Skippers: a spatial evaluation of the impact of ticket gates in a historic rail fares context

Claude Lynch*[1]

[1]Bartlett Centre for Advanced Spatial Analysis, University College London

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Summary

At present, rail fares are 2.8% more expensive, in real terms, than they were in 2004. Over the same time period, petrol prices have become 4.3% cheaper. As such, some travellers choose to skip fares. Why? This project deploys a novel dataset of which stations have ticket barriers, joining this to other datasets such as station operator, passenger numbers and routes served to understand exactly where fare evasion might be the highest, or the hardest. We then consider how narratives around fare evasion have changed in the UK over time, and conclude with an intervention synthesising these mixed methods.

KEYWORDS: Transport, Ticketing, Railways, Fare Structures, Regions

1 Introduction

This extended abstract concerns the nature of fare evasion on railway services in the UK. While the politics of fare evasion and the best methods of reducing it have been discussed previous (Barabino et al., 2020), the understanding of how and where fare evasion happens is less detailed. We aim to add to this work by synthesising a dataset of ticket barriers across stations in Great Britain (i.e. excluding Northern Ireland). This can be added to existing datasets regarding passenger numbers to draw preliminary conclusions about the journeys and routes with the greatest *potential* for fare evasion. A further degree of details comes from a qualitative analysis of why ticket barriers have become commonplace, as part of a broader shift towards revenue capture and greater penalisation of those who renege on paying an escalating price for their train ticket. As such, we wish to inspect the middle ground between the efficient application of ticket barriers and the critical evaluation of their implementation. These two halves are taken in turn through this abstract.

*claude.lynch.15@ucl.ac.uk

2 Background

In 2024, train ticket prices rose by 1.2%. In 2023, however, the figure was 5.7% (ORR, 2024). This was the first time that the rise wasn't based on the inflation rate in the usual way – instead, it was based on average earnings growth from the previous year; if it had matched inflation, the figure would have been almost double (DfT, 2022). This was an indication that national government had recognised the impact that increases in rail fares was having on socioeconomic inequalities; pushing rail fares up further could have further hampered the UK's exit from recession post-COVID.

Nonetheless, rail fares are notably more expensive now in real terms than they were in 2004, with an average increase of 2.4% over the past twenty years. In contrast, the price of petrol for private automobiles has decreased in real terms by 4.3% over the same period, having stabilised after a bump caused by sanctions related to the invasion of Ukraine in 2022 (RAC, 2024). It is important to note that the yearly increase in rail fares applies only to the fares that are limited by national government; some fares are set by train operating companies (TOCs) themselves. For example, in 2024, an off peak single ticket would increase in price by 1.2%; as would a day return, an anytime single, or a season ticket. In comparison, an *advance* ticket might increase by much more - or stay exactly the same. In any case, it is precisely the least well off groups that may lack the savings and hence opportunities for forward planning to *take advantage* of cheap advance tickets (Banister, 2018).

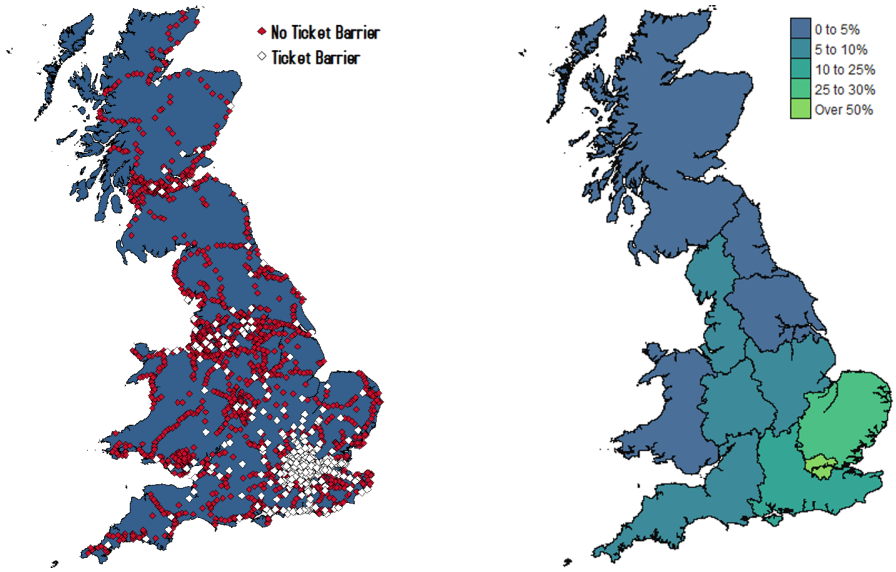
The two points noted above - access issues for cheap train tickets, and decreases in the real price of petrol, inevitably make choosing to drive a more attractive travel option for those who are able to do so. This seems to contradict the decarbonisation facing the transport sector - the part of the UK economy with the highest emissions (BEIS, 2023) - given that modal shift is likely to be the most effective means of reducing CO_2e emissions in the short to medium term (Dennis, 2024). For those for whom travelling by train is the only practical means of reaching their destination, then, it appears that real terms fare rises must be taken on the chin, at least in principle. In practice, this invites the discussion of one of the clearest consequences of less affordable travel: a reduced willingness to pay. Those who cannot risk the financial consequences of paying a train fare instead risk the legal consequences of not buying one at all. They commit fare evasion; they become skippers.

In contemporary terms, skipping a rail fare is as simple as starting from a station with no ticket barrier. Rates of fare evasion are not regularly measured in the UK, but data from TfL suggests regular occurence on even the most heavily protected routes (London, 2024). In fact, research has tended to focus on exactly these systems where barriers are applied across the board, as opposed to larger systems where this cannot be taken for granted (Barabino et al., 2020; Fürst and Herold, 2018). Hence our novel choice to focus the problem of fare evasion down to the question of *where ticket barriers are located*. In this way, we wish to consider the structural nature of fare *protection* as it relates to fare evasion, and how other factors in the mobilities space might inform where revenue protection is or is not prioritised - a novel example of socio-spatial dialectic in action (Soja, 2013).

3 Methods

Values for stations with ticket barriers was derived from an .xml file publically available on the National Rail website (at internal.nationalrail.co.uk/4.0/stations.zip). The data was merged with information on station entries and exits (along with operators) available from the ORR (at data-portal.orr.gov.uk).

4 Preliminary Results



(a) Spatial distribution of ticket barriers (b) Regional distribution of ticket barriers

Figure 1: Preliminary mapping exercises

Table 1: Ticket barrier percentages per region

Region	% of stations with ticket barriers	% stations of total
London	53	13
East of England	30	8
South East	24	17
South West	10	7
West Midlands	8	6
North West	7	13
East Midlands	7	4
North East	5	2
Yorkshire and The Humber	5	7
Scotland	5	14
Wales	4	9

In Table 1 and Figure 1b, we see that London is the only region of the UK that has a percentage of stations with ticket barriers over 50%. The extent of the commuter belt represented in the East of England and South East - where revenue capture is arguably of greater importance - might explain high figures in these areas too. Outside of these regions, it is primarily the major cities, towns and interchange stations (such as Crewe) where ticket barriers are found.

Table 2: Most frequented stations and journeys with no ticket barriers

Station Name	Number of Passengers p/a
York	8,862,978
Sheffield	8,677,012
Stansted Airport	7,906,474
Preston	4,236,536
Doncaster	3,634,522

Station Name	Main O-D pair
Lancaster	Preston
Meadowhall	Sheffield
Chesterfield	Sheffield
Barnsley	Sheffield
Scarborough	York

Table 2 is a reminder of the stations with highest passenger numbers with no barriers - York, where heritage groups have longstanding opposition to their installation, Sheffield, where barriers were not installed owing to the stations' use as a thoroughfare, Stansted Airport, where inspectors operate in place of barriers, Preston, where inspectors are also more commonplace, and Doncaster, where the design of the station impinges their installation.

In aiming to provide some value added for operators, we then looked at the stations with the highest passenger throughput where both halves of the origin-destination pair had no ticket barriers; in other words, where the most popular journey is a barrier-free journey. It is perhaps unsurprising that three of these journeys feature Sheffield - the smaller station in each case still enjoys over a million passenger entry and exits each year.

Table 3 illustrates that the operator with highest percentage of barriers (excluding Network Rail) is c2c, with 100%. This falls off quite quickly, with the next highest private operator being GTR's Thameslink at 52%. At the other end, Northern operates 18% of all stations, but only 4% of them have ticket barriers. The possible reasons for this reverse correlation - and further analysis based on individual TOC-operated routes - will be examined in the presentation.

Table 3: Ticket barrier percentages per operator[1]

Station owner	% of stations with ticket barriers	% stations operated of total
Network Rail	100	1
c2c	100	1
London Underground[2]	97	1
Elizabeth line	96	1
London Overground	56	3
Thameslink	52	1
Great Northern	45	2
Avanti West Coast	38	1
London North Eastern Railway	36	1
Southern	35	6
Chiltern Railways	29	1
South Western Railway	23	7
Southeastern	21	6
Transpennine Express	21	1
London North Western Railway	14	1
Greater Anglia	12	5
Merseyrail	11	3
Great Western Railway	10	8
East Midlands Railway	6	4
Scotrail	4	14
Transport for Wales Rail	4	10
Northern	4	18
West Midlands Railway	3	4

A further piece of work sought to collect as many posters urging against fare evasion as possible. Figure 2 is a subset of this collection. These posters seem to evidence a two-pronged approach, often used at once by the same TOC in different media: either seeking to make the skipper feel guilty, or make them feel criminal - but not both.

The application of the phrase 'fare's fair' by Chiltern Railways among others is telling, given that the same term was used in the 1980s to advertise *bringing down* transport fares in London. This illustrates how, since privatisation began, the onus has been placed on the *individual* to *accept* the level at which the fare has been set - instead of on the *government* to set the fare at an *acceptable* level. This gives rise to the question: fare's fair, for whom?

[1] excluding operators with less than ten stations

[2] of those in NR database

Figure 2: Four anti-fare evasion posters in trains and stations (Image credit: Authors)

5 Conclusion

Based on the mixed methods analysis presented above, it is difficult to reliably conclude that the 'skippers' have it wrong - there is a definitive correlation between busy stations and ticket barriers, implementation issues aside. Meanwhile, fares are surging, and the passenger is treated more like a prisoner to the conditions of carriage than someone railway companies have to *entice* into travelling with them. This coincides with narratives of privatisation - railways become an asset to sweat, instead of a service to provide to the public (Dennis, 2024). Our work therefore urges that Great British Railways should prioritise a drive to not only simplify, rationalise and *mark down* rail fares, but also consider the narrative they build around why people travel and what they are prepared to pay for it. Our oral presentation will further explore the context of this work and the results secured in the intervening period.

6 Acknowledgements

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7 Biographies

Claude Lynch is a PhD student at the Bartlett Centre for Advanced Spatial Analysis, UCL. The through line of his research is the link between theory and application in geography. Within this, his PhD project aims to understand how simulations from transport models are best applied to regional political contexts.

Tom Murat is a PhD student at the Bartlett Centre for Advanced Spatial Analysis, UCL. His research looks at applying machine learning to scenario-building for agent-based models with the aim of redressing socioeconomic inequalities in transport.

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