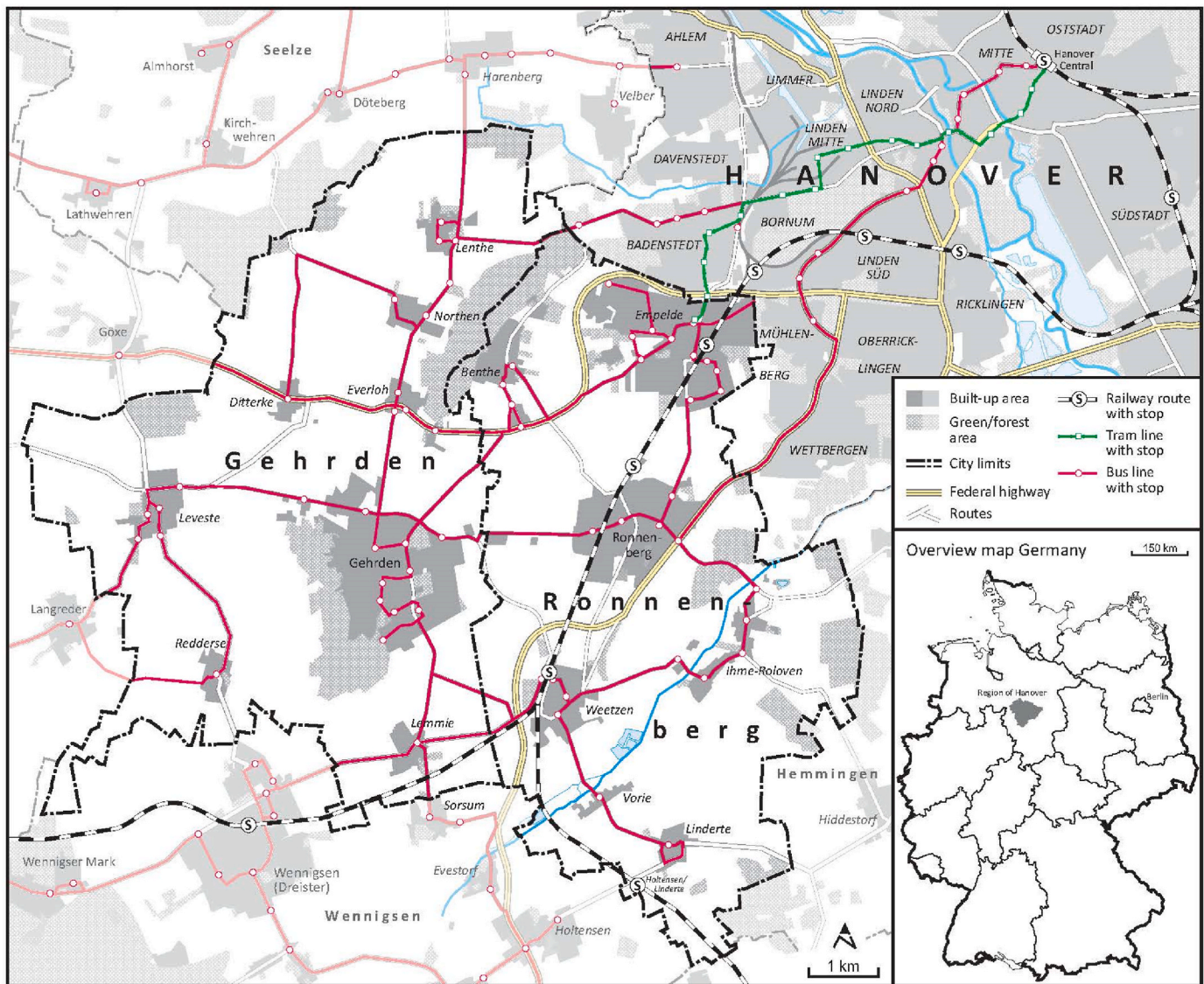
In particular, being able to offer their children something, i.e. showing them places outside their residential environment, appears to be a decisive reason for purchasing and a guiding factor for using the 9-Euro-Ticket. One mother states: "We really had a bit more of a life of luxury. I definitely noticed that. [...] I was finally able to show [my child] a bit more of the world than just Hanover. That's not been possible for me at all as a single mum normally." (#4SM1X). Another says: "Getting out. Out of your own home, having the opportunity to see other places, to get to know other places in general. Being able to leave your own four walls. To be able to offer my child something that I wouldn't have been able to do otherwise. That was very important." (#9SM1). For younger children, travelling on trains meant an adventure and their mothers reported this positively: "The little one was so happy, such sparkling eyes. Really. It was so beautiful. [...] I also took lots of great photos. The little ones were grinning like a Cheshire cat." (#5SM2X). Another reports: "With public transport [...] It's an adventure [...] my kid, he's a really big fan of trains." (#7(S)M1).

The possibility of using public transport affordably led to a feeling of freedom. This was described in three ways: freedom of mind, freedom of space and freedom of time. The former refers to the low price and simplicity of the ticket, i.e. a low price for everyone and the validity of the ticket on all means of public transport throughout Germany, which allowed the interviewees to use public transport without thinking about it too much. The respondents also reported a psychological relief. This seemed to be a new experience for the interviewees, as they are used to having to balance the cost of public transport with other expenses, such as food or necessities for their children. One person explains: "You only pay 9 euros and [then] you forget [about it] for the whole month. [You

don't keep [thinking]: Do I have to travel today? Do I have to? Do I have to calculate the costs? The ticket will cost. How much will it cost?" (#11MF5). Spatial freedom refers to the fact that the respondents did not have to orient their trips according to the fare boundaries and prices associated with them. Thus, trips to more distant places became affordable. However, it is not only the destinations that are further away that are associated with freedom, but also journeys within the city. For example, the 9-Euro-Ticket enabled some respondents to leave their house or extend their action radius. An interviewee states: "Still even in Germany there's like different people of different financial status. [...] This support is something incredible. No, definitely, because we still have the opportunity to feel like we are not like caged animals." (#7(S)M1). The freedom of time is evident in the fact that, by purchasing a 9-Euro-Ticket, even if it was only to be used for one journey, further journeys were theoretically already financed. The respondents describe the possibility of using public transport flexibly and spontaneously as a positive feeling: "If you calculate it like this, if two people travel together, you pay almost ten euros [...]. So, [with the 9-Euro-Ticket], you didn't need to think about it. You simply had the ticket and could travel. It didn't matter. And if you just decided right now, I'm going to get on the train and go into town now. It didn't matter. [...] And that was what I liked about this ticket." (#3M3X).

Using public transport with the 9-Euro-Ticket was linked to other practices, such as hospital visits, language courses for migrant women, appointments at offices, training for better job opportunities, going to certain grocery shops, e.g. with cheaper or non-European goods, swimming courses or school holiday activities for children. An interviewee explains: "We were able to go swimming more often during the summer holidays. That was definitely a highlight for my child. Because we were able to go swimming more often, he has now finally achieved [a swimming badge]." (#4SM1X).

The 9-Euro-Ticket improved social and societal participation by strengthening the respondents' social networks, contributing to integration, having an empowering effect and changing their standard of living. The respondents reported that they were able to visit their friends and relatives more often. Some saw people again for the first time in years because they could not afford to travel to each other's places of residence. One person reports: "We [she and her friend] [came] together



Map 1. Public transport infrastructure in Ronnenberg and Gehrden in the Hanover Region (Cartography: Elke Alban).

[to Germany] about eight years [ago]. [We] didn't see [each other] at all. Yes, but this year it worked out. Because you could just buy a ticket for 9 euros, it was cheap, and then you could go anywhere. That was very, very nice." (#1M3). The 9-Euro-Ticket promoted the integration of people who had not lived in Germany all their lives, as it allowed them to get to know not only their place of residence, but also the country in which they now live. A mother states: "I would say with the 9-Euro-Ticket we had like more opportunities to [...] integrate here. Just, for example, to understand where we are." (#7(S)M1). In addition, the 9-Euro-Ticket strengthened women's mobility and independence in particular. For example, one respondent reported that the price of 9 euros was perfect because it was low enough that she did not have to discuss it with her husband. She could simply take nine euros from her grocery money: "Because I can't ask my husband [for] money every time." (#2M2). This interviewee reported about a German course for migrant women that was well attended during the period of the 9-Euro-Ticket and continued in September, but then with only a few women. She personally suspects that some participants were unable to afford the public transport ticket to the city of Hanover: "The 9-Euro-Ticket is [...] women's freedom. [...] Because [there were] many in the class [...] then, there [were] many women who said, oh it has become more expensive. [...] Once, ten women [came], the second time [there were]

only five women." (#2M2). Moreover, the respondents described perceiving a change in their standard of living as a result of the 9-Euro-Ticket. They used descriptions such as living a normal or luxury life, experiencing highlights and being able to offer something to their children. One interviewee clarifies: "Maybe for someone it's like oh, it's a 9-Euro-Ticket, but for someone [like me] it's like it's a huge opportunity to keep on living a normal life." (#7(S)M1).

4.5. The interviewees' travel practices after the 9-Euro-Ticket expired

After the 9-Euro-Ticket, i.e. from September 2022 onwards, the travel practices of the respondents changed back to the state before the measure. Public transport use was again challenging and, for many, impossible to finance. The higher ticket prices seemed even more expensive now. One mother describes this: "Expensive. So, after the 9-Euro ticket, you just think, you always thought it was expensive. But now you just think it's extremely expensive. To use public transport for one day when you could have travelled all the way to Munich for the whole month." (#5SM2X). If the interviewees purchased regular or, due to social benefits, reduced-price public transport tickets, it was only for commuting to work or for necessary errands. Financing several tickets in the household, usually for their partner and children became

unaffordable or challenging again. An interviewee explains: “Now I think twice before I go somewhere. Because [...] my [child], he will turn 6 soon. So, it will be like not only one ticket, it will be 2 tickets for us. [...] And that’s why I need to think.” (#7(S)M1). Leisure activities that took place during the validity of the 9-Euro-Ticket now no longer occur, especially not with the whole family. A father sums up: “Unfortunately, no. We just sit at home.” (#11FM5). For the interviewees, it is now not affordable or financially challenging to visit relatives and friends within the Hanover region, let alone in other German cities. One mother states: “Leisure activities outside Hanover are no longer possible. Not at all, actually. Meeting friends easily, that’s also not possible. So, actually, we are not very mobile anymore.” (#4SM1X). Moreover, as before the 9-Euro-Ticket, the interviewees cannot take advantage of free, low-cost or social benefit offers without trade-offs in other areas of their lives. One mother described the situation like this: “Now you think about going to the shops or to the dentist.” (#3M3X.)

The fact that the 9-Euro-Ticket led to increased public transport use, which then decreased after its validity, proves that there is a suppressed demand for public transport use. This suppressed demand does not only relate to local, regional journeys, but also to those for leisure purposes in distant destinations all over Germany. Therefore, the interviewees are potentially new public transport customers if there are affordable tickets. Without naming a fixed price, affordable tickets mean a lower price than the current social tariffs, as even these reduced-price tickets are not easy to finance, especially not for the whole family. The respondents clearly communicated that they would welcome a continuation of the 9-Euro-Ticket. In doing so, they spoke of missing (“I miss this ticket” (#10SM5X)), wishing and hoping (“I am sad that it is no longer available. [...] I long [for it]. I hope that something like this will happen again” (#3M3X), “Everyone wants the 9-Euro-Ticket back. I hope that this [will happen].” (#1M3)), i.e. there are very strong meanings attributed to the ticket.

5. Discussion and conclusions

Financing public transport use is challenging for people on low incomes, which increases the risk of transport-related social exclusion (Bondemark et al., 2021; Inguglia et al., 2020; Rozynek et al., 2022; Rozynek and Lanzendorf, 2023; Schwertfeger, 2019). The focus of this study is on low-income households with children because this group has a higher risk of being affected by financial poverty (EU, 2022). As the 9-Euro-Ticket enabled anyone with access to public transport infrastructure across Germany to use local and regional public transport for 9 euros per month in June, July and August 2022, this completely changed the conditions of public transport use for low-income households with children.

The qualitative analysis revealed that the 9-Euro-Ticket had three different effects on travel practices and social participation among the respondents. The first effect is that the 9-Euro-Ticket did not change the public transport use nor the travel practices and social participation of low-income households with children. This demonstrates that a low price does not suddenly turn people who do not need or cannot use public transport into public transport users. The second effect is that the 9-Euro-Ticket expanded the public transport use and thus changed the travel practices and social participation of low-income households with children. This effect occurred for people who already used public transport for necessary trips, such as commuting to work. As the affordable price made it possible to buy a public transport ticket for all household members, trip purposes expanded to include leisure trips with the whole family. Moreover, the lower ticket price was a financial relief, which enabled the interviewees to spend these savings on food, things for their children and for leisure activities. The third effect is that the 9-Euro-Ticket enabled low-income households with children to use public transport and fundamentally change their travel practices and social participation. This effect occurred for most of the interviewees. They either never or only occasionally used public transport for financial

reasons before the 9-Euro-Ticket. The strengthening of social participation through an increase in mobility is particularly evident among people who are usually forced to walk. The ticket extended their radius of action beyond their living environment and enabled them to engage in activities further away that are not affordable at regular or even reduced ticket prices for social benefit recipients.

Accordingly, during the validity of the 9-Euro-Ticket, there was more public transport use by the respondents, mainly for leisure activities. This is in line with the results of quantitative studies on the 9-Euro-Ticket (Follmer et al., 2023; Hille and Gather, 2022; Nobis et al., 2022). Although one interviewee reported travelling by bus instead of bicycle, the others reported that they continued to walk or cycle during the 9-Euro-Ticket period. They used the 9-Euro-Ticket for longer distances, i.e. to the city centre of Hanover or to other German cities that they would not be able to reach on foot or by bike, especially not with children. The risk of shifting from non-motorised transport to public transport, as in Templin (Storchmann, 2003), therefore appears to be low for low-income households with children. Nevertheless, this study shows through the increased leisure trips reported by all interviewees that the 9-Euro-Ticket led to induced traffic as was the case in Tallinn (Estonia) (Cats et al., 2017), in Santiago (Chile) (Bull et al., 2021) and in the Yangtze River Delta (China) in the form of more informal traffic through B&B (Bed and breakfast) operators (Liu et al., 2023). However, as the travel purposes in this study were previously unaffordable leisure activities and visits to friends and relatives, which promoted women’s independence, integration and children’s mobility, it raises the question of whether this induced traffic really needs to be assessed negatively or can be relativized in terms of social participation.

Since the travel practices of all the respondents returned back to their previous state after the validity of the 9-Euro-Ticket due to the higher regular ticket prices, there are no long-term effects as for example in the case of Fujii and Kitamura (2003) but only short-term changes in mobility as already described by Thøgersen and Møller (2008). Nevertheless, the knowledge gained about public transport use during the period of the 9-Euro-Ticket and the positive experiences may be preserved. These factors, especially for children and young adults, might lead to long-term changes in public transport use if its use were affordable again.

The increased use of public transport with the 9-Euro-Ticket and the reduced use without it prove that financing public transport use is a mobility barrier for people on low incomes. Moreover, the results of this study reveal that there is a suppressed demand for more public transport use due to financial poverty, which is indicated in other studies on low-income people (Aberle et al., 2022; Rozynek et al., 2022; Rozynek and Lanzendorf, 2023). This suppressed demand does not only relate to local, regional journeys as in the case study by Aberle et al. (2022), but also to trips to distant destinations all over Germany for visits to relatives and friends as well as for excursions with children.

The interviewees in this study described using public transport with the 9-Euro-Ticket as feeling a freedom of mind, space and time. Such symbolic meanings were also touched on in other studies on public transport fares. For example, in a qualitative Australian study (Rambaldini-Gooding et al., 2023), interviewees associated free bus use with freedom and feeling good and, in a study on fare evasion in Brussels, the situation of being able to access the public transport system without a ticket was described with the words ‘the gates to paradise [...] are open’ (Sträuli and Kęblowski, 2022: 12). The lack of the 9-Euro-Ticket and hoping for affordable public transport tickets in the future, as expressed individually by the interviewees in this study, is also being claimed by civil society in an organised manner, as in Sweden and Brussels (Nygård, 2018; Sträuli and Kęblowski, 2022).

The limitations of this study are as follows. This study is based mainly on the perspective of mothers. Additional insights could be gained if other household compositions, such as grandparents or other relatives raising children, more male parents and single fathers, were interviewed. With a sample size of 12 interviews, this study is not

representative, but rather provides deeper insights into how a temporary, nearly fare-free public transport ticket influences the mobility and social participation of low-income households with children. It was not the aim of this study to analyse the motivations for the 9-Euro-Ticket, but future studies could examine the underlying reasons for the measure, e.g. how the price of 9 euros really came about, why the ticket was offered to all income groups, why the ticket was valid throughout Germany and why the measure lasted three months. Moreover, the interviewees in this study have shown a strong desire for an affordable public transport ticket, which indicates a willingness of low-income people to pay for affordable public transport and raises the question of why or whether fully fare-free public transport (cf. Kębłowski, 2020) is preferable to nearly fare-free public transport. Future studies might investigate the actual willingness of different income groups to pay for affordable public transport explicitly in more detail. In addition, as we are observing more and more implementing of fare-free public transport around the globe (Kębłowski, 2020; Kębłowski et al., 2023), it would also be worth analysing the underlying reasons for (nearly) fare-free public transport as well as its impact on the social participation of low-income people in a comparison of case studies. Finally, many FFPT cases refer mainly to bus routes. Therefore, it would be interesting to analyse the differences between FFPT with bus-only public transport and those with other transport modes, such as regional and local trains, trams, metros, or concepts, such as on-demand systems or sharing services.

6. Policy recommendations

This study revealed six main findings that may be of interest to policy makers or practitioners. First, a sharp, drastic fare reduction, such as the 9-Euro-Ticket, is an effective way to enable low-income households with children to access the public transport system and thus increase their social participation. Many people have been benefitting from the introduction of the Deutschlandticket at a price of 49 euros per month since May 2023, but, without an affordable price for all or a nationwide regulation on reduced-price tickets for low-income earners and those on social benefits, there are still people who are denied access to the public transport system.³ Hence, policy makers should take measures for affordable public transport if they want to reduce social inequalities and ensure that everyone can reach and thus use services of public interest. Second, the freedom of mind, space and time described by the interviewees due to the 9-Euro-Ticket proves the potential of an affordable simple ticket (one price, one area of validity, no subscription) to improve the conditions for self-determined mobility and thus increase the chances for low-income people to participate in societal life. Third, the 9-Euro-Ticket was a transport policy measure, but it had implications in areas of social policy, i.e. affordable public transport should not only be part of the transport policy debate, but also of social policy. It would be even better if these two specialised policies were to jointly develop, implement and evaluate measures to promote mobility and participation. Fourth, traffic induced by public transport is not a negative effect per se, but can be a success in terms of enabling social participation for population groups that cannot afford public transport tickets. Fifth, there is a need to invest in the public transport infrastructure and in its quality if more people are going to use it in the long term. The interviewees clarify that crowded vehicles and stations were experienced as problematic and even dangerous for children. Sixth, the success of a transport measure, such as the 9-Euro-Ticket, should not mainly be measured by whether there was a shift from car to public transport. This is, of course, desirable in times of climate crisis, but social aspects should also be taken into account when assessing the impact and deciding whether to continue a measure.

CRedit authorship contribution statement

Caroline Rozynek: Conceptualization, Investigation, Methodology, Writing – original draft.

Declarations of competing interest

None.

Data availability

The data that has been used is confidential.

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References

- Aberle, C., Daubitz, S., Gertz, C., Schwedes, O., 2022. Mobilitätsbezogene soziale Exklusion in Großstädten: empirische Bestandsaufnahme und Strategieentwicklung für Berlin und Hamburg. *Journal für Mobilität und Verkehr* 14, 18–27. <https://doi.org/10.34647/jmv.nr14.id89>.
- Aberle, C., Havemann, F., Porsche, L., Weissinger, J., 2021. Endlich kann ich meine Enkelkinder öfter mal sehen!: Wie einkommensarme hvv-Fahrgäste das 9-Euro-Ticket nutzen und was das Ende des Angebots für sie bedeutet: Zwischenergebnisse einer laufenden Befragung. <https://doi.org/10.15480/882.4562>.
- Abou-Zeid, M., Ben-Akiva, M., 2012. Travel mode switching: comparison of findings from two public transportation experiments. *Transport Pol.* 24, 48–59. <https://doi.org/10.1016/j.tranpol.2012.07.013>.
- Boddy, C.R., 2016. Sample size for qualitative research. *Qual. Mark. Res. Int. J.* 19 (4), 426–432. <https://doi.org/10.1108/QMR-06-2016-0053>.
- Bondemark, A., Andersson, H., Wretstrand, A., Brundell-Freij, K., 2021. Is it expensive to be poor? Public transport in Sweden. *Transportation* 48 (5), 2709–2734. <https://doi.org/10.1007/s11116-020-10145-5>.
- Bull, O., Muñoz, J.C., Silva, H.E., 2021. The impact of fare-free public transport on travel behavior: evidence from a randomized controlled trial. *Reg. Sci. Urban Econ.* 86, 103616. <https://doi.org/10.1016/j.regsciurbeco.2020.103616>.
- Busch-Geertsema, A., Lanzendorf, M., Klüner, N., 2021. Making public transport irresistible? The introduction of a free public transport ticket for state employees and its effects on mode use. *Transport Pol.* 106, 249–261. <https://doi.org/10.1016/j.tranpol.2021.04.007>.
- Cats, O., Susilo, Y.O., Reimal, T., 2017. The prospects of fare-free public transport: evidence from Tallinn. *Transportation* 44 (5), 1083–1104. <https://doi.org/10.1007/s11116-016-9695-5>.
- City of Miami, 2023. *Trolley*. Get Trolley Info, Schedules, & Maps. <https://www.miamiv.com/Transportation-Roadways/Trolley-Information/Get-Trolley-Information-Schedules-and-Maps>.
- Daubitz, S., Aberle, C., 2020. Mobilität und Soziale Exklusion in Hamburg: Faktenblatt. TUHH Universitätsbibliothek. <https://doi.org/10.15480/882.3019>.
- De Witte, A., Macharis, C., Lannoy, P., Polain, C., Steenberghen, T., Van De Walle, S., 2006. The impact of "free" public transport: the case of Brussels. *Transport. Res. Pol. Pract.* 40 (8), 671–689. <https://doi.org/10.1016/j.tra.2005.12.008>.
- Dellheim, J., 2018. Germany: europe's 'car country' is turning on its head. In: *Free Public Transit: and Why We Don't Pay to Ride Elevators*, second ed. Black Rose Books, pp. 151–168.
- Dellheim, J., Prince, J. (Eds.), 2018. *Free Public Transit: and Why We Don't Pay to Ride Elevators*, second ed. Black Rose Books.
- EU, 2022. *Living Conditions in Europe—Poverty And Social Exclusion* (European Union's (EU) Statistics on Income and Living Conditions (EU-SILC)). Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living_conditions_in_Europe_-_poverty_and_social_exclusion.
- Fernandes Pereira, T., Vermander, M., Kębłowski, W., 2023. Motivations and characteristics of FFPT policies in selected Brazilian municipalities. *Journal of*

³ For an overview, please visit: www.wasbringt49.de.

- Sustainable Urban Mobility 3 (1), 122–138. <https://doi.org/10.53613/josum.2023.v3.010>.
- Flick, U., 2009. *An Introduction to Qualitative Research*, 4. ed. SAGE. repr.
- Follmer, R., Gruschwitz, D., 2019. Mobilität in Deutschland – MiD Kurzreport. Ausgabe 4.0 Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministers für Verkehr und digitale Infrastruktur (FE-Nr. 70.904/15). In: . Bonn, Berlin. https://bmdv.bund.de/SharedDocs/DE/Anlage/G/mid-2017-kurzreport.pdf?__blob=publicationFile.
- Follmer, R., Schelewsky, M., Treutlein, J., Kern, F., 2023. *Alles wie vorher? Die Verkehrswende zwischen 9-Euro-Ticket und alten Herausforderungen* (07; Mobilitätsreport). infas, WZB, BMBF, infas 360, Motiontag, TomTom. https://www.infas.de/wp-content/uploads/2023/02/infas_Mobilitaetsreport_07_7647-2.pdf.
- Franklin, S., 2018. Location, search costs and youth unemployment: experimental evidence from transport subsidies. *Econ. J.* 128 (614), 2353–2379. <https://doi.org/10.1111/econj.12509>.
- Fujii, S., 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 (1), 81–95. <https://doi.org/10.1023/A:1021234607980>.
- German Bundestag, 2022. Gesetzentwurf der Fraktionen, S.P.D., BÜNDNIS 90/DIE GRÜNEN und FDP. In: Entwurf eines Siebten Gesetzes zur Änderung des Regionalisierungsgesetzes, 20/1739. <https://dserver.bundestag.de/btd/20/017/2001739.pdf>.
- German Federal Government Online, 2022a. Diese Steuerentlastungen Sind Beschlossen. Bundesregierung. <https://www.bundesregierung.de/breg-de/suche/entlastungen-paket-eins-2010636>.
- German Federal Government Online, 2022b. Fragen und Antworten zum 9-Euro-Ticket ab Juni 2022. Bundesregierung. <https://www.bundesregierung.de/breg-de/suche/faq-9-euro-ticket-2028756>.
- German Federal Government Online, 2022c. Nachfolge für 9-Euro-Ticket. Bundesregierung. <https://www.bundesregierung.de/breg-de/suche/9-euro-ticket-nachfolge-2134074>.
- German Federal Government Online, 2022d. Weitere Entlastungen Beschlossen. Bundesregierung. <https://www.bundesregierung.de/breg-de/suche/entlastungspaket-zwei-2028052>.
- German Federal Government Online, 2023. *Deutschlandticket: Änderung des Regionalisierungsgesetzes* | Bundesregierung. Die Bundesregierung informiert | Startseite. <https://www.bundesregierung.de/breg-de/suche/regionalisierungsgesetz-deutschlandticket-2161096>.
- González, Busco, Codocedo, 2019. Fare evasion in public transport: grouping transantiago users' behavior. *Sustainability* 11 (23), 6543. <https://doi.org/10.3390/su11236543>.
- GVH Online, 2022. Unsere Preisübersicht. <https://www.gvh.de/fahrkarten-preise/preisuebersicht/>.
- Hille, C., Gather, M., 2022. Ergebnisse einer Befragung von einkommenschwachen Haushalten zur Wirkung des 9-Euro-Tickets auf das Mobilitätsverhalten und ausgewählte Dimensionen der sozialen Teilhabe. *Berichte des Instituts Verkehr und Raum*. https://www.fh-erfurt.de/fileadmin/Dokumente/IVR/IVR_Schriftenreihe/Band_29_final/IVR_Band_29_9EuroTicket.pdf.
- Inguglia, C., Di Marco, M., Ricci, M., 2020. Urban mobility, social inclusion and participation: a qualitative study in palermo, Italy. In: Smorto, G., Vinci, I. (Eds.), *The Role of Sharing Mobility in Contemporary Cities*. Springer International Publishing, pp. 51–68. https://doi.org/10.1007/978-3-030-57725-4_4.
- Kębłowski, W., 2020. Why (not) abolish fares? Exploring the global geography of fare-free public transport. *Transportation* 47 (6), 2807–2835. <https://doi.org/10.1007/s11116-019-09986-6>.
- Kębłowski, W., Maciejewska, M., Gillard, M., Boussauw, K., Van Acker, V., Bakalinskyi, O., 2023. *The Map of Fare-Free Public Transport* [Map]. <https://freepublictransport.net/map/>.
- Krämer, A., Wilger, G., Bongaerts, R., 2022. Das 9-Euro-Ticket: Erfahrungen, Wirkungsmechanismen und Nachfolgeangebot. *Wirtschaftsdienst* 102 (11), 873–879. <https://doi.org/10.1007/s10273-022-3313-2>.
- Kuckartz, U., 2014. *Qualitative Text Analysis: A Guide to Methods, Practice & Using Software*. SAGE.
- Liu, Q., Liu, Z., An, Z., Zhao, P., Zhao, D., 2023. A modal shift due to a free within-destination tourist bus scheme: multimodality and transport equity implications. *Research in Transportation Business & Management* 48, 100863. <https://doi.org/10.1016/j.rtbm.2022.100863>.
- Lucas, K., 2012. Transport and social exclusion: where are we now? *Transport Pol.* 20, 105–113. <https://doi.org/10.1016/j.tranpol.2012.01.013>.
- Lucas, K., 2019. A new evolution for transport-related social exclusion research? *J. Transport Geogr.* 81, 102529. <https://doi.org/10.1016/j.jtrangeo.2019.102529>.
- Lucas, K., Mattioli, G., Verlinghieri, E., Guzman, A., 2016. Transport poverty and its adverse social consequences. *Proceedings of the Institution of Civil Engineers - Transport* 169 (6), 353–365. <https://doi.org/10.1680/jtran.15.00073>.
- Malta Public Transport, 2024. Free Public Transport. <https://www.publictransport.com.mt/en/faqs-free-travel>.
- Mujcic, R., Frijters, P., 2021. The colour of a free ride. *Econ. J.* 131 (634), 970–999. <https://doi.org/10.1093/ej/ueaa090>.
- Nobis, C., Kolarova, V., Nägele, S., Winkler, C., Jipp, M., 2022. 6. DLR-Erhebung zur Mobilität & Corona. In: 9-Euro-Ticket und Senkung der Kraftstoffpreise. DLR-Institut für Verkehrsforschung, pp. 1–28. <https://verkehrsforschung.dlr.de/de/news/sechste-dlr-erhebung-wie-veraendert-corona-unsere-mobilitaet>.
- Nobis, C., Kuhnimhof, T., 2018. *Mobilität in Deutschland – MiD Ergebnisbericht*. Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministers für Verkehr und digitale Infrastruktur (FE-Nr. 70.904/15). Bonn, Berlin. http://www.mobilitaet-in-deutschland.de/pdf/MiD2017_Ergebnisbericht.pdf.
- Nygård, A., 2018. *Planka.nu: umping turnstiles in Sweden*. In: Dellheim, J., Prince, J. (Eds.), *Free Public Transit: and Why We Don't Pay to Ride Elevators*: Vol. 111–126). Black Rose Books.
- Official portal of the Grand Duchy of Luxembourg, 2024. Public transport. <https://luxembourg.public.lu/en/living/mobility/public-transport.html>.
- Perrotta, A.F., 2017. Transit fare affordability: findings from a qualitative study. *Publ. Works Manag. Pol.* 22 (3), 226–252. <https://doi.org/10.1177/1087724X16650201>.
- Przyborski, A., Wohlrab-Sahr, M., 2014. *Qualitative Sozialforschung: Ein Arbeitsbuch*. DE GRUYTER. <https://doi.org/10.1524/9783486719550>.
- Rambaldini-Gooding, D., Molloy, L., Parrish, A., Strahilevitz, M., Clarke, R., Perez, P., 2023. Free public transport and older people: an ethnographic study of an Australian bus service. *Australas. J. Ageing* 42 (2), 409–416. <https://doi.org/10.1111/ajag.13158>.
- Region Hannover, 2015. *Sozialbericht 2015: Soziale Lagen in der Region Hannover*. <https://www.hannover.de/Leben-in-der-Region-Hannover/Soziales/Soziale-istungen-weitere-Hilfen/Sozialhilfe-und-Grundsicherung/Sozialberichte-der-Region-Hannover>.
- Regional Transportation District, 2023. *Free MallRide Denver*. Free MallRide Denver. <https://www.rtd-denver.com/services/free-mallride>.
- Rhein-Main Verkehrsverbund (RMV), 2023a. *Rmv - nachtbusse*. Gießen: nachtbusse venus und saturn. <https://www.rmv.de/c/de/fahrplan/linien-netze/nachtverkehre/giesse-n-nachtlinien?inapp=3&Hash=297aa1d9880141b3f99c5471ab68e68a>.
- Rhein-Main Verkehrsverbund (RMV), 2023b. *RMV.DE - RMV-JobTicket*. <https://www.rmv.de/c/de/fahrkarten/sortiment-verkauf/fahrkarten-im-ueberblick/fahrkarten-fuer-spezielle-personengruppen/jobticket>.
- Rozynek, C., Lanzendorf, M., 2023. How does low income affect older people's travel practices? Findings of a qualitative case study on the links between financial poverty, mobility and social participation. *Travel Behaviour and Society* 30, 312–324. <https://doi.org/10.1016/j.tbs.2022.10.003>.
- Rozynek, C., Schwerdtfeger, S., Lanzendorf, M., 2022. The influence of limited financial resources on daily travel practices. A case study of low-income households with children in the Hanover Region (Germany). *J. Transport Geogr.* 100, 103329. <https://doi.org/10.1016/j.jtrangeo.2022.103329>.
- Scheiner, J., Holz-Rau, C., 2017. Women's complex daily lives: a gendered look at trip chaining and activity pattern entropy in Germany. *Transportation* 44 (1), 117–138. <https://doi.org/10.1007/s11116-015-9627-9>.
- Schwanen, T., Lucas, K., Akyelken, N., Cisternas Solsona, D., Carrasco, J.-A., Neutens, T., 2015. Rethinking the links between social exclusion and transport disadvantage through the lens of social capital. *Transport. Res. Pol. Pract.* 74, 123–135. <https://doi.org/10.1016/j.tra.2015.02.012>.
- Schwerdtfeger, S., 2019. *Fahren ohne (gültigen) Fahrschein: Motive, soziale Akzeptanz und alternative Finanzierungsinstrumente*. Springer Fachmedien. <https://doi.org/10.1007/978-3-658-26064-4>.
- Shove, E., Pantzar, M., Watson, M., 2012. *The Dynamics of Social Practice: Everyday Life and How it Changes*. SAGE.
- Social Exclusion Unit, 2003. *Making the Connections: Final Report on Transport and Social Exclusion*.
- Storchmann, K., 2003. Externalities by automobiles and fare-free transit in Germany—a paradigm shift? *Journal of Public Transportation* 6 (4), 89–105. <https://doi.org/10.5038/2375-0901.6.4.5>.
- Štraub, D., 2019. Riding without a ticket: geography of free fare public transport policy in Poland. *Urban Development Issues* 64 (1), 17–27. <https://doi.org/10.2478/udi-2019-0020>.
- Štraub, D., Kębłowski, W., Maciejewska, M., 2023. From Bełchatów to Żory: charting Poland's geography of fare-free public transport programmes. *J. Transport Geogr.* 111, 103650. <https://doi.org/10.1016/j.jtrangeo.2023.103650>.
- Sträuli, L., 2023. Negotiating difference on public transport: how practices and experiences of deviance shape public space. *Urban Planning* 8 (4). <https://doi.org/10.17645/up.v8i4.6456>.
- Sträuli, L., Kębłowski, W., 2022. 'The gates of paradise are open': contesting and producing publicness in the Brussels metro through fare evasion. *Urban Stud.* 004209802211256. <https://doi.org/10.1177/00420980221125671>.
- Thøgersen, J., Møller, B., 2008. Breaking car use habits: the effectiveness of a free one-month travelcard. *Transportation* 35 (3), 329–345. <https://doi.org/10.1007/s11116-008-9160-1>.
- Tomeš, Z., Fitzová, H., Pařil, V., Rederer, V., Kordová, Z., Kasa, M., 2022. Fare discounts and free fares in long-distance public transport in central Europe. *Case Studies on Transport Policy* 10 (1), 507–517. <https://doi.org/10.1016/j.cstp.2022.01.011>.
- VDV, & DB AG, 2022. *Abschlussbericht zur bundesweiten Marktforschung*. Verband Deutscher Verkehrsunternehmen (VDV), Deutsche Bahn AG (DB AG). https://www.vdv.de/deutsche-bahn_vdv_9-euro-ticket-abschlussbericht.pdf?forced=true.
- Vermander, M., 2021. *EXPLORING FARE-FREE PUBLIC TRANSPORT IN BRAZIL: Rationales And Characteristics of Tarifa Zero Policies in Small Brazilian Municipalities* [Thesis]. <https://www.mobilize.org.br/midias/pesquisas/transporte-publico-gratuito-no-brasil-em-ingles.pdf>.
- Volinski, J., 2012. *Implementation and Outcomes of Fare-free Transit Systems*. Transportation Research Board, 22753. <https://doi.org/10.17226/22753>.
- Witzel, A., Reiter, H., 2012. *The Problem-Centred Interview: Principles and Practice*. SAGE Publications Ltd. <https://doi.org/10.4135/9781446288030>.