

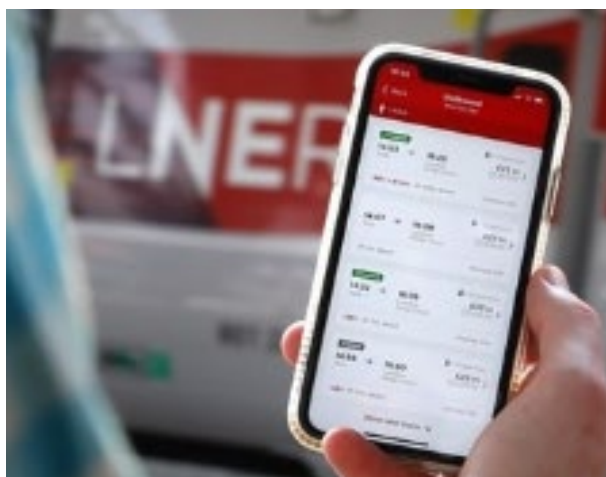


Department
for Transport

SYSTRA

EVALUATION OF SINGLE LEG PRICING AND SIMPLER FARES TRIAL ON LNER

FINAL REPORT



Images: LNER

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EXECUTIVE SUMMARY

Objectives and approach

This evaluation provides a summative assessment of the impact of the Single Leg Pricing (SLP) and Simpler Fares (SFs) pricing changes on revenue, demand, customer satisfaction and passenger behaviours on LNER services. A full cost-benefit analysis is outside the scope of this evaluation, and therefore this work does not account for factors such as the costs of implementation, the impacts of satisfaction, or wider social and economic costs or benefits.

The evaluation was undertaken using a three-step methodology, as follows:

- Development of a basic Theory of Change to engage stakeholders, identify and confirm policy objectives and context, and provide a logic map and any further information;
- Primary Research to collect passengers' views on the impact of the changes in fares structure across several phases of the implementation of SLP and Simpler Fares; and
- Secondary Data Analyses to quantify the impact of SLP and Simpler Fares on revenue and demand, through the use of LENNON data, including consideration of a counterfactual. A descriptive analysis provided some context by summarising and interpreting the data and trends. A regression analysis, which had counterfactuals and statistical testing of the impacts of SLP and SF, was used to provide the key findings.

Customer experience and satisfaction

- On-train surveys with LNER passengers indicate that both SLP and Simpler Fares appear to enhance the ticketing experience for passengers, with satisfaction improving in many areas, though this has taken time to achieve.
- Passengers on SLP flows had more positive sentiments than Simpler Fares passengers regarding perceived fairness, increasing frequency of travel and monetary valuation of ticketing flexibility.
- While Simpler Fares is perceived as less fair than other ticketing systems, the perception of Simpler Fares is improving.
- Informing passengers of the Simpler Fares assurances may improve perceptions of fairness and likelihood to travel by rail.

Impacts on demand

- A descriptive analysis of LENNON data indicated a greater increase in overall demand for SLP trial flows than for Simpler Fares trial flows (noting that the trial flows chosen for the SLP and Simpler Fares evaluations were different).
- For SLP, positive journey growth was seen for trial flows relative to control flows, although these impacts were not statistically significant overall. However, the impacts were statistically significant for London trial flows when the effects of competition were added into the regression models, but remained not significant for non-London trial flows.
- For Simpler Fares, journey increases were generally noted on the Phase 1a trial flows, but at a lower rate than the control flows. Journeys decreased on Simpler Fares Phase 1b trial flows. Neither of these demand impacts were statistically significant for Simpler Fares.
- However, Simpler Fares results may have been suppressed due to trial avoidance by some passengers (use of non-Simpler Fares routes may have increased at the expense of routes with Simpler Fares introduced).

- There were some (self-reported) indications of train loadings being evened-out, with statistically significant increases in the proportion of SLP passengers and Simpler Fares passengers suggesting that 'lots of seats were available' post-implementation compared to pre-implementation. This has not been validated against loading data so is based on perception only.
- When looking at the combined impacts for SLP and Simpler Fares together, there was no significant impact on demand (journeys) for the trial flows in this combined model.

Impacts on revenues

- Regression analysis demonstrated that LNER revenue impacts were more positive for SLP than Simpler Fares.
- SLP had a positive and significant revenue impact for London trial flows, but a non-statistically significant impact for non-London trial flows.
- The SLP revenue impact was higher on London trial flows where competition with other TOCs was present than London trial flows without competition.
- Simpler Fares trial flows did not show a statistically significant revenue impact with the results being effectively neutral for both Phase 1a and Phase 1b.
- When looking at the combined impacts for SLP and Simpler Fares together, there was a statistically significant positive impact (increase) in revenue for the trial flows.

Summary tables for descriptive analysis observed changes

The tables below summarise the changes in revenues, journeys and yields from the descriptive analysis. Results are shown for the full 'before' SLP/Simpler Fares and 'after' SLP/Simpler Fares periods¹, with percentage changes indicated. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices).

In summary:

- SLP London trial flows demonstrated a 42% increase in revenue, a 19% increase in journeys, and 19% increase in yield;
- SLP non-London trial flows demonstrated a 16% increase in revenue, a 2% decrease in journeys, and 19% increase in yield;
- For Simpler Fares Phase 1a, trial flows demonstrated a 1% increase in revenue, a 2% decrease in journeys, and 4% increase in yield; and
- For Simpler Fares Phase 1b, trial flows demonstrated a 5% decrease in revenue, an 8% decrease in journeys, and 3% increase in yield.

¹ The period 'before' SLP introduction is 27th June 2021 to 12th November 2022 (P04 2021/22-P08 2022/23); the period 'after' is 25th June 2023 to 9th November 2024 (P04 2023/24-P08 2024/25). For Simpler Fares Phase 1a, the 'before' period is 1st April 2022 to 31st March 2023 (P01 2022/23-P13 2022/23); the period 'after' is 1st April 2024 to 31st March 2025 (P01 2024/25-P13 2024/25). For Simpler Fares Phase 1b, the 'before' period is 16th October 2022 to 31st March 2023 (P08 2022/23-P13 2022/23); the period 'after' is 13th October 2024 to 31st March 2025 (P08 2024/25-P13 2024/25).

Descriptive Analysis Summary – SLP (June 2021 to November 2022 vs. June 2023 to November 2024)

FLOW TYPE	REVENUE BEFORE SLP	REVENUE AFTER SLP	% CHANGE REVENUE	JOURNEYS BEFORE SLP	JOURNEYS AFTER SLP	% CHANGE JOURNEYS	YIELD BEFORE SLP	YIELD AFTER SLP	% CHANGE YIELD
London flows									
LNER Trial	£113.9m	£161.8m	+42%	3,066,905	3,663,115	+19%	£37	£44	+19%
LNER Trial + Competition	£25.8m	£44.4m	+72%	878,977	1,364,376	+55%	£29	£33	+11%
non-LNER Control	£521.5m	£693.8m	+33%	14,879,423	18,191,712	+22%	£35	£38	+9%
Non-London flows									
LNER Trial	£33.0m	£38.4m	+16%	1,746,433	1,710,770	-2%	£19	£22	+19%
LNER Trial + Competition	£18.4m	£24.7m	+34%	1,286,649	1,669,949	+30%	£14	£15	+3%
non-LNER Control	£102.0m	£132.8m	+30%	5,025,589	6,444,237	+28%	£20	£21	+2%

Descriptive Analysis Summary – SFs Phase 1a (April 2022 to March 2023 vs. April 2024 to March 2025)

PHASE 1A FLOW TYPE	REVENUE BEFORE SF	REVENUE AFTER SF	% CHANGE REVENUE	JOURNEYS BEFORE SF	JOURNEYS AFTER SF	% CHANGE JOURNEYS	YIELD BEFORE SF	YIELD AFTER SF	% CHANGE YIELD
LNER Trial	£177.0m	£179.4m	+1%	2,965,696	2,900,312	-2%	£60	£62	+4%
LNER Control	£221.0m	£256.7m	+16%	5,296,554	6,131,755	+16%	£42	£42	0%
non-LNER Control	£370.7m	£419.4m	+13%	7,307,070	8,986,458	+23%	£51	£47	-8%

Descriptive Analysis Summary – SFs Phase 1b (October 2022 to March 2024 vs. October 2024 to March 2025)

PHASE 1B FLOW TYPE	REVENUE BEFORE SF	REVENUE AFTER SF	% CHANGE REVENUE	JOURNEYS BEFORE SF	JOURNEYS AFTER SF	% CHANGE JOURNEYS	YIELD BEFORE SF	YIELD AFTER SF	% CHANGE YIELD
LNER Trial	£5.5m	£5.3m	-5%	132,289	122,182	-8%	£42	£43	+3%
LNER Control	£4.8m	£5.1m	+6%	80,624	87,845	+9%	£60	£58	-3%
non-LNER Control	£9.8m	£12.7m	+30%	187,872	244,782	+30%	£52	£52	0%

Summary of modelled impacts

The table below shows the summary of the regression models estimated to evaluate the SLP impact for revenues and journeys. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices).

- **Model 1** provides the **overall average weekly SLP impact**;
- **Model 2** provides the **weekly SLP impact for London and non-London flows separately**; and
- **Model 3** provides the **weekly SLP impact with the effects of competition from other TOCs accounted for**.

Regression Analysis Summary – SLP (June 2021 to November 2022 vs. June 2023 to November 2024)

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED	MODEL 2: LONDON/NON-LONDON SEGMENTED	MODEL 3: SEGMENTED WITH COMPETITION
Revenue (net receipts)	SLP weekly impact (London)	£16k	£17k	£20k
	SLP weekly impact (non-London)	£16k	£7k (ns)	-£1.5k (ns)
Demand (journeys)	SLP weekly impact (London)	74 (ns)	142 (ns)	286
	SLP weekly impact (non-London)	74 (ns)	-312 (ns)	28 (ns)

(ns) SLP impact is not significant at 95% confidence level

The table below shows the summary of the regression models estimated to evaluate the Simpler Fares Phase 1a impact for revenues and journeys. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices). The Phase 1b results followed the same pattern, demonstrating revenue and demand neutrality for Simpler Fares

- **Model 1** provides the **overall average weekly Simpler Fares impact**; and
- **Model 2** provides the **weekly Simpler Fares impact for each trial separately**.

Regression Analysis Summary – SFs (April 2022 to March 2023 vs. April 2024 to March 2025)

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED	MODEL 2: TRIAL FLOW SEGMENTED
Revenue (net receipts)	SFs weekly impact (London-Berwick-upon-Tweed)	£11k (ns)	-£2k (ns)
	SFs weekly impact (London-Edinburgh)	£11k (ns)	£13k (ns)
	SFs weekly impact (London-Newcastle)	£11k (ns)	£20k (ns)
Demand (journeys)	SFs weekly impact (London-Berwick-upon-Tweed)	-182 (ns)	-147 (ns)
	SFs weekly impact (London-Edinburgh)	-182 (ns)	-175 (ns)
	SFs weekly impact (London-Newcastle)	-182 (ns)	-224 (ns)

(ns) Simpler Fares impact is not significant at 95% confidence level

1. INTRODUCTION

1.1 Context

- 1.1.1 The Department for Transport (DfT) commissioned SYSTRA to undertake an evaluation on the outcomes and impacts of the rollout of Single-Leg Pricing (SLP) on LNER's network, followed by a further evaluation on the subsequent trial of Simpler Fares (SFs) on some flows.
- 1.1.2 SLP involves selling tickets on a single-leg basis, allowing customers to choose the most suitable ticket for each leg of their journey. Single fares are typically reduced to around 52% of the previous Return fare, and Return fares are usually removed from sale. The price of a return journey then equals the combined cost of two single tickets. SLP removed off-peak tickets on flows where off-peak and super-off peak were previously available. For flows where super-off peak tickets were not available, off-peak was retained.
- 1.1.3 Simpler Fares then involves removing the Off-Peak and Super-off-peak walk-up tickets from sale, further reducing the complex range of ticket types on offer. Simpler Fares adjusts ticket prices in line with demand for the seats in individual services, with the price on fuller trains being higher than on emptier trains as the cheapest train specific tickets tend to sell out first. The Anytime Single, which before represented the prevailing walk-up fare for a previously "peak" train, remains, meaning the demand-based pricing changes are effectively capped by this fare. More information about both fare structures is detailed in the timeline sections below.
- 1.1.4 The two changes described above form part of a wider reform programme in relation to fares, ticketing and retailing (FTR) for the whole UK railway, ensuring that the industry takes advantage of new technologies and changes in wider society, such as retailing and fulfilment innovations (such as smart ticketing), and the impact of remote and part-time working on both business and commuter markets as well as a trend of increased leisure demand. Both SLP and Simpler Fares aim to simplify the range of tickets on offer for passengers, as well as the conditions (which often differed on return portions), in addition to offering greater flexibility for travelling using different combinations of tickets (e.g. A to B to C journeys, or different tickets for different legs such as Fixed out and Flexible back, or First class with Standard class). Pricing based on demand aims to smooth out train loadings by incentivising travel outside of the busiest periods, which often do not mirror the existing Peak and Off-Peak periods.
- 1.1.5 The evaluation aims to provide a summative assessment of the impact of the pricing changes on revenue, demand, customer satisfaction and passenger behaviours. It includes consideration of a counterfactual (a situation without the fare structure changes) and, from this, whether the trials have had more or less impact on particular demographic/user groups.
- 1.1.6 Outputs and lessons from the evaluation will feed into the wider development of future rail fares, ticketing and retailing policies. The outputs will also inform the Department's approach to evaluation of other FTR policy interventions.

SLP Rollout Timeline

- 1.1.7 The timeline of events leading up to the full rollout of SLP across the LNER network is as follows:

- 30th November 2019 – SLP trial ticket sales went live for travel from 2nd January 2020;
- 2nd January 2020 – SLP trials were implemented for LNER London journeys to/from Newcastle, Leeds and Edinburgh; and
- 11th June 2023 – SLP was fully implemented to cover nearly all LNER priced flows.

1.1.8 This document is a report of the findings of the 2023 implementation of SLP. Revenue analysis from the 2020 trial was [published separately](#)².

1.1.9 The key changes as a result of SLP being introduced are:

- Return tickets are removed³ from the fares structure, reducing the available options (in this case) to Anytime Single, Super Off-Peak or Off Peak Single or Advance Single;
 - Super Off-Peak Single is cheaper than the Off-Peak, but has different time restrictions; and
 - Anytime Single is more expensive than the Off-Peak, but has no time restrictions.
 - Advance tickets are sold for specific trains at variable prices.
- Across all of the remaining ticket types, Single tickets are priced at approximately 50% of the original Return.
- In cases where a Super Off-Peak fare was not available prior to the trial, an Off-Peak ticket was retained as a Single ticket, and the Off-Peak Return was removed. The price of the Single was also set at around 50% of the Return.

Simpler Fares Rollout Timeline

1.1.10 Simpler Fares trial ticket sales went live on 16th January 2024, for travel from 5th February 2024. The changes as a result of Simpler Fares being introduced are described below:

- Simplification of the fares structure. The available standard class fares for those routes with Simpler Fares are:
 - Advance (Fixed) – typically the best value fare, booked in advance for a fixed journey with a guaranteed reserved seat;
 - ‘70min Flex’ (Semi-Flexible) – a new type of ticket offering customers the flexibility to travel on other LNER services on the same route, which can be 70 minutes before or after their original booked journey; and
 - Anytime (Fully-Flexible) – this ticket can be used at any time of day.
- The prices of the first two tickets types are adjusted to account for changing demand (prices change based on class of travel, number of remaining seats, and time until train departure). These two tickets share an allocation so a ticket sold as an Advance (Fixed) fare is one less 70min Flex (Semi-Flexible) fare that can be sold for a given service and vice-versa.

² [LNER single leg pricing trial evaluation: revenue analysis - GOV.UK](#)

³ In a small minority of cases, unregulated off-peak day returns have been retained including the York-Newcastle flow (after SLP only 0.4% of LNER tickets were returns on this flow).

- The 'Phase 1a' initial launch targeted the long-distance, high-volume flows between London Kings Cross and Newcastle, Edinburgh, and Berwick-upon-Tweed.
- An update to the eligible stations (Phase 1B) was implemented in August 2024, approximately 6 months into the trial. This served two purposes:
 - Bringing more LNER-operated stations between Newcastle and Edinburgh into the trial (e.g. Reston, Dunbar, Morpeth);
 - Extending the validity of the new 70min Flex ticket to other Train Operating Companies that offer connecting services to these stations. For example, customers will be able to buy a 70min Flex fare from Widdrington to London, with the first part of this journey being on a train operated by Northern.
- While eligible stations for Phase 1B were operating on Simpler Fares for only part of the fieldwork period, these have been retained in this final reporting stage to provide wave-on-wave comparability to the baseline.
- As part of the Simpler Fares trial, the LNER website and App were optimised for the new fares structure. This changed throughout the first 6 months of the trial, including pop-ups to highlight the semi-flex ticket, and explanatory information around product selection. While most website features were live from February 2024, these were finalised in July 2024, meaning there is not enough time to provide a meaningful analysis of before-and-after differences due to the website changes specifically.

1.2 Study overview

1.2.1 This evaluation was undertaken using a three-step methodology, as follows:

- Development of a basic **Theory of Change** to engage stakeholders, identify and confirm policy objectives and context, and provide a logic map and any further information;
- **Primary Research** to collect passengers' views on the impact of the changes in fares structures. A survey was undertaken across three of the four study waves (see paragraph 1.2.4), which took place across several phases of the implementation of SLP and Simpler Fares; and
- **Secondary Data Analysis**, undertaken in parallel to the primary research, to quantify the impact of SLP and Simpler Fares on revenue and demand, through the use of LENNON data (the system used to collect and process ticket sales data from across the UK rail network), including consideration of a counterfactual.

1.2.2 The primary research compared passengers' views on the fare structure before and after implementation of SLP and Simpler Fares on the affected flows. It explored perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types, as well as passengers' satisfaction.

1.2.3 The secondary data analysis included counterfactual analysis to understand the impact of the SLP rollout and Simpler Fares trial. This analysis used control flows as a benchmark for a counterfactual no SLP/no Simpler Fares scenario against which demand and revenue impact can be estimated.

1.2.4 The primary research and the secondary data analysis for this evaluation were undertaken in four waves as follows:

WAVE	SLP	SIMPLER FARES
1 (Summer/Autumn 2023)	Prior to the introduction of SLP on the majority of the network (baseline) - Primary research - Secondary data analysis	Prior to the introduction of Simpler Fares (baseline) - Primary research - Secondary data analysis
2 (Winter 2023-24)	6 months after the introduction of SLP on the majority of the network Secondary data analysis only	
3 (Winter 2024-25)	17 ⁴ months after the introduction of SLP on the majority of the network - Primary research - Secondary data analysis	5 months after the introduction of Simpler Fares - Primary research - Secondary data analysis
4 (Spring 2025)		12 months after the introduction of Simpler Fares - Primary research - Secondary data analysis

- 1.2.5 The methodology (described in full in Chapter 3) was designed to address the evaluation questions listed below. These evaluation questions were subsequently consolidated into short-medium term outcomes and long-term impacts during the development of the Theory of Change (ToC), outlined in Chapter 2.

SLP evaluation questions:

- To what extent does SLP provide passengers with a greater degree of flexibility?
- To what extent does SLP smooth passenger loads across train services?
- To what extent does SLP improve perceptions that the pricing system is fair and that passengers are getting the best price for their ticket?
- To what extent does SLP simplify fares and ticketing for passengers?
- How does SLP impact passengers travel and ticket purchasing behaviours? Do passengers mix and match tickets to meet their needs?
- What are the lessons learnt for implementation on the rest of the network?
- What is the yield and revenue impact of SLP including on other operators and modes for LNER and other TOCs (in aggregate, but including Open Access operators)? To what extent can demand/revenue impacts of each part of the policy be isolated? What is the timing of revenue/demand impacts e.g. how quickly do people respond to the change?
- What percentage of the removed return fare achieves revenue neutrality?

Simpler Fares evaluation questions:

- What is the yield and revenue impact of Simpler Fares including on other operators and modes for LNER and other TOCs (in aggregate, but including Open Access operators)? To what extent can demand/revenue impacts of each part of the policy

⁴ The intention was to collect and analyse data at six-month intervals. However, the practicalities around data collection and external influences on data quality (e.g. election periods, engineering works, strike action, rail sale periods) meant the evaluation was modified slightly to ensure comparable periods were selected. 17 months of SLP also provided adequate time for SLP to have fully 'bedded-in' for final analysis.

be isolated? What is the timing of revenue/demand impacts e.g. how quickly do people respond to the change?

- What impact does Simpler Fares have on the average ticket price?
- To what extent does Simpler Fares smooth passenger loads across train services?
- To what extent does Simpler Fares improve perceptions that the pricing system is fair and that passengers are getting the best price for their ticket? Did purchasers of “Flexible Advance” believe that was the optimum choice at the time of travel compared with when they bought it?
- To what extent does Simpler Fares simplify fares and ticketing?
- How does Simpler Fares impact passengers travel and ticket purchasing behaviours?
- What is rail passengers’ experience of demand-based pricing and of the new Flexible Advanced ticket? How does this change based on where/when tickets are purchased?
- What are the lessons learnt for implementation on the rest of the network?

2. THEORY OF CHANGE

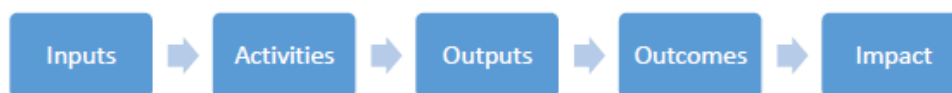
2.1 Developing a Theory of Change narrative

2.1.1 The first stage of the evaluation of SLP and the Simpler Fares trial was to develop a basic Theory of Change (ToC). This describes how and why the policy will work in producing change, and what that change may be.

2.1.2 The ToC consists of a single primary theory, providing a headline explanation of the expected pathways from implementation to long-term impacts to underpin the evaluation. It is based on:

- Knowledge of the context and circumstances;
- Knowledge of what similar changes in ticketing structures have delivered in the rail industry and potentially in other transport sectors; and
- The type of outcomes expected from ticketing and pricing structure changes.

2.1.3 The ToC pathways that link through from inputs to short-medium term outcomes, and longer term impacts are outlined in the diagram below.



2.1.4 To form the ToC narrative, a workshop was undertaken with key stakeholders from DfT, LNER and the Rail Delivery Group (RDG) on 20th April 2023. In addition, a review of relevant policy and product delivery papers provided by the DfT was conducted.

2.2 Narrative

2.2.1 Several drivers underpinned the introduction of SLP and the Simpler Fares trial. These drivers nest within, and are shared with, the strategic policy aims of the DfT's wider Fares, Ticketing and Retailing (FTR) reform agenda, including:

- The need to reform the railway as outlined in Getting Britain Moving⁵ (and several industry reviews;
- Complexity in the fares system putting off potential users (Easier Fares For All⁶);
- DfT's priority to improve transport for people;
- The rail industry's financial challenges; and
- The wider driver of climate change, decarbonisation and reducing the adverse social, environmental and economic impacts of transport.

2.2.2 The primary theory for how change may occur was that:

⁵ <https://labour.org.uk/wp-content/uploads/2024/04/GETTING-BRITAIN-MOVING-Labours-Plan-to-Fix-Britains-Railways.pdf>

⁶ https://www.raildeliverygroup.com/files/Publications/2019-02_easier_fares_for_all.pdf

As part of the wider reform of rail ticketing, if Single Leg Pricing and Simpler Fares can support improved traveller perceptions of the rail product, primarily through simplifying and increasing the transparency of ticketing and managing key aspects of service quality by smoothing out train loadings, then this will drive increases in rail demand and revenues, maintain and improve community connectivity, support local and regional economic vitality and, through modal shift from road travel, deliver traffic flow and wider environment benefits.

- 2.2.3 Developing this further allowed for a graphical representation of the theory through a simplified logic map, illustrated in Figure 1.
- 2.2.4 The development of the ToC narrative and accompanying logic map informed the design of the subsequent evaluation methodology, described in full in Chapter 3.

2.3 Theory of change themes

- 2.3.1 The logic map in Figure 1 points to three broad themes within which the short to medium term outcomes and longer-term impacts sit. These were:

Customer attitudes and behaviour impacts

- Perceptions and acceptance of new ticketing structures;
- Passenger satisfaction with the ease of access to tickets and simplification, fairness, transparency;
- Attractiveness of rail service offering, driving behaviour change; and increases in rail passenger demand.

Community impacts

- Maintenance and enhancement to community connectivity for a range of purposes, including employment, education, health and other purposes; and
- Delivery of wider social, economic and environmental benefits, primarily driven by increased connectivity and modal shift from road and air to rail.

Railway system impacts

- Revenue impacts driven by passenger volumes and changes in yields (average revenue per passenger), and with increased flexibility in managing yields arising from smoothing train loadings and reduced regulation;
- Operating efficiencies driven by smoothing of train loadings, especially in redistributing loadings between busiest peak trains, shoulder periods and less busy off-peak trains; and
- Delivery of increased revenues and operating efficiencies potentially improving financial sustainability, increasing investment and/or reducing the level of taxpayer support to the industry.

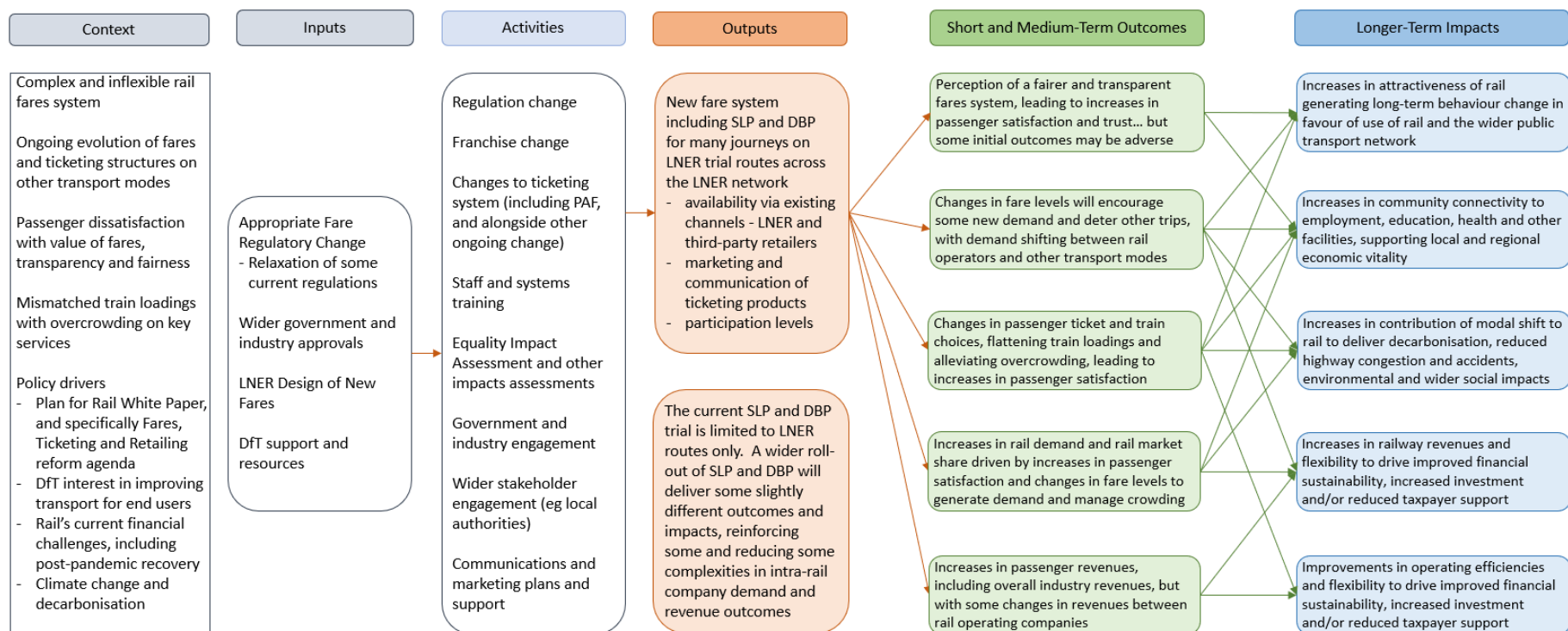


Figure 1. LNER Trial of Single Leg Pricing and Simpler Fares – Logic Map

2.4 Theory of Change delivery risk

- 2.4.1 The three broad ToC themes provide a suitable framework around which to consider the risk that intended causal pathways may not materialise, thereby affecting the benefit delivery.
- 2.4.2 Key risks were identified by the SYSTRA team and raised at the ToC stakeholder workshop. The workshop was also used to consider the potentially adverse effects of the trial to design a robust evaluation methodology to capture the intended and unintended consequences of the trial objectively.
- 2.4.3 The identified risks are described below.

Customer and non-customer

- Passengers may not understand the available fare options, although this level of understanding may increase over time;
- Perceptions of SLP may be influenced by passengers' understanding of how to buy tickets for a return journey, railcard minimum fares and delay repay reimbursements;
- Perceptions of Simpler Fares may be influenced by increases in the number of ticket price points available, the range of fares on offer, and new ticketing variants;
- SLP may lead to some current users having an increase in fare for the same journey;
- Customers may believe Simpler Fares could increase maximum fares for certain crowded trains and travel times;
- Passenger behaviours may prove hard to shift;
- Accessibility to products could be perceived as harder or more expensive for those vulnerable to digital exclusion;
- Passenger satisfaction with SLP or Simpler Fares may be compromised by industry performance issues such as punctuality and reliability; and
- Passengers may not perceive SLP or Simpler Fares as a simplification.

Community

- The attractiveness of the rail service may be compromised by negative perceptions of SLP and Simpler Fares, or nuances affecting some markets or geographies;
- Short to medium term challenges may compromise long-term behavioural change;
- Goals to enhance connectivity to employment, education, health and other facilities may be compromised by less cheap fares at certain times; and
- The above impacts could trigger modal shift away from rail to road and air.

Railway system – Implementation phase

- There may be challenges in agreeing regulatory or fare changes where connections are reliant on other operators;
- Potential for complexities in technical implementation across retail channels and bespoke industry systems, or in delivering staff and systems training. These factors could lead to implementation delays or confusion for passengers; and

Railway system – Delivery phase

- Operational benefits may not materialise if passenger behaviours prove hard to shift;

- There may be revenue risks arising from abstraction for SLP, modal shift away from rail to road and air due to less cheap peak time fares, or competition from other Train Operating Companies.
- There may be reputational risks arising from messaging being compromised by industry performance (e.g. punctuality, reliability).

2.5 Focus of the evaluation

- 2.5.1 Given the timing of this evaluation relative to the introduction of SLP and Simpler Fares, the focus of the evaluation was primarily on the short and medium-term outcomes. Our methodology was therefore designed accordingly to understand these immediate and emerging outcomes as the new ticketing systems are maturing.
- 2.5.2 Naturally, the longer-term impacts defined in the ToC will take more time to develop once the new ticketing systems have bedded in. As a result, the longer-term impacts were outside the immediate focus of this evaluation.

3. EVALUATION METHODOLOGY

This chapter provides an overview of the approach undertaken for the two core elements of the evaluation: primary research and secondary data analysis. Further details on the research design, adjustments to the methods during the evaluation and assumptions applied for the analysis are provided in Appendix B.

3.1 Primary Research

- 3.1.1 A series of surveys were conducted with passengers on-board LNER services to compare passengers' views on the fare structure before and after implementation of SLP and Simpler Fares on the affected flows. The surveys explored perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types, as well as passengers' satisfaction.
- 3.1.2 The surveys took place at the following stages of SLP and Simpler Fares implementation:
- Wave 1 (Summer/Autumn 2023): Prior to introduction of SLP/Simpler Fares (baseline);
 - Wave 2 (Summer 2024/25): No primary research (secondary data analysis only);
 - Wave 3 (Winter 2024/25): 17 months post SLP, 5 months post Simpler Fares; and
 - Wave 4 (Spring 2025): 12 months post Simpler Fares implementation.
- 3.1.3 The final sample sizes achieved by flow (after data cleaning) are shown in Table 1, and by SLP and Simpler Fares flows in Table 2.
- 3.1.4 Due to circumstances such as travel disruptions, strike action, planned engineering works and pre-election periods, the fieldwork schedule was adjusted around these events. While this was necessary to reduce potential bias from external factors outside of SLP and Simpler Fares, this generated some variability in sample sizes between each wave. Full details are provided in Appendix B.

Table 1. Number of responses by flow – Waves 1, 3 and 4

FLOW	WAVE 1 FINAL RESPONSES	WAVE 3 FINAL RESPONSES	WAVE 4 FINAL RESPONSES	FLOW TYPE
1: Newcastle - Edinburgh	217	407	-	SLP
2: York - Newcastle, Edinburgh	151	530	-	SLP
3: London Kings Cross - York, Doncaster	261	501	-	SLP
4: London Kings Cross - Newcastle	552	405	335	SF
5: London Kings Cross - Edinburgh	848	878	532	SF
6: London Kings Cross - Morpeth, Alnmouth, Berwick-upon-Tweed, Reston, Dunbar	59	83	42	SF
7a: Other flows – SLP	760	117	-	SLP
7b: Other flows – Simpler Fares	-	16	2	SF
Total	2,848	2,937	911	

- 3.1.5 The combined sample size for all flows for SLP and Simpler Fares (shown in Table 2) provide a strong foundation for robust findings at 95% confidence level for both SLP and Simpler Fares. For example, the 1,459 responses for the Wave 1 Simpler Fares baseline provides a maximum confidence interval of +/-2.6%. The sample size of 1,389 for SLP also provides a

maximum confidence interval for SLP +/-2.6%. This means if the survey results showed that 50% of respondents were satisfied or agreed with a particular statement, you could be confident that the true value for the population lies within the range 47.4%-52.6% (at the 95% confidence level).

Table 2. Survey completes for each wave by trial groups

FLOW GROUP	TOTAL RESPONSES (AFTER DATA CLEANING)	LONDON-BASED FLOWS	NON-LONDON BASED FLOWS
Wave 1 Total	2,848	1,991	857
Simpler Fares	1,459	1,459	-
SLP	1,389	532	857
Wave 3 Total	2,937	1,898	1,039
Simpler Fares	1,382	1,382	-
SLP	1,555	516	1,039
Wave 4 Total	911	911	-
Simpler Fares	911	911	-
SLP	-	-	-

3.1.6 In this report, additional analysis was run to identify whether statistically significant differences are present in the attitudes and behaviours of respondents between the baseline survey (Wave 1) and the follow-up surveys at Wave 3 and Wave 4.

- Where there are statistically significant differences these are stated as being 'significant'; differences that are not significant are highlighted as differences only, without the term 'significant' being used;
- Where crosstabs and tests for statistical significance have been run, 'don't know', 'unsure' and 'prefer not to say' options have been excluded, unless stated;
- Where significant differences exist between waves, the extent that this could be attributed to changes in sample composition has been assessed; and
- Findings are only reported as 'significantly different' if the statistical testing has produced a robust result e.g. significance testing is not impacted by low base sizes, low cell counts or missing values.

3.1.7 When reviewing the results in Chapter 4 and Chapter 5, it should be noted that the total percentages to several questions may not add to 100% due to rounding.

3.2 Secondary Data Analysis

3.2.1 The secondary analysis was undertaken in parallel to the primary market research. The analysis sought to quantify the impact of SLP and Simpler Fares on revenue and demand, using LENNON Earnings data, including consideration of a counterfactual. The analysis used control flows as a benchmark for a counterfactual non-SLP/no Simpler Fares scenario, against which demand and revenue impact was estimated, and customer satisfaction evaluated. It included a descriptive analysis and regression analysis.

Descriptive analysis

3.2.2 The descriptive analysis provided an initial review of the results, such as changes in market share and average yield between the SLP and Simpler Fares Trial and Control flows over time.

- For SLP, the analysis focused on the average of eighteen post-Covid-19 rail periods (late June to early November of the following year) for rail years 2022/23 and 2024/25 (i.e. before and after the rollout of SLP);
- For Phase 1a of Simpler Fares, the analysis focused on the average of 13 post-Covid-19 rail periods (April to March) for the rail years 2022/23 and 2024/25 (i.e. before and after the rollout of Simpler Fares); and
- For Phase 1b of Simpler Fares, the analysis focused on the average of 6 post-Covid-19 rail periods (October to March) for rail years 2022/23 and 2024/25 (i.e. before and after the rollout of Simpler Fares).

3.2.3 This analysis demonstrated how passengers have responded to the availability of ticket types as well as other potentially known, or unknown factors (e.g. TOC competition, disruptions). It also helps to understand the changes in passengers' ticket purchasing behaviour (through LENNON) during the trials.

Regression analysis

3.2.4 The regression analysis sought to estimate the revenue and demand impact of the SLP and Simpler Fares trials, as well as identifying the drivers behind the changes in revenue and the number of journeys. The modelling took account of a range of other factors that may have led to a difference in the revenue relative to the control flows.

3.2.5 The analysis undertaken was a Difference-in-Difference (DID) approach, which compared the changes in outcomes over time between the trial flows and the control flows. The DID approach is more robust than cross-sectional or 'before and after' analyses as it can account for time trends and background changes that may occur across the network (e.g. increasing ridership everywhere).

3.2.6 The regressions identify any statistically significant impacts of SLP and Simpler Fares, as well as the other variables included in the DID model, and test for multicollinearity⁷. The tests for the impact of SLP and Simpler Fares were undertaken separately for Phase 1a and Phase 1b trial flows.

3.2.7 The modelling used regressions, in which the dependent variable relates to either revenues or demand for the trial and control flows. The independent variables included the SLP or Simpler Fares monitoring periods and control variables such as engineering works. Revenue and demand were included in the model as periodic or annual changes.

3.2.8 Dummy variables were used to identify characteristics, such as flags for different flows (e.g. one for Edinburgh, one for Newcastle, etc), train operating companies, seasonality and to account for variables across a timeline such as engineering works and events. This allowed for the isolation of demand or revenue impacts that are not caused by the implementation of SLP and/or Simpler Fares but are specific to individual flows and time periods (at a weekly level) affected by engineering works and other events.

⁷ Multicollinearity is when two or more independent variables are highly correlated, which can lead to redundant information (as affected independent variables are essentially predicting the same outcome).

Control Flows

- 3.2.9 SLP was first introduced for sale on 30th November 2019 (for travel from 2nd January 2020) on three LNER flows. The wider rollout of SLP went ahead for sale from 14th May 2023 (for travel from 11th June 2023) and now covers the majority of the LNER network.
- 3.2.10 As a result, there are three LNER flows that had introduced SLP in the before periods, i.e. London-Newcastle, London-Leeds and London-Edinburgh. All other LNER flows had introduced SLP in the after periods but not in the before periods.
- 3.2.11 There were six trial flows chosen for regression analysis of the wider rollout of SLP, and six trial flows chosen for Simpler Fares.
- 3.2.12 As the whole of LNER had SLP in place, the SLP control flows come from other competing operators only (as the ticketing change is being rolled out across the network at the same time). Simpler Fares has a mixture of LNER and non-LNER flows.
- 3.2.13 The SLP and Simpler Fares control flows for each respective trial flow were selected based on flow distance, total revenues, demand market share made up of anytime/peak tickets and year-on-year revenue impacts using LENNON data for periods 2023/P02 (May 2022) to 2024/P03 (June 2023).
- 3.2.14 For SLP and Simpler Fares, the level of aggregation for the demand and revenue analysis was at Tertiary Zone (TZ⁸), rather than at a station-specific level. The pros and cons of conducting the analysis for SLP and Simpler Fares at TZ level are outlined In Appendix B.

Data and assumptions

- 3.2.15 To undertake the secondary data analysis, the following data was used:
 - LENNON Earnings data⁹ by flow, week, period, TOC and ticket type for the Trial/Control flows; and
 - Key events that might have affected LNER's revenue during the SLP and Simpler Fares periods.
- 3.2.16 Analysis of the LENNON datasets included econometric modelling to help identify trends on the flows of interest in yields, revenue and demand. The findings are segmented by flow groupings and by ticket types to see how they have changed over time between before and after trials. This allowed the comparison between control and the trial flows individually so that this relationship can be used to understand the market.
- 3.2.17 Key events allowed for the isolation of any likely impacts to changes in travel patterns which were not caused by the trials. In cases where there were just LNER flows to analyse, key events were specified by flow and/or trial or control flows to identify a distinct difference against other flows. If the same impact was perceived to be across all flows, then this could

⁸ Every station in LENNON is mapped to a Tertiary Zone (TZ), which are based on geographic proximity and logical flows for stations situated closely together. For example, Edinburgh Waverley and Haymarket are in the same TZ.

⁹ Revenues measured as net receipts and demand measures as passenger journeys.

be ignored in the regressions. The events were modelled by defining an individual dummy for each event, that was set to 1 for all affected flows/periods, and 0 for the other flows/periods. A comprehensive list of events is presented in Appendix C, and includes rail strikes, engineering works, and timetable changes.

- 3.2.18 The LENNON data was adjusted to take account of split ticketing on the rail network, following guidance from the Rail Delivery Group (RDG). The approach taken is outlined in full detail in Appendix J.

4. PRIMARY RESEARCH FINDINGS – SLP

Chapter Summary

The aim of the primary research was to understand the extent to which some of the anticipated short and medium term outcomes of SLP (as identified in the Theory of Change) were achieved. More specifically, the survey sought to understand whether there were any changes 17 months after implementation of SLP across the LNER network (compared to before prior to its introduction across the LNER network) in the following:

- Perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types;
- Passengers' overall satisfaction; and
- Changes in trip patterns and demand.

The results reported in this chapter relate to the responses provided by passengers travelling on one of the SLP flows outlined in Table 1 of Chapter 3.1.

Changes in passenger satisfaction and perceptions of SLP

Passengers on SLP flows were significantly more likely to rate SLP as being fair (50%), than the former ticketing system (36%); although there were no significant changes in the perceived fairness of SLP post, compared to prior to implementation.

Whilst SLP passengers were twice as likely to agree that removing return tickets was 'inconvenient' (46%) than to disagree (19%), **over half (53%) agreed that purchasing only single tickets provided them with more flexibility to choose their travel time.**

Looking at overall satisfaction with LNER services, the **share of passengers who rated their current journey experience as 8+ out of 10 was significantly higher (71%) post, compared to prior to implementation (63%).**

When comparing passenger satisfaction post, compared to prior to implementation, there were **statistically significant increases in the share of SLP passengers who:**

- Were satisfied their ticket offered **good value for money** (65% post vs. 58% pre);
- Agreed the **range of different ticket options** available for their journey was appropriate (63% post vs. 59% pre);
- Agreed the difference between the various ticket types was **clear and easy to understand** (64% post vs. 59% pre); and
- Agreed it was easy to **find the necessary information** and options about tickets to make informed decisions (67% post vs. 61% pre).

There were non-statistically significant increases or no changes post, compared to prior to implementation, in the share of passengers who:

- Agreed they understood the restrictions that applied to the different ticket types (68% post vs. 66% pre);
- Agreed it was easy to buy the ticket they wanted (84% post vs. 82% pre);

- Agreed it was clear how much flexibility in travel times was available with the ticket purchased (68% post vs. 66% pre);
- Agreed it was clear what the price of their ticket included (82% post vs. 81% pre);
- Agreed it was easy to identify the right ticket for their journey (76% post vs. 74% pre); and
- Were confident they purchased the best value for money ticket at time of booking (72% post vs. 72% pre).

There were non-significant decreases post, compared to prior to implementation, in the share of passengers who:

- Found it easy to choose the ticket needed for their journey (89% post vs. 90% pre);
- Agreed they bought the most appropriate ticket for their journey (83% post vs. 84% pre);
- Were confident they purchased the most appropriate ticket to travel at the time they wanted (83% post vs. 84% pre); and
- Agreed the price they were paying for the ticket was clear (89% post vs. 90% pre).

Changes in trip patterns and demand following implementation of SLP

Over half of passengers (53% on outbound journey legs and 54% on return legs of a journey) **travelling with Advance tickets post-implementation would hypothetically be willing to pay more if their ticket allowed them the flexibility to travel on other trains up to 70 minutes before or after** their planned departure time. This is a slight increase compared to pre-implementation (50-51%). Of those willing to pay, the average value was an additional 20% of their ticket price post-implementation, notably higher than prior to implementation (18% for outbound journeys and 15% for return journey).

The share of SLP passengers stating that they travelled by rail at least once a month or more was very similar post-implementation as it was prior to implementation.

Three in five passengers (60%) who were aware of SLP prior to taking part in the survey stated the system had no impact on their frequency of rail travel on LNER services. One in five (18%) said SLP had increased their frequency of rail travel, with the same proportion being unsure, and 5% who said they have decreased their frequency of rail travel as a result of SLP.

Three in five passengers (57%) who were unaware of SLP prior to taking part in the survey stated that the system would not impact their future travel on LNER. However, half of all respondents travelling on flows with SLP (49%) stated they would increase their frequency of rail travel if it was introduced on all services across the UK, compared to only 3% who said they would travel less often if this were the case.

The most common journey purposes for SLP passengers remained consistent post, compared to prior to implementation, with visiting friends or family, company business, and a holiday of 1-2 nights remaining the most commonly cited reasons for travel.

Other statistically significant changes which occurred post-implementation compared to prior to implementation were:

- **Over half of passengers (56%) reported lots of seats being available** on their train post-implementation, a significant increase from prior to implementation (41%).
- **The proportion of passenger who considered travelling by another mode instead of rail for their current journey significantly decreased** post (33%) compared to prior to implementation (41%).

4.1 Chapter overview

4.1.1 The primary aims of SLP are to:

- Improve passenger perceptions of rail by simplifying the range of tickets (and their associated conditions) on offer to passengers, and offering greater flexibility to travel using different combinations of tickets;
- Drive increases in rail demand and revenues;
- Support economic vitality, and maintain and improve community connectivity; and
- Through modal shift from road travel, deliver traffic flow and wider environment benefits.

4.1.2 The primary research explored the extent to which some of the anticipated short and medium term outcomes of SLP have been achieved. The survey sought to understand whether there were any changes 17 months after implementation of SLP across the LNER network (compared to pre-implementation) for:

- Perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types;
- Passengers' overall satisfaction; and
- Changes in trip patterns and demand.

4.1.3 In Wave 3 (approximately 17 months after SLP implementation), 1,555¹⁰ responses were received from passengers travelling on flows where SLP has been introduced. This was slightly higher than the sample of 1,389 achieved in Wave 1 (prior to the introduction of SLP across the LNER network). Full details of the sample profile and demographic characteristics of SLP passengers across both surveys (Waves 1 and 3) are provided in Appendix D1. Where there are significant differences in results between waves, these have been checked to assess whether they may be attributable to any differences in sample profile.

4.1.4 This chapter provides the findings from this data set. Where questions were not asked to the full sample of respondents, this is indicated by the base size accompanying the relevant chart or table in this chapter. In addition:

- The results of the significance testing between survey Wave 1 and Wave 3 are included in this main reporting document; and
- The results between groups for Wave 3 specifically are included in full in Appendix E1; though consistent trends in sub-group analyses are identified in the summary at the end of this chapter.

¹⁰ Following data cleaning.

4.2 Awareness of SLP trial and attitudes towards SLP characteristics

- 4.2.1 Wave 3 fieldwork was undertaken when SLP tickets were available to purchase and use across the LNER network. Wave 1 fieldwork was undertaken after SLP tickets went on sale but before the date when they could be used for travel across the LNER network.
- 4.2.2 To gauge awareness of SLP in Wave 3, respondents were asked to what extent they were aware that SLP ticketing is in operation on their journey. In Wave 1 they were asked to what extent they were aware that SLP ticketing was going to be in operation on their journey.
- 4.2.3 In both survey waves, passengers were provided with a definition of SLP, as follows:

To book a round trip by rail, a customer now buys two flexible tickets (one for each leg of the journey) rather than buying one Return ticket. These Single tickets are priced at roughly half the cost of the previous Return ticket on these routes. This differs to historical pricing practices, whereby Single flexible fares were often only a little less than Returns. Below demonstrates an example of a change to the tickets available:

Previously Available Tickets	Single Leg Tickets
Single = £44	Single = £26
Return = £50	Single x 2 = £52

So a flexible journey made exactly the same way costs a little more, a Single journey costs a lot less, and a journey mixing and matching one flexible leg with one Advance (fixed) leg should also cost less than the old flexible Return even if you buy the Return portion at a later time e.g. when your return plans are clearer.

- 4.2.4 Overall, awareness of SLP was generally low amongst passengers. The results indicated that the level of awareness was broadly similar between the survey waves, albeit with a slight (but non-statistically significant) increase in awareness in Wave 3. This suggests that travelling on flows utilising SLP does not necessarily make passengers more aware of its implementation. In Wave 3:
- 20% were fully aware of the introduction of the product (3% more than in Wave 1);
 - 27% had some level of awareness (the same proportion as in Wave 1); and
 - 53% were not aware of it at all (3% less than Wave 1).
- 4.2.5 To understand the perception of SLP fairness among respondents, passengers were asked about their views on the former system which generally featured a small price difference between most Single and Return tickets, and the new SLP system, where pricing of single tickets is set at just over 50% of the former return tickets.
- 4.2.6 Table 3 shows that for both survey waves, around half of respondents considered the new SLP ticketing system (whereby single tickets are just over 50% of the price of the former return tickets) to be fair or very fair (50% and 52% in Wave 3 and Wave 1 respectively), and around half as many considered it to be unfair or very unfair (24% and 22% in Wave 3 and Wave 1 respectively). There were no statistically significant differences in the perception of fairness between the survey waves, thereby suggesting that travelling on SLP does not appear to impact passenger perceptions of how fair the SLP system is.

- 4.2.7 The former system (with a small price difference between singles and returns) was generally considered less fair than the new SLP ticketing system. Around a third considered it to be fair or very fair (36% and 34% in Wave 3 and Wave 1 respectively) and slightly fewer considered it to be unfair or very unfair (28% and 31% in Wave 3 and Wave 1 respectively). There were no statistically significant differences in the perception of fairness between the survey waves.

Table 3. SLP passengers fairness perception of former system and SLP

FORMER TICKETING SYSTEM	WAVE 1	WAVE 3	% CHANGE
Former small price difference between most Single and Return tickets			
Very fair or fair	34%	36%	+2%
Neither fair nor unfair	28%	30%	+1%
Unfair or very unfair	31%	28%	-4%
I don't know	6%	7%	-
Total	100%	100%	-
Base	1,389	1,555	-
NEW SLP TICKETING SYSTEM	WAVE 1	WAVE 3	% CHANGE
Single tickets at just over 50% of the price of the former Return tickets			
Very fair or fair	52%	50%	-3%
Neither fair nor unfair	20%	21%	+1%
Unfair or very unfair	22%	24%	+2%
I don't know	6%	5%	-1%
Total	100%	100%	-
Base	1,389	1,555	-

- 4.2.8 Respondents were asked to share their opinions about the main features of SLP ticketing, namely removal of return tickets, purchasing single tickets only, and the convenience and flexibility of these.
- 4.2.9 Table 4 shows that respondents in both survey waves were twice as likely to agree that removing return tickets was inconvenient (42% and 46% in Wave 3 and Wave 1 respectively) than to disagree (18% and 19% Wave 3 and Wave 1 respectively).
- 4.2.10 A higher proportion of respondents agreed that purchasing only single tickets provided them with more flexibility to choose their travel time, with this sentiment consistent between Wave 3 and Wave 1 (53% and 55% respectively). Far fewer disagreed with this statement (14% and 16% in Wave 3 and Wave 1 respectively).

Table 4. SLP passengers' perceptions of removing the return tickets

CONVENIENCE OF SLP	WAVE 1	WAVE 3	% CHANGE
Removing return tickets is an inconvenience			
Strongly agree or agree	46%	42%	-3%
Neither agree nor disagree	31%	32%	+2%
Disagree or strongly disagree	19%	18%	-
I don't know	5%	7%	+2%
Total	100%	100%	-
Base	1,389	1,555	-
FLEXIBILITY OF SLP	WAVE 1	WAVE 3	% CHANGE
Purchasing only single tickets provides more flexibility to choose when you travel			
Strongly agree or agree	55%	53%	-3%
Neither agree nor disagree	26%	29%	+2%
Disagree or strongly disagree	16%	14%	-
I don't know	3%	4%	+2%
Total	100%	100%	-
Base	1,389	1,555	-

4.2.11 In Wave 3:

- Of those who agreed with the statement "Removing return tickets is an inconvenience", 40% also agreed with the statement "Purchasing only single tickets provides more flexibility to choose when you travel". This was a slight reduction compared to the percentage noted in Wave 1 (43%).
- Of those who agreed with the statement "Purchasing only single tickets provides more flexibility to choose when you travel", 32% also agreed with the statement "Removing return tickets is an inconvenience". This was a slight reduction compared to the percentage noted in Wave 1 (35%).

4.2.12 These results demonstrate that there was a degree of overlap. Whilst some respondents see the removal of return tickets as an inconvenience, there were many who also thought that purchasing only single tickets has some benefits in relation to flexibility. However, the extent of this overlap was slightly lower in Wave 3 compared to Wave 1.

4.3 Impact of SLP on travel behaviour

Travel on LNER services

4.3.1 In Wave 3, to assess the impact of SLP tickets on passengers' travel on LNER, those who were aware of SLP ticketing¹¹ were asked to what extent its introduction has impacted their frequency of rail travel on LNER. Most respondents reported no impact on their frequency of rail travel (60%), whilst 18% said it had increased their frequency, and only 5% said they were travelling less often as a result. The remaining 18% were unsure. Groups who were significantly more likely to suggest the introduction of SLP had increased their frequency of travel on LNER services were:

- Passengers on personal business (32%) compared to work/company business (12%);

¹¹ Base: 728 (excludes those unaware of SLP ticketing prior to taking part in the survey; W3 only).

- Passengers aged 18-25 (34%) compared to those aged 26+ (19%); and
- Passengers travelling with children (33%) compared to those travelling alone (17%).

4.3.2 Those who were unaware of SLP ticketing prior to taking part in the Wave 3 survey¹² were asked about the extent to which they felt the introduction of SLP would impact on their travel on LNER services in the future. Again, the majority anticipated no impact (57%), however a quarter suggested they may increase their rail travel frequency (25%), either considering it 'very likely' or 'fairly likely'. Only 6% felt that they would be less likely to travel by rail on LNER services, and 13% were unsure. There were no statistically significant differences between passenger demographics in their responses to this question.

Travel on all UK rail services

4.3.3 Respondents travelling on SLP flows in Wave 3 were also asked about their likelihood of travelling by rail in the future if SLP and Simpler Fares were introduced across the whole UK rail network. These findings are presented in Table 5 and show that:

- Half of respondents on SLP flows felt they would be likely to travel more often by rail if SLP was introduced across the whole UK rail network (49%), compared to only 3% who suggested they would travel less often.
- One in five respondents on SLP flows felt they would be likely to travel more often by rail if Simpler Fares was introduced across the whole UK rail network¹³ (20%), compared to around two in five (38%) who felt they would decrease their frequency of rail travel.
- Passengers aged 18-30 (57%) and female passengers (55%) were significantly more likely to say they were likely to increase their frequency of rail travel if SLP was introduced across the UK compared to those aged 31+ (50%) and males (47%).

Table 5. Impact on travel by rail in the future if SLP or Simpler Fares was introduced across the UK rail network (passengers on SLP flows)

IMPACT ON TRAVEL BY RAIL	IF SLP WAS INTRODUCED ACROSS THE UK	IF SIMPLER FARES WAS INTRODUCED ACROSS THE UK
Very likely to travel more often by rail	21%	7%
Fairly likely to travel more often by rail	28%	13%
It wouldn't impact my rail travel behaviour	42%	34%
Fairly likely to travel less often by rail	2%	21%
Very likely to travel less often by rail	1%	17%
I don't know	7%	8%
Total	100%	100%
Base	1,555	1,555

¹² Base: 827 (excludes those aware of SLP ticketing prior to taking part in the survey; W3 only).

¹³ These passengers were presented with the definition of Simpler Fares as "ticket prices for train travel are based on changing demand so ticket prices become more expensive when demand is high/trains are busy and cheaper when demand is low/trains are not busy." These passengers also did not receive the details of the assurances regarding Simpler Fares.

4.4 Passengers' ticket purchasing behaviour for current trips

- 4.4.1 The extent to which respondents purchased their ticket ahead of travel was consistent across survey waves for SLP:
- Around one in nine respondents on SLP flows purchased their ticket on the day of travel (11%), with this percentage being the same in both survey waves;
 - A third of passengers on SLP flows purchased their ticket up to a week before travel (35% and 36% for Wave 3 and Wave 1 respectively);
 - Three in ten purchased their ticket between more than 1 week and up to a month before travel (30%), with this percentage being the same in both survey waves; and
 - Over one in five respondents purchased their ticket more than a month ahead of travel (22%), with this percentage being the same in both survey waves.
- 4.4.2 In Wave 3, over four in five passengers bought their return leg ticket at the same time as they purchased their ticket for outward leg (84%), much higher than the 71% who did so in the Wave 1 survey¹⁴.
- 4.4.3 In Wave 3, 35% of SLP passengers purchased their ticket through an LNER channel, compared to 65% through non-LNER channels. This was a significant increase in the share of SLP passengers purchasing through LNER compared to Wave 1 (30%).

4.5 Passengers' satisfaction, perceptions and willingness to pay

- 4.5.1 Respondents who purchased an Advance ticket for either their outward or return leg were asked how much more, if anything, they would hypothetically be prepared to pay for a ticket that allowed them the flexibility to travel on other trains up to 70 minutes before or after their planned departure time.
- 4.5.2 Across both outward and return legs, survey respondents across both waves were split fairly evenly between being willing to pay more and being unwilling to pay more. There was a slightly higher share willing to pay more in Wave 3 than Wave 1 for outward journey legs (53% and 50% respectively), and return journey legs (54% and 51% respectively).
- 4.5.3 Table 6 shows that passengers were willing to pay 20% more than their original ticket price for this flexibility in Wave 3, for both outward and return journeys. This was a little more than in Wave 1 where they were willing to pay 18% more for outward journeys and 15% more for return journeys.

¹⁴ Base: W1=374; W3=1,305. Question asked only to passengers making a round trip by rail. Base size for W1 is much smaller as this question had additional routing at the baseline stage, to only ask this question to passengers making a round trip who purchased a single ticket.

Table 6. SLP passengers average additional willingness to pay (WTP) for Advance → Semi-flexible ticket

JOURNEY LEG	AVERAGE PRICE PAID	% WILLING TO PAY MORE	AVERAGE AMOUNT WILLING TO PAY	% OF ORIGINAL PRICE	BASE
Outward leg					
Wave 1	£57.50	50%	£10.47	18%	659
Wave 3	£43.42	53%	£8.55	20%	699
Return leg					
Wave 1	£46.37	51%	£6.88	15%	205
Wave 3	£40.84	54%	£7.99	20%	541

Base: includes those who a) purchased an Advance ticket for the leg of the journey they are being asked about; and b) provided a ticket price for the leg of the journey they are being asked about.

- 4.5.4 Around two thirds of Wave 3 respondents were satisfied that the ticket for their current train journey represented good value for money (65%), a statistically significant increase from the Wave 1 value of 58%. Consequently, the share of dissatisfaction with ticket value for money significantly decreased in Wave 3 (17%) compared to Wave 1 (23%).
- 4.5.5 A large majority of respondents found it easy to choose the ticket needed for the leg of their journey they were undertaking, with the percentage holding this sentiment being very similar in Wave 3 (89%) to Wave 1 (88%).
- 4.5.6 Table 7 shows that the majority of respondents felt very or fairly confident they purchased the best value for money ticket at the time of booking (72% in both survey waves), and the most appropriate ticket to travel at the time they wanted (83% and 84% for Wave 3 and Wave 1 respectively).

Table 7. SLP passengers' attitudes towards fairness of tickets purchased

STATEMENT	WAVE	VERY/FAIRLY CONFIDENT	NEUTRAL	FAIRLY/VERY UNCONFIDENT	I DON'T KNOW
I purchased the best value for money ticket at time of booking	Wave 1	72%	16%	9%	3%
	Wave 3	72%	16%	8%	5%
I purchased the most appropriate ticket to travel at the time I wanted to for this leg	Wave 1	84%	9%	4%	2%
	Wave 3	83%	10%	3%	3%

Base: W1=1,389; W3=1,555

- 4.5.7 Table 8 shows respondents' opinions regarding the range of ticket options available for their current journey. It explores how they perceive the availability of ticket types, their respective restrictions, and whether it is easy to understand them. Additionally, the table gauges their opinions on how transparent the ticket options are in offering flexibility in travel times. The results indicate that each of these four features was perceived more positively in Wave 3 than in Wave 1.
- Nearly two thirds of Wave 3 respondents strongly agreed or agreed that the range of different ticket options available for their journey was appropriate (63%). This was an increase from Wave 1 (59%).
 - A similar proportion of Wave 3 respondents strongly agreed or agreed that the difference between the various ticket types was clear and easy to understand (64%). This was an increase from Wave 1 (59%).

- Over two thirds of Wave 3 respondents strongly agreed or agreed that they understood the restrictions that applied to the different ticket types (68%). This was a slight increase from Wave 1 (66%).
- A similar proportion of Wave 3 respondents strongly agreed or agreed that it was clear how much flexibility in travel times was available with the ticket they purchased (68%). This was a slight increase from Wave 1 (66%).

Table 8. SLP passengers' attitudes towards a range of available ticket options

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
The range of different ticket options available for my journey was appropriate	Wave 1	59%	23%	14%	5%
	Wave 3	63%	21%	10%	5%
The difference between various ticket types was clear and easy to understand	Wave 1	59%	19%	19%	4%
	Wave 3	64%	17%	15%	5%
I understood the restrictions that applied to the different ticket types	Wave 1	66%	16%	16%	3%
	Wave 3	68%	14%	14%	4%
It was clear how much flexibility in travel times was available with the ticket I purchased	Wave 1	66%	15%	15%	3%
	Wave 3	68%	14%	14%	4%

Base: W1=1,389; W3=1,555

4.5.8 Table 9 shows how the experience of purchasing a ticket was perceived. Overall, the results indicate that each of these three features was perceived more positively in Wave 3 than in Wave 1.

- Over four in five Wave 3 respondents agreed it was easy to buy the ticket they wanted (84%). This was a slight increase compared to Wave 1 (82%).
- Over three quarters of Wave 3 respondents agreed it was easy to identify the right ticket for their journey (76%). This was a slight increase compared to Wave 1 (74%).
- Two thirds of Wave 3 respondents agreed it was easy to find the necessary information and options about tickets to make informed decisions (67%). This was a statistically significant increase compared to the Wave 1 (61%).

Table 9. SLP passengers' attitudes towards simplicity of purchasing a ticket

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
It was easy to identify <i>the right ticket</i> for my journey	Wave 1	74%	15%	8%	3%
	Wave 3	76%	14%	7%	3%
It was easy to find necessary <i>information and options</i> about tickets to make an informed decision	Wave 1	61%	21%	14%	3%
	Wave 3	67%	18%	11%	4%
It was <i>easy</i> to buy the ticket I wanted	Wave 1	82%	10%	5%	2%
	Wave 3	84%	9%	4%	3%

Base: W1=1,389; W3=1,555

- 4.5.9 Table 10 demonstrates how appropriate respondents considered the ticket they bought was for their journey and how clear the price of it was. A large majority of Wave 3 respondents believed they had bought the most appropriate ticket for their journey (82%), that the price they were paying for the ticket was clear (89%) and that it was clear what the price of the ticket included (82%). Each of these levels of agreement aligned closely with the Wave 1 baseline results (80%, 90% and 81% respectively).

Table 10. SLP passengers' attitudes towards available information on a ticket

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
I believe I bought the most appropriate ticket for my journey	Wave 1	80%	12%	5%	3%
	Wave 3	82%	11%	4%	4%
The price I was paying for the ticket was clear	Wave 1	90%	5%	3%	2%
	Wave 3	89%	6%	2%	3%
It was clear what the price of my ticket included	Wave 1	81%	10%	6%	2%
	Wave 3	82%	10%	5%	3%

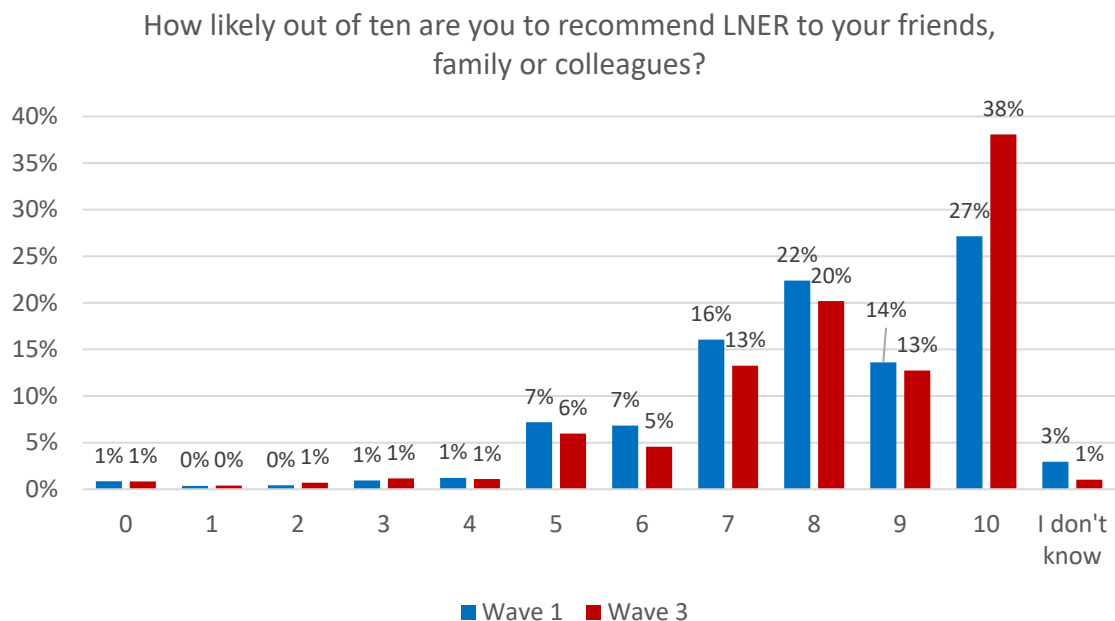
Base: W1=1,389; W3=1,555

- 4.5.10 Respondents were asked about seat reservation and availability for their current journey:
- The vast majority of Wave 3 respondents reserved the seat for their current journey (91%), very similar to Wave 1 respondents (90%);
 - Over half of Wave 3 respondents reported lots of seats available on their train (56%), representing a statistically significant increase compared to Wave 1 (41%).
 - Very few Wave 3 respondents reported there being no available seats or people standing on the train (2%), down from 4% in Wave 1.
- 4.5.11 Respondents were asked to rank nine specific factors (from 1 to 9, where 1 was the most important and 9 was the least important) according to their level of importance, when considering their choice of ticket for their current journey. The average rank scores are presented in Table 11. In summary:
- The average rank scores for each factor were closely aligned between Wave 3 and the Wave 1;
 - Best price / cheapest was the most important factor overall (average rank 2.0 and 2.1 in Wave 3 and Wave 1 respectively); and
 - Refund Policy and other T&Cs was the least important factor overall (average rank 7.5; and 7.4 in Wave 3 and Wave 1 respectively).

Table 11. SLP passengers ranking of factors for choosing a ticket for the current journey

FACTOR	W1 AVG. RANK	W3 AVG. RANK
Best Price/ Cheapest	2.1	2.0
Ability to have a reserved seat	4.1	3.9
I wanted to travel at a specific time	4.2	4.2
Flexibility over the time of travel (including the return journey, if applicable)	4.8	4.7
Minimal time spent travelling	4.6	4.8
Ability to find an available seat	5.2	5.2
Travelling/interchanging via a particular route or station, or avoiding a specific route	6.2	6.3
Ability to mix and match travel during the peak and Off-Peak periods (for return journeys)	6.5	6.3
Refund policy and other T&Cs	7.4	7.5
Base	1,389	1,555

- 4.5.12 Figure 2 shows that, based on their current trip, 71% of respondents in Wave 3 rated LNER services as eight or higher on a scale from 0 to 10, where 10 indicates an extremely high likelihood of recommending the service to friends, family, or colleagues. This was a significant increase compared to 63% of respondents in Wave 1. The percentage of respondents providing a rating of 10 was also significantly higher in Wave 3 (38%) compared to Wave 1 (27%).



Base: W1=1,389; W3=1,555

Figure 2. SLP passengers likelihood of recommending LNER to friends, family or colleagues

4.6 Passengers' travel behaviour

4.6.1 Table 12 shows the frequency with which respondents said they generally travel by rail. This was similar between the survey samples for each wave. Around three in five respondents took trips by rail once a month or more (59% and 61% in Wave 3 and Wave 1 respectively).

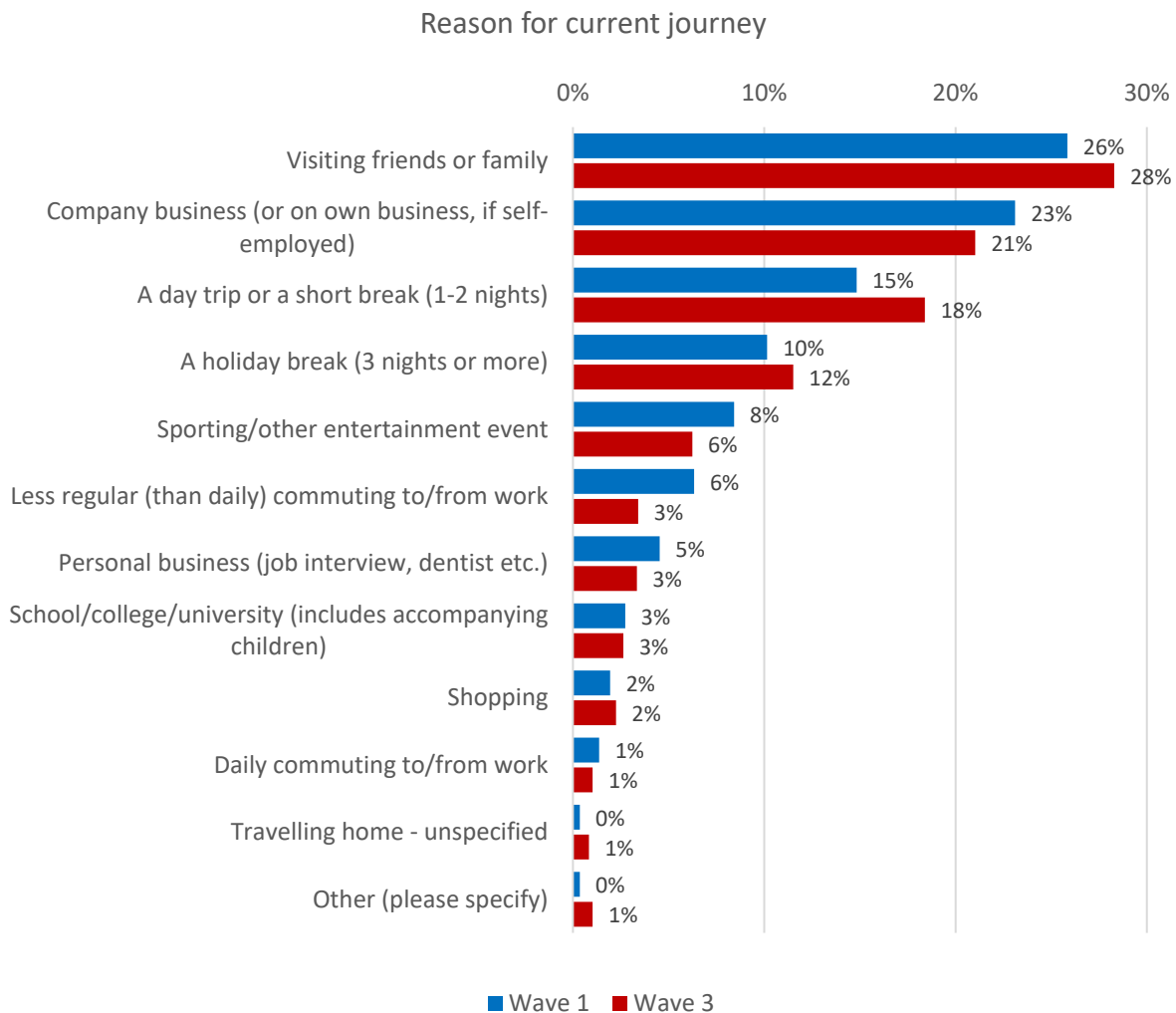
Table 12. SLP passengers self-reported frequency of travelling by rail

FREQUENCY	WAVE 1	WAVE 3
Four or more times a week	4%	4%
About two or three times a week	9%	9%
About once a week	10%	10%
About two or three times a month	20%	18%
About once a month	18%	17%
Less often than once a month, but at least three times a year	24%	25%
Once or twice a year	9%	10%
Less often than once a year	3%	3%
First time	2%	3%
Don't know	1%	1%
Total	100%	100%
Base	1,389	1,555

4.6.2 Figure 3 shows that the most common reasons respondents gave for traveling on their current journey were broadly consistent between the survey waves, and were:

- To visit friends or family (28% and 26% in Wave 3 and Wave 1 respectively);
- For company business purposes (21% and 23% in Wave 3 and Wave 1 respectively);
- For a day trip or short break lasting 1-2 nights (18% and 15% in Wave 3 and Wave 1 respectively); and
- For a holiday break lasting 3 nights or more (12% and 10% in Wave 3 and Wave 1 respectively).

4.6.3 Around half of Wave 3 respondents said they make the same trip for the same purpose between once a month and once or twice a year (52%), similar to the Wave 1 proportion of 49%. In addition, nearly a quarter reported that this was their first time making their current journey trip (22% and 23% in Wave 3 and Wave 1 respectively).



Base: W1=1,389; W3=1,555

Figure 3. SLP passengers' reasons of travelling for current journey

4.6.4 Respondents were asked whether they considered travelling by another transport mode for their current journey.

- A third of Wave 3 respondents considered travelling by at least one other mode of transport for their current journey (33%), significantly lower than for Wave 1 (41%).
- Table 13 shows that, amongst those who considered travelling by an alternative mode to train, car or van was the mode most likely to be considered as an alternative (70% and 63% in Wave 3 and Wave 1 respectively).

Table 13. What other mode did you consider travelling by another transport mode for this journey (SLP passengers)?¹⁵

CONSIDERED TRAVELLING BY...	WAVE 1	WAVE 3
Car or van	63%	70%
Coach or bus	14%	15%
Plane	19%	12%
Taxi	1%	2%
Motorbike	1%	1%
Other (e.g. multiple different modes of travel)	1%	1%
Total	100%	100%
Base	570	520

4.6.5 More than four in five respondents in both Wave 3 and Wave 1 decided themselves what ticket to buy (83% and 85% respectively) and chose what times of the trains to book (84% and 88% respectively).

4.6.6 Over half of Wave 3 respondents made their current journey alone (53%), representing a statistically significant decrease compared to Wave 1 (58%). Respondents in Wave 3 were more likely to be travelling with other adults (46%) compared to Wave 1 (40%).

4.7 Analysis of results by sub-groups

4.7.1 In Wave 3, some types of passenger were significantly more likely to perceive SLP more positively, across a number of trial characteristics, than others. Passenger groups which were significantly more positive in their sentiments towards SLP were:

- Leisure passengers, who were more likely than those travelling for other purposes to be positive about almost all sentiments covered in this chapter;
- Passengers travelling on non-London flows, who were more likely than those travelling on London flows to be positive about almost all sentiments covered in this chapter;
- Passengers aged 60+ or who are retired, who were more likely than passengers under 60 or and those not retired, to:
 - Understand ticket restrictions and different ticketing options (77% for aged 60+ and 83% for retired, compared to 70% for under 60s and 69% of not retired);
 - Be satisfied with value for money (79% for aged 60+ and 82% for retired, compared to 64% for under 60s and 67% of not retired); and
 - Less likely to agree that the removal of return tickets is an inconvenience (36% for aged 60+ and 31% for retired, compared to 47% for both under 60s and not retired).
- Females, who were more likely than males to state it was easy to understand the range of ticket types (71% compared to 64%) for their journey;
- Passengers without the option to work from home, who were more likely than those with the option to work from home, to say:
 - The range of different ticket options for their journey was appropriate (74% without the option compared to 61% with);

¹⁵ Base includes only those respondents who considered travelling by an alternative mode to train.

- The difference between various ticket types was clear and easy to understand (74% without the option compared to 62% with)
 - They understood the restrictions that applied to the different ticket types (75% without the option compared to 66% with);
 - It was easy to identify the right ticket for their journey (82% without the option compared to 73% with); and
 - It was easy to find necessary information and options about tickets to make an informed decision (77% without the option compared to 64% with).
- Passengers travelling with other adults or children, who were more likely than those travelling alone to say:
- The range of different ticket options for their journey was appropriate (72% with others compared to 62% alone);
 - The difference between various ticket types was clear and easy to understand (72% with others compared to 63% alone);
 - They understood the restrictions that applied to the different ticket types (75% with others compared to 67% alone);
 - It was clear how much flexibility in travel times was available with the ticket they purchased (75% with others compared to 68% alone);
 - It was easy to identify the right ticket for their journey (81% with others compared to 77% alone); and
 - It was easy to find necessary information and options about tickets to make an informed decision (74% with others compared to 66% alone).
- Passengers who tended to travel by rail less frequently (e.g. travelling on their specific journey once or twice a year or less) were more likely than those travelling more frequently to say:
- It was easy to identify the right ticket for their journey (81% of less frequent compared to 75% of more frequent travellers);
 - It was easy to find necessary information and options about tickets to make an informed decision (75% of less frequent compared to 64% of more frequent travellers);
 - It was easy to buy the right ticket (88% of less frequent compared to 85% of more frequent travellers);
 - They purchased the most appropriate ticket for their journey (88% of less frequent compared to 85% of more frequent travellers);
 - The price they were paying for their ticket was clear (93% of less frequent compared to 90% of more frequent travellers); and
 - It was clear what the price of their ticket included (87% of less frequent compared to 83% of more frequent travellers).
- Post-implementation, disabled passengers (n=147) were less likely than non-disabled passengers (n=1,355) to state that:
- It was easy to choose the right ticket (92% of non-disabled compared to 86% of disabled);
 - It was easy to find relevant information to inform their purchase (70% of non-disabled compared to 64% of disabled); and

- That the prices for different ticket options were clear (93% of non-disabled compared to 86% of disabled).
- While the share of disabled passengers who found it easy to find relevant information was higher post-implementation compared to prior (up from 57% in Wave 1), the share of disabled passengers who felt the prices for different ticket options were clear had and found it easier to choose the right ticket decreased (down from 89% and 90% respectively in Wave 1).

4.7.2 Full results of the sub-group analysis for SLP passengers are provided in Appendix E1.

5. PRIMARY RESEARCH FINDINGS – SIMPLER FARES

Chapter Summary

The aim of the primary research was to understand the extent to which some of the anticipated short and medium term outcomes of Simpler Fares (as identified in the Theory of Change) was achieved. More specifically, the survey sought to understand whether there were any changes 12 months after implementation of Simpler Fares across the LNER network (compared to a baseline period of surveying in 2023, prior to its introduction across the LNER network) in the following:

- Perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types;
- Passengers' overall satisfaction; and
- Changes in trip patterns and demand.

Unless stated otherwise, all results reported in this chapter relate to the responses provided by passengers travelling on one of the Simpler Fares flows outlined in Table 1 of Chapter 3.1.

Changes in passenger satisfaction and perceptions of Simpler Fares

Around one third of passengers on Simpler Fares flows rated the new Simpler Fares system as fair (32%), which was lower than both the former ticketing system (37%) and SLP (53%), and around twice as many rated it as unfair than rated it as fair. However perceived fairness of Simpler Fares had increased compared to pre-implementation, when 27% rated the scheme as fair.

Presenting passengers on Simpler Fares flows with a set of assurances regarding Simpler Fares pricing did not make any difference to perceptions of fairness for around two in five passengers post-implementation (45%). Of the remainder, more felt that Simpler Fares were fairer following this information (19%) than thought it was less fair (12%); with a quarter (24%) being unsure.

Looking at overall satisfaction with LNER services, the **share of passengers who rated their current journey experience as 8+ out of 10 was significantly higher post-implementation (70%)** than prior to implementation (64%).

Comparing passenger satisfaction post-implementation to prior to implementation, there were **statistically significant increases in the share of Simpler Fares passengers who agreed** with the following statements:

- The **range of different ticket options was appropriate** (61% post vs 55% pre);
- The difference between the various ticket types was **clear and easy to understand** (63% post vs. 55% pre);
- It was **easy to choose the ticket you needed** for the leg of the journey you were undertaking (86% post vs. 83% pre);
- I **understood the restrictions** that applied to the different ticket types (70% post vs. 60% pre);

- It was **clear how much flexibility in travel times** was available with the ticket purchased (75% post vs. 62% pre);
- It was **easy to buy** the ticket I wanted (82% post vs. 79% pre);
- It was **easy to find the necessary information** and options about tickets to make informed decisions (67% post vs. 57% pre); and
- It was **clear what the price of my ticket included** (83% post vs. 78% pre).

However, there were non-statistically significant changes post, compared to prior to implementation, in the share of passengers who:

- Were satisfied their ticket offered good value for money (58% post vs. 57% pre);
- Were confident they purchased the best value for money ticket at time of booking (67% post vs. 67% pre);
- Were confident they purchased the most appropriate ticket to travel at the time they wanted for this leg at the time of booking (85% post vs. 82% pre);
- Agreed they bought the most appropriate ticket (82% post vs. 77% pre); and
- Agreed the price they were paying for the ticket was clear (88% post vs. 87% pre).

There were no decreases in the share of passengers who agreed with the above statements post, compared to prior to implementation.

Changes in trip patterns and demand following implementation of Simpler Fares

Just under half of passengers (46% on outbound journey legs and 44% on return legs of a journey) **travelling with Advance tickets post-implementation stated they were willing to pay more for the flexibility to travel on other trains up to 70 minutes before or after their planned departure time** (albeit they had chosen to travel with an Advance ticket even though this option was available to them). There was minimal change in this figure prior to and post-implementation for outward legs; but a decrease post-implementation for return legs. Of those willing to pay, the average value was an additional 11-12% of their ticket price, with this figure being consistent throughout all survey waves.

The share of Simpler Fares passengers stating that they travelled by rail at least once a month or more was significantly lower post-implementation (54%), compared to prior to implementation (61%).

If Simpler Fares was introduced across the whole UK rail network, one third of passengers (37%) stated there would be no change to their frequency of rail travel. One in five (19%) stated they would travel by rail more often, while one third (36%) said they would travel less often by rail.

After being presented with passenger assurances on Simpler Fares, three in five passengers (59%) stated there would be no change to their frequency of rail travel. However, while 17% stated they would travel by rail more often after seeing the assurances, only 11% said they would travel less often by rail.

Half of Simpler Fares passengers (50%) did not differ in their 'uninformed' and 'informed' position, while one in eleven felt more uncertain after seeing the assurances.

Over two in five passengers reported lots of seats being available on their train post-implementation (43%), a significant increase from the interim stage (35%) and prior (30%) to implementation. This is based on passenger perception only.

The most common journey purposes for Simpler Fares passengers remained consistent for all survey waves, with visiting friends or family, company business, and a holiday of three nights or more remaining the most commonly cited reasons for travel.

The **proportion of passengers who considered travelling by another mode instead of rail for their current journey significantly decreased** post-implementation (45%), compared to prior (50%) to implementation.

5.1 Chapter Overview

5.1.1 The primary aims of Simpler Fares are to:

- (Alongside SLP) Improve passenger perceptions of rail by simplifying the range of tickets (and their associated conditions) on offer to passengers to make them easier to understand, and offering greater flexibility to travel using different combinations of tickets;
- Smooth out train loadings by incentivising travel outside of the busiest periods, which often don't mirror the existing Peak and Off-Peak periods;
- Drive increases in rail demand, yields and revenues;
- Support economic vitality, and maintain and improve community connectivity; and
- Through modal shift from road travel, deliver traffic flow and wider environment benefits.

5.1.2 The primary research explored the extent to which some of the anticipated short and medium term outcomes of Simpler Fares have been achieved. The survey sought to understand whether there were any changes 12 months after implementation of Simpler Fares across the LNER network (compared to pre-implementation) for:

- Perceptions of simplicity of the fare structure, flexibility of different ticket types, and benefits and disbenefits of different ticket types;
- Passengers' overall satisfaction; and
- Changes in trip patterns and demand.

5.1.3 In Wave 4 (approximately 12 months after the implementation of Simpler Fares), 911 responses were received from passengers travelling on flows where Simpler Fares has been introduced¹⁶. Although this was lower than the 1,382 valid responses (after data cleaning) achieved in Wave 3 (approximately 5 months after the implementation of Simpler Fares) and 1,459 responses achieved in Wave 1 (prior to the introduction of Simpler Fares):

- The proportion of passengers across each flow was very similar in Wave 4 to Wave 1;
- Over 400 responses were achieved for the London-Edinburgh flow; and

¹⁶ While this chapter reports on Simpler Fares passengers views, some questions were asked to both SLP and Simpler Fares passengers. Where Simpler Fares questions were presented to SLP passengers, this is noted in the relevant paragraphs.

- While the London-Newcastle flow has less than the originally desired 400 responses for Wave 4, broad comparisons between the sample demographics compared to Wave 3 indicated that overall, the profiles of the samples were broadly similar.

5.1.4 Full details of the sample profile and demographic characteristics of Simpler Fares passengers across each survey (Wave 1, 3 and 4) are provided in Appendix D2.

5.1.5 This chapter provides the findings from this data set. Where questions were not asked to the full sample of respondents, this is indicated by the base size accompanying the relevant chart or table in this chapter. In addition:

- Analysis has been run to identify whether statistically significant differences are present in the attitudes and behaviours of respondents between survey Waves 1, 3 and 4.
- The results between groups for Waves 3 and 4 specifically are included in full in Appendix E2; though consistent trends in sub-group analyses are identified in the summary at the end of this chapter.

5.2 Awareness of Simpler Fares trial and attitudes towards its characteristics

5.2.1 To gauge awareness of Simpler Fares in Waves 3 and 4, all respondents were asked to what extent they were aware that Simpler Fares is in operation on their journey. Passengers were provided with a definition of Simpler Fares, as follows:

Since January 2024, London North Eastern Railway has been pricing fares based on demand as part of its 'Simpler Fares' trial, and has simplified the ticketing structure so that passengers can now choose from the following single tickets in both Standard and First Class:

- *Advance (Fixed) – the best value fare, booked in advance for a fixed journey with a guaranteed reserved seat for travel with LNER.*
- *'70min Flex' (Semi-Flexible) – a new type of ticket offering customers the flexibility to travel on other LNER services, which can be 70 minutes before or after their original booked journey.*
- *Anytime (Fully-Flexible) – this ticket can be used at any time of day.*

5.2.2 Overall, awareness of Simpler Fares being in operation was generally low amongst passengers. Level of awareness of Simpler Fares was measured at the interim and final evaluation stages (not at baseline). The results indicate that the level of awareness was similar between passengers on SLP flows and passengers on Simpler Fares flows, suggesting that travelling on Simpler Fares flows does not necessarily make passengers more aware of its implementation. It should be noted that LNER did not strongly advertise Simpler Fares during this period.

- In Wave 4, 16% of Simpler Fares passengers were fully aware of the introduction of the product. This was an increase from 13% of Simpler Fares passengers and 12% of SLP passengers in Wave 3.
- In Wave 4, 30% of Simpler Fares passengers had some level of awareness of the product. This was the same proportion as Wave 3 (30% of Simpler Fares passengers and 29% of SLP passengers); and

- In Wave 4, 54% of Simpler Fares passengers were not aware of it at all. This was a slight decrease from 57% of Simpler Fares passengers and 59% of SLP passengers in Wave 3.

5.2.3 To understand perceptions of the fairness of Simpler Fares among respondents, the survey inquired about their views on:

- The former ticketing system (a small price difference between most Single and Return tickets);
- The SLP system (where pricing of single tickets is set at just over 50% of the former return tickets); and
- The Simpler Fares system (where ticket prices are based on demand).

5.2.4 Table 14 shows that for all survey waves, respondents were more likely to rate the SLP ticketing system as fair than the former system or the Simpler Fares system. However, the proportion of respondents who rated each system as fair varied across survey waves, with Wave 4 seeing the greater proportions of respondents rating each system as ‘fair’:

- The SLP system was rated fair by a significantly greater proportion of respondents in Wave 4 (53%) compared to Waves 3 and 1 (49% in each);
- The former system was rated fair by a significantly greater proportion of respondents in Wave 4 (37%) compared to Wave 3 (32%) and Wave 1 (29%); and
- The Simpler Fares ticketing system had the smallest proportion of respondents rating it as fair, with 32% rating it as fair in Wave 4, 24% in Wave 3, and 27% in Wave 1. The share of passengers who felt Simpler Fares were fair increased significantly in Wave 4 compared to Wave 3.

Table 14. Simpler Fares passengers fairness perception of former system, SLP and Simpler Fares

FORMER TICKETING SYSTEM	WAVE 1	WAVE 3	WAVE 4
Former small price difference between most Single and Return tickets			
Very fair or fair	29%	32%	37%
Neither fair nor unfair	31%	31%	29%
Unfair or very unfair	27%	28%	25%
I don't know	13%	9%	9%
Total	100%	100%	100%
Base	1,459	1,382	911

NEW SLP TICKETING SYSTEM	WAVE 1	WAVE 3	WAVE 4
Single tickets at just over 50% of the price of the former Return tickets			
Very fair or fair	49%	49%	53%
Neither fair nor unfair	21%	22%	21%
Unfair or very unfair	22%	22%	20%
I don't know	8%	6%	6%
Total	100%	100%	100%
Base	1,459	1,382	911

SIMPLER FARES TICKETING SYSTEM	WAVE 1	WAVE 3	WAVE 4
Ticket pricing based on how busy the trains are			
Very fair or fair	27%	24%	32%
Neither fair nor unfair	20%	18%	16%
Unfair or very unfair	48%	54%	47%
I don't know	5%	4%	5%

SIMPLER FARES TICKETING SYSTEM	WAVE 1	WAVE 3	WAVE 4
Total	100%	100%	100%
Base	1,459	1,382	911

5.2.5 Wave 4 and Wave 3 respondents were then provided with details of the Passenger Assurances which apply per rail period under the Simpler Fares system, to understand whether this additional information changed their views. The following context was provided.

As part of the 'Simpler Fares' trial, LNER are applying the following principles, which DfT will keep under review as the trial progresses.

- *The maximum price you will pay will not exceed the cost of an Anytime ticket;*
- *Advance tickets will be priced so that:*
 - *At least two-thirds of Advance tickets will cost 50% or less than Anytime tickets; and*
 - *A maximum of 10% of Advance tickets are sold at 80% or more of the Anytime price.*

5.2.6 For around two in five passengers, this information did not make any difference to their perceptions of fairness regarding Simpler Fares, with similar results for passengers on SLP flows (44% in Wave 3) and Simpler Fares flows (45% in Wave 4; 41% in Wave 3)¹⁷. Just under one in five respondents felt Simpler Fares was fairer following this information; although one in eight perceived Simpler Fares as less fair following these assurances. Overall, around a quarter of respondents were undecided.

Table 15. Does this information [on passenger assurances] change your views on the fairness of train ticket pricing based on how busy the trains are, or not? (Simpler Fares and SLP passengers)

STATEMENT	SLP WAVE 3	SF WAVE 3	SF WAVE 4
No, it does not change my views	44%	41%	45%
Yes, I now think it's fairer to price train tickets based on how busy the trains are	18%	19%	19%
Yes, I now think it's less fair to price train tickets based on how busy the trains are	13%	13%	12%
I don't know	24%	27%	24%
Total	100%	100%	100%
Base	1,555	1,382	911

5.2.7 For passengers on Simpler Fares flows in Wave 4:

- Of those who felt Simpler Fares were fair prior to seeing the assurances (n=291), 52% did not change their views after these were presented. Three in ten (30%) felt Simpler Fares were fairer after the assurances, while 4% felt they were less fair.
- Of those who were neutral towards Simpler Fares prior to seeing the assurances (n=148), 43% did not change their views after these presented. One in five (22%) felt Simpler Fares were fairer after the assurances, while 5% felt they were less fair.

¹⁷ Wave 4 includes results for Simpler Fares passengers only, as Wave 4 fieldwork was conducted only on flows with Simpler Fares in operation.

- Of those who felt Simpler Fares were unfair prior to seeing the assurances (n=427), 44% did not change their views after these were presented. Around one in eight (13%) felt Simpler Fares were fairer after the assurances, while 21% felt they were less fair.
- Of those who felt undecided on their perception of fairness of Simpler Fares prior to receiving the assurances (n=45), the majority remained undecided or unchanged after the assurances (91%).

5.3 Impact of Simpler Fares on travel behaviour

5.3.1 In Waves 3 and 4, respondents travelling on Simpler Fares flows were asked about the likelihood of them travelling by rail in the future if SLP and Simpler Fares were introduced across the whole UK rail network. This was prior to further information about passenger assurances on Simpler Fares being presented. These findings are presented in Table 16 and show that:

- In Wave 4, 42% of Simpler Fares passengers felt they would be likely to travel more often by rail if SLP was introduced across the whole UK, a statistically significant decrease from Wave 3 (51%) and Wave 1 (47%).
- In Wave 4, 37% of Simpler Fares passengers stated there would be no impact on their travel behaviour if Simpler Fares was introduced across the whole UK rail network, a statistically significant increase from Wave 3 (31%).
- In Wave 4, 35% of Simpler Fares passengers suggested they would be likely to travel less often by rail if Simpler Fares was introduced across the whole UK rail network, a statistically significant decrease from Wave 3 (42%).

Table 16. Impact on travel by rail in the future if SLP or Simpler Fares was introduced across the UK rail network (passengers on Simpler Fares flows)

IMPACT ON TRAVEL BY RAIL	IF SLP WAS INTRODUCED ACROSS THE UK			IF SIMPLER FARES WAS INTRODUCED ACROSS THE UK		
	WAVE 1	WAVE 3	WAVE 4	WAVE 1	WAVE 3	WAVE 4
Very likely to travel more often by rail	19%	19%	15%	6%	6%	5%
Fairly likely to travel more often by rail	29%	32%	26%	16%	14%	14%
It wouldn't impact my rail travel behaviour	42%	41%	50%	34%	31%	37%
Fairly likely to travel less often by rail	1%	2%	1%	21%	23%	20%
Very likely to travel less often by rail	1%	1%	0%	15%	20%	16%
I don't know	7%	6%	7%	7%	8%	9%
Total	100%	100%	100%	100%	100%	100%
Base	1,459	1,382	911	1,459	1,382	911

5.3.2 For Simpler Fares passengers, there were also some notable differences in the likelihood of travel by rail in the future if SLP or Simpler Fares were introduced across the UK rail network for passengers with different ticket types. However, due to the lower base sizes for Fully Flexible (Anytime Single) and Semi-flexible ticket holders (less than 50 passengers each), these differences were not statistically significant.

If SLP was introduced across the UK:

- In Wave 4, over two in five passengers travelling on their outward journey with Fixed (Advance Single) or Anytime tickets were more likely to travel by rail in the future (45% and 44% respectively), compared to a third of passengers using Semi-Flexible tickets (33%).
- In Wave 4, around two in five passengers travelling on their return journey with Fixed (Advance Single) or Anytime tickets were more likely to travel by rail (43% and 39% respectively), compared to a third of passengers using Semi-Flexible tickets (33%).

If Simpler Fares was introduced across the UK:

- In Wave 4, over one in five passengers travelling on their outward journey with Fixed tickets (Advance Single), and one in four of those travelling with Anytime tickets were more likely to travel by rail (21% and 25% respectively), compared to 13% of passengers using Semi-Flexible tickets.
- In Wave 4, around one in five passengers travelling on their outward journey with Fixed (Advance Single) or Anytime tickets were more likely to travel by rail (22% and 19% respectively), compared to 9% of passengers using Semi-Flexible tickets.

- 5.3.3 Following the presentation of the assurances (described at 5.2.5) to all Wave 4 (Simpler Fares passengers only) and Wave 3 (SLP and Simpler Fares) passengers, they were asked again if ticket pricing based on how busy trains are had any impact on their likelihood of travelling by rail in the future¹⁸. The main changes in sentiment between the ‘initial’ views and the ‘informed’ views of passengers, following presentation of the Simpler Fares assurances, are summarised in Tables 17 and 18, with results presented for passengers on SLP flows and Simpler Fares flows separately.
- 5.3.4 After seeing the assurances, over half of passengers on SLP flows in Wave 3 stated that ticket pricing based on how busy trains are would not impact their rail travel behaviour (55%), significantly higher than before seeing the assurances (34%). This increase in passengers stating the policy would have no impact was due to a reduction in passengers stating the proposals would be likely to decrease their rail travel. These results imply that explaining the assurances to passengers could move them from a position of being less likely to travel by train, to a more neutral position.
- 5.3.5 After seeing the assurances, three in five passengers travelling on Simpler Fares flows in Wave 4 stated that ticket pricing based on how busy trains are would not impact their rail travel behaviour (59%), a statistically significant increase from the 37% of Wave 4 passengers who felt this way prior to seeing the assurances, and also a statistically significant increase compared to the 53% who felt this way in Wave 3 after seeing the assurances. Again, the results indicated that explaining the assurances to passengers could move them from being less likely to travel by train, to a more neutral position.

¹⁸ This question was not asked in Wave 1.

Table 17. Likelihood of travelling by rail in the future (initial vs. informed view) – Passengers on SLP flows

STATEMENT	WAVE 3 INITIAL VIEW	WAVE 3 INFORMED VIEW	% DIFFERENCE
Very likely to travel more often by rail	7%	5%	-2%
Fairly likely to travel more often by rail	13%	13%	-
It wouldn't impact my rail travel behaviour	34%	55%	+21%
Fairly likely to travel less often by rail	21%	8%	-13%
Very likely to travel less often by rail	17%	4%	-13%
I don't know	8%	15%	+7%
Total	100%	100%	-
Base	1,555	1,555	-

Table 18. Likelihood of travelling by rail in the future (initial vs. informed view – Passengers on Simpler Fares flows

STATEMENT	WAVE 3		WAVE 4		INFORMED % DIFFERENCE
	INITIAL	INFORMED	INITIAL	INFORMED	
Very likely to travel more often by rail	6%	3%	5%	3%	-
Fairly likely to travel more often by rail	14%	14%	14%	14%	-
It wouldn't impact my rail travel behaviour	31%	53%	37%	59%	+6%
Fairly likely to travel less often by rail	23%	11%	20%	7%	-4%
Very likely to travel less often by rail	20%	4%	16%	4%	-
I don't know	8%	15%	9%	14%	-1%
Total	100%	100%	100%	100%	-
Base	1,382	1,382	911	911	-

5.3.6 For half of Wave 4 Simpler Fares passengers (52%), there was no change in their anticipated likelihood of travel between their initial response and their response once informed of the assurances. However, nearly three in ten (28%) transitioned to a view in which they were more likely to travel often by rail; compared to 11% who transitioned to a view where they were less likely. For 9% of passengers, the assurances moved them towards uncertainty.

5.4 Passengers' ticket purchasing behaviour for current trips

5.4.1 The extent to which Simpler Fares influences when passengers book their ticket was explored, with the results indicating that the amount of time which respondents purchased their ticket ahead of travel was consistent across survey waves.

- Around one third of passengers purchased their ticket up to one week before, or on the day of travel (33%, 33% and 32% for Waves 4, 3 and 1 respectively).
- A third purchased their ticket between more than one week and up to a month before travel (35%, 36% and 34% for Waves 4, 3 and 1 respectively).
- One in five purchased their ticket between more than one month and up to two months before travel (20%, 20% and 21% for Waves 4, 3 and 1 respectively).
- Around one in ten purchased their ticket more than two months before travel (10%, 11% and 11% for Waves 4, 3 and 1 respectively).

- 5.4.2 In both Wave 4 and Wave 3, over four in five passengers making a round-trip by rail bought their return leg ticket at the same time as they purchased their ticket for the outward leg (82% and 84% respectively). In Wave 4, 7% of passengers making a round-trip by rail had not purchased their return journey yet, compared to 3% in Wave 3.
- 5.4.3 The proportion of passengers purchasing their ticket through an LNER channel was explored, to understand the propensity of passengers to use different purchase channels. In Wave 4, 44% of passengers purchased their ticket through an LNER channel, compared to 56% through non-LNER channels. This was a notable, but not statistically significant increase in the share of Simpler Fares passengers purchasing through LNER compared to Wave 3 (40%) and Wave 1 (39%).

5.5 Passenger satisfaction, perceptions and willingness to pay

- 5.5.1 Respondents who purchased a Fixed (Advance) ticket for either their outward or return leg were asked how much more, if anything, they would have been prepared to pay for a ticket that allowed them the flexibility to travel on other trains up to 70 minutes before or after their planned departure time (albeit they had chosen to travel with an Advance ticket even though this option was available to them). Table 19 shows the results for both outward and return legs across the survey waves.
- 5.5.2 Across both outward and return legs, survey respondents across all waves were split fairly evenly between being willing to pay more and being unwilling to pay more. There was a slightly higher share willing to pay more in Wave 3 than in Waves 1 and 4 for outward journey legs (49% compared to 45% and 46% respectively), whilst for the return leg there was a notably lower share willing to pay more in Wave 4 (44%). compared to the previous two waves (49% each).
- 5.5.3 Respondents with Advance tickets were willing to pay on average 11%-12% more than their original tickets for this flexibility, across all waves, and for both outward and return journeys. In Wave 4, for passengers travelling between London and Edinburgh specifically, this mean willingness to pay percentage was between 10% to 11%; while for those travelling between London and Newcastle, this figure was between 12% to 13%.

Table 19. Simpler Fares passengers' average additional willingness to pay (WTP) for Advance → Semi-flexible ticket

JOURNEY LEG	AVERAGE PRICE PAID	% WILLING TO PAY MORE	AVERAGE AMOUNT WILLING TO PAY	% OF ORIGINAL PRICE	BASE
Outward leg					
Wave 1 – All	£82.14	45%	£9.22	11%	674
Wave 3 – All	£81.63	49%	£9.49	12%	851
Wave 4 – All	£80.61	46%	£9.47	12%	562
Return leg					
Wave 1 – All	£79.44	49%	£8.94	11%	474
Wave 3 – All	£77.14	49%	£8.83	11%	633
Wave 4 – All	£79.59	44%	£8.60	11%	395

Base: includes those who a) purchased an Advance ticket for the leg of the journey they are being asked about; and b) provided a ticket price for the leg of the journey they are being asked about.

5.5.4 Wave 4 and Wave 3 respondents who purchased a semi-flexible ticket for their outward and/or return legs were asked about how they used this ticket¹⁹. As shown in Table 20, a greater share of respondents travelled on the train they booked for their outward journey in Wave 4 (58%) compared to Wave 3 (47%). Conversely for the return legs of journeys, a smaller share of respondents in Wave 4 travelled on the train they booked (38%) compared to Wave 3 (45%).

Table 20. Simpler Fares passengers use of semi-flexible tickets

OUTWARD LEG			RETURN LEG		
Category	WAVE 3	WAVE 4	Category	WAVE 3	WAVE 4
Travelled on the train you booked	47%	58%	Travelled on the train you booked	45%	38%
Used the 70-minute flexibility to get a train before the train you booked	26%	28%	Used the 70-minute flexibility to get a train before the train you booked	18%	22%
Used the 70-minute flexibility to get a train after the train you booked	8%	13%	Used the 70-minute flexibility to get a train after the train you booked	5%	7%
Don't know	19%	3%	Don't know	31%	33%
Total	100%	100%	Total	100%	100%
Base	73	40	Base	77	45

5.5.5 Figure 4 shows that the most reported reasons for choosing a semi-flexible ticket were the additional flexibility it provided, compared to an Advance/fixed ticket (77% in Wave 4 and 60% in Wave 3), and not requiring the complete flexibility offered by an Anytime ticket (23% in Wave 4 and Wave 3).

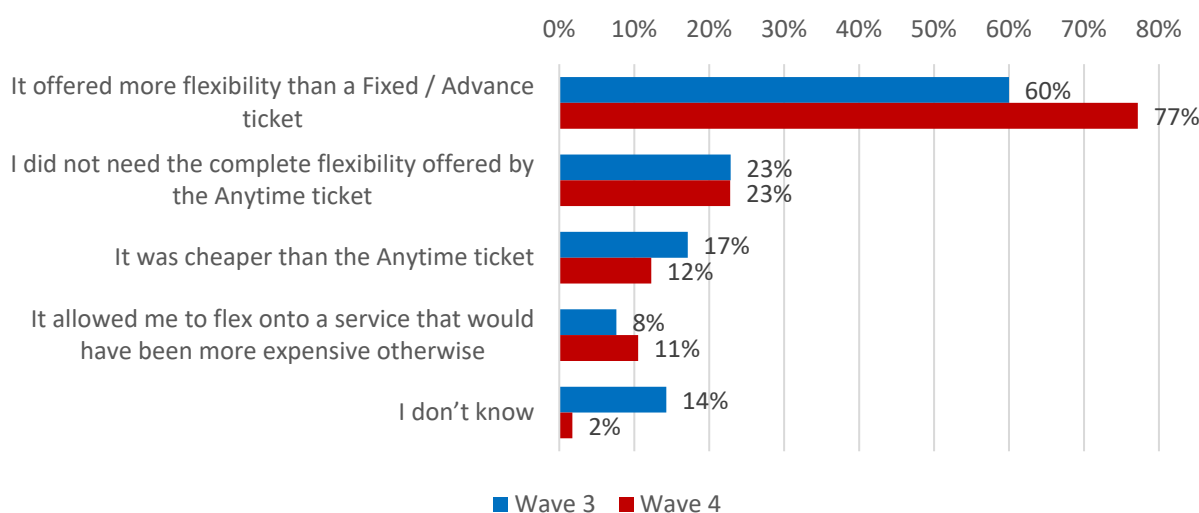


Figure 4. Simpler Fares passengers reasons for choosing a semi-flexible ticket (multi code)

Base: Wave 4 = 57; Wave 3 = 105 (only those who purchased a semi-flexible ticket for at least one of their outward or return legs).

¹⁹ This question was not asked in Wave 1 as the semi-flexible ticket type was not available to purchase at baseline. The semi-flexible ticket was introduced as part of the new Simpler Fares structure.

- 5.5.6 Over half of Wave 4 respondents travelling on Simpler Fares flows were very or fairly satisfied that the ticket for their current train journey represented good value for money (58%), very similar to those in Wave 3 and Wave 1 (56% and 57% respectively). In Wave 4, just over one in five passengers were dissatisfied with the value for money of their ticket (22%), similar to Wave 1 (23%), but significantly less than Wave 3 (26%).
- 5.5.7 More than four in five respondents found it easy to choose the ticket they needed for the leg of their journey they were undertaking (86%, 85% and 83% for Waves 4, 3 and 1 respectively). There were no statistically significant differences in this sentiment between different passenger demographics in Wave 4.
- 5.5.8 However, Wave 3 passengers with a long-term illness or disability were less likely to find it easy to choose (86%), compared to passengers without an illness or disability (92%); and males were less likely to find it easy to choose (87%) than females (94%). In Wave 4, the percentage of passengers who agreed it was easy to choose the ticket they needed was similar to Wave 3 for these gender and disability status segments; albeit the differences between the segments was no longer statistically significant.
- 5.5.9 Table 21 shows that the majority of Wave 4 passengers travelling on Simpler Fares flows felt very or fairly confident they purchased the best value for money ticket at the time of booking (67%), and the most appropriate ticket to travel at the time they wanted (85%). This level of confidence very closely aligned with the results from Wave 3 passengers on Simpler Fares flows (68% and 84% respectively) and Wave 1 (67% and 82% respectively). There were no statistically significant differences in the level of agreement with these statements between Simpler Fares passengers with different types of tickets.

Table 21. Simpler Fares passengers' attitudes towards fairness of tickets purchased

STATEMENT	WAVE	VERY/FAIRLY CONFIDENT	NEUTRAL	FAIRLY/VERY UNCONFIDENT	I DON'T KNOW
I purchased the best value for money ticket at time of booking	Wave 1	67%	18%	9%	6%
	Wave 3	68%	17%	9%	5%
	Wave 4	67%	20%	8%	5%
I purchased the most appropriate ticket to travel at the time I wanted to for this leg	Wave 1	82%	10%	4%	4%
	Wave 3	84%	9%	4%	3%
	Wave 4	85%	9%	3%	4%

Base: W1=1,459; W3=1,382; W4=911

- 5.5.10 Table 22 shows respondents' opinions regarding the range of ticket options available for their current journey. It explores how they perceive the availability of ticket types, their respective restrictions, and whether it is easy to understand them. Additionally, the table shows their opinions on how transparent the ticket options are in offering flexibility in travel times. The results show that each of the features were perceived more positively in Wave 4 than in Wave 3 and Wave 1. This trend over time suggests that passenger views may take time to change, given that significant increases were not noted until the final evaluation stage.
- Three in five passengers strongly agreed or agreed that the range of different ticket options available for their journey was appropriate in Wave 4 (61%), a statistically significant increase compared to the proportion in Wave 3 and Wave 1 (55% each).

- Over three in five Wave 4 passengers strongly agreed or agreed that the difference between the various ticket types was clear and easy to understand (63%). This was a statistically significant increase from Wave 3 (59%) and Wave 1 (55%).
- Seven in ten Wave 4 passengers strongly agreed or agreed that they understood the restrictions that applied to the different ticket types (70%). This was higher than the proportion in Wave 3 (66%), and a statistically significant increase from Wave 1 (60%).
- Three quarters of Wave 4 respondents strongly agreed or agreed that it was clear how much flexibility in travel times was available with the ticket they purchased (75%). This was a statistically significant increase compared to Wave 3 (69%) and Wave 1 (62%).

Table 22. Simpler Fares passengers' attitudes towards a range of available ticket options

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
The range of different ticket options available for my journey was appropriate	Wave 1	55%	27%	12%	7%
	Wave 3	55%	25%	14%	6%
	Wave 4	61%	22%	10%	7%
The difference between various ticket types was clear and easy to understand	Wave 1	55%	21%	18%	5%
	Wave 3	59%	19%	16%	5%
	Wave 4	63%	19%	11%	6%
I understood the restrictions that applied to the different ticket types	Wave 1	60%	17%	18%	4%
	Wave 3	66%	16%	14%	5%
	Wave 4	70%	15%	10%	5%
It was clear how much flexibility in travel times was available with the ticket I purchased	Wave 1	62%	16%	18%	4%
	Wave 3	69%	15%	12%	4%
	Wave 4	75%	13%	8%	4%

Base: W1=1,459; W3=1,382; W4=911

5.5.11 Table 23 shows how the experience of purchasing a ticket was perceived. Overall, the results indicate that each of these three features was perceived more positively in Wave 4 and Wave 3 compared to Wave 1, and as positively or more positively in Wave 4 compared to Wave 3. Again, this highlights that it may take time for passenger views to change, with time needed to become accustomed to the new system, or for the new system to mature.

- Three quarters of Wave 4 passengers agreed it was easy to buy the ticket they wanted (76%). This was a higher proportion than in Wave 3 (74%), and a statistically significant increase from the proportion in Wave 1 (69%);
- Two thirds of Wave 4 passengers strongly agreed or agreed it was easy to find the necessary information and options about tickets to make informed decisions (67%), significantly higher than the figure in both Wave 3 and Wave 1 (63% and 57% respectively).
- A large majority of Wave 4 respondents agreed it was easy to buy the ticket they wanted (82%), the same proportions as was noted in Wave 3 and a slight increase from the proportion in Wave 1 (79%).

Table 23. Simpler Fares passengers' attitudes towards simplicity of purchasing a ticket

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
It was easy to identify <i>the right ticket</i> for my journey	Wave 1	69%	17%	10%	4%
	Wave 3	74%	15%	8%	4%
	Wave 4	76%	15%	5%	4%
It was easy to find necessary <i>information and options</i> about tickets to make an informed decision	Wave 1	57%	23%	14%	5%
	Wave 3	63%	19%	13%	5%
	Wave 4	67%	19%	9%	5%
It was <i>easy</i> to buy the ticket I wanted	Wave 1	79%	12%	5%	4%
	Wave 3	82%	10%	4%	4%
	Wave 4	82%	10%	3%	5%

Base: W1=1,459; W3=1,382; W4=911

5.5.12 Table 24 demonstrates how appropriate respondents considered the ticket they bought was for their journey, and how clear the price of it was. Over four in five Wave 4 respondents believed they had bought the most appropriate ticket for their journey (82%), that the price they were paying for the ticket was clear (88%) and that it was clear what the price of the ticket included (83%); higher than the figures seen in both Wave 3 and Wave 1. The share of respondents who agreed it was clear what the price of the ticket included was significantly greater in Wave 4 than Wave 1 (78%).

Table 24. Simpler Fares passengers' attitudes towards available information on a ticket

STATEMENT	WAVE	STRONGLY AGREE / AGREE	NEUTRAL	DISAGREE / STRONGLY DISAGREE	I DON'T KNOW
I believe <i>I bought the most appropriate ticket</i> for my journey	Wave 1	77%	14%	3%	5%
	Wave 3	80%	12%	4%	4%
	Wave 4	82%	11%	3%	4%
The price I was paying for the ticket was clear	Wave 1	87%	6%	3%	4%
	Wave 3	87%	7%	2%	4%
	Wave 4	88%	5%	2%	5%
It was clear what the price of my ticket included	Wave 1	78%	11%	7%	4%
	Wave 3	80%	11%	5%	4%
	Wave 4	83%	10%	3%	4%

Base: W1=1,459; W3=1,382; W4=911

5.5.13 Respondents were asked about seat reservation and availability for their current journey. The results indicate that most passengers reserved their seat, while availability of seating seemed to be improving following the introduction of Simpler Fares.

- The vast majority of Wave 4 respondents reserved the seat for their current journey (97%), a similar proportion to Wave 3 (96%), and statistically significantly higher proportion than Wave 1 (93%).
- Over two in five Wave 4 passengers reported lots of seats available on their train (43%), a statistically significant increase from Wave 3 (35%) and Wave 1 (30%).
- A third of Wave 4 passengers stated some seats were available (34%), similar to Wave 3 (34%) and Wave 1 (33%).
- Less than one in five Wave 4 passengers said there were a few seats available (17%), less than in Wave 3 (21%) and significantly less than in Wave 1 (24%).

- Only 3% of Wave 4 passengers noted no seats being available, or people standing on the train. This was significantly lower than both Wave 3 (7%) and Wave 1 (11%).

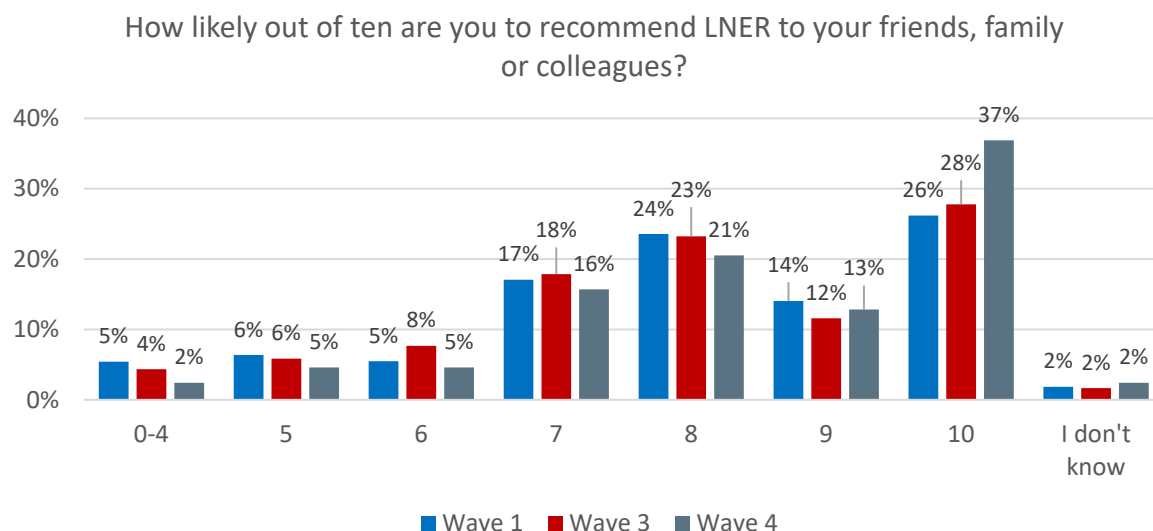
5.5.14 Respondents were asked to rank the importance of nine factors (from 1 to 9, where 1 was the most important and 9 was the least important) when considering their choice of ticket for their current journey. The average rank scores are presented in Table 25. In summary:

- The average rank scores for each factor were closely aligned across all survey waves;
- Best price / cheapest was consistently the most important factor overall (average rank 2.5, 2.1 and 2.3 in Waves 4, 3 and 1 respectively); and
- Refund Policy and other T&Cs was consistently the least important factor overall (average rank 7.3, 7.4 and 7.4 in Waves 4, 3 and 1 respectively).

Table 25. Simpler Fares passengers ranking of factors for choosing a ticket for the current journey

FACTOR	W1 AVG. RANK	W3 AVG. RANK	W4 AVG. RANK
Best Price/ Cheapest	2.3	2.1	2.5
Ability to have a reserved seat	3.5	3.5	3.3
I wanted to travel at a specific time	4.1	3.9	3.9
Minimal time spent travelling	4.4	4.4	4.2
Ability to find an available seat	5.3	5.3	5.1
Flexibility over the time of travel (including the return journey, if applicable)	5.1	5.2	5.3
Travelling/interchanging via a particular route or station, or avoiding a specific route	6.3	6.5	6.7
Ability to mix and match travel during the peak and Off-Peak periods (for return journeys)	6.6	6.7	6.8
Refund policy and other T&Cs	7.4	7.4	7.3
Base	1,459	1,382	911

5.5.15 Figure 5 shows a high proportion of respondents were positive about recommending LNER services to friends, family or colleagues across all waves. Based on their current trip, at least four in five respondents rated LNER services as seven or higher, on a scale from 0 to 10, where 10 indicates an extremely high likelihood of recommending the service to friends, family, or colleagues. This figure was higher in Wave 4 (86%) than in Wave 3 and Wave 1 (81% each). Over a third of respondents provided a rating of 10 in Wave 4 (37%), a significantly higher proportion than in Wave 3 and Wave 1 (28% and 26% respectively).



Base: W1=1,459; W3=1,382; W4=911

Figure 5. Simpler Fares passengers likelihood of recommending LNER to friends, family or colleagues

5.6 Passengers' travel behaviour

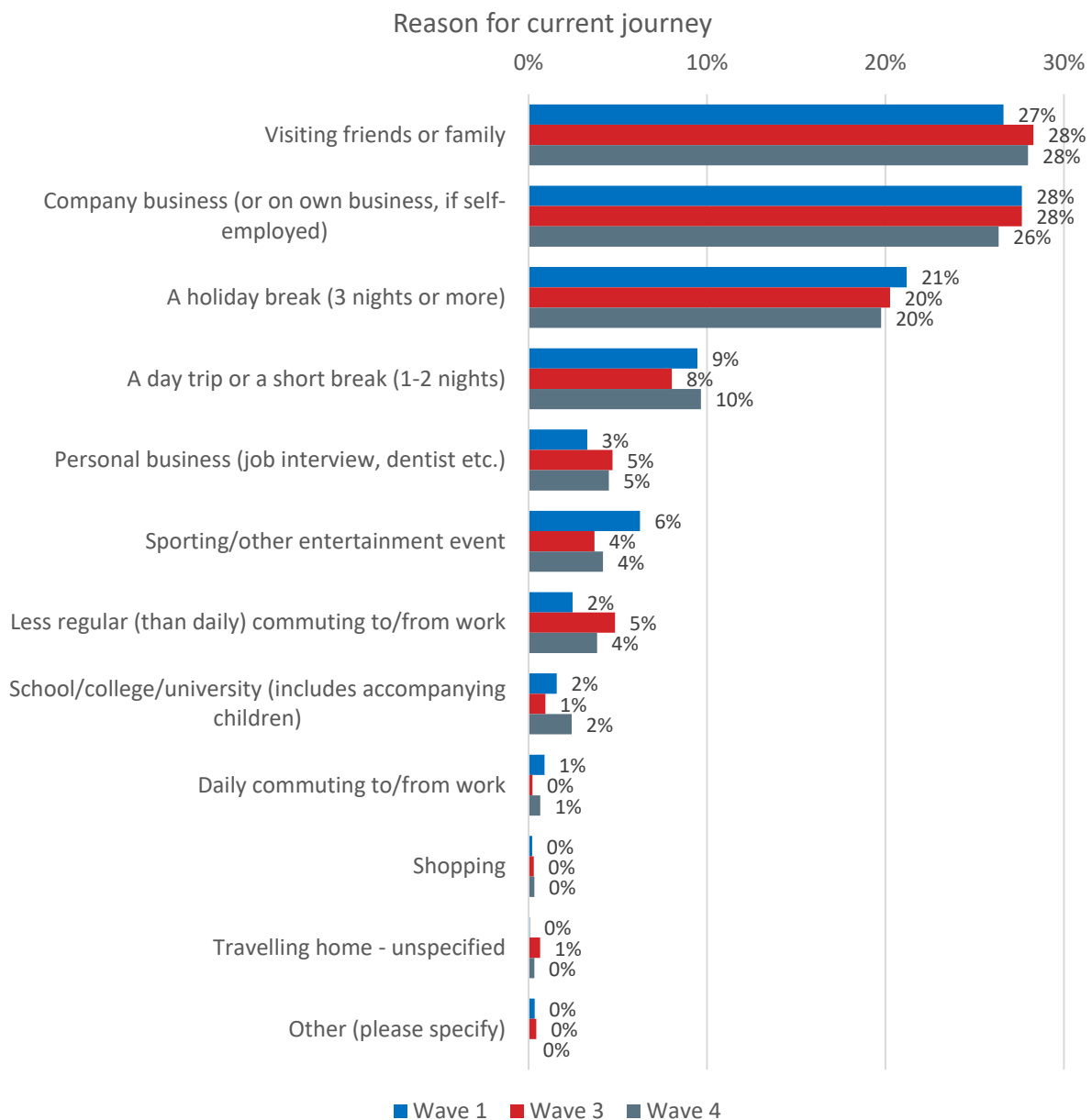
- 5.6.1 The evaluation sought to explore whether Simpler Fares had influenced passenger frequency of travelling by rail, their journey purposes, and consideration of using other modes. These factors were of particular interest given the dynamic nature of the pricing, and the new semi-flexible ticket which permits travel up to 70 minutes before or after a scheduled departure time; both of which provide greater flexibility and a lower cost option compared to an anytime (fixed) ticket purchased on the day of travel.
- 5.6.2 Table 26 shows that the frequency with which respondents said they generally travel by rail was significantly lower in Wave 4 than in Wave 3 and Wave 1. Significantly fewer respondents in Wave 4 said they travel by rail once a month or more (54%), compared to Wave 1 (61%); while the Wave 4 figure was also notably lower than Wave 3 (57%).

Table 26. Simpler Fares passengers self-reported frequency of travelling by rail

FREQUENCY	WAVE 1	WAVE 3	WAVE 4
Four or more times a week	6%	7%	5%
About two or three times a week	10%	9%	7%
About once a week	9%	9%	7%
About two or three times a month	20%	18%	16%
About once a month	17%	15%	19%
Less often than once a month, but at least three times a year	20%	23%	27%
Once or twice a year	9%	9%	10%
Less often than once a year	6%	4%	5%
First time	4%	5%	4%
Don't know	1%	1%	1%
Total	100%	100%	100%
Base	1,459	1,382	911

5.6.3 Figure 6 shows that the most common reasons respondents gave for traveling on their current journey were broadly consistent between the survey waves, and were:

- To visit friends or family (27-28% across the three survey waves);
- For company business purposes (26-28% across the three survey waves); and
- A holiday break lasting 3 nights or more (20-21% across the three survey waves).



Base: W1=1,459; W3=1,382; W4=911

Figure 6. Simpler Fares passengers reasons of travelling for current journey

5.6.4 Over half of Wave 4 passengers made the same trip for the same purpose between once a month and once or twice a year (58%), slightly higher, but not statistically different to the proportions for Wave 3 (54%) and Wave 1 (53%).

- 5.6.5 Just under half of Wave 4 passengers considered travelling by at least one other mode of transport for their current journey (45%), lower than the proportion in Wave 3 (49%) and Wave 1 (50%). Table 27 shows that, amongst those who considered travelling by an alternative mode to train, plane was the mode most likely to be considered as an alternative (80%, 67% and 66% in Waves 4, 3 and 1 respectively).

Table 27. What other mode did you consider travelling by another transport mode for this journey (Simpler Fares passengers)?²⁰

CONSIDERED TRAVELLING BY...	WAVE 1	WAVE 3	WAVE 4
Plane	66%	67%	80%
Car or van	25%	23%	25%
Coach or bus	7%	8%	6%
Taxi	1%	1%	1%
Motorbike	1%	0%	0%
Other (e.g. multiple different modes of travel)	0%	0%	0%
Total	100%	100%	100%
Base	732	684	406

- 5.6.6 The majority of Wave 4 respondents decided themselves what ticket to buy (82%), similar to the proportion in Wave 3 (82%) and Wave 1 (84%). A very similar share of respondents chose what time train to book in Wave 4 (85%) as in Wave 3 and Wave 1 (both 86%)
- 5.6.7 With regards to who people travelled with, the share was the same across all survey waves. Just over half travelled alone (51% for all waves), whilst just under half travelled with other adults (47% in all waves) and between 8-10% of passengers were travelling with children²¹.

5.7 Analysis of results by sub-groups

- 5.7.1 In Wave 4, some types of passengers were significantly more likely to perceive Simpler Fares more positively, across a number of trial characteristics, than others. Passenger groups which were significantly more positive in their sentiments towards Simpler Fares were:

- Passengers travelling with other adults or children, who were more likely than those travelling alone to say:
 - They purchased the best value for money ticket at time of booking (74% with others compared to 67% alone);
 - The range of ticket options was clear and easy to understand (71% with others compared to 63% alone);
 - They understood the restrictions that applied to different ticket types (76% with others compared to 71% alone);
 - It was easy to identify the right ticket for their journey (82% with others compared to 77% alone);
 - It was easy to find the information about ticket options to make an informed decision (75% with others compared to 67% alone);
 - The price they paid for the ticket was fair (59% with others compared to 37% alone); and

²⁰ Base includes only those respondents who considered travelling by an alternative mode to train.

²¹ Percentages sum to over 100% as this question permitted multiple response options.

- The journey represents good value for money (71% with others compared to 50% alone).
- Passengers who tended to travel by rail less frequently (by rail once or twice a year or less), who were more likely than those travelling more frequently to say:
 - The range of different ticket options for their journey was appropriate (76% compared to 64%); and
 - It was easy to find necessary information and options about tickets to make an informed decision (78% compared to 69%).
- Passengers travelling between London and Newcastle were significantly more likely than those travelling between London and Edinburgh to say:
 - The former ticketing system was unfair (34% for London-Newcastle compared to 23% for London-Edinburgh);
 - That the Simpler Fares system was unfair, prior to seeing passenger assurances (56% for London-Newcastle compared to 45% for London-Edinburgh); and
 - They were dissatisfied with the value of the ticket for their current train (29% for London-Newcastle compared to 19% for London-Edinburgh).
- Passengers travelling between London and Edinburgh were significantly more likely than those travelling between London and Newcastle to agree that:
 - The range of different ticket types was appropriate (69% for London-Edinburgh compared to 62% for London-Newcastle);
 - They understood the restrictions which applied to different ticket types (77% for London-Edinburgh compared to 69% for London-Newcastle); and
 - The price they paid for their ticket was fair (52% for London-Edinburgh compared to 39% for London-Newcastle).
- Females, who were more likely than males to state they:
 - Had all the necessary information to feel fully informed on their purchase decision (73% for females compared to 67% for males); and
 - Feel that the differences between ticket types were clear and easy to understand (72% for females compared to 63% for males).
- Passengers with a household income of £28,000 or below, who were more likely than those with incomes above £28,000 to state:
 - They understood the restrictions associated with different ticket types (87% for those ≤£28,000 compared to 71% for those above £28,000); and;
 - They had all the necessary information to feel fully informed about their purchase decision (91% for those ≤£28,000 compared to 75% for those above £28,000) – though the low base size for those with a household income of £28,000 or below (n=46) means these findings should be interpreted with a degree of caution.

5.7.2 Post-implementation, disabled passengers (n=64) were less likely than non-disabled passengers (n=815) to state that they were confident they purchased the most appropriate

ticket to travel at the time they wanted (85% of disabled compared to 89% of non-disabled). However, disabled passengers were more likely to say they:

- Were clear how much flexibility their ticket provided (86% of disabled compared to 78% of non-disabled); and
- Had all the necessary information to feel fully informed on their purchase decision (76% of disabled compared to 70% of non-disabled).

5.7.3 However, the lower base size for disabled passengers means these findings should be interpreted with a degree of caution.

5.7.4 Full results of the sub-group analysis for Simpler Fares passengers are provided in Appendix E2.

6. SECONDARY DATA ANALYSIS FINDINGS – SLP

Chapter Summary

Introduction

The aim of the secondary analysis was to quantify the impact of SLP on revenue and demand for the trial flows, and for a series of control flows which served as a counterfactual for a ‘no SLP’ scenario. The analysis compared periods before the introduction of SLP (P04 2021/22-P08 2022/23) to periods after the introduction of SLP (P04 2023/24-P08 2024/25)²²; and modelled the impacts with and without adjustments for split ticketing.²³

The descriptive analysis identified major trends in journeys, revenue and yield, as well as the share of different ticket types purchased. This analysis provided an initial context to explain what occurred with the data before or after the implementation of SLP and Simple Fares. It helped to highlight patterns, trends and anomalies, and served as foundation for a deeper analysis (i.e., a regression analysis).

Therefore, the descriptive analysis was followed by a regression analysis that quantified the impact of SLP introduction on revenue and demand by using a Difference-in-Difference statistical method; estimating the causal effect of SLP by comparing changes in revenue and demand over time between trials flows and control flows. Further regression analysis was undertaken to explore the sensitivities of the SLP impact, and those were analysed for different rail markets (London and non-London) as well as flows with TOC competition.

Changes in passenger revenues²⁴

The descriptive analysis revealed that revenues increased across the trial flows as a whole (+41% when split ticketing is accounted for; and +35% when this is not accounted for over two rail years: Jul20-Nov21 vs Jul22-Nov23²⁵). However, there were some differences between London and non-London flow groups as described in section 6.3.

The regression analysis showed that the increase in revenue after the introduction of SLP was statistically significant for London trial flows. Where competition from other TOCs was present for London flows, the SLP revenue impact was more positive compared to London flows without competition from other TOCs. This effect could be confounded by having shorter distances and higher passenger volumes in the trial flows experiencing competition from other TOCs. However, where competition was present, the descriptive analysis showed that the LNER market shares for journeys decreased for London-Doncaster and London-York, and that may be due to higher LNER fares increases compared to the competition.

²² Baseline: 27 Jun ‘21 to 12 Nov ‘22 (before) vs. 18 month-post: 25 Jun ‘23 to 9th Nov ‘24 (after)

²³ Split ticketing is when a passenger uses more than one ticket to make a leg of their journey. The journey is broken into sections, with a separate ticket for each part, even if they stay on the same train.

²⁴ Revenues are compared in real terms (in 2021/22 prices).

²⁵ Note that the rail industry was still going through Covid-19 recovery during the period and revenues increases may not be fully attributable to SLP.

For the non-London trial flows, some revenue differences over time between individual flows were observed. For example, the descriptive analysis shows that Newcastle-Edinburgh revenues grew by only 1% with an 18% increase in yield (split ticketing weighting applied). Nevertheless, the revenue increase after the SLP introduction was not significant in the regression analysis. This finding could indicate that longer journeys (to/from London) might benefit more of SLP than shorter journeys (non-London).

Changes in rail demand²⁶

The descriptive analysis revealed that, overall, journeys increased after the introduction of SLP across the full LNER network by 20% when split ticketing was accounted for (15% without split ticketing weights). Journeys increased for all trial flows with the exception of the shorter distance flow York-Newcastle.

The regression analysis showed that there was a positive demand increase in the trial flows when compared to the control flows, but that demand impact was only statistically significant for the London trial flows when competition was controlled for in the model.

The share of Standard Anytime and Super Off-Peak tickets increased after SLP introduction across all London trial flows, although the share of Standard Advance tickets did not generally change (aside from a 5% increase in London-Darlington).

Changes in fare levels²⁷

Overall, yields across all SLP trial flows combined increased by 17% when comparing before versus after the introduction of SLP across the full LNER network.

Yields increased for all London trial flows when comparing before to after the introduction of SLP across the LNER network. This increase did not seem to impact the positive growth in journeys observed during the descriptive analysis.

Standard Super-Off-Peak yields were substantially higher in the LNER trial flows than in the control flows, whereas the opposite was true for Standard Anytime.

6.1 Identification of control flows

- 6.1.1 Prior to the descriptive analysis and regressions, control flow dashboards were produced to compare the revenues, revenue changes, and market shares (by ticket type) on the trial flows and the control flows. The control flow dashboards used LENNON data for the selected flows with all TOCs considered, and the figures were populated with split ticketing weighting factors for journeys and revenues²⁸. The split ticketing factors are reported in appendices F1 and F2.

²⁶ Note that the rail industry was still going through Covid-19 recovery during the period and demand increases may not fully attributable to SLP.

²⁷ Fares are compared using yields in real terms and 2021/22 prices.

²⁸ Split ticketing factors are weights to adjust LENNON journeys and revenues due to the presence of multiple and separate tickets for different segments of a single journey. The weights were agreed with the DfT and provided by the RDG.

- 6.1.2 The purpose of this analysis was to confirm the validity of the control flows (checked by SYSTRA and reviewed by DfT) that were selected using the rail periods 2023/P02 to 2024/P03 before conducting the fieldwork. This analysis was conducted over 17-month periods before (P04 2021/22-P08 2022/23) and after SLP (P04 2023/24-P08 2024/25).
- 6.1.3 Three key statistics as well as distance were used in the comparison and defined as follows (see Appendix B for further details):
- Total revenues – the absolute value of adjusted earnings in £m;
 - Revenue impacts – the relative growth between two periods in %; and
 - Ticket market share – the distribution of demand (journeys) by Anytime vs Advance/Reduced (including Off-Peak and Super Off-Peak) in %.
- 6.1.4 These three factors were chosen because they show the revenue impact of SLP in absolute and relative terms, and the changes in the market shares (by demand) brought about by the change in the fare structure.
- 6.1.5 Comparison of revenues across different flows and periods required a systematic approach considering significant differences in the sizes of the different flows - in absolute value, a 1% change on revenue of £1 million is less significant than a 1% change on £100m revenue. Flows were therefore classified into three revenue bands – less than £30m, £30-£75m and greater than £75m²⁹ to assess whether the observed change across the periods was significant or not. The level of change in growth for the control flows was considered acceptable or reasonable when their coefficient of variation³⁰ was less than 1³¹ given the use of periodic data.
- 6.1.6 For the LNER SLP trial evaluation: revenue analysis report³², control flows were identified within the LNER network as well as the rest of rail network (non-LNER). This was possible as SLP was not fully rolled out at the time of that research. However, as SLP has now been rolled-out on the majority of the LNER network, only non-LNER control flows were identified for this SLP evaluation.

London flows

London - Darlington

- 6.1.7 The variance in absolute revenue across these control flows was acceptably similar. Total revenues were in the £30m to £75m band. While the revenue impacts were not expected to be similar across control flows; they were within the acceptable range as defined in 6.1.5. The ticket market share had seen an increase of Anytime tickets in the after SLP period, as was expected for LNER (given the ability to mix and match fare types); but Advance/Reduced was still the dominant ticket type, indicating small changes to the ticket type structure.

²⁹ Revenue bands can vary depending on the number of periods considered in the analysis.

³⁰ The coefficient of variation (CV) is defined as the ratio of the standard deviation to the mean.

³¹ Less than 1 is considered low variability as a general guidance.

³² <https://www.gov.uk/government/publications/lner-single-leg-pricing-trial-evaluation-revenue-analysis>

London - Doncaster

- 6.1.8 The variance in absolute revenue across the control flows was acceptably similar. Total revenues were in the £30m to £75m band. While the revenue impacts were not expected to be similar across control flows; they were within the acceptable range as defined in 6.1.5. The ticket market share had seen an increase of Anytime tickets in the after SLP period, as expected, though Advance/Reduced was still the dominant ticket type, indicating small changes to the ticket type structure. Ticket type splits for Doncaster were similar to both control flows, with small increases in the share of Anytime tickets seen over time.

London - York

- 6.1.9 The variance in absolute revenue across the control flows was acceptably similar. Total revenues were in the £75m to £150m band, except for one flow. The regression analysis had individual flow variables to prevent any undue influence the results due to a variation of revenue volumes (i.e. this was controlled for using dummy variables). While the revenue impacts were not expected to be similar across control flows, they were within the acceptable range as defined in 6.1.5. The ticket market share had seen an increase of Anytime tickets in the after SLP period, as expected, though Advance/Reduced was still the dominant ticket type indicating small changes to the ticket type structure.

Non-London flows

Newcastle - Edinburgh

- 6.1.10 The variance in absolute revenue across the control flows was acceptably similar. Total revenues were in the less than £30m band. While revenue impacts were not expected to be similar across control flows, they were within the acceptable range as defined in 6.1.5. The share of Anytime tickets had increased and decreased across the different flows, although the Standard Advance/Reduced remained the dominant ticket type in all cases except for one flow after SLP. Overall, this indicated small changes to the ticket type structure.

York - Edinburgh

- 6.1.11 The variance in absolute revenue across the control flows was acceptably similar. Total revenues were in the less than £30m band. While revenue impacts were not expected to be similar across control flows, they were within the acceptable range as defined in 6.1.5. The share of Anytime tickets had increased and decreased across the different flows, although the Standard Advance/Reduced remained the dominant ticket type in all cases. Overall, this indicated small changes to the ticket type structure.

York - Newcastle

- 6.1.12 The variance in absolute revenue across the control flows was within a reasonable range. Total revenues were in the less than £30m band. Although revenue impacts were not expected to be similar across control flows, they were within an adequate range as defined in 6.1.5. Noticeably, the LNER trial flow experienced the smallest increase in revenue. The ticket market share had seen a mix of increasing and decreasing in the share of Anytime tickets after the SLP period, but it was still the less dominant ticket type, with the exception

of one flow which was close to a 50-50 split. Overall, this indicated small changes to the ticket type structure.

6.2 Summary of descriptive analysis findings for LNER trial flows

6.2.1 Since the introduction of SLP across the LNER network, key findings across the London trial flows can be summarised as follows:

- There was an increase in yield for the London trial flows (9% to 17%), which is likely to have been driven by the removal of Off-Peak tickets, and a shift towards more expensive Anytime London tickets, but also smoothed by the market share increase of cheaper Super-Off-Peak London tickets³³³⁴; and
- The market share of Advance tickets did not change (70%-80%) and the Anytime and Super Off-Peak tickets slightly increased (1% to 2%).

6.2.2 Since the introduction of SLP across the LNER network, key findings across the non-London trial flows can be summarised as follows:

- There was an increase in yield for the non-London trial flows (8% to 15%), which is likely to have been driven by a shift towards more expensive Anytime London tickets; and
- The market share of Advance tickets generally decreased to around 70%, but Anytime tickets did not see as much of an uplift (there was more of an uplift to the Off-Peak).

6.2.3 Further analysis of some individual trial flows observed that:

- York-Edinburgh showed some differences to the general trend; journeys and revenues increased considerably over this time period (>30%), which is likely to be supported by the smaller yield increase (6%) when compared with the other two non-London flows (18%); and
- There was a decrease in volume of journeys across some of the non-London flows over this time period (Newcastle-Edinburgh and York-Newcastle). This may be because of other factors, such as competitors changing prices. No evidence of significant timetable changes has been found. As a result of the increasing yields on these flows, revenue has not been impacted as much as demand.

6.2.4 The data also indicated a reduction in the market share of Advance tickets for some non-London trial flows. The decreased volume of Advance tickets may be due to the 'mix-and-match' opportunities that arise from SLP, as passengers may be selecting an Anytime or Off-Peak ticket for one leg of their journey where this is more useful to them. This hypothesis assumes that passengers who would have previously bought Anytime tickets are no more likely to buy Advance tickets now they are able to do so for one leg of their journey.

³³ Note that the rail industry was still going through Covid-19 recovery during the period and yield increases may not fully attributable to SLP.

³⁴ The removal of Off-Peak tickets on flows with Super Off-Peak tickets available only impacted Monday to Thursday services that arrived in London.

6.3 Descriptive analysis: Overall observations

6.3.1 The results for all the SLP trial flows (as SLP has been expanded to the majority of the LNER network) showed a positive increase in demand, revenue and average yield. These results are summarised below with and without split ticketing factors for journeys and revenues³⁵.

SLP trial flows

6.3.2 The overall findings for the SLP trial flows show that:

- Journeys have increased on average by 20% (15% if unweighted) when comparing the period before and after the SLP introduction³⁶;
- Revenues³⁷ and average yield have also increased by 41% (35% if unweighted) and 17% respectively when comparing before with after the SLP introduction;
- The revenues before the SLP introduction were £191,118,669 (£173,899,282 if unweighted) whereas they were £269,195,866 (£234,054,730 if unweighted) after the SLP introduction; and
- The average yield before the SLP introduction was £27.38 (£27.06 if unweighted) whereas it was £32.02 (£31.60 if unweighted) after the SLP introduction.³⁸

6.3.3 For simplicity and with agreement with DfT, the more detailed results in this section are only presented with weighting for split ticketing factors for journeys and revenues.

London-based trial flows

6.3.4 The overall findings for the London-based trial flows³⁹ from the descriptive analysis are outlined in Table 28. These findings show that:

- Journeys have increased for all trial flows when comparing before with after the SLP introduction; and
- Revenues⁴⁰ and average yield have also increased in all trial flows when comparing before with after the SLP introduction.

Table 28. London trial flows (June 2021 to November 2022 vs. June 2023 to November 2024)

TRIAL FLOW (ALL TOCS)	% CHANGE JOURNEYS	% CHANGE REVENUES	REVENUES BEFORE SLP	REVENUES AFTER SLP	% CHANGE YIELD	YIELD BEFORE SLP	YIELD AFTER SLP
London-Doncaster	27%	48%	£38.0m	£56.4m	17%	£28.34	£33.15
London-York	23%	44%	£74.3m	£107.3m	17%	£37.79	£44.36
London-Darlington	42%	55%	£27.4m	£42.5m	9%	£42.93	£46.77

³⁵ Split ticketing factors agreed with the DfT using data provided by the RDG. See Appendix J.

³⁶ The period 'before' SLP introduction is 27th June 2021 to 12th November 2022 i.e. P04 2021/22 – P08 2022/23; the period 'after' is 25th June 2023 to 9th November 2024 i.e. P04 2023/24-P08 2024/25.

³⁷ Real terms (in 2021/22 prices).

³⁸ The concurrent rise of journeys, revenues and yields is likely explained by post-COVID recovery during this period, as well as wider trends such as population growth and employment growth.

³⁹ It includes LNER and any other TOC serving the trial flow.

⁴⁰ Real terms (in 2021/22 prices).

6.3.5 Additionally, the ticket type and TOC market shares show:

- Standard Anytime and Super Off-Peak tickets have increased after SLP introduction across all London trial flows, whilst the share of Standard Advance tickets has not generally changed (aside from the increase of 5% in London-Darlington). This indicates that some passengers have generally not switched ticket type beyond moving from return to single tickets;
- Super-Off-Peak yields are substantially higher in the trial flows than in the control flows across periods (i.e. LNER are gaining more revenue per journey before and after SLP introduction); and
- When there has been TOC competition in London trial flows (i.e., London-Doncaster and London-York), the LNER market share in the post-SLP period has decreased in comparison with the competing TOCs. That change may potentially be due to a higher increase in the LNER fares after SLP introduction compared with the competing TOCs, as well as competitors running fewer services before the SLP introduction because of the Covid-19 recovery process.

Non-London trial flows

6.3.6 Overall findings for non-London-based trial flows⁴¹ from the descriptive analysis, when comparing before with after the SLP introduction are outlined in Table 29. The findings show that:

- Journeys have increased, except for York-Newcastle (-8%), with this drop being consistent across individual rail periods. That reduction of journeys for York-Newcastle was similar across all the rail periods when looking at the time period trend; and
- Revenues⁴² and average yields have also increased, except for Newcastle-Edinburgh, where the yield remained stable. The yield increased about £2 per journey in absolute terms in the other two non-London trial flows.

Table 29. Non-London trial flows (June 2021 to November 2022 vs. June 2023 to November 2024)

TRIAL FLOW (ALL TOCS)	% CHANGE JOURNEYS	% CHANGE REVENUES	REVENUES BEFORE SLP	REVENUES AFTER SLP	% CHANGE YIELD	YIELD BEFORE SLP	YIELD AFTER SLP
York-Newcastle	-8%	6%	£18.0m	£19.0m	15%	£12.93	£14.80
Newcastle-Edinburgh	28%	29%	£19.3m	£25.0m	1%	£16.43	£16.52
York-Edinburgh	25%	35%	£14.1m	£19.0m	8%	£30.30	£32.67

6.4 Regression Analysis

Model Results

6.4.1 The regression analysis used a Difference-In-Difference (DID) approach to statistically model the revenue and demand impacts of SLP and compare the changes in outcomes over time between the trial flows and the control flows. The modelling periods were P04 2021/22-P08

⁴¹ It includes LNER and any other TOC serving the trial flow.

⁴² Real terms (in 2021/22 prices).

2022/23 and P04 2023/24-P08 2024/25 (covering late June to early November of the following year in years 2022/23 and 2024/25).

- 6.4.2 The model results summarised in this section are both unweighted and weighted, using specific split ticketing factors for journeys and revenues⁴³. The full model results for these two variants (unweighted and weighted) are shown individually in Appendices G1 (revenue models) and G2 (demand models).
- 6.4.3 The tables presented in this section include a variety of metrics from the two model variants, including:
- Coefficient – estimated value of the parameter (β) for predicting revenue and demand (Y) from the explanatory variable (X);
 - Standard Error (in brackets) – standard error associated with the coefficient (b), and
 - Stat. sig. – coefficients having p-values less than 5% (i.e. 95% confidence level) are statistically significant (i.e. different from zero because the null hypothesis (H_0) is not accepted). Then, “ns” means not significant.
- 6.4.4 There were two-way fixed effects (FEs) added into the final models. These FEs were statistically significant at 95% confidence level using the t-test hypothesis test for regression:
- Time period fixed effects (weekly dummy variables) to control for unobserved temporal effects as well as variation of the presence of engineering works and external events, and
 - Flow fixed effects (flow dummy variables) to control for origin-destination fixed effects.
- 6.4.5 Table 30 shows the isolated impact of the SLP trial (see Appendices G1 and G2 for full model results). The results from Model 1 indicate a significant positive weekly revenue impact on the trial flows in both variants (£12k-16k per week equated to 6.04%-6.49% increase over the average weekly single leg revenue) and a non-statistically significant demand impact.

Table 30. Results from Regression Analysis – Model 1: DID model to test the weekly overall impact of SLP

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	UNWEIGHTED WEEKLY IMPACT	WEIGHTED WEEKLY IMPACT
Revenue (net receipts)	Impact of SLP (LNER trial flows after SLP)	All flows before SLP and control flows after SLP	£12,645 (£3,475)	£15,647 (£3,865)
Demand (journeys)			25 (74) ns	74 (85) ns

- 6.4.6 In Table 31, a second model (Model 2) was estimated to separate the weekly revenue and demand SLP impacts by LNER trial type (London vs non-London). This effect was estimated by using an interaction term to measure the effect of SLP on London and non-London flows separately (see Appendices G1 and G2 for full model results). The model found:

⁴³ Split ticketing factors agreed with the DfT and use data provided by the RDG.

- A positive and statistically significant weekly revenue SLP impact for the LNER London flows (£14k-£17k per week equated to 4.39%-4.60% increase over the average weekly single leg revenue);
- A positive, but not statistically significant, weekly revenue SLP impact for the LNER non-London flows (£3k-£7k per week equated to 3.37%-6.31% increase over the average weekly single leg revenue);
- A non-statistically significant weekly demand SLP impact for the LNER London and non-London flows, except for the non-London flows in the unweighted model that indicated a reduction of 511 journeys per week (equated to -10.28% over the average weekly single leg demand).

Table 31. Results from Regression Analysis – Model 2: DID model to test the weekly SLP impact by London and non-London rail markets

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	UNWEIGHTED WEEKLY IMPACT	WEIGHTED WEEKLY IMPACT
Revenue	Impact of SLP (LNER London trial flows after SLP)	All London flows before SLP and London control flows after SLP	£14,314 (£3,736)	£17,187 (£4,154)
	Impact of SLP (LNER non-London trial flows after SLP)	All non-London flows before SLP and non-London control flows after SLP	£3,116 (£8,563) ns	£6,853 (£9,523) ns
Demand	Impact of SLP (LNER London trial flows after SLP)	All London flows before SLP and London control flows after SLP	118 (80) ns	142 (91) ns
	Impact of SLP (LNER non-London trial flows after SLP)	All non-London flows before SLP and non-London control flows after SLP	-511 (183)	-312 (208) ns

- 6.4.7 In the descriptive analysis, some large yield differences between LNER and its competitors within the same trial flow were observed. They were 25% vs 7% change in London-Doncaster, 18% vs -7% change in Newcastle-Edinburgh, 6% vs 21% change in York-Edinburgh.
- 6.4.8 As a result of these large yield differences between LNER and its competitors within the same trial flows, a third model (Model 3) was estimated to control for the impact of competition on LNER trial flows, with the results presented in Table 32.
- 6.4.9 The effects of competition (where that existed for the LNER trial flows) was accounted for through the use of a dummy variable. This enhanced model found:
- A positive and statistically significant weekly revenue and demand SLP impact for the LNER London flows (£17k-£20k per week and 250-290 journeys per week);
 - A lower (but still statistically significant) weekly revenue impact (-6%) and weekly demand impact (-4%) for TOCs competing with the LNER trial flows⁴⁴, compared to all LNER trial flows and control flows;
 - A non-statistically significant weekly revenue and demand SLP impact for the LNER non-London flows.

⁴⁴ These percentages relate to the competitor TOCs combined, rather than individually.

Table 32. Results from Regression Analysis – Model 3: DID model to test the weekly SLP impact by London and non-London rail markets, and the presence of TOC competition

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	UNWEIGHTED WEEKLY IMPACT	WEIGHTED WEEKLY IMPACT
Revenue	Impact of SLP (LNER London trial flows after SLP)	All London flows before SLP and London control flows after SLP	£17,175 (£3,271)	£20,413 (£3,638)
	Impact of SLP (LNER non-London trial flows after SLP)	All non-London flows before SLP and non-London control flows after SLP	-£1,073 (£3,496) ns	-£1,499 (£3,888) ns
	TOCs competing with LNER on the London trial flows	All LNER trial flows and control flows	-£210,040 (£5,402)	-£236,056 (£6,008)
	TOCs competing with LNER on the non-London trial flows	All LNER trial flows and control flows	-£56,284 (£5,354)	-£64,321 (£5,954)
Demand	Impact of SLP (LNER London trial flows after SLP)	All London flows before SLP and London control flows after SLP	250 (70)	286 (80)
	Impact of SLP (LNER non-London trial flows after SLP)	All non-London flows before SLP and non-London control flows after SLP	-26 (75) ns	28 (86) ns
	TOCs competing with LNER on the London trial flows	All LNER trial flows and control flows	-2,036 (115)	-2,301 (131)
	TOCs competing with LNER on the non-London trial flows	All LNER trial flows and control flows	-4,752 (116)	-5,265 (132)

6.5 Regression Analysis: Summary

- 6.5.1 Overall, for 17-months post SLP, there was a statistically significant weekly revenue impact of £12k-£16k (equated to 6.04%-6.49% increase over the average weekly single leg revenue), but a non-statistically significant weekly demand impact of SLP (Model 1: DID model to test the overall weekly SLP impact).
- 6.5.2 The SLP revenue impacts were different for London and non-London LNER trials. When the SLP impacts were segmented by rail market, London flows showed a significant positive revenue value (£14k-£17k), whereas non-London flows showed a positive but not statistically significant value (£3k-£7k). This indicates that revenue increased more on the London flows after the introduction of SLP than on the non-London flows (Model 2: DID model to test the weekly SLP impact by London and non-London rail markets).
- 6.5.3 When the revenue and demand of the LNER trial competitors was added into the DID model (Model 3: DID model to test the weekly SLP impact by London and non-London rail markets and trial flows with competition), the SLP revenue impacts were higher for the London trial flows (£17k-£20k) and still not statistically significant for the non-London trial flows. The SLP demand impact turned into significant and positive for London trial flows (250-286 journeys per week), whereas it was not statistically significant for non-London trial flows.

6.5.4 Table 33 shows the summary of the models estimated to evaluate the SLP impact. It is recommended to use the weighted overall SLP impact (Model 1) to report the averaged impact for the LNER network and use the weighted model with market segmentation with competition (Model 3) for more detailed analysis.

Table 33. SLP Results from Regression Analysis – Summary

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED		MODEL 2: LONDON/NON-LONDON SEGMENTED		MODEL 3: SEGMENTED WITH COMPETITION	
		Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Revenue (net receipts)	SLP weekly impact (London)	£12k	£16k	£14k	£17k	£17k	£20k
	SLP weekly impact (non-London)	£12k	£16k	£3k (ns)	£7k (ns)	-£1k (ns)	-£1.5k (ns)
Demand (journeys)	SLP weekly impact (London)	25 (ns)	74 (ns)	118 (ns)	142 (ns)	250	286
	SLP weekly impact (non-London)	25 (ns)	74 (ns)	-511	-312 (ns)	-26 (ns)	28 (ns)

(ns) SLP impact is not significant at 95% confidence level

6.5.5 Estimated from Model 3, LNER competitors' weekly revenue and demand for the trial flows was lower than LNER and all control flows, £56k-64k (4,700-5,300 journeys) lower for non-London trial flows; and £210k-£236k (2,000-2,300 journeys) lower for London trial flows, with both impacts statistically significant.

6.6 Conclusions

6.6.1 The descriptive analysis presented a general view of what was happening with the LNER trial and the control flows, but a more disaggregated analysis was undertaken using regression modelling techniques to determine whether the introduction of SLP impacted LNER revenues.

Simple Summary: London-based trial flows

6.6.2 Journeys, revenues and yield increased in all London trial flows when comparing before the introduction of SLP (P04 2021/22-P08 2022/23) with after the introduction of SLP (P04 2023/24-P08 2024/25).

6.6.3 Standard Anytime and Super Off-Peak tickets increased after SLP across all London trial flows, whilst the share of Standard Advance tickets did not generally change (aside from a 5% increase in London-Darlington).

- 6.6.4 Standard Super-Off-Peak yields were substantially higher in the LNER trial flows than in the control flows, whereas the opposite was true for Standard Anytime.
- 6.6.5 LNER market share decreased for London-Doncaster and London-York.

Simple Summary: Non-London trial flows

- 6.6.6 Journeys decreased notably for the Newcastle-Edinburgh and York-Newcastle flows. However, journeys increased for the York-Edinburgh flow.
- 6.6.7 Revenues and yield increased in all non-London trial flows, but trends were different across them. Newcastle-Edinburgh revenues barely grew by 1% with a 18% increase in yield.
- 6.6.8 Standard Off-Peak yields were substantially higher in the LNER trial flows than in the control flows, whereas the opposite was true for Standard Anytime.
- 6.6.9 LNER market share decreased considerably for Newcastle-Edinburgh, remained stable for York-Newcastle, and increased for York-Edinburgh.

Regression Analysis Summary: Key model results

- 6.6.10 In model 1, regression modelling showed that 17 months post SLP, the LNER revenues increased on the SLP trial flows. There was a statistically significant weekly revenue impact of SLP. However, the LNER demand did not increase or decrease during that period.
- 6.6.11 In model 2, the SLP impact was segmented by flow type (London vs non-London). London trial flows showed a significant and positive impact whereas the non-London trial flows showed a non-statistically significant SLP impact. This indicates that LNER revenue increased on the London trial flows after the introduction of SLP but not on the non-London trial flows. That difference might be driven by being different market segments with different journey purposes and sensitivities to ticketing changes. In terms of demand, the impacts on LNER remained not statistically significant.
- 6.6.12 When LNER trial competition effects were added into the regression analysis (model 3), the SLP impacts on revenue and demand were higher and statistically significant for London trial flows, while they remained not statistically significant for non-London trial flows. This could indicate passengers switching from competitors to LNER due to the introduction of SLP. The LNER journeys in the London trial flows showed a statistically significant increase but not for non-London trial flows. The competitors' revenue and demand in the trial flows were lower than LNER, being statistically significant in both flow segments (London and non-London).
- 6.6.13 The models had statistically significant predictors associated with revenue and demand, but it is worth noting that the R-square statistic that measured the goodness of fit of the models was not high (36%-37%), indicating variation in the revenue and demand not included in the models.

7. SECONDARY DATA ANALYSIS FINDINGS – SIMPLER FARES

Chapter Summary

Introduction

The aim of the secondary analysis was to quantify the impact of Simpler Fares on revenue and demand for the trial flows, and for a series of control flows which served as a counterfactual for a 'no Simpler Fares' scenario. The analysis compared periods before the introduction of Simpler Fares (P01 2022/23 - P13 2022/23)⁴⁵ to a period after the introduction of Simpler Fares (P01 2024/25 - P13 2024/25)⁴⁶.

The descriptive analysis identified major trends in journeys, revenue and yield, as well as the share of different ticket types purchased. This analysis provided an initial context to explain what occurred with the data before or after the implementation of SLP and Simple Fares. It helped to highlight patterns, trends and anomalies, and served as foundation for a deeper analysis (i.e., a regression analysis).

Therefore, the descriptive analysis was followed by a regression analysis that quantified the impact of SLP introduction on revenue and demand by using a Difference-in-Difference statistical method; estimating the causal effect of SLP by comparing changes in revenue and demand over time between trials flows and control flows. Further regression analysis was undertaken to explore the sensitivities of the SLP impact, and those were analysed for different rail markets (London and non-London) as well as flows with TOC competition.

Changes in passenger revenues⁴⁷

Overall, the descriptive analysis indicated an increase in revenues for the Phase 1a trial flows (12-month post-evaluation) and a decrease in revenues for the Phase 1b trial flows (6-month post-evaluation). However, neither of these impacts were statistically significant, and when considering all Simpler Fares flows combined, this equated to a 1% increase in revenues.

Revenues for Phase 1a trial flows did not increase for London-Newcastle (0%), despite some growth being observed on the control flows. In addition, while revenues increased for London-Reston (Berwick) and London-Edinburgh (8% and 2% respectively), this was at a lower rate than their respective control flows.

Revenues for Phase 1b flows decreased after Simpler Fares for all trial flows (from -3% to -5%). By contrast, revenues for control flows increased after Simpler Fares, with this growth being larger for non-LNER control flows than LNER control flows.

⁴⁵ Baseline: 1 April '22 to 31 Mar '23 (before) vs. 12 month-post: 1 April '24 to 31 March '25 (after).

⁴⁶ The analysis for Phase 1a of Simpler Fares focuses on 13 post-Covid-19 rail periods post-implementation, while Phase 1b focuses on 6 post-Covid-19 rail periods. The rail periods covered for Phase 1a and 1b are outlined in Chapter 3.2.2.

⁴⁷ Revenues are compared in real terms (in 2022/23 prices).

Changes in rail demand

Overall, journeys decreased (non-significantly) across the trial flows as a whole (-2% when split ticketing is accounted for; and -7% when this is not accounted for). This non-significant impact was confirmed by the modelling.

Journeys for Phase 1a trial flows increased for London-Berwick and London-Edinburgh, but decreased for London-Newcastle, which experienced a significant drop in journeys (-7%). For all flows, journeys on their respective controls generally grew at a larger rate than the LNER trial flows.

The change in the share of different ticket types was also notable on the trial flows for Phase 1a. Standard Advance tickets had an increased share for all three flows whereas the Standard Reduced (Off Peak) share decreased. This impact on ticket type shares was expected, as Off Peak and Super Off Peak tickets were removed from sale since Simpler Fares were introduced.

For Phase 1b trial flows, journeys decreased for trial flows (from -6% to -9%). However, the control flow experienced significant increases in journeys, with the non-LNER control flows displaying stronger growth than LNER control flows.

Changes in fare levels⁴⁸

Overall, yields across all Simpler Fares trial flows combined increased by 4% when comparing before versus after the introduction of SLP across the full LNER network.

For Phase 1a flows, yields generally either did not change, or decreased for all flows (ranging between -10% and 0%). The exception was London-Newcastle trial flow, which considerably increased (8%). The other two trial flows experienced a small increase in yield (0% to 1%) whereas the control flows experienced a reduction in yield (-7% to 0%).

For Phase 1b flows, yields increased for all three trial flows and generally decreased for control flows, with the exception of the control flows for London-Morpeth. These control flows increased yield at the same level as the trial flow London-Morpeth.

7.1 Identification of control flows

- 7.1.1 Prior to the descriptive analysis and regressions, control flow dashboards were produced to compare the revenues, revenue impacts, and market shares (by ticket type) on the trial flows and the control flows. The analysis was conducted over 13-month periods⁴⁹ before (P01 2022/23 - P13 2022/23) and after (P01 2024/25 - P13 2024/25) Simpler Fares on the trial flows and the control flows. The purpose of this analysis was to confirm the validity of the control flows that were selected using the rail periods 2023/P02 to 2024/P03 before conducting the fieldwork. The control flows were checked by SYSTRA and reviewed by DfT.

⁴⁸ Fares are compared using yields in real terms and 2022/23 prices.

⁴⁹ For Phase 1b flows, 6-month periods are used: 'before' is 16th October 2022 to 31st March 2023 (P08 2022/23-P13 2022/23); 'after' is 13th October 2024 to 31st March 2025 (P08 2024/25-P13 2024/25).

- 7.1.2 The control flow dashboards used LENNON Earnings data for the selected flows with all TOCs considered, and the figures were populated with split ticketing weighting factors for journeys and revenues⁵⁰. The distribution of the split ticketing factors sat between 1.0 and 1.3 (as reported in appendices F1 and F2).
- 7.1.3 When defining control groups, it is important to consider a sample of flows that do not receive the trial (in this case, Simpler Fares). The individual impacts of the LNER and non-LNER control subgroups in modelling were measured by the introduction of a 'control group type' dummy (binary) variable.
- 7.1.4 The results were weighted using specific split ticketing factors for journeys and revenues. The dashboards used LENNON data for the selected flows with all TOCs considered.
- 7.1.5 The three key statistics as well as distance used in the comparison are defined as follows (see Appendix B for further details):
- Total revenues – the absolute value of adjusted earnings in £m;
 - Revenue impacts – the relative growth between two periods in %; and
 - Ticket market share – the distribution of demand (journeys) by Anytime vs Advance/Reduced (including Off-Peak and Super Off-Peak) in %.
- 7.1.6 These three factors were chosen because they show the revenue impact of Simpler Fares in absolute and relative terms, and the changes in the market shares (by demand) brought about by the change in the fare structure.
- 7.1.7 Comparison of revenues across different Phase 1a flows and periods required a systematic approach considering significant differences in the sizes of the different flows - in absolute value, a 1% change on revenue of £1 million is less significant than a 1% change on £100m revenue. Flows were therefore classified into three revenue bands⁵¹ - less than £25m, £25-£60m and £60-£100m - to assess whether the observed change across the periods was significant or not.
- 7.1.8 The level of change in growth for the control flows was considered acceptable or reasonable when their coefficient of variation⁵² was less than 1⁵³ given the use of periodic data. This threshold was relaxed when a negative growth was observed in the control flows, and their correspondent trial flow showed a positive growth. As a result, the selection of control groups in these trials was firstly determined by quantitative metrics such as revenues and ticket market shares. The suitability of these metrics for each flow was then reviewed using the expertise and perspective of the project team. Where the metric data was not considered to be sufficient, it was placed in the context of flow distance⁵⁴ covered. In any case, the regression analysis controlled for specific flow and time unobserved fixed effects, and therefore, it was not expected to limit the regression results.

⁵⁰ Split ticketing factors agreed with the DfT and use data provided by the RDG. See Appendix J.

⁵¹ For Phase 1b flows, a single revenue of less than the £10m band.

⁵² The coefficient of variation (CV) is defined as the ratio of the standard deviation to the mean.

⁵³ Less than 1 is considered low variability as a general guidance.

⁵⁴ Distance as a proxy of fare/yield.

- 7.1.9 Due to the commercial sensitivity of data which fed-into the development of the control flows dashboards, the specific charts generated as part of the dashboards for each flow are not included in this report. A simple summary of each flow has been included below.

Phase 1a trial flows

London – Berwick-upon-Tweed (Berwick)⁵⁵

- 7.1.10 The variance in absolute revenue across the 6 control flows was acceptably similar, with the exception of two flows where the LNER revenue market share was less than £5m. Total revenues were in the less than the £25m band. There were a mix of flows with positive revenue impacts. Those impacts were not expected to be similar across control flows but are within the acceptable range as defined in 7.1.7. However, one flow registered a small negative revenue impact.
- 7.1.11 The ticket market share had seen a minor increase of Anytime tickets with the exception of one flow, where the share of anytime tickets decreased after Simpler Fares were introduced; though all initially identified control flows were retained within the analysis. Those observed differences in revenue and ticket type market share were further tested in the regression analysis, and the presence of individual flow effects in the models minimised those effects and controlled them to assure robustness in the results.

London - Edinburgh

- 7.1.12 The variance in absolute revenue across the 6 control flows was acceptably similar, with the exception of one flow where the LNER revenue was less than £5m. This observed difference was further tested in the regression analysis, and the presence of individual flow effects in the models was controlled for through the use of dummy variables to ensure robustness in the results. Total revenues were in or close to the £60m to £100m band, except for one flow, which is a larger flow. Revenue impacts were not expected to be similar across control flows but within an acceptable range, as defined in 7.1.7 The ticket market share had seen a minor increase of Anytime tickets after Simpler Fares were introduced.

London - Newcastle

- 7.1.13 The variance in absolute revenue across the 5 control flows was acceptably similar. Total revenues were in (or close enough to) the £25m to £60m band for the control flows. Revenue impacts were not expected to be similar across control flows but within an acceptable range, as defined in 7.1.7. The ticket market share had seen a minor increase of Anytime tickets in the after Simpler Fares were introduced.

Phase 1b trial flows⁵⁶

⁵⁵ Reston rail station belongs to the tertiary zone (TZ) of Berwick. Therefore, the TZ London-Berwick has been used to analyse the trial flows London-Reston.

⁵⁶ For all three Phase 1a Trial flows, the introduction of Simpler Fares for Phase 1b would have also been reflected in results between August 2024 and April 2025.

London – Dunbar (Berwick)⁵⁷

- 7.1.14 The variance in absolute revenue across the 4 control flows was acceptably similar. Total revenues were in the less than £10m band. There were a mix of flows with positive revenue impacts. Those impacts were not expected to be similar across control flows but were within the acceptable range as defined in 7.1.7. Note that the trial flow London-Berwick registered a negative revenue impact for the 6-month post-Simpler Fares periods and this change could have been due to the introduction of Simpler Fares. However, a positive revenue impact on this flow for the 12-month post-Simpler Fares periods was observed. This change could be because SFs were launched across two stages. The regressions consisted of multivariate analysis that tested those external and time factors as well as individual-flow fixed effects, and therefore, those effects were controlled in the regression models. The ticket market share had seen a mix of minor increases of Anytime or Advance/Reduced tickets in the after Simpler Fares were introduced on Phase 1b flows in August 2026.

London – Alnmouth (Morpeth)⁵⁸

- 7.1.15 The variance in absolute revenue across the 4 control flows was acceptably similar. Total revenues were in the less than £10m band. There were a mix of flows with positive revenue impacts. Those impacts were not expected to be similar across control flows but were within the acceptable range as defined in 7.1.7. The regressions consisted of a multivariate analysis that controlled for individual-flow fixed effects, and therefore, those effects were controlled in the regression models. The ticket market share had seen an increase of Anytime tickets in the after Simpler Fares were introduced.

London - Morpeth

- 7.1.16 The variance in absolute revenue across the 4 control flows was acceptably similar. Total revenues were in the less than £10m band. Revenue impacts were not expected to be similar across control flows but within an acceptable range as defined in 7.1.7. However, some non-LNER control flows were not within the acceptable range. One flow had an unexpected large positive revenue growth (84%) together with a significant increase in passengers (69%). This was probably driven by being a popular commuting hub. Another flow registered a negative revenue impact (-19%) and this was likely to be as a result of engineering works and related disruptions. The regressions consisted of a multivariate analysis that controlled for individual-flow fixed effects, and therefore, those effects were controlled in the regression models. The ticket market share had seen a minor increase of Anytime tickets in the after Simpler Fares were introduced.

7.2 Summary of descriptive analysis findings for LNER trial flows

- 7.2.1 The key findings since the introduction of Simpler Fares on Phase 1a trial flows can be summarised as follows:

⁵⁷ Dunbar rail station belongs to the tertiary zone (TZ) of Berwick. Therefore, the TZ London-Berwick has been used to analyse the trial flows London-Dunbar. See Appendix B for discussion on the approach.

⁵⁸ Alnmouth rail station belongs to the tertiary zone (TZ) of Morpeth. Therefore, the TZ London-Morpeth has been used to analyse the trial flows London-Alnmouth. See Appendix B for discussion on the approach.

- A slight decrease in journeys, as well as a small increase in revenues on trial flows.
- Journeys and revenues for control flows grew at a larger rate than the trial flows.
- An increased share of Standard Advance tickets, and decreased share of Standard Reduced (Off Peak) have contributed to an increase in average yield. A shift in ticket types was anticipated due to the removal of Off Peak and Super Off Peak tickets since Simpler Fares was introduced.

7.2.2 The key findings since the introduction of Simpler Fares on Phase 1b trial flows can be summarised as follows⁵⁹:

- A notable decrease in journeys and revenues on trial flows.
- Journeys and revenues for control flows grew significantly, with non-LNER control flows displaying stronger growth than LNER control flows.
- As was the case for Phase 1a trial flows, there has been an increased share of Standard Advance tickets, and decreased share of Standard Reduced (Off Peak) have contributed to an increase in average yield. This is linked to the removal of Off Peak and Super Off Peak tickets since Simpler Fares was introduced.

7.3 Descriptive analysis: Overall observations

7.3.1 The results presented in this descriptive analysis are weighted using specific split ticketing factors for journeys and revenues⁶⁰.

Simpler Fares trial flows

7.3.2 The overall findings for the Simpler Fares trial flows show that:

- Journeys decreased by -2% (-7% if unweighted) on average when comparing before with after the Simpler Fares introduction;
- Revenues⁶¹ and average yield increased by 1% (-3% if unweighted) and 4% respectively when comparing before with after the Simpler Fares introduction; and
- The average yield before the Simpler Fares introduction was £59.67 (£59.82 if unweighted) whereas it was £61.85 (£62.14 if unweighted) after the Simpler Fares introduction.

Phase 1a results summary

7.3.3 The descriptive analysis for Phase 1a Simpler Fares flows, comparing before (P01 2022/23 to P13 2022/23) and after Simpler Fares (P01 2024/25 to P13 2024/25), is shown in Table 34 and can be summarised as follows:

- **Journeys** increased for London-Berwick and London-Edinburgh, while London-Newcastle experienced a significant drop in journeys (-7%). For all flows, control flows journeys generally grew at a much larger rate than the LNER trial flows.

⁵⁹ Phase 1b trial flows were not weighted for split ticketing due to the size of the markets.

⁶⁰ Split ticketing factors agreed with the DfT and use data provided by the RDG.

⁶¹ Real terms (in 2022/23 prices).

- **Revenues**⁶² did not increase for London-Newcastle (0%), despite some growth being observed on their control flows. However, revenues increased for London-Berwick-upon-Tweed (Berwick) and London-Edinburgh (+8% and +2% respectively) but grew at a lower rate to control flows.
- **Yields** increased by 4% overall, driven by London-Newcastle which considerably increased (+8%). The other two trial flows experienced a small or no increase in yield (0% to 1%).
- The change in the share of different ticket types was notable on the trial flows. Standard Advance tickets saw an increased share for all three flows whereas Standard Reduced (Off Peak) share decreased. This impact on the ticket type shares was expected because Off Peak and Super Off Peak tickets were removed from sale since the introduction of Simpler Fares.

Table 34. Phase 1a Simpler Fares trial flows (April 2022 to March 2023 vs. April 2024 to March 2025)

LNER TRIAL FLOW	% CHANGE JOURNEYS	% CHANGE REVENUES	REVENUES BEFORE SIMPLER FARES	REVENUES AFTER SIMPLER FARES	% CHANGE YIELD	YIELD BEFORE SIMPLER FARES	YIELD AFTER SIMPLER FARES
London-Berwick-upon-Tweed (Berwick)	7%	8%	£8.0m	£8.5m	0%	£55	£55
London-Edinburgh	1%	2%	£103.1m	£104.7m	1%	£64	£65
London-Newcastle	-7%	0%	£66.0m	£66.2m	8%	£54	£59
Phase 1a trial flows	-2%	1%	£177.1m	£179.4m	4%	£60	£62

Phase 1b results summary

7.3.4 The descriptive analysis for Phase 1b Simpler Fares flows, comparing before (P08 2022/23 to P13 2022/23) and after Simpler Fares (P08 2024/25 to P13 2024/25), is shown in Table 35 and can be summarised as follows:

- **Journeys** decreased between periods for trial flows (from -6% to -9%). However, the control flow experienced significant increases in journeys with non-LNER control flows having stronger growth than LNER control flows.
- Similarly, **revenues** decreased for all trial flows (from -3% to -5%). Revenues grew on the control flows and were stronger for non-LNER control flows than LNER control flows.
- **Yields** increased for the two trial flows and generally decreased for control flows, with the exception of the control flows for London-Morpeth. These control flows increased yield at the same level as the trial flow London-Morpeth.
- The change in the share of different ticket types was notable on the trial flows. Standard Advance tickets saw an increased share for all three flows whereas Standard Reduced (Off Peak) share decreased. This impact was expected due to the removal of

⁶² Real terms (in 2022/23 prices).

Off Peak and Super Off Peak tickets since the introduction of Simpler Fares, however, these findings only reflect 6-month of post-Simpler Fares, and a seasonal time effect might be present.

Table 35. Phase 1b Simpler Fares trial flows (October 2022 to March 2023 vs. October 2024 to March 2025)

LNER TRIAL FLOW	% CHANGE JOURNEYS	% CHANGE REVENUE	REVENUE BEFORE SIMPLER FARES	REVENUE AFTER SIMPLER FARES	% CHANGE YIELD	YIELD BEFORE SIMPLER FARES	YIELD AFTER SIMPLER FARES
London-Berwick-upon-Tweed (Berwick)	-6%	-5%	£3.8m	£3.6m	1%	£53	£53
London-Alnmouth (Morpeth)	-9%	-3%	£1.7m	£1.6m	7%	£57	£61
London-Morpeth							
Phase 1b trial flows	-7%	-5%	£5.5m	£5.2m	3%	£54	£56

7.4 Regression analysis: Phase 1a Model results

7.4.1 The regression analysis used a Difference-In-Difference (DID) approach to statistically model the weekly revenue and demand impacts of Simpler Fares and compare the changes in outcomes over time between the trial flows and the control flows. The periods considered were the same as in the descriptive analysis P01 2022/23-P13 2022/23 (2023) and P01 2024/25-P13 2024/25 (2025). Regression models allowed for a multivariate analysis instead of a univariate approach (i.e. the simple descriptive analysis), and therefore, it was possible to control for other impacts such as planned disruptions, seasonal time effects and individual-flow effects that might bias the descriptive analysis results.

7.4.2 The results of these model runs are presented in Table 36 and subsequent tables. The tables include a variety of metrics from the model, including:

- Coefficient – estimated value of the parameter (β) for predicting revenue and demand (Y) from the explanatory variable (X);
- Standard Error (% revenue) – standard error associated with the coefficient (b), and its proportion of revenue in the explanatory variable (X);
- t Stat – value of the t-statistic for t-test with a null hypothesis (H_0) that the parameter (β) is equal to zero (i.e. $H_0: \beta = 0$);
- p-value – Two tailed probability value associated with the t-statistic in testing the null hypothesis (H_0) that the parameter (β) is zero (i.e. $H_0: \beta = 0$);
- Stat. sig. – coefficients having p-values less than 5% (i.e. 95% confidence level) are statistically significant (i.e. different from zero because the null hypothesis (H_0) is not accepted). Then, “ns” means not significant.

- 7.4.3 There were 2-way fixed effects⁶³ estimated in the modelling and the final models only considered the variables that were statistically significant at 95% confidence level using the t-test hypothesis test for regression.
- 7.4.4 As a result, flow fixed effects (FEs) were shown to be statistically significant and therefore, flow dummy variables were added into the final model
- 7.4.5 Models with time effects and one-off impacts were also tested, and found the following results:
- Statistically significant weekly fixed effects to control for unobserved temporal effects;
 - No statistically significant impact of engineering works and external events. Having weekly data allowed for the testing of specific dummy variables for key events (see Appendix C2).
- 7.4.6 The impact of Simpler Fares was measured with various model specifications to explore the sensitivity of the impact. Individual regressions were conducted for Phase 1a and Phase 1b trial flows.
- Those regressions had two different revenue and demand measures to compare Simpler Fares impacts:
 - Revenues/Demand with split ticketing weighting (Models ‘a’); and
 - Revenues/Demand without split ticketing weighting (Models ‘b’).
 - Models were further specified with three different variants:
 - No Simpler Fares impact segmentation (Model 1a and Model 1b);
 - Simpler Fares impact segmented by trial flow (Model 2a and Model 2b); and
 - Simpler Fares impact segmented by time period (Model 3a and Model 3b).
- 7.4.7 The regression models for the Phase 1a trial flows to test the overall weekly revenue and demand Simpler Fares impact with split ticketing weights (Phase 1a Model 1a), and without split ticketing weights (Phase1a Model 1b) included results showing the impacts of:
- LNER flows before and after Simpler Fares (i.e. to account for the revenue/demand change due to the time trend in the LNER flows between before and after the introduction of Simple Fares);
 - Non-LNER flows before and after Simpler Fares (i.e. to account for the revenue/demand change due to the time trend in the non-LNER flows between before and after the introduction of Simple Fares); and
 - Isolated impact of Simpler Fares for the LNER trial flows (i.e. to account for the revenue/demand change due to the introduction of Simple Fares in the LNER trial flows).

⁶³ Controls for unobserved heterogeneity across units (i.e. flows) and time periods (i.e. weeks) involving fixed effects for both units and time, effectively removing any unit-invariant and time-invariant confounders. This statistical technique is used to analyse panel data (i.e., the same flows over rail periods). It is widely used for estimating causal effects by controlling these flow-specific and time-specific confounders simultaneously. It can be seen as a generalisation of the DID model.

7.4.8 The results from Phase 1a trial flows (Table 36) to test the overall weekly revenue and demand Simpler Fares impact with split ticketing weights (Model 1a) indicate no significant revenue and demand impact on the trial flows. However, the effects below were displayed (see Appendix H1 for full model results):

- Once controlled by individual flow and time fixed effects, the revenue and demand impacts estimated in the regression analysis have similarities with the descriptive analysis (which did not control for fixed effects).
- Overall, the LNER flows combined (trial and control) showed a higher increase in revenue and demand than non-LNER control flows, mainly driven by the LNER control flows;
- The LNER trial flows had a small additional single leg revenue impact and a small reduction in single leg journeys after the introduction of Simpler Fares (£11k equated to 1.85% over the average weekly single leg revenue total, and -182 journeys equated to -1.92% over the average weekly single leg demand total) when compared to the control flows, but the impact of Simpler Fares was not statistically significant;
- All LNER flows had a positive LNER-specific revenue and demand after the introduction of Simpler Fares (£407k and 5,833 journeys; equating to 49% of the average weekly single leg revenue and 66% of the average weekly demand). This impact was statistically significant); and
- Non-LNER flows had a smaller revenue and demand increase after the introduction of Simpler Fares (£31k and 1,048 journeys) compared to before Simpler Fares, and this impact was statistically significant.

Table 36. Results from Regression Analysis – Phase 1a Model 1a (Phase 1a trial flows to test the overall weekly SF impact with split ticketing weights)

DEPENDENT VARIABLE	TEST	COUNTERFACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	£407,228	£18,739	21.73	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£31,221	£7,148	4.37	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£10,613	£18,739	0.57	0.57	ns
Demand	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	5,833	402	14.52	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	1,048	153	6.84	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-182	402	-0.45	0.65	ns

7.4.9 Table 37 presents the results from Phase 1a trial flows to test the overall weekly Simpler Fares impact without split ticketing weights (Phase 1a Model 1b). The results indicate that there was no significant revenue and demand impact on the trial flows. However, the effects below were displayed (see Appendix H1 for full model results):

- The impact of not having split ticketing weighting is an overall reduction of the scale of the coefficients. The Simpler Fares impact was not significant in both models (Phase 1a Model 1a and Phase 1a Model 1b) but there was a weekly revenue difference of £20k in value (+£10k vs -£10k respectively). These absolute values equate to 1.85% and -1.69% over the average post-SF weekly single leg revenue;
- With no split ticketing weighting, the LNER trial flows had a reduction in revenue after the introduction of Simpler Fares (-£10k) when compared to the LNER control flows, but the impact of Simpler Fares was not statistically significant;
- All LNER flows (trial and control) had a positive LNER-revenue after the introduction of Simpler Fares (£376k and 5,395 journeys), and this impact was statistically significant. Note that part of this revenue could be attributable to LNER flows with no SLP in the pre Simpler Fares period;
- Non-LNER control flows had a smaller revenue increase after the introduction of Simpler Fares (£19k) compared to before Simpler Fares, and this impact was statistically significant;
- The demand impact for all LNER flows for the non-weighted model (5,395 journeys) was similar to the impact estimated in the weighted model (5,833 journeys); and
- Although the demand for LNER trial flows was more negative for the non-weighted model (-532 journeys) compared to the weighted model (-182 journeys), the demand impact for both models was not statistically significant.

Table 37. Results from Regression Analysis – Phase 1a Model 1b (Phase 1a trial flows to test the overall weekly SF impact without split ticketing weights)

DEPENDENT VARIABLE	TEST	COUNTERFACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	£376,333	£16,414	22.93	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£18,663	£6,261	2.98	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-£9,876	£16,414	-0.60	0.55	ns
Demand	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	5,395	353	15.29	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	818	135	6.08	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-532	353	-1.51	0.13	ns

7.4.10 Table 38 presents the results from an extended model to test the overall weekly revenue and demand Simpler Fares impact with/without split ticketing weights by trial flow (Phase 1a Model 2a/2b) which was estimated to understand the Simpler Fares impacts by individual LNER trial flow (see Appendix H1 for full model results). The results from Phase 1a Model

2a/2b indicate no significant revenue impacts by trial flow: London-Berwick-upon-Tweed (-£2k and -£5k), London-Edinburgh (£13k and -£17k) and London-Newcastle (£21k and -£8k). The model results showed no significant demands impacts after the introduction of Simple Fares.

Table 38. Results from Regression Analysis – Phase 1a Model 2a/2b (Phase 1a trial flows to test the overall weekly SF impact with/without split ticketing weights by trial flow)

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	MODEL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for LNER trial London-Berwick-upon-Tweed (Impact of SFs)	After SFs for LNER control flows	2a	-£2,344	£25,314	-0.09	0.93	ns
			2b	-£4,896	£22,173	-0.22	0.83	ns
	After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	2a	£13,239	£25,314	0.52	0.60	ns
			2b	-£16,744	£22,173	-0.76	0.45	ns
	After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	2a	£20,945	£25,314	0.83	0.41	ns
			2b	-£7,987	£22,173	-0.36	0.72	ns
Demand	After SFs for LNER trial London-Berwick-upon-Tweed (Impact of SFs)	After SFs for LNER control flows	2a	-147	543	-0.27	0.79	ns
			2b	-183	477	-0.39	0.70	ns
	After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	2a	-175	543	-0.32	0.75	ns
			2b	-653	477	-1.37	0.17	ns
	After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	2a	-224	543	-0.41	0.68	ns
			2b	-759	477	-1.59	0.11	ns

7.4.11 In Tables 39 and 40, time effects for the Simpler Fares impact were estimated in Phase 1a trial flows to test the overall weekly revenue and demand Simpler Fares impact with/without split ticketing weights by time period models by adding dummy time variables to Models 1a/1b (i.e. Phase 1a trial flows to test the overall weekly revenue and demand Simpler Fares impact with/without split ticketing weights).

7.4.12 The results did not show statistical significance; however, they indicated a time period variation of the revenue and demand impacts after the introduction of Simpler Fares (see Appendix H1 for full model results). It seems to be a pattern that shows a positive revenue

and demand impact in the first 5-6 rail periods (April'24 to Aug'24), and then, a decline in the next 6-7 periods (Sep'24 to Feb'25), with a positive recovery in period P13 (Mar'25). It is therefore possible that these results are driven by effects of seasonality.

Table 39. Results from Regression Analysis – Phase 1a Model 3a/3b (Phase 1a trial flows to test the overall weekly revenue SF impact with/without split ticketing weights by time period)

TEST	COUNTER-FACTUAL	MODEL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After_1a_Trial_P01	Before_1a_Trial_P01	3a	£46,314	£35,981	1.29	0.198	ns
		3b	£22,123	£31,513	0.70	0.483	ns
After_1a_Trial_P02	Before_1a_Trial_P02	3a	£40,090	£35,980	1.11	0.265	ns
		3b	£16,991	£31,513	0.54	0.590	ns
After_1a_Trial_P03	Before_1a_Trial_P03	3a	£62,000	£35,977	1.72	0.085	ns
		3b	£36,749	£31,510	1.17	0.244	ns
After_1a_Trial_P04	Before_1a_Trial_P04	3a	£52,366	£35,986	1.46	0.146	ns
		3b	£27,979	£31,518	0.89	0.375	ns
After_1a_Trial_P05	Before_1a_Trial_P05	3a	£46,505	£35,983	1.29	0.196	ns
		3b	£23,146	£31,515	0.73	0.463	ns
After_1a_Trial_P06	Before_1a_Trial_P06	3a	£9,093	£35,983	0.25	0.801	ns
		3b	-£11,650	£31,515	-0.37	0.712	ns
After_1a_Trial_P07	Before_1a_Trial_P07	3a	-£320	£35,979	-0.01	0.993	ns
		3b	-£19,934	£31,512	-0.63	0.527	ns
After_1a_Trial_P08	Before_1a_Trial_P08	3a	-£29,517	£35,986	-0.82	0.412	ns
		3b	-£45,944	£31,518	-1.46	0.145	ns
After_1a_Trial_P09	Before_1a_Trial_P09	3a	-£43,229	£35,993	-1.20	0.230	ns
		3b	-£58,322	£31,524	-1.85	0.064	ns
After_1a_Trial_P10	Before_1a_Trial_P10	3a	-£42,577	£35,983	-1.18	0.237	ns
		3b	-£57,919	£31,516	-1.84	0.066	ns
After_1a_Trial_P11	Before_1a_Trial_P11	3a	-£19,937	£35,973	-0.55	0.579	ns
		3b	-£37,678	£31,507	-1.20	0.232	ns
After_1a_Trial_P12	Before_1a_Trial_P12	3a	-£23,754	£35,986	-0.66	0.509	ns
		3b	-£41,336	£31,518	-1.31	0.190	ns
After_1a_Trial_P13	Before_1a_Trial_P13	3a	£40,350	£35,989	1.12	0.262	ns
		3b	£16,869	£31,521	0.54	0.593	ns

Table 40. Results from Regression Analysis – Phase 1a Model 3a/3b (Phase 1a trial flows to test the overall weekly demand SF impact with/without split ticketing weights by time period)

TEST	COUNTER-FACTUAL	MODEL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After_1a_Trial_P01	Before_1a_Trial_P01	3a	523	772	0.68	0.50	ns
		3b	102	678	0.15	0.88	ns
After_1a_Trial_P02	Before_1a_Trial_P02	3a	610	772	0.79	0.43	ns
		3b	181	678	0.27	0.79	ns
After_1a_Trial_P03	Before_1a_Trial_P03	3a	729	772	0.95	0.35	ns
		3b	289	678	0.43	0.67	ns
After_1a_Trial_P04	Before_1a_Trial_P04	3a	588	772	0.76	0.45	ns
		3b	167	678	0.25	0.81	ns
After_1a_Trial_P05	Before_1a_Trial_P05	3a	258	772	0.33	0.74	ns
		3b	-123	678	-0.18	0.86	ns
After_1a_Trial_P06	Before_1a_Trial_P06	3a	-421	772	-0.55	0.59	ns
		3b	-755	678	-1.11	0.27	ns
After_1a_Trial_P07	Before_1a_Trial_P07	3a	-518	772	-0.67	0.50	ns
		3b	-838	678	-1.24	0.22	ns
After_1a_Trial_P08	Before_1a_Trial_P08	3a	-993	772	-1.29	0.20	ns
		3b	-1,256	678	-1.85	0.06	ns
After_1a_Trial_P09	Before_1a_Trial_P09	3a	-1,159	772	-1.50	0.13	ns
		3b	-1,408	678	-2.08	0.04	ns
After_1a_Trial_P10	Before_1a_Trial_P10	3a	-668	772	-0.87	0.39	ns
		3b	-970	678	-1.43	0.15	ns
After_1a_Trial_P11	Before_1a_Trial_P11	3a	-405	772	-0.53	0.60	ns
		3b	-740	678	-1.09	0.28	ns
After_1a_Trial_P12	Before_1a_Trial_P12	3a	-1,035	772	-1.34	0.18	ns
		3b	-1,305	678	-1.96	0.05	ns
After_1a_Trial_P13	Before_1a_Trial_P13	3a	107	772	0.14	0.89	ns
		3b	-275	678	-0.41	0.69	ns

7.5 Regression analysis: Phase 1b Model results

7.5.1 The Simpler Fares 6-month evaluation regression analysis for the Phase 1b flows used the same approach and presentation of results as conducted for the Phase 1a flows. This analysis modelled weekly revenue and demand impacts of Simpler Fares and compared the changes in outcomes over time between the trial flows and the control flows. The periods considered were P08 2022/23-P13 2022/23 (2023) and P08 2024/25-P13 2024/25 (2025).

7.5.2 Flow fixed effects were shown to be statistically significant and therefore, flow dummy variables were added into the final model. Models with time effects and one-off impacts were tested, and produced the following results:

- Statistically significant weekly fixed effects to control for unobserved temporal effects;
- No statistically significant impact of engineering works and external events; whereby having weekly data allowed for the testing of specific dummy variables for key events (see Appendix C2).

7.5.3 The regression models (Table 41 – Phase 1b trial flows to test the overall weekly Simpler Fares impact with split ticketing weights; and Table 42 – Phase 1b trial flows to test the overall weekly Simpler Fares impact without split ticketing weight) included results showing the impacts of:

- LNER flows before and after Simpler Fares (i.e. to account for the revenue/demand change due to the time trend in the LNER flows between before and after the introduction of Simple Fares);
- Non-LNER flows before and after Simpler Fares (i.e. to account for the revenue/demand change due to the time trend in the non-LNER flows between before and after the introduction of Simple Fares); and
- Isolated impact of Simpler Fares for the LNER trial flows (i.e. to account for the revenue/demand change due to the introduction of Simple Fares in the LNER trial flows).

7.5.4 Table 41 presents the results from Phase 1b trial flows to test the overall weekly revenue and demand Simpler Fares impact with split ticketing weights (Phase1b Model 1a). The results indicate no significant revenue and demand impact on the trial flows. However, the effects below were displayed (see Appendix H2 for full model results):

- Once controlled by individual flow and time fixed effects, the impacts estimated in the regression analysis are in line with the Phase 1a regression analysis (it also controlled for fixed effects). Overall, the LNER flows combined (trial and control) showed a higher increase than non-LNER control flows, mainly driven by the LNER control flows;
- The LNER trial flows had a small additional weekly single leg revenue impact and a small reduction in weekly single leg demand after the introduction of Simpler Fares (£1k equated to 1.84% over the average weekly single leg revenue total, and -20 journeys equated to -1.98% over the average weekly single leg demand total) compared to the control flows. However, the impact of Simpler Fares was not statistically significant;
- All LNER flows as a whole had a higher revenue and demand increase after the introduction of Simpler Fares (£47k and 762 journeys). This impact was statistically significant; and
- Non-LNER flows had a smaller revenue and demand increase after the introduction of Simpler Fares (£6k and 127 journeys) than the LNER flows, and this impact was statistically significant.

Table 41. Results from Regression Analysis – Phase 1b Model 1a (Phase 1b trial flows to test the overall weekly SF impact with split ticketing weights⁶⁴)

DEPENDENT VARIABLE	TEST	COUNTERFACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	£47,334	£3,643	12.99	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£5,797	£1,377	4.21	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£1,012	£3,643	0.28	0.78	ns
Demand	After SFs for all LNER flows (trial & control)	Before SFs for non-LNER control flows	762	67	11.44	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	127	25	5.06	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-20	67	-0.30	0.77	ns

7.5.5 Table 42 presents the results from Phase 1b trial flows to test the overall weekly revenue and demand SF impact without split ticketing weights (Phase1b Model 1b). The results indicate no significant revenue and demand impact on the trial flows, and those results are similar to Phase1b Model 1a results that do have split ticketing weights applied. Similarly, the effects below were displayed (see Appendix H2 for full model results):

- The LNER trial flows had a slightly additional revenue and a small reduction in demand after the introduction of Simpler Fares (£1k and 20 journeys) than for the LNER control flows, but the impact of Simpler Fares was not statistically significant;
- All LNER flows (trial and control) had a positive LNER-specific revenue and demand after the introduction of Simpler Fares (£47k and 761 journeys), and this impact was statistically significant); and
- Non-LNER control flows had a relatively smaller revenue and demand increase after the introduction of Simpler Fares (£5k and 92 journeys) compared to before Simpler Fares, and this impact was statistically significant.

⁶⁴ Simpler Fares Phase 1b trial flows had no weighting factors for split ticketing due to size and they were compared against LNER and non-LNER control flows which did have weighting for split ticketing.

Table 42. Results from Regression Analysis – Phase1b Model 1b (Phase 1b trial flows to test the overall weekly revenue SF impact without split ticketing weights)

DEPENDENT VARIABLE	TEST	COUNTERFACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,219	£3,320	14.22	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£4,721	£1,255	3.76	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£1,128	£3,320	0.34	0.73	ns
Demand	After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	761	59	12.95	0.00	
	After SFs for non-LNER control flows	Before SFs for non-LNER control flows	92	22	4.15	0.00	
	After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-19	59	-0.32	0.75	ns

7.5.6 Table 43 presents the results from an extended model (Phase 1b trial flows to test the overall weekly Simpler Fares impact with/without split ticketing weights by trial flow), which was estimated to understand the Simpler Fares impacts by individual LNER trial flow (see Appendix H2 for full model results). The results from Phase 1b Model 2a/2b indicate no significant revenue and demand impacts on the trial flows London-Dunbar (Berwick) (-£1k and -63/-64 journeys) and London-Morpeth (£3k and 24-25 journeys). The Simpler Fares impact is the same for the trial flows London-Alnmouth and London-Morpeth, as both flows belong to the same TZ (see Appendix B for a full discussion on the use of TZ in this analysis). Note that the overall average of these three individual Simpler Fares impacts is equivalent to the combined impact of them (£1k).

Table 43. Results from Regression Analysis – Phase1b Model 2a/2b (Phase 1b trial flows to test the overall weekly SF impact with/without split ticketing weights by trial flow)

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	MODEL	CO-EFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After SFs for LNER trial London-Dunbar ⁶⁵ (Berwick) (Impact of SFs)	After SFs for LNER control flows	2a 2b	-£1,152 -£1,036	£4,300 £3,919	-0.27 -0.26	0.79 0.79	ns ns
	After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	2a 2b	£3,177 £3,292	£4,300 £3,919	0.74 0.84	0.46 0.40	ns ns
	After SFs for LNER trial London-Dunbar (Berwick) (Impact of SFs)	After SFs for LNER control flows	2a 2b	-64 -63	79 69	-0.81 -0.90	0.42 0.37	ns ns
	After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	2a 2b	24 25	79 69	0.31 0.37	0.76 0.71	ns ns
Demand	After SFs for LNER trial London-Dunbar (Berwick) (Impact of SFs)	After SFs for LNER control flows	2a 2b	-64 -63	79 69	-0.81 -0.90	0.42 0.37	ns ns
	After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	2a 2b	24 25	79 69	0.31 0.37	0.76 0.71	ns ns

7.5.7 In Table 44, time effects for the Simpler Fares impact were estimated in Phase 1b trial flows to test the overall weekly revenue and demand SF impact with/without split ticketing weights by time period models by adding dummy time variables to Model 1a/1b (i.e. the model with and without split ticketing weights). The results did not show statistical significance but indicated some positive time period variation of the revenue and demand impacts after the introduction of Simpler Fares (see Appendix H2 for full model results).

⁶⁵ Berwick-upon-Tweed has the largest proportion of Berwick TZ, and Simple Fares went live for that station in Phase 1a.

Table 44. Results from Regression Analysis – Phase 1b Model 3a/3b (Phase 1b trial flows to test the overall weekly SF impact with/without split ticketing weights by time period)

DEPENDENT VARIABLE	TEST	COUNTER-FACTUAL	MODEL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Revenue	After_Trial_P08	Before_Trial_P08	3a	£204	£5,252	0.04	0.97	ns
			3b	£580	£4,786	0.12	0.90	ns
	After_Trial_P09	Before_Trial_P09	3a	£814	£5,255	0.15	0.88	ns
			3b	£1,087	£4,789	0.23	0.82	ns
	After_Trial_P10	Before_Trial_P10	3a	-£872	£5,253	-0.17	0.87	ns
			3b	-£1,333	£4,787	-0.28	0.78	ns
	After_Trial_P11	Before_Trial_P11	3a	£1,700	£5,255	0.32	0.75	ns
			3b	£1,751	£4,788	0.37	0.72	ns
	After_Trial_P12	Before_Trial_P12	3a	-£1,067	£5,260	-0.20	0.84	ns
			3b	-£959	£4,793	-0.20	0.84	ns
	After_Trial_P13	Before_Trial_P13	3a	£5,317	£5,259	1.01	0.31	ns
			3b	£5,666	£4,793	1.18	0.24	ns
Demand	After_Trial_P08	Before_Trial_P08	3a	-70	96	-0.73	0.47	ns
			3b	-62	85	-0.73	0.46	ns
	After_Trial_P09	Before_Trial_P09	3a	-48	96	-0.50	0.62	ns
			3b	-45	85	-0.53	0.60	ns
	After_Trial_P10	Before_Trial_P10	3a	-15	96	-0.15	0.88	ns
			3b	-27	85	-0.32	0.75	ns
	After_Trial_P11	Before_Trial_P11	3a	30	96	0.31	0.76	ns
			3b	31	85	0.37	0.72	ns
	After_Trial_P12	Before_Trial_P12	3a	-92	96	-0.96	0.34	ns
			3b	-90	85	-1.06	0.29	ns
	After_Trial_P13	Before_Trial_P13	3a	76	96	0.79	0.43	ns
			3b	83	85	0.97	0.33	ns

7.6 Regression analysis: Summary

- 7.6.1 Overall, there is no statistically significant revenue impact of Simpler Fares, either 12-months (Phase 1a flows) or 6-months (Phase 1b flows) post Simpler Fares, despite the model estimation showing an average positive value of £11k (1.85% change over the average weekly single leg revenue) and £1k (1.84% change over the average weekly single leg revenue) respectively for the post-Simpler Fares period (Model 1a) when split ticketing is controlled for. However, the 12-months post Simpler Fares impact turned into a negative but not statistically significant revenue impact of -£10k (-1.69% change over the average weekly single leg revenue) when the split ticketing weights were removed.
- 7.6.2 When individual trial flow and period Simpler Fares impacts were estimated, no statistical significance was found. There is only an indication that the impact of the introduction of Simpler Fares might have been positive impact on trial flows London-Edinburgh, London-Newcastle and London-Morpeth (and Alnmouth) but then negative for London-Berwick (Berwick-upon-Tweed and Dunbar). Hence, there is no statistical evidence that there is an impact of the Simpler Fares on revenue over for either the 12-month evaluation for Phase1a flows, or the 6-month evaluation for Phase 1b flows.
- 7.6.3 The demand impact of Simpler Fares was not statistically significant, and therefore, there was no evidence of Simpler Fares impacting the volume of journeys in the trial flows.

7.6.4 Table 45 shows the summary of the models estimated to evaluate the Simple Fares Phase 1a impact. It is recommended to use the weighted overall Simple Fares impact (Model 1) to report that no Simpler Fares impacts were observed (i.e., revenue and demand neutrality).

Table 45. Simple Fares Phase 1a Results from Regression Analysis – Summary

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED		MODEL 2: TRIAL FLOW SEGMENTED	
		Unweighted	Weighted	Unweighted	Weighted
Revenue (net receipts)	SFs weekly impact (London-Berwick-upon-Tweed)	-£10k (ns)	£11k (ns)	-£5k (ns)	-£2k (ns)
	SFs weekly impact (London-Edinburgh)	-£10k (ns)	£11k (ns)	-£17k (ns)	£13k (ns)
	SFs weekly impact (London-Newcastle)	-£10k (ns)	£11k (ns)	-£8k (ns)	£20k (ns)
Demand (journeys)	SFs weekly impact (London-Berwick-upon-Tweed)	-532	-182 (ns)	-183 (ns)	-147 (ns)
	SFs weekly impact (London-Edinburgh)	-532	-182 (ns)	-653 (ns)	-175 (ns)
	SFs weekly impact (London-Newcastle)	-532	-182 (ns)	-759 (ns)	-224 (ns)

(ns) Simple Fares impact is not significant at 95% confidence level

7.6.5 Table 46 shows the results for the Simple Fares Phase 1b that cover 6-months post Simple Fares. Those results do not show statistically significant results and they are aligned with Phase 1a results.

Table 46. Simple Fares Phase 1b Results from Regression Analysis – Summary

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED		MODEL 2: TRIAL FLOW SEGMENTED	
		Unweighted	Weighted	Unweighted	Weighted
Revenue (net receipts)	SFs weekly impact (London-Dunbar)	£1k (ns)	£1k (ns)	-£1k (ns)	-£1k (ns)
	SFs weekly impact (London-Morpeth)	£1k (ns)	£1k (ns)	£3k (ns)	£3k (ns)
Demand (journeys)	SFs weekly impact (London-Dunbar)	-20 (ns)	-19 (ns)	-63 (ns)	-64 (ns)
	SFs weekly impact (London-Morpeth)	-20 (ns)	-19 (ns)	25 (ns)	24 (ns)

(ns) Simple Fares impact is not significant at 95% confidence level

7.7 Conclusions

7.7.1 The overall findings for **Phase 1a Simpler Fares flows** (12 months of data), from the descriptive analysis when comparing before (P01 2022/23-P13 2022/23) with after (P01 2024/25-P13 2024/25) the introduction of Simpler Fares, can be summarised as follows:

- **Journeys** have increased between periods for most of the flows, with the exception of London-Newcastle that experienced a significant drop in journeys (-7%). For all control flows, journeys generally grew at a much larger rate than the LNER trial flows.

- **Revenues** have not increased for London-Newcastle (0%), despite some growth being observed on their control flows. However, revenues have increased for London-Berwick-upon-Tweed (Berwick) and London-Edinburgh (8% and 2% respectively), but at a lower rate to control flows.
- **Yields** have generally not changed or decreased for all flows (ranged between -10% and 0%), with the exception of London-Newcastle that considerably increased (8%). The other two trial flows experienced a small increase in yield (0-1%).
- The change in the share of different **ticket types** has also been notable on the trial flows. Standard Advance tickets have seen an increased share for all three flows whereas Standard Reduced (Off Peak) share has decreased. This impact on the ticket type shares was expected because Off Peak and Super Off Peak tickets were removed from sale since the introduction of Simpler Fares.

7.7.2 The overall findings for **Phase 1b Simpler Fares flows** (6 months of data), from the descriptive analysis when comparing before (P08 2022/23 to P13 2022/23) and after Simpler Fares (P08 2024/25 to P13 2024/25), can be summarised as follows:

- **Journeys** have decreased between periods for trial flows (from -6% to -9%). However, the control flow experienced significant increases in journeys, with non-LNER control flows having stronger growth than LNER control flows.
- Similarly, **revenues** have decreased for all trial flows (from -3% to -5%). Revenues for control flows grew, and this growth was stronger for non-LNER control flows than LNER control flows.
- **Yields** have increased for the two trial flows and generally decreased for control flows, with the exception of the control flows for London-Morpeth. These control flows have increased yield at the same level as the trial flow London-Morpeth.
- The change in the share of different **ticket types** has also been notable on the trial flows. Standard Advance tickets have seen an increased share for all three flows whereas Standard Reduced (Off Peak) share has decreased. This impact was expected due to the removal of Off Peak and Super Off Peak tickets since the introduction of Simpler Fares, however, these findings only reflect 6-month post-Simpler Fares periods, and a seasonal time effect might be present⁶⁶.

7.7.3 The descriptive analysis presented a general view of what has happened to date with the trial and control flows. There may be a split ticketing impact to some extent that was not possible to measure given the data available.

7.7.4 In addition, Phase 1b trial flows have been analysed for a 6-month period and the changes in revenues or journeys might not reflect a sufficient period of maturity of the Simpler Fares system.

7.7.5 A more disaggregated analysis was run using regression modelling techniques to determine whether the introduction of Simpler Fares impacted LNER revenues and demand.

⁶⁶ London-Berwick-upon-Tweed revenues and demand have been reflected in these results because Berwick TZ was used. Given the larger size of Berwick-upon-Tweed in comparison with Dunbar, it is difficult to ascertain the net London-Dunbar performance.

- 7.7.6 After undertaking the regression modelling, the overall conclusion for the 12-month post Simpler Fares of the Phase 1a flows analysis is that although revenue increased on the trial flows, there was not a statistically significant revenue impact of Simpler Fares despite the model estimation showing an averaged positive value of £11k (Model 1a; equivalent to 1.85% over the average single leg revenue in the trial flows after Simpler Fares). There was a reduction in demand (i.e., -182 weekly single leg journeys equated to -1.92% over the average weekly single leg demand) on the trial flows compared to the control flows, though this also was not statistically significant.
- 7.7.7 When Simpler Fares impacts were specifically estimated for each trial flow or for each rail period, results did not show any statistical significance. This finding was the same for Phase 1a and Phase 1b trial flows.
- 7.7.8 Therefore, the overall conclusion for the 6-month post Simpler Fares of Phase 1b flows analysis is that although weekly single leg revenue increased on the trial flows (Model 1a; £1k equated to 1.84%), there was not a statistically significant revenue impact.
- 7.7.9 Models with and without split ticketing weighting were estimated. None of the models showed statistical significance of a Simpler Fares impact. However, the models with split ticketing weights might reflect actual revenues more accurately⁶⁷. The estimated weekly revenue Simpler impacts, despite not being significant at 95% confidence level, showed to be positive with split ticketing (+£10k) and negative without split ticketing (-£10k) for the Phase 1a trial flows (12-month post-evaluation). These findings should bring interest to the use of split ticketing in data analyses, since split ticketing can offer attractive savings to passengers by buying separate tickets for different legs of their journey, even if they stay on the train, and particularly for long distance to/from London journeys. The lack of significance (i.e., the large value of the standard deviation of the SF coefficient) in the models with split ticketing weights is within the same scale as the models without split ticketing (that is between £16k and £19k), and therefore, it shows that the split ticketing is having a similar variation effect in the trial flows as in the control flows.
- 7.7.10 The models' estimated impacts on demand showed the same level of significance as for the revenue models. Overall, the volume of journeys (demand) was not affected by the introduction of Simpler Fares in the trial flows.

⁶⁷ Trial flows (Berwick-upon-Tweed, Dunbar, Morpeth and Alnmouth) were small in size, and therefore, the split ticketing factors remained as 1 for both pre and post Simpler Fares. Conversely, LNER and non-LNER control flows had split ticketing factors which increased revenue and demand in the period post Simpler Fares.

8. REGRESSION ANALYSIS - COMBINED SLP & SIMPLER FARES

Chapter Summary

Introduction

In addition to the separate models for individual SLP and Simpler Fares impacts, regression analysis for a combined SLP and Simple Fares impact was also run. This analysis used a DID approach to statistically model the combined weekly revenue and demand impacts of these products together and compare the changes in outcomes over time between the trial flows and the control flows.

To run a combined model, common periods in which both SLP and Simpler Fares (Phase 1a trial flows) were available were selected, and flows were maintained for consistency with the previous regression analyses. Therefore, periods considered were P01 2022/23-P08 2022/23 ('before SLP and Simpler Fares' period) and P01 2024/25-P08 2024/25 ('after SLP and Simpler Fares' period). The SLP trial and control flows were the same flows as in Chapter 6 (London and non-London trial flows, see section 6.1), and the Simpler Fares flows were the same Phase 1a flows as in Chapter 7 (Phase 1a trial flows, see section 7.1). It should be noted however that there were two Simpler Fares trial flows (London-Newcastle and London-Edinburgh) and one Simpler Fares LNER control flow (London-Leeds) that had SLP introduced in 2020. A hypothesis test showed no statistically significant difference in the SLP and Simpler Fares impacts between models with and without those flows.

Due to the reliance on evaluating based on eight months of post-implementation data, these results should be viewed as indicative. The analysis of SLP and Simpler Fares individually has suggested there may be a 'bedding-in' period as passengers become increasingly accustomed to the systems and as the systems mature. This maturation effect is not necessarily captured during this eight month analysis timeframe for the combined SLP and Simpler Fares model.

Changes in passenger revenues

Overall, the regression analysis indicated an increase in revenues for the combined SLP and Simple Fares Phase 1a trial flows (8-month post-evaluation). This impact was statistically significant; this equated to a £10k-£13k (2.88%-3.31%) increase in the average weekly single leg revenues.

Changes in rail demand

Overall, the regression analysis indicated no statistically significant impact in demand (journeys) for the combined SLP and Simple Fares Phase 1a trial flows (8-month post-evaluation).

8.1 Combined SLP & Simpler Fares Phase 1a Model results

- 8.1.1 Split ticketing involves buying multiple tickets for different and consecutive segments of a single train journey. Because each segment acts as a separate transaction, LENNON might incorrectly record a single trip as multiple journeys. The Rail Delivery Group (RDG) developed

a split ticketing method to recreate single train journeys and generate split ticketing factors by station pairs for weighting.

8.1.2 Sensitivity tests were then carried out to assess the impacts under different scenarios. As a result, five sets of models were run, as set out below. These separate models assessed the sensitivity of the split ticketing weightings under scenarios of potential double counting:

- One with the full split ticketing weightings applied (i.e. no adjustment for any potential double counting);
- One with 75% split ticketing weightings (i.e. a 25% adjustment for any potential double counting);
- One with 50% split ticketing weightings (i.e. a 50% adjustment for any potential double counting);
- One with 25% split ticketing weightings (i.e. a 75% adjustment for any potential double counting); and
- One without split ticketing weightings applied (i.e. a 100% adjustment for any potential double counting).

8.1.3 Table 47 shows the combined impact of the SLP and Simple Fares trials (see Appendix I for full model results). The results from the combined model indicate a **significant positive weekly revenue impact** on the trial flows (£10k-13k per week), but **no significant demand (journeys) impact**. Under the assumption of a potential double counting, the impact should be reduced proportionally⁶⁸ as shown in table below.

⁶⁸ $Impact = (1 - \% \text{ double counting}) * Impact_{Yes} + (\% \text{ double counting}) * Impact_{No}$

Table 47. Results from Regression Analysis – Combined SLP and SFs Phase 1a Model (overall weekly SLP & SFs impact)

DEPENDENT VARIABLE	SPLIT TICKETING WEIGHTS	COEFFICIENT (% CHANGE)	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.	ADJ. R-SQUARED
Revenue	Yes	£12,751	£4,753	2.68	0.01		57.20%
	Yes, with 25% double counting	£12,006	£4,624	2.60	0.01		57.23%
	Yes, with 50% double counting	£11,261	£4,495	2.51	0.01		57.25%
	Yes, with 75% double counting	£10,517	£4,367	2.41	0.02		57.27%
	No	£9,772	£4,240	2.30	0.02		57.29%
Journeys	Yes	94	98	0.96	0.34	ns	60.84%
	Yes, with 25% double counting	79	96	0.82	0.41	ns	60.83%
	Yes, with 50% double counting	64	94	0.68	0.50	ns	60.40%
	Yes, with 75% double counting	49	92	0.53	0.59	ns	60.13%
	No	34	89	0.38	0.71	ns	59.84%
Number of observations							25,619

8.2 Summary and Conclusions

- 8.2.1 The regression analysis indicated an increase in revenues for the combined SLP and Simple Fares Phase 1a trial flows (8-month post-evaluation). Sensitivity tests were undertaken to assess the impact of a potential double counting when the split ticketing weights were applied. Overall, this combined impact was statistically significant; this equated to a £10k-£13k (2.88%-3.31%) increase in the average weekly single leg revenues.
- 8.2.2 The demand regression analysis indicated no statistically significant impact in journeys for the combined SLP and Simple Fares Phase 1a trial flows (8-month post-evaluation). Therefore, we concluded that the introduction of SLP and Simple Fares Phase 1a resulted to be demand neutral for the period analysed.

9. CONCLUSIONS

Summary

The primary research indicates that both SLP and Simpler Fares offer enhancements to the ticketing experience for passengers. The findings were more positive for SLP than Simpler Fares with regards to perceived fairness, increasing frequency of travel and passengers' monetary valuation of ticketing flexibility. Passenger satisfaction has improved significantly in many areas, though this has taken time to achieve; while behaviour (frequency of travel and journey purpose) has remained consistent. Simpler Fares is perceived as less fair than other systems, but this is improving, and informing passengers of the assurances is important for perceptions of fairness and likelihood to travel by rail. This is within the context of satisfaction with LNER being high and having increased.

The secondary data analyses results were more positive for SLP than Simpler Fares with regards to impact on LNER revenues. The descriptive analysis provided some context by summarising and interpreting the data and trends. The regression analysis, which had counterfactuals and statistical testing of the impacts of SLP and SF, was used to provide the key findings. The regression analysis found that SLP had a positive and significant revenue impact for London trial flows, but a non-statistically significant impact for non-London trial flows. The SLP revenue impact was higher on London trial flows where competition with other TOCs was present than London trial flows without competition. Simpler Fares trial flows did not show a statistically significant revenue impact with the results being effectively neutral for both Phase 1a and Phase 1b (12 and 6 months after implementation). The regression analysis also found that the results on journeys showed some positive results for SLP trial flows relative to control flows, however these impacts were not statistically significant. For Simpler Fares, journey increases were generally noted on the Phase 1a trial flows (12 months after implementation), but at a lower rate than on the control flows. Journeys decreased on Phase 1b trial flows (6 months after implementation).

When looking at the combined impacts for SLP and Simpler Fares together, the regression analysis showed that there was a statistically significant positive impact (increase) in revenue for the trial flows. By contrast, there was no impact on demand (journeys) for the trial flows in this combined model. However, the short analysis period for this combined model (eight months) means that the results did not necessarily capture any maturation effects as customers become more familiar with the changes over time. It should be noted however that there were two Simpler Fares trial flows (London-Newcastle and London-Edinburgh) and one Simpler Fares LNER control flow (London-Leeds) that had SLP introduced in 2020; although there were no statistically significant differences in the SLP and Simpler Fares impacts between models with and without those flows.

Overall, when comparing the findings from the evaluation to the expected impacts identified in the Theory of Change (ToC):

- Passenger perceptions of fairness of the fares systems, and satisfaction with different journey and ticket purchase elements generally increased post-implementation compared to baseline, as anticipated in the ToC;

- The primary research indicated fewer passengers considered other (non-rail) transport modes for their journey, as anticipated in the ToC. However, self-reported rail travel frequency and journey purposes had not changed;
- While the share of advance tickets remained stable for SLP, their share increased for Simpler Fares. In addition, the primary research indicated some reported reductions in crowding, as anticipated in the ToC;
- The combined impact of SLP and Simpler Fares indicated no statistically significant increase in demand on trial flows. While some increases in demand were observed, there was no consistent pattern, potentially pointing to a lesser demand impact than originally anticipated in the ToC; and
- The combined impact of SLP and Simpler Fares indicated a statistically significant increase in revenue on trial flows, as anticipated in the ToC. However, this was primarily driven by increased revenues on SLP London trial flows.

9.1 Key Findings from the Primary Research

Does SLP and Simpler Fares increase passenger trust and satisfaction through a perception of a fairer and transparent fares system?

- 9.1.1 A larger proportion of passengers felt that SLP was fair compared to the proportion who felt that the previous ticketing system was fair, and a lower proportion felt that Simpler Fares was fair. Overall, perceptions of fairness of the fares systems, and passenger satisfaction, have increased post-implementation compared to their baseline levels. In addition, satisfaction with many individual elements of the system have increased over time. While SLP is still perceived as the 'fairer' product overall, Simpler Fares has seen the greater increase in both perceived fairness and satisfaction with individual elements over the evaluation period.
- 9.1.2 SLP was rated by passengers as more 'fair' (53%) than Simpler Fares (32%) by Simpler Fares passengers post-implementation, and at all stages of the evaluation.
- 9.1.3 At the end of the evaluation period (17-months post-implementation), half of SLP passengers rated the SLP ticketing system as 'fair' (50%), around a quarter rated it as 'unfair' (24%), and around one in five had no strong opinion either way (21%). These figures differed little from the baseline figures (1-2% difference).
- 9.1.4 Simpler Fares was rated by more passengers as 'fair' post-implementation (32%) compared to the baseline (27%). This shift came from passengers transitioning away from the 'neither fair nor unfair' category, which decreased from 20% to 16%. The percentage of passengers who felt Simpler Fares was 'unfair' remained consistent throughout (47% post-implementation compared to 48% at the baseline).
- 9.1.5 Around three in ten (30%) did say they were more likely to travel more frequently by rail after seeing a set of assurances regarding Simpler Fares pricing, indicating there is potential benefit in informing passengers of these details regarding Simpler Fares. However, many Simpler Fares passengers (45%) did not change their views on the fairness of this ticketing system after seeing assurances regarding the pricing.
- 9.1.6 For SLP specifically, 42% of passengers feel that the removal of return tickets is inconvenient, but around half (53%) agree that SLP provides more flexibility in choosing a travel time.
- 9.1.7 Passengers' overall satisfaction with their current LNER journey increased post-implementation for both SLP (71% for 17 months post-implementation) and Simpler Fares (70% for 12 months post-implementation), compared to prior to their introduction (63% and 64% respectively). When looking at passenger perceptions of specific elements of the different ticketing systems, the extent to which passengers agreed with individual statements were broadly aligned for SLP and Simpler Fares. More specifically:
 - 'The price I was paying for the ticket was clear' was the highest ranked element for both SLP (89%) and Simpler Fares (88%); and
 - The two least positively rated features for both ticketing systems were: 'The difference between various ticket types was clear and easy to understand' (64% for SLP and 63% for Simpler Fares); and 'The range of different ticket options available for my journey was appropriate' (63% for SLP and 61% for Simpler Fares).

9.1.8 Between the pre-implementation survey (prior to the tickets' introduction), and the final evaluation stages (17 months post-implementation for SLP, and 12 months post-implementation for Simpler Fares), both SLP and Simpler Fares saw significant increases in the percentage of passengers who agreed that:

- 'The difference between the various ticket types was clear and easy to understand';
- 'The range of different ticket options available for their journey was appropriate'; and
- 'It was easy to find the necessary information and options about tickets to make informed decisions'.

9.1.9 However, there were some differences in the satisfaction with some characteristics between the SLP and Simpler Fares ticketing systems. Confidence in purchasing the best value for money ticket at time of booking was notably higher for SLP (72%) than Simpler Fares (67%). By contrast, clarity on how much flexibility in travel times was available with the ticket purchased was notably higher for Simpler Fares (75%) than SLP (68%).

Does SLP and Simpler Fares encourage some new demand and deter other trips, with demand shifting between rail operators and other transport modes?

9.1.10 Overall, there have been minimal changes to passenger journey purposes and the time in advance of travel in which passengers booked their ticket post-implementation compared to baseline. However, fewer passengers considered non-rail modes for the journey they were making post-implementation compared to baseline. While SLP had no significant impact on self-reported current frequency of rail travel, if the scheme was rolled-out across the UK, many passengers in the primary research stated this would increase their frequency of future rail use. However, the results for Simpler Fares were less favourable, with a self-reported reduction in rail journeys post-implementation compared to baseline. This finding broadly aligned with the secondary analysis, which indicated a non-significant decrease in journeys on Simpler Fares flow post-implementation compared to baseline. In addition, nearly a third of passengers stating they would reduce their frequency of rail travel if Simpler Fares was rolled-out across the UK.

9.1.11 For SLP passengers, no significant changes were identified in self-reported rail travel frequency between the time prior to implementation and post-implementation. However, overall self-reported rail travel frequency decreased for Simpler Fares passengers post-implementation (54% travelling at least once a month) compared to pre-implementation (61% travelling at least once a month).

9.1.12 If the respective ticketing systems were introduced across the whole UK rail network, SLP was reportedly more likely to increase future rail travel frequency (stated by 49% of SLP passengers) compared to Simpler Fares (19% of Simpler Fares passengers). In addition, only 2% of SLP passengers stated they would travel less often if SLP was introduced across the UK; compared to 35% of Simpler Fares passengers who stated they would reduce their frequency of travel if Simpler Fares was introduced across the UK. However, the results indicate that it may take time for passengers to change their views and behaviours (with results for SLP and Simpler Fares generally shifting towards more 'positive' views or anticipated behaviours as time progressed). As SLP had been live for longer in the final post-implementation survey, this may be a contributing factor to the difference in stated increase in future rail travel between the ticketing systems.

- 9.1.13 Assurances around pricing did not affect the views of most Simpler Fares passengers, although three in ten (28%) did say they were more likely to travel more frequently by rail after seeing these assurances. However, one in nine transitioned to a view where they would travel less frequently by rail compared to their 'uninformed' view.
- 9.1.14 Among passengers travelling with Advance tickets, over half of SLP passengers (53-54%) and just under half of Simpler Fares passengers (44-46%) were willing to pay more if their ticket allowed them the flexibility to travel on other trains up to 70 minutes before or after their planned departure time. However, SLP passengers' willing to pay more placed a higher additional value on this flexibility (20% on top of their ticket price in Wave 3, up from 15-18% in Wave 1) compared to Simpler Fares passengers (11-12% range across Waves 1, 3 and 4). However, it is worth noting that Simpler Fares passengers had the opportunity to purchase the semi-flexible ticket in Waves 3 and 4 (many chose not to, and many will have seen the price difference compared to Advance), whereas SLP passengers did not have this opportunity. Therefore, the difference between the hypothetical scenario and anticipated behaviour is potentially less for Simpler Fares passengers as they actually had the opportunity to purchase the semi-flexible ticket in Waves 3 and 4.
- 9.1.15 SLP passengers were significantly more likely to report plenty of seats being available on their train post-implementation (56%) compared to pre-implementation (41%). These findings occurred despite the primary research indicating no change in the share of advance ticket purchases among surveyed SLP passengers post-implementation compared to baseline; while the secondary analysis indicated no change in advance ticket purchase proportions for London-flows, and a small decrease for non-London flows.
- 9.1.16 The share of Simpler Fares passengers self-reporting that lots of seats were available significantly increased post-implementation (43%) compared to baseline (30%). Those reporting that there were no seats available, or passengers standing on the train significantly decreased post-implementation (3%) compared to pre-implementation (11%). These findings align with the secondary data analysis for Simpler Fares, which observed an increased proportion of advance tickets sold post-implementation compared to baseline; although the primary research did not indicate any notable change in the share of advance ticket purchases among surveyed Simpler Fares passengers.
- 9.1.17 In addition, a lower proportion of passengers considered travelling by another mode instead of rail for their current journey post-implementation, with this trend consistent for SLP (33% post, compared to 41% pre) and Simpler Fares (45% post, compared to 50% pre).
- 9.1.18 While the most common journey purposes remained the same for SLP and Simpler Fares at all stages of the evaluation, SLP passengers were more likely to be travelling with other adults, and less likely to be travelling alone post-implementation compared to pre-implementation.

9.2 Key Findings from the Secondary Data Analysis

Are there increases in rail demand and rail market share as a result of the ticketing system?

- 9.2.1 The regression analysis showed that:

- When looking at the combined impacts for SLP and Simpler Fares together, there was no significant impact on demand (journeys) for the trial flows in this combined model;
- For SLP overall, the weekly demand impacts were not statistically significant in the regression analysis. However, for the London trial flows, there was a positive and statistically significant demand impact when competition effects on trial flows were accounted for (an increase of 250-290 journeys per week). Demand impacts for non-London trial flows (while positive) remained not statistically significant for all demand modelling; and
- For Simpler Fares, there was a small reduction in journeys on the trial flows when compared to the control flows (Phase 1a -182 journeys; Phase 1b -20 journeys). However, neither of these impacts were statistically significant.

9.2.2 The descriptive analysis showed that:

- Across all trial flows for SLP, when comparing before the introduction of SLP to after the introduction of SLP, journeys increased substantially (between 15%-20%). Journeys increased for all SLP London trial flows, whereas journeys for the SLP non-London trial flows decreased notably for the Newcastle-Edinburgh and York-Newcastle flows. However, the regression analysis demonstrates that these changes were not a result of the ticketing system;
- Standard Anytime and Super Off-Peak tickets increased post-SLP implementation across all London trial flows compared to pre-implementation, whilst the share of Standard Advance tickets did not generally change (aside from a 5% increase in London-Darlington). For the control flows, standard Super-Off-Peak yields were substantially higher in the LNER trial flows compared to the control flows, whereas the opposite was true for Standard Anytime;
- For Simpler Fares, journeys for Phase 1a trial flows increased for London-Berwick, and less so for London-Edinburgh post-implementation compared to pre-implementation. By contrast, London-Newcastle experienced a significant drop in journeys (-7%). The control flows journeys generally grew at a much larger rate than the LNER trial flows;
- Journeys decreased post Simpler Fares implementation compared to pre-implementation for Phase 1b Simpler Fares trial flows (from -6% to -9%). However, the control flows experienced significant increases in journeys, with non-LNER control flows displaying stronger growth than LNER control flows; and
- The change in the share of different ticket types post-implementation compared to pre-implementation was notable on the trial flow for Simpler Fares. Standard Advance tickets had an increased share for all three flows whereas Standard Reduced (Off Peak) share decreased. This impact on ticket type shares was expected, as Off Peak and Super Off Peak tickets were removed since Simpler Fares were introduced.

Are there any changes in passenger revenues, and if so, do these changes vary between by flow or market?

9.2.3 The regression analysis showed that:

- When looking at the combined impacts for SLP and Simpler Fares together, there was a statistically significant positive impact (increase of approximately £10k-£13k, equated to 2.88%-3.31%) in weekly revenue for the trial flows, when controlling for the effects of competition in the trial flows;

- For SLP, London trial flows showed a statistically significant increase in revenue after the introduction of SLP. On non-London trial flows, the revenue impact was not statistically significant. This difference could be driven by being different market segments, with different journey purposes and sensitivities to ticketing changes; and
- For Simpler Fares, the regression analysis indicated a non-significant increase in revenues for the Phase 1a trial flows and a non-significant decrease in revenues for the Phase 1b trial flows post-implementation compared to pre-implementation. This equated to a 1% increase in revenue across all flows when split ticketing was accounted for (-3% without split ticketing accounted for).

9.2.4 The descriptive analysis showed that:

- Overall, we observed large revenues increases across all SLP trial flows post-implementation compared to pre-implementation (between 35%-41% in two rail years at a similar magnitude as the control flows). However, there were differences between London and non-London flow groups. For London trial flows, the revenue increases were significant. Where competition was present for London flows, the SLP revenue impact was higher compared to London flows without competition;
- Where competition was present, the SLP descriptive analysis showed that LNER market shares decreased for London-Doncaster and London-York. For non-London flows, the revenue increase was relatively small, albeit with some differences in trends between individual flows; and
- For both Simpler Fares phases, revenue growth was higher for the control flows than the trial flows; with Phase 1b also seeing larger growth for non-LNER controls than LNER control flows. When interpreting these results, it's worth noting that the Phase 1a trial flows account for much larger revenues than Phase 1b. In addition, the Berwick TZ was present in both phases (i.e., trial flows Berwick-upon-Tweed (1a) and Dunbar (1b)). Therefore, Phase 1b had included the impact of Berwick-upon-Tweed (which had the largest proportion of Berwick TZ).

Do changes in fare levels encourage some new demand and deter other trips, with demand shifting between rail operators and other transport modes?

9.2.5 The descriptive analysis showed that:

- Yields increased for all SLP London trial flows post-implementation compared to pre-implementation. This increase did not seem to impact the positive growth in journeys observed during the descriptive analysis;
- For Phase 1a Simpler Fares flows, yields for the London-Newcastle trial flow increased considerably (8%), although the other two trial flows experienced a small increase in yield (0-1%). Control flows experienced a reduction in yield; and
- For Phase 1b flows, yields increased for the two trial flows and generally decreased for control flows, with the exception of the control flows for London-Morpeth. These control flows increased yield at the same level as the trial flow London-Morpeth.

Summary tables for descriptive analysis observed changes

9.2.6 The tables below summarise the changes in revenues, journeys and yields from the descriptive analysis. Results are shown for the full 'before' SLP/Simpler Fares and 'after' SLP/Simpler Fares periods, with percentage changes indicated. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices).

Descriptive Analysis Summary – SLP (June 2021 to November 2022 vs. June 2023 to November 2024)

FLOW TYPE	REVENUE BEFORE SLP	REVENUE AFTER SLP	% CHANGE REVENUE	JOURNEYS BEFORE SLP	JOURNEYS AFTER SLP	% CHANGE JOURNEYS	YIELD BEFORE SLP	YIELD AFTER SLP	% CHANGE YIELD
London flows									
LNER Trial	£113.9m	£161.8m	+42%	3,066,905	3,663,115	+19%	£37	£44	+19%
LNER Trial + Competition	£25.8m	£44.4m	+72%	878,977	1,364,376	+55%	£29	£33	+11%
non-LNER Control	£521.5m	£693.8m	+33%	14,879,423	18,191,712	+22%	£35	£38	+9%
Non-London flows									
LNER Trial	£33.0m	£38.4m	+16%	1,746,433	1,710,770	-2%	£19	£22	+19%
LNER Trial + Competition	£18.4m	£24.7m	+34%	1,286,649	1,669,949	+30%	£14	£15	+3%
non-LNER Control	£102.0m	£132.8m	+30%	5,025,589	6,444,237	+28%	£20	£21	+2%

Descriptive Analysis Summary – Simpler Fares Phase 1a (April 2022 to March 2023 vs. April 2024 to March 2025)

PHASE 1A FLOW TYPE	REVENUE BEFORE SF	REVENUE AFTER SF	% CHANGE REVENUE	JOURNEYS BEFORE SF	JOURNEYS AFTER SF	% CHANGE JOURNEYS	YIELD BEFORE SF	YIELD AFTER SF	% CHANGE YIELD
LNER Trial	£177.0m	£179.4m	+1%	2,965,696	2,900,312	-2%	£60	£62	+4%
LNER Control	£221.0m	£256.7m	+16%	5,296,554	6,131,755	+16%	£42	£42	0%
non-LNER Control	£370.7m	£419.4m	+13%	7,307,070	8,986,458	+23%	£51	£47	-8%

Descriptive Analysis Summary – Simpler Fares Phase 1b (October 2022 to March 2023 vs. October 2024 to March 2025)

PHASE 1B FLOW TYPE	REVENUE BEFORE SF	REVENUE AFTER SF	% CHANGE REVENUE	JOURNEYS BEFORE SF	JOURNEYS AFTER SF	% CHANGE JOURNEYS	YIELD BEFORE SF	YIELD AFTER SF	% CHANGE YIELD
LNER Trial	£5.5m	£5.3m	-5%	132,289	122,182	-8%	£42	£43	+3%
LNER Control	£4.8m	£5.1m	+6%	80,624	87,845	+9%	£60	£58	-3%
non-LNER Control	£9.8m	£12.7m	+30%	187,872	244,782	+30%	£52	£52	0%

Summary of modelled impacts

9.2.7 The table below shows the summary of the regression models estimated to evaluate the SLP impact for revenues and journeys. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices).

- **Model 1** provides the **overall average weekly SLP impact**;
- **Model 2** provides the **weekly SLP impact for London and non-London flows separately**; and
- **Model 3** provides the **weekly SLP impact with the effects of competition from other TOCs accounted for**.

Regression Analysis Summary – SLP (June 2021 to November 2022 vs. June 2023 to November 2024)

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED	MODEL 2: LONDON/NON- LONDON SEGMENTED	MODEL 3: SEGMENTED WITH COMPETITION
Revenue (net receipts)	SLP weekly impact (London)	£16k	£17k	£20k
	SLP weekly impact (non-London)	£16k	£7k (ns)	-£1.5k (ns)
Demand (journeys)	SLP weekly impact (London)	74 (ns)	142 (ns)	286
	SLP weekly impact (non-London)	74 (ns)	-312 (ns)	28 (ns)

(ns) SLP impact is not significant at 95% confidence level

9.2.8 The table below shows the summary of the regression models estimated to evaluate the Simplifier Fares Phase 1a impact for revenues and journeys. Split ticketing factors have been applied to these results, while revenues and yields are compared in real terms (in 2021/22 prices). The Phase 1b results followed the same pattern, demonstrating revenue and demand neutrality for Simplifier Fares.

- **Model 1** provides the **overall average weekly Simplifier Fares impact**; and
- **Model 2** provides the **weekly Simplifier Fares impact for each trial separately**.

Regression Analysis Summary – Simpler Fares (April 2022 to March 2023 vs. April 2024 to March 2025)

DEPENDENT VARIABLE	TEST	MODEL 1: OVERALL, NOT SEGMENTED	MODEL 2: TRIAL FLOW SEGMENTED
Revenue (net receipts)	SFs weekly impact (London-Berwick-upon-Tweed)	£11k (ns)	-£2k (ns)
	SFs weekly impact (London-Edinburgh)	£11k (ns)	£13k (ns)
	SFs weekly impact (London-Newcastle)	£11k (ns)	£20k (ns)
Demand (journeys)	SFs weekly impact (London-Berwick-upon-Tweed)	-182 (ns)	-147 (ns)
	SFs weekly impact (London-Edinburgh)	-182 (ns)	-175 (ns)
	SFs weekly impact (London-Newcastle)	-182 (ns)	-224 (ns)

(ns) Simpler Fares impact is not significant at 95% confidence level

9.3 Considerations for new ticketing products

9.3.1 This evaluation has highlighted some successful elements of the ticketing products being evaluated, which could be noted in the development of any future products:

- For SLP, the largest increases in satisfaction related to perceived value for money, the range of products available, and the ease of finding and understanding information on SLP products;
- For Simpler Fares, the largest increases in satisfaction related to the share of passengers who understood the flexibility and restrictions associated with their ticket, and the share of passengers who said it was easy to find and understand information on Simpler Fares products;
- Awareness of assurances associated with a new product may improve some people's perceptions of fairness of the product, and their anticipated likelihood of future travel;
- The regression analysis has shown passengers on London flows (longer distances) may behave differently than passengers on non-London flows (shorter distances);
- The regression analysis has also highlighted the importance of measuring the impact of having competition in trial flows; and
- The existence of split ticketing that allows multiple ticket purchases is a matter that should be accounted for when assessing the impact of new ticketing products. By doing so, the revenue and demand impact can be more accurately measured.

9.4 Considerations for future evaluations of new ticketing products

9.4.1 This evaluation has demonstrated that attitudes and behaviours can mature over an extended period of time as people's familiarity and awareness of a product grows. This is a key learning for future evaluations, highlighting the importance of evaluating new ticketing products over an extended period of time (more than one year), to account for a 'bedding-in' period while people become accustomed to the new product(s). Changes in attitudes and behaviours may not be fully captured if the timescale for the evaluation is too limited.

- 9.4.2 This research has also demonstrated that raising awareness of assurances associated with a new product may improve some people's perceptions of fairness of the product, and their anticipated likelihood of future travel. Valuable information could be sought from those whose views are not impacted by increased awareness of such assurances, to understand why the assurances do not impact their views or behaviour, and whether any other specific messages would resonate better with them.
- 9.4.3 The regression analysis has provided a robust statistical method to quantify the impact evaluation of new ticketing products. The Difference-In-Difference (DID) method enabled the estimation of causal effects by comparing the changes in revenue and demand over time between trial flows and control flows. Special consideration was taken for the selection of the 'before' implementation and 'after' implementation rail periods; the trial flows; and the control flows based on key metrics.
- 9.4.4 Another important consideration was the use of the two-way fixed estimation method in the regression analysis, which enabled the estimation of causal effects by controlling for unobserved flow-specific and time-specific confounding factors.

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APPENDIX B – METHODOLOGY TECHNICAL APPENDIX

Primary Research

Questionnaire design

The questionnaire was developed to assess various aspects of SLP and Simpler Fares trials. The exact contents of the questionnaire were planned to largely remain the same between each wave of the evaluation as the SLP and Simpler Fares trials progress further, with the Wave 1 survey being used as a baseline for comparison with subsequent waves. The Wave 1 survey had a particular focus on:

- Awareness and understanding of SLP;
- Attitudes towards satisfaction with SLP and Simpler Fares in terms of fairness, flexibility, simplicity;
- Attitudes, perceptions and satisfaction with the experience of choosing and buying tickets and the availability of seats;
- Travel behaviours (frequency, time of day, journey purpose, choice of mode);
- Ticket purchasing behaviours (tickets purchased; ticket type preferences, railcard ownership, preferred channels of ticket purchase); and
- Demographic and employment questions.

For Wave 3, the Wave 1 survey was used as an initial starting point for the questionnaire design. Whilst many of the Wave 1 questions remained, some elements were refined to simplify the experience of completing the questions for respondents, whilst additional insights were sought regarding the introduction of Simpler Fares. The key modifications to the survey script for Wave 3 therefore related to:

- More tailored screening to maximise the proportion of the sample from ‘in-scope’ SLP and Simpler Fares flows, and minimising respondents on ‘other’ flows;
- Modification of the Willingness to Pay (WtP) questions, with these questions now:
 - Only asked to those who purchased an Advanced (Fixed) ticket; and
 - Focused on WtP for a 70-min Semi-flex ticket, rather than an Anytime ticket.
- The addition of Simpler Fares questions asking passengers about their understanding, awareness, perceptions, and intended behaviours as a result of the trial initiative.

For Wave 4, the Wave 3 survey was used as the starting point for the questionnaire design. There were minimal changes between these two waves, with the only modifications being:

- The screening questions were updated so only passengers on ‘in-scope’ Simpler Fares flows were selected to participate, and
- A question was added to ascertain whether the respondent used split ticketing when purchasing the ticket for the journey they were making.

Fieldwork

Wave 1 fieldwork took place between 22nd May 2023 and 10th June 2023 on the future SLP rollout and Simpler Fares trial routes before SLP and Simpler Fares travel started on the routes listed below. A

booster wave of fieldwork of 20 further shifts focussing on Simpler Fares exclusively was undertaken between 10th October and 21st October 2023:

- SLP rollout routes (sampled from a wider pool of flows where SLP was introduced): Newcastle – Edinburgh, York - Newcastle, York – Edinburgh, London – York, London -Doncaster
- Simpler Fares trial routes (the only routes offering Simpler Fares as part of the trial): London – Newcastle, London – Edinburgh, London – intermediate stations between Newcastle and Edinburgh.

Wave 3 fieldwork took place between 16th September 2024 and 15th November 2024. All fieldwork was undertaken on LNER services and took place at different times of day and on different days of the week (weekdays and weekends), avoiding days where industrial action or engineering works was taking place.

Wave 4 fieldwork took place between 24th March 2025 and 9th April 2025. Fieldwork was exclusively on LNER services, comprising a mix of weekdays and weekends, peak and off-peak services. The fieldwork period for Wave 4 was cut-short due to the need to avoid collecting data during the pre-election period for local government (from 10th April 2025).

Interviewers were provided with project specific training to ensure that they understood the survey context and questions; to re-enforce how they should conduct themselves on trains and approach passengers⁶⁹, and to provide health and safety information. The survey was administered as follows:

- Interviewers approached passengers and undertook a short screening interview to ascertain whether they were in scope (based on station boarded and alighted, and ticket type);
- In-scope passengers were asked if they would be willing to take part in an online survey, or complete a paper-based survey;
- In-scope passengers willing to complete an online survey were given a QR code to scan or a URL link (as preferred) and interviewers stayed with them where possible to help them get started and encourage completion; and
- In-scope passengers opting for a paper survey were provided with a questionnaire which the interviewer collected from them prior to them leaving the train.

Passengers were incentivised to complete the survey with a prize draw, with a chance to win one of six £100 of high-street shop vouchers.

Sampling: Wave 1 initial and revised sampling approach

Our target sample sizes were derived to ensure that each flow achieved a sample size of around 400 interviews, using the formula:

$$N = \frac{1.96^2 \times p(1-p)}{MoE^2}$$

Whereby:

- N = The sample size;

⁶⁹ For Wave 3 fieldwork, interviewers received travel passes and instructions explicitly stating they were permitted to sit in Standard Class only. Interviewers could still interview in First Class during Wave 3, but they were not permitted to sit in First Class. During Wave 1, a Letter of Authority was provided, in which there were no explicit instructions regarding which class interviewers could sit in.

- 1.96 = the value required to ensure a 95% level of confidence (i.e. so there is only a 5% chance that our results are due to random variation), which is the most widely used confidence level in social research to provide statistical rigour;
- p = the proportion of the population who exhibit a specific attribute (set to 50%); and
- $MofE$ = the maximum margin of error that will be tolerated (set at 5%).

A sample of 400 per flow is considered as sufficient to provide robust conclusions, as a sample of this size provides a maximum confidence interval of +/-4.9% at the 95% level. This means that if the survey results showed that 50% of respondents had a particular perception, you could be 95% confident that the true value for the population lies within the range 45.1% and 54.9%.

The initial target sample for Wave 1 was 2,400 completed interviews, split evenly over six main flow groups, representing control flows for SLP and Simpler Fares trials. This was to ensure a robust target sample size of 400 for each flow, and 1,200 for each of the SLP and Simpler Fares control groups. Initial assumptions were that each fieldwork shift would achieve 56 completed interviews. However, due to lower than anticipated response rates for these flows, a number of changes were made to the approach, as follows:

- The screening questions were revised to encourage more respondents to participate in the survey;
- The requirement to exclude passengers who had not purchased their own ticket was removed;
- The requirement that respondents were travelling on these 6 main flows only was removed and respondents from other stations on the routes were included in the survey as well. This focused fieldwork on obtaining an adequately robust sample to be able to compare London and non-London flows; and
- A further 24 shifts were undertaken to boost the overall response rate to 2,235 (close to the initially anticipated sample).

These adjustments (summarised in the table below) led to a response rate of 32 interviews per shift and improved the validity and reliability of our findings despite the challenges with response rates.

	METHODOLOGY BEFORE	METHODOLOGY AFTER
Flows and total samples	<u>SLP trial</u> - Newcastle – Edinburgh - York - Newcastle, Edinburgh - London Kings Cross - York, Doncaster <u>Simpler Fares trial</u> - London – Newcastle - London – Edinburgh - London - Morpeth, Alnmouth, Berwick-upon-Tweed, Reston, Dunbar	<u>SLP trial</u> - London based flows - Non-London flows <u>Simpler Fares trial</u> - London – Newcastle - London – Edinburgh
Screening questions	- Under 18's - Season Ticket Holders or Rail Staff - Leisure Card Holders - People who have not purchased their own ticket - People who travel outside chosen flows	- Under 18's - Season Ticket Holders or Rail Staff - Leisure Card holders

* Flows between London to Leeds are excluded, as SLP was introduced on this flow in 2020. It can therefore not be used as a baseline for SLP. This is also not a flow in which Simpler Fares will be trialled on.

Sampling: Wave 1 Simpler Fares Booster

Following the initial fieldwork period for Wave 1, additional fieldwork was scheduled to boost the number of respondents travelling on Simpler Fares specific flows (as whilst the overall sample of 2,400 was nearly achieved, numbers for the individual Simpler Fares flows were lower than required). The booster consisted of 20 further shifts undertaken between 10th October and 21st October 2023.

Targeting the specific Simpler Fares boost reflects the scope of phase 1a of the Simpler Fares trial, which will start with London to Edinburgh Waverley, Newcastle Central and Berwick-upon-Tweed. Other intermediate stations between the Newcastle and Edinburgh station clusters will join the trial in phase 1b.

To target Simpler Fares passengers, interviewers boarded LNER trains between Newcastle and York (in both directions, covering trains to and from London). These stations were chosen as they both cover Simpler Fares flows, with regular trains running between these stations. By changing trains more frequently (approximately every 60 minutes) 'fresh' batches of passengers were available to approach more often, thus boosting response rates per shift (an average of 40 responses per shift). Furthermore, the shift lengths were increased to enable a greater number of trips to be taken per shift.

Sampling: Wave 3 SLP and Simpler Fares

The target sample for Wave 3 was 2,400 completed interviews, split evenly over six main flow groups, representing control flows for SLP and Simpler Fares trials. This was to ensure a robust minimum sample size of 400 for each flow, and 1,200 for each of the SLP and Simpler Fares groups.

The average response rates per shift increased in Wave 3 compared to Wave 1. There are several contributing factors as to why the response rates were higher in this more recent fieldwork period:

- In Wave 1, surveyors were on one train for a longer period (2-3 hours), compared to Wave 3, where surveyors changed trains more frequently (45-60 minutes per train). This meant that there were 'fresh' batches of passengers to approach more often.
- In addition, the length of shifts were greater in Wave 3 (where the shortest shift was 8.25 hours) compared to Wave 1 (where the shortest shift was 4.75 hours).
- Furthermore, the reduced number of screening criteria since the first stages of the Wave 1 fieldwork increased the number of passengers in-scope to participate.

Sampling: Wave 4 Simpler Fares

The target sample for Wave 4 was 1,200 completed interviews across the Simpler Fares flows (Phase 1a and 1b), with a minimum of 400 responses for London-Newcastle and London-Edinburgh initially specified. However, despite a further increase in average response rates during this wave (48 completes per shift), the shortened fieldwork window, resulting from the local government pre-election period, meant that 911 completed interviews were achieved in total.

Data cleaning

The survey data was processed and cleaned, ensuring the removal of any inconsistencies and providing a reliable dataset for further analysis. This includes removing cases where respondents may have provided inadequate or incorrect origin and/or destinations, travel dates or travel times for their journeys.

‘Other flows’ represented respondents who travelled outside the initially agreed flows but still within LNER network. However, some respondents had either one or both ends of their journey indicated as non-LNER station. It was reasonable to assume those people misinterpreted the questions and indicated their whole journey that involved LNER service at some point rather than the stations where they joined and departed the LNER network⁷⁰. These responses were processed and assigned to the nearest LNER stations based on the following requirements.

- It is possible to identify which LNER service was taken;
- Travel times indicated by a respondent match LNER/Network Rail timetable information; and
- Control flow type (SLP or Simplar Fares) is the same before and after update. Respondents got different questions depending on the origin and destination they indicated hence it is important for control flows to stay the same before and after update.

Where these criteria were not all met, the response was excluded for analysis. For example, the table below shows two responses with the departure time, origin and destination provided in survey Wave 1, and their newly assigned origin and destination updated during data cleaning. They were mapped based on the location of each non-LNER station and checked against the travel times provided, and whether they were SLP or Simplar Fares trial flows. The London - Hexham response was deleted due to the difference in the trial flow (before it was SLP, but it became Simplar Fares afterwards). However, the Edinburgh - Cambridge response was kept, because its updated origin and destination were within SLP flows.

FACTOR	EXAMPLE 1	EXAMPLE 2
Origin (Provided in survey)	London	Edinburgh
Destination (Provided in survey)	Hexham	Cambridge
Departure time (Provided in survey)	08:30	09:00
Control Flow	SLP	SLP
Origin (Updated during data cleaning)	London	Edinburgh
Destination (Updated during data cleaning)	Newcastle	Peterborough
Control Flow (Updated at data cleaning)	SF	SLP
Delete Response?	Delete	Keep

For Wave 1 data cleaning:

- 47 responses were assigned to the nearest LNER station; and
- 162 responses were removed after data cleaning (43 because they gave contradicting answers and 119 because of difficulty reliably identifying which LNER service was taken).

For Wave 3 data cleaning:

- 51 responses were assigned to the nearest LNER station; and
- 104 responses were removed after data cleaning (4 because they gave contradictive answers and 100 because of difficulty identifying which LNER service was taken).

For Wave 4, no responses were required to be re-assigned.

The table below outlines the number of survey responses and shifts undertaken during Wave 1 (SLP and Simplar Fares), Wave 3 (SLP and Simplar Fares) and Wave 4 (Simplar Fares only).

⁷⁰ Passengers were screened by interviewers to check they were on a relevant flow before being handed the questionnaire on an LNER train, thereby suggesting some passengers mis-interpreted the question.

FLOW	WAVE 1	WAVE 3	WAVE 4
Number of fieldwork shifts	98	62	19
Responses received – Main fieldwork	2,235	3,041	911
Responses received – Booster fieldwork	775	-	-
Removal of out of scope responses	-162	-104	0
Total final sample	2,848	2,937	911

Secondary Analysis

Control flow selection

Two control flows were excluded from the analysis after being identified as appropriate control flows, due to the inter-availability of Any Permitted routeing via alternative train lines. When compared against their related trial flow, the majority of the other pre-selected control flows had:

- Differences in distance from origin to destination that were in an acceptable distance band in miles (<50, 50-100, 100-150, 150-200, 200+);
- Total revenues in an acceptable revenue bracket in £m (<10, 10-25, 25-40);
- A small proportion of market share of anytime/peak tickets (<10%); and
- A strong correlation on year-on-year revenue impacts (>80%).

For the Simpler Fares secondary data analysis, LNER and non-LNER control flows were identified. For this reason, the control flows have been split into two subgroups. Figures in the descriptive analysis are then compared against both groups individually, as well as the combined group of control flows. This comparison helps to contextualise the figures observed for the LNER trial flows from two different sources of variation, differences within the LNER network and differences between LNER and the non-LNER network.

There is no evidence to suggest that the non-LNER control flows were a better comparison than the LNER control flows. Having both types of control flows provides more robustness to the regression analysis, as the models capture the variability of the non-trial flows and represent more accurately the reality of the rail network/market. Due to the commercial sensitivity of data which fed-into the development of the control flows dashboards, the specific charts generated as part of the dashboards for each flow have not been included in this report. Instead, a simple summary of the control flows for each trial flow has been included below.

Data and assumptions

The level of aggregation for the demand and revenue analysis was at Tertiary Zone (TZ), rather than at a station-specific level. The pros and cons of conducting the analysis for SLP and Simpler Fares at TZ level are outlined in the table below

PROS OF TZ LEVEL ANALYSIS	CONS OF TZ LEVEL ANALYSIS
Ensures that switching between component stations in response to the introduction of SLP and Simpler Fares is accounted for at the aggregate level (e.g. passengers shifting from using two different stations within the Edinburgh TZ)	Does not provide revenue modelling at the individual station level
Includes passengers with a ticket to a non-specific destination (e.g. London Terminals) reducing volatility from period to period	As SLP and Simpler Fares are rolled out on specific flows, there may be some stations within a TZ where the trial has not been rolled out, so some stations may still have returns available, and super-off peak and off-peak tickets
Includes passengers travelling short distances to access major stations reducing volatility from period to period	
TZ level analysis was used for the SLP 2020 trial, so using the same method ensures consistency for the SLP 2023/24 trial and the Simpler Fares 2024/25 trial.	

The LENNON Dataset provides an understanding of how SLP and Simpler Fares have impacted passenger demand and revenues and will also form the counterfactual analysis. A quantitative assessment on the data from LENNON earnings was run by Rail Period.

- The baseline data for SLP covered the dates of 27th June 2021 to 12th November 2022 (P04 2021/22-P08 2022/23).
- The 17 month post-SLP covered the dates of 25th June 2023 to 9th November 2024 (P04 2023/24-P08 2024/25).
- The baseline data for Simpler Fares covered the dates of 1st April 2022 to 31st March 2023 (P01 2022/23 to P13 2022/23).
- The 12 month post-Simpler Fares covered the dates of 1st April 2024 to 31st March 2025 (P01 2024/25 to P13 2024/25).

The SLP analysis plan initially had the intention of including P11 and P12 of 2022/23 and 2023/24 respectively. However, following the inclusion of these periods in early runs of the analysis, there were too many confounds from the Great British Rail Sale (GBRS) impacting the analysis. Following discussion with DfT, the decision was taken to exclude P11 and P12 (as well as two weeks, W49 and W50, from period P13) from each of these years in the analysis, so the results were based only on rail periods not impacted by GBRS.

Under the SLP rollout, for most flows, the Off-Peak ticket was removed, leaving the Anytime, Super Off-Peak and Advance options available for Standard Class before Simpler Fares was introduced. The Super Off-Peak ticket has different time restrictions to the Off-Peak, meaning that availability of tickets outside of the peak period is now different to pre-SLP rollout.

SLP allows passengers to mix and match single walk-up and Advance tickets for the different legs of their journey as well as different classes and/or peak and off-peak. Passengers who previously travelled on Off-Peak return tickets would need to switch to either an Anytime, Off Peak, Super-Off Peak or an Advance ticket, mixing freely between these to construct a return that meets their needs if required.

For Simpler Fares flows, the Off-Peak and Super Off-Peak ticket types were removed. This should be noted when interpreting the analysis.

In order to deliver the analysis, several assumptions have been made regarding the data, as follows:

- Split ticketing⁷¹ proportions by flow and period provided by the Rail Delivery Group (RDG) have been incorporated into the analysis to adjust demand and revenue for periods before and after the introduction of Simpler Fares. The analysis adjusts for journeys and revenues undertaken on the trial and control flows, and therefore also impacts yield figures reported throughout. More detail is listed in the Appendices C1 and C2;
- Revenues are compared in real terms (in 2022/23 prices⁷²);
- Refunds are excluded, as refunds data was not available by ticket type (the refunds for the revenues account for approx. 4% on average across all flows); and
- Season tickets will be excluded, because the affected flows are typically long-distance and Season tickets do not have a significant market share.

Are there any limitations to the evaluation?

Primary Research

During the planning of the fieldwork schedule, it was intended that the on-mode data collection would be undertaken at fixed intervals of six months between waves. However, owing to external circumstances such as travel disruptions, strike action, planned engineering works and pre-election periods, the fieldwork schedules had to be adjusted around these events. This was necessary to avoid surveying passengers at a time when their views of the respective ticketing systems (or rail more generally) were more likely to be biased by factors which were unrelated to the interventions directly. Although the modification of the on-mode data collection timescales was necessary, one result of these changes was that the sample sizes varied more than originally intended between survey waves – in particular, the reduction in fieldwork period for Wave 4 as a result of Purdah owing to local government elections. While the overall sample sizes for each wave still provide narrow confidence intervals, these smaller sample sizes somewhat limit the ability to undertake analysis by individual flows for the primary research data in Wave 4. While the surveying was undertaken outside of these disruptive event periods, the primary research cannot control for any potential longer-term impacts of these events on passengers responses.

As part of the Simpler Fares trial, the LNER website and App were optimised for the new fares structure. This changed throughout the first 6 months of the trial, including pop-ups to highlight the semi-flex ticket, and explanatory information around product selection. While most website features were live from February 2024, these were finalised in July 2024, meaning there is not enough time to provide a meaningful analysis of before-and-after differences due to the website changes specifically.

The results for SLP and Simpler Fares are not directly comparable, given these ticketing systems are at different stages of maturity. Several results indicate that passenger views may be a 'bedding-in' period as passengers become increasingly accustomed to the systems and as the systems mature.

⁷¹ Split ticketing is when a passenger purchases multiple tickets for different segments of a journey, rather than purchasing one ticket. For example, a passenger may buy a ticket from London to York, then York to Newcastle, rather than buying a ticket from London to Newcastle.

⁷² Fare increases capped at 4.9% (2025) and 5.9% (2024) resulting to a 2025-to-2023 deflator of 11.1%.

Secondary Data Analysis

The post-implementation periods evaluated for SLP (17 months), Simpler Fares Phase 1a (12 months) and Simpler Fares Phase 1b (6 months) are different, which limits some of the comparability between the schemes due to the different levels of system maturity. The Phase 1b results for Simpler Fares in particular may not be fully estimated in the regression analysis as a full year of impacts are not captured.

There may be a confounding relationship between SLP and Simpler Fares impacts on the trial flow for London-Berwick specifically, as SLP was introduced to this flow in June 2023. As a result, the modelled impacts for the Simpler Fares analysis for this flow were a combination of both trials, SLP and Simpler Fares. This potential confound was discussed with DfT, but as the Simpler Fares impact for this flow was not statistically significant, no further action was taken.

APPENDIX C1 – NUMBER OF KEY EVENTS BEFORE AND AFTER SLP

YEAR	PERIOD	BEFORE SLP	AFTER SLP
2022	P06	1	
2022	P10	4	
2023	P01	5	
2023	P02	1	
2023	P03	5	
2023	P04	2	
2023	P05	6	
2023	P06	2	
2023	P07	13	
2023	P08	5	
2024	P04		3
2024	P05		1
2024	P06		6
2024	P07		8
2024	P08		8
2024	P09		11
2024	P10		6
2024	P11		25
2024	P12		19
2024	P13		7
2025	P01		5
2025	P02		5
2025	P03		1
2025	P04		1
2025	P06		7
2025	P07		8
2025	P08		8

APPENDIX C2 – NUMBER OF KEY EVENTS BEFORE AND AFTER SIMPLER FARES

PERIOD	WEEK	BEFORE SIMPLER FARES	AFTER SIMPLER FARES
2023/P13	W51	1	
2023/P13	W52	1	
2024/P01	W01	3	
2024/P01	W02	3	
2024/P02	W05	1	
2024/P02	W06	2	
2024/P02	W07	4	
2024/P03	W09	3	
2024/P03	W10	1	
2024/P03	W12	2	
2024/P04	W13	1	
2024/P04	W16	2	
2024/P13	W52		4
2025/P01	W01		3
2025/P01	W02		1
2025/P01	W04		1
2025/P02	W05		1
2025/P02	W06		4
2025/P03	W09		1
2025/P04	W14		1

APPENDIX D1 – PRIMARY RESEARCH SLP SAMPLE PROFILE

The vast majority of the passengers surveyed in Wave 3 were making journeys within the three flow groups identified at the start of the survey (92%), and less than one in ten were making other journeys within the LNER network (8%). This is significantly higher than in Wave 1, where most passengers were making journeys on 'other' flows (55%) within the LNER network; and is a result of the amended recruitment approach implemented in Wave 3. However, these journeys were still on the routes of interest but the passengers weren't going to the precise origin or destination: for example they could have been travelling from London to Wakefield rather than Doncaster or York. As this is the same train, with the same ticket types, these are still considered a valid comparison.

FLOW	WAVE 1		WAVE 3	
	Number	Percentage	Number	Percentage
Newcastle - Edinburgh	217	16%	407	26%
York - Newcastle, Edinburgh	151	11%	530	34%
London Kings Cross - York, Doncaster	261	19%	501	32%
Other Journeys	760	55%	117	8%
Base / total	1,389	100%	1,555	100%

After regrouping the flows based on whether the origin or destination was in London, a third of respondents in Wave 3 started or ended their journey in London, and were classified as London based (33%), and two thirds did not, and were classified as non-London based (67%). A slightly larger share of Wave 3 respondents' journeys were non-London based compared to Wave 1 (62%).

FLOW	WAVE 1		WAVE 3	
	Number	Percentage	Number	Percentage
London Based	532	38%	516	33%
Non-London	857	62%	1,039	67%
Base / total	1,389	100%	1,555	100%

In Wave 3, 60% of the respondents identified as female and 36% as male. This represents a statistically significant increase in the share of females and a decrease in the share of males compared to Wave 1 (54% female; 43% male). The share of 'other', and those who preferred not to say, was less than 4% in both waves.

The age profile of respondents was broadly similar in each survey wave, with the just over a quarter of respondents aged 31-45 (28% in Wave 3 and Wave 1 respectively), and around a quarter aged 46-59 (25% and 23% in Wave 3 and Wave 1 respectively).

AGE	WAVE 1	WAVE 3	% CHANGE
18-25	21%	17%	-3%
26-30	14%	14%	-1%
31-45	28%	28%	-
46-59	23%	25%	+2%
60-69	11%	12%	+1%
70-79	2%	3%	+1%
80+	0%	0%	-
Prefer not to say	1%	1%	-
Total	100%	100%	-
Base	1,389	1,555	-

Nearly two thirds of Wave 3 respondents worked full time (64%), defined as working 30+ hours a week. This proportion was similar to Wave 1 (66%).

WORKING STATUS	WAVE 1	WAVE 3	% CHANGE
Working full-time (30+ hours a week)	66%	64%	-2%
Working part-time (less than 30 hours a week)	9%	10%	+2%
Retired	7%	9%	+2%
Full-time student	13%	8%	-5%
Unemployed / looking for work	1%	2%	+1%
Unemployed / not looking for work	1%	1%	-
Prefer not to say	1%	3%	+2%
Total	100%	100%	-
Base	1,389	1,555	-

Around two thirds of Wave 3 respondents who work full or part-time, had the option to work from home at least some of the time (65%). This represents a statistically significant decrease compared to Wave 1 (70%). Factors such as changing employee and employer attitudes towards home working, and the ongoing recovery from the COVID-19 pandemic may influence these results.

The household income profile of those in employment was broadly similar for respondents in each survey wave. Around two in five had an annual income of between £41,001 and £100,00 (38% and 37% respectively in Wave 3 and Wave 1).

INCOME	WAVE 1	WAVE 3	% CHANGE
Under £5,000	1%	1%	-
£5,001-£14,000	2%	2%	-
£14,001-£21,000	4%	4%	-
£21,001-£28,000	8%	8%	-
£28,001-£41,000	12%	16%	+4%
£41,001-£55,000	12%	12%	-1%
£55,001-£75,000	11%	13%	+2%
£75,001-£100,000	14%	13%	-1%
£100,001-£120,000	8%	7%	-1%
£120,001 or more	14%	10%	-3%
Prefer not to say	15%	15%	-
Total	100%	100%	-
Base	1,036	1,158	-

Respondents' home locations are presented in the following table. The highest proportions in both Wave 1 and Wave 3 reside in North-East & Cumbria, Yorkshire and Humber, Scotland and London. Wave 3 saw a statistically significant increase in respondents from Yorkshire and the Humber (31%)

compared to Wave 1 (19%). In addition, Wave 3 saw a higher share of respondents from Cumbria (25%) and fewer respondents from London (8%) and the East Midlands (2%) compared to Wave 1 (21%, 12% and 8% respectively).

AREA OF RESIDENCY	WAVE 1	WAVE 3	% CHANGE
Yorkshire & the Humber	19%	31%	+11%
North-East & Cumbria	21%	25%	+4%
Scotland	17%	19%	+2%
London	12%	8%	-4%
Outside of the UK	5%	5%	+1%
South-East	5%	4%	-2%
East Midlands	8%	2%	-6%
East of England	6%	1%	-5%
North-West	2%	1%	-1%
South-West	1%	1%	-
West Midlands	0%	0%	-
Cymru/Wales	0%	0%	-
Northern Ireland	0%	0%	-
Prefer not to say	2%	4%	+2%
Total	100%	100%	-
Base	1,389	1,555	-

The next table represents the characteristics of tickets purchased and used by respondents on the outward and return legs of their current journey. For clarity, a return ticket is a rail ticket which is valid for both an outward and returning journey from the same station or destination on a chosen route. A return leg refers to a rail journey from a destination station back to the origin station.

- Most passengers were using Standard Class tickets, although the proportion of Standard Class was higher in Wave 3 (91% outward; 90% return) compared to Wave 1 (84% outward; 83% return).
- Across both survey waves, the distribution of different ticket types was similar. The two most common ticket types were Advance and Off-Peak tickets. Around two-thirds of passengers used Advance tickets (61%-64% across outward and return, and the survey waves) and around one in eight used Off-Peak tickets (12%-13% across outward and return, and the survey waves).

TICKET TYPE	WAVE 1		WAVE 3	
	OUTWARD LEG	RETURN LEG	OUTWARD LEG	RETURN LEG
Ticket Class				
Standard	84%	83%	91%	90%
First	16%	17%	9%	10%
Total	100%	100%	100%	100%
Ticket Type				
Anytime	9%	9%	10%	11%
Advance	64%	62%	61%	62%
Off-Peak	13%	13%	13%	12%
Super Off-Peak	5%	5%	4%	4%
Other	0%	1%	0%	0%
I don't know	9%	10%	12%	12%
Total	100%	100%	100%	100%
Base	1,389	1,144	1,555	1,305

Comparing the sample composition across Waves 1 and 3, the main changes were to the makeup of the flows (e.g. significantly fewer respondents on 'Other' routes), the share of tickets between First

and Standard class, and the proportion of male and female respondents. When looking at an overall question about the passenger experience as an example – ‘Based on this trip, how likely out of ten would you be to recommend London North Eastern Railway (LNER) to your friends, family or colleagues?’ – these changes to the sample appear to make relatively small differences to the overall results for this question, and therefore no additional action has been taken to further comparability between the waves.

The only notable difference was that the changes in the proportion of different flows may make the percentage agreement slightly lower in Wave 3, given that there are higher proportions of passengers on the York – Newcastle / Edinburgh and London – York / Doncaster flows, who have slightly lower satisfaction than average (they make up approx. 30% of the Wave 1 sample, but approx. 66% of the Wave 3 sample, and have an average of 61% scoring 8, 9 or 10 in Wave 3, compared to the overall score of 72%).

Half of respondents owned a railcard in both survey waves (50%). Of these, the majority used the railcard for their current journey (87% and 86% in Wave 3 and Wave 1 respectively).

APPENDIX D2 – PRIMARY RESEARCH SIMPLER FARES SAMPLE PROFILE

The sample profiles by flow for Waves 4 and 1 were similar, with around three in five passengers (58%) travelling between London to Edinburgh; lower than the Wave 3 share of 64%. Conversely, just under three in ten Wave 3 respondents were making journeys within the London-Newcastle flow (29%), lower than the Wave 4 and Wave 1 figures of 37% and 38% respectively.

FLOW	WAVE 1		WAVE 3		WAVE 4	
	N	%	N	%	N	%
London Kings Cross - Newcastle	552	38%	405	29%	335	37%
London Kings Cross - Edinburgh	848	58%	878	64%	532	58%
London Kings Cross - Morpeth, Alnmouth, Berwick, Reston, Dunbar	59	4%	83	6%	42	5%
Other journeys	0	0%	16	1%	2	0%
Base / total	1,459	100%	1,382	100%	911	100%

In the survey sample for Wave 4, 55% of the respondents identified as female and 41% as male. This was similar to the proportions for the Wave 1 baseline (54% female; 42% male), but a lower share of females compared to Wave 3 (59% female; 38% male). The share of 'other', and those who preferred not to say, ranged between 3-4% across all survey waves.

For Wave 4, there was a significantly lower percentage share of 18-25 year olds in the sample (12%) compared to the Wave 1 baseline (17%). However, the age profile across Wave 1 and Wave 3 was broadly similar, with the largest shares of respondents being aged 31-45 (33% and 31% in Wave 3 and Wave 1 respectively) and 46-59 (22% and 34% in Wave 3 and Wave 1 respectively).

AGE	WAVE 1	WAVE 3	WAVE 4
18-25	17%	14%	12%
60-69	10%	10%	13%
70-79	3%	3%	4%
80+	0%	0%	0%
Prefer not to say	1%	1%	2%
Total	100%	100%	100%
Base	1,459	1,382	911

Two thirds of respondents were working full time and most of the remainder split approximately evenly between part time workers, full time students and retired people. However, there were some significant differences noted:

- The percentage of passengers working full-time was significantly higher in Wave 3 (73%) compared to Wave 4 (68%).
- Conversely, Wave 4 had the highest percentage of retired respondents at 11%, significantly higher than Wave 3 (7%).

WORKING STATUS	WAVE 1	WAVE 3	WAVE 4
Working full-time (30+ hours a week)	69%	73%	68%
Working part-time (less than 30 hours a week)	9%	8%	7%
Retired	8%	7%	11%
Unemployed / looking for work	1%	1%	1%
Unemployed / not looking for work	1%	2%	1%
Full-time student	7%	6%	7%
Part-time student	0%	0%	0%
Other	1%	1%	1%
Prefer not to say	3%	2%	3%
Total	100%	100%	100%
Base	1,459	1,382	911

Of those who work full or part-time, around three quarters of respondents had the option to work from home at least some of the time, with this figure broadly consistent across survey waves (73% in Wave 4, 78% in Wave 3, and 75% in Wave 1).

The household income profile (of those in employment)⁷³ was significantly different in Wave 4 to the previous survey waves. In Wave 4, 21% of respondents had a household income of over £120,000, compared to 16% in Wave 3, and 17% in Wave 1. However, the share of respondents with a household income of between £41,001 and £100,000 was consistently at two in five respondents across all survey waves (40% in Wave 4, 41% in Wave 3, and 39% in Wave 1).

INCOME	WAVE 1	WAVE 3	WAVE 4
Under £5,000	0%	1%	0%
£5,001-£14,000	1%	1%	1%
£14,001-£21,000	2%	2%	2%
£21,001-£28,000	5%	4%	4%
£28,001-£41,000	12%	12%	10%
£41,001-£55,000	14%	13%	10%
£55,001-£75,000	13%	15%	11%
£75,001-£100,000	12%	13%	11%
£100,001-£120,000	6%	11%	8%
£120,001 or more	17%	16%	21%
Prefer not to say	16%	12%	21%
Total	100%	100%	100%
Base	1,134	1,121	687

Respondents' home locations are presented in the following table. There was a broadly similar profile of passengers across all waves, with around a quarter from each of Scotland (23-26%), London (24-28%), and the North East & Cumbria (20-24%) respectively. Most of the remaining passengers were from outside the UK (11-14%) and the South East (8-9%).

⁷³ Question was asked only to passengers who were working full-time or working part-time.

AREA	WAVE 1	WAVE 3	WAVE 4
Scotland	23%	26%	25%
London	28%	26%	24%
North-East & Cumbria	21%	20%	23%
Outside of the UK	11%	14%	11%
South-East	9%	8%	8%
East of England	2%	1%	2%
South-West	2%	2%	2%
East Midlands	1%	1%	0%
Yorkshire & the Humber	1%	0%	0%
West Midlands	0%	0%	0%
Cymru/Wales	0%	0%	0%
North-West	0%	0%	0%
Northern Ireland	0%	0%	0%
Prefer not to say	2%	2%	5%
Total	100%	100%	100%
Base	1,459	1,382	911

The next table represents the characteristics of tickets purchased and used by respondents on the outward and return legs of their current journey. At least four in five passengers were using Standard Class tickets, although the proportion of Standard Class was significantly higher in Wave 3 (89% outward, 90% return) compared to Wave 1 (80% outward; 80% return) and Wave 4 (84% outward, 84% return).

Most respondents in Wave 4 were using Fixed (Advance) tickets (84% outward; 81% return), similar to the proportions seen in Wave 3 (81% outward; 80% return). In Wave 1, prior to the introduction of Simpler Fares, Advance ticket usage was lower (64% outward; 62% return). The survey waves are not directly comparable in terms of viewing the changes in ticket types because the ticket system has changed following Wave 1 as part of the reform being trialled. However, the table provides a useful indication of how surveyed passengers have transitioned.

TICKET TYPE	WAVE 1		WAVE 3		WAVE 4	
	OUTWARD	RETURN	OUTWARD	RETURN	OUTWARD	RETURN
Ticket Class						
Standard	80%	80%	89%	90%	84%	84%
First	20%	20%	11%	10%	16%	16%
Total	100%	100%	100%	100%	100%	100%
Ticket Type						
Anytime	6%	9%	-	-	-	-
Advance	64%	62%	-	-	-	-
Off-Peak	8%	13%	-	-	-	-
Super Off-Peak	10%	5%	-	-	-	-
Fixed (Advance Single)	-	-	81%	80%	84%	81%
Semi-flexible	-	-	5%	7%	4%	6%
Fully Flexible (Anytime Single)	-	-	4%	5%	4%	5%
Other	2%	1%	2%	2%	1%	1%
I don't know	11%	10%	7%	7%	7%	7%
Total	100%	100%	100%	100%	100%	100%
Base	1,459	1,194	1,382	1,153	911	754

In Wave 4, the following groups were significantly more likely to be travelling with a First Class ticket:

- Passengers travelling with a Fully Flexible (Anytime) ticket (35% outward; 30% return);
- Passengers travelling for work/company business on their outbound journey (20% outward; 19% return);
- Passengers aged 60+ (26% outward; 24% return);
- Male passengers (20% return);
- Retired passengers (26% outward; 28% return);
- Passengers with the option to work from home at least some of the time (18% outward; 17% return); and
- Passengers with a household income of £120,001 or more (29% outward; 26% return).

In Wave 3, the following groups were significantly more likely to be travelling with a First Class ticket:

- Passengers travelling on their specific journey once a week or more (14% outward; 17% return), or for the first time (15% outward; 13% return);
- Passengers travelling by rail generally for the first time (29% outward; 26% return);
- Passengers aged 46+ (18% outward; 16% return)
- Passengers with a household income of £120,001 or more (22% outward; 18% return);
- Retired passengers (18% outward; 13% return); and
- Passengers without a railcard (13% outward).

In Wave 4, there were no statistically significant differences between any of the respondent demographics and the likelihood of travelling with a Fixed (Advance Single) ticket. The new Fixed (Advance Single) ticket was not available for purchase in Wave 1.

In Wave 3, the following groups were significantly more likely to be travelling with a Fixed (Advance Single) ticket:

- Passengers aged 26-30 (93% outward; 92% return);
- Female passengers (89% outward);
- Passengers travelling with children (93% outward; 90% return) or with other adults (90% return); and
- Passengers who own a railcard (91% outward; 91% return).

Comparing the sample composition across Wave 1 (baseline) and Wave 4 (12 month after the introduction of Simpler Fares), the main changes in the sample were to the age and household income profile of passengers. However, when looking at responses to the overall question about the passenger experience – ‘Based on this trip, how likely out of ten would you be to recommend London North Eastern Railway (LNER) to your friends, family or colleagues?’ – overall ratings did not significantly vary by household income; and while overall satisfaction increased with age, this pattern was consistent between Waves 1 and 4.

In addition, for specific questions where significant differences in the Wave 4 results were identified by household income and age; these results were compared to Wave 1 baseline findings. This investigation found that the sample changes made little difference to the overall trends in the data (i.e. the pattern in the differences by age groups and household income brackets were largely consistent between the waves). Therefore, no additional action has been taken to further comparability between the waves.

Half of respondents owned a railcard (49%, 49% and 50% in Waves 4, 3 and 1 respectively). Of these, the majority used the railcard for their current journey (82%, 85% and 85% in Waves 4, 3 and 1 respectively).

APPENDIX E1 – SIGNIFICANT DIFFERENCES IN SLP PASSENGER VIEWS AND BEHAVIOURS BY DEMOGRAPHICS

This appendix outlines the instances in the primary research with SLP passengers where there were statistically significant differences between sub-groups in Wave 3 (approximately 17 months post-implementation).

Ticket type used

The following groups were significantly more likely to be travelling with a First Class ticket in Wave 3:

- Passengers aged 60+ (21 outward; 22% return%);
- Passengers with the option to work from home all the time (15% outward; 14% return);
- Retired passengers (23% outward; 28% return); and
- Passengers with a household income over £100k (16% outward; 14% return).

The following groups were significantly more likely to be travelling with an Advance ticket in Wave 3:

- Leisure passengers (71% outward; 72% return);
- Passengers aged 60+ (78% return);
- Passengers with the option to work from home some of the time (72% outward); and
- Passengers using a railcard for their journey (74% return).

Awareness of SLP trial and attitudes towards SLP characteristics

In Wave 3, the following groups were significantly more likely to be ‘fully aware’ of SLP being in operation

- Leisure passengers (23%);
- Passengers travelling on non-London flows (22%);
- Passengers aged 60+ (24%); and
- Passengers travelling with other adults (26%).

In Wave 3, the following groups were significantly more likely to consider the former ticketing system to be ‘unfair’ compared to other segmentation sub-samples:

- Passengers travelling on work/company business (36%);
- Passengers travelling on London flows (35%);
- Passengers travelling by rail two to three times a month (36%);
- Passengers with the option to work at home all of the time (33%); and
- Passengers travelling alone (35%).

In Wave 3, the following groups were significantly more likely to consider the new SLP ticketing system to be ‘unfair’:

- Passengers travelling on London flows (30%);
- Passengers making their specific rail journey less than once a year (35%);
- Passengers aged 26-30 (35%); and
- Passengers travelling alone (28%).

In Wave 3, the following groups were significantly more likely to strongly agree or agree that removing return tickets is an inconvenience:

- Passengers travelling for work/company business (47%);
- Passengers travelling on non-London flows (47%);
- Passengers aged 18-25 (58%);
- Students (61%);
- Passengers with no option to work from home (51%);
- Passengers with a household income of £41,000 or less (54%);
- Passengers travelling with other adults (49%); and
- Passengers who used a railcard for their journey (48%).

In Wave 3, the following groups were significantly more likely to strongly agree or agree that purchasing only single tickets provides more flexibility to choose when you travel:

- Passengers travelling for personal business (61%);
- Passengers travelling by rail once a month (65%); and
- Passengers travelling alone (57%).

Impact of SLP on travel behaviour

In Wave 3, the following groups were significantly more likely to suggest the introduction of SLP had increased their frequency of travel on LNER services:

- Passengers travelling for personal business (32%);
- Passengers aged 18-25 (34%); and
- Passengers travelling with children (33%).

In Wave 3, the following groups were significantly more likely to say they were likely to increase their frequency of rail travel if SLP was introduced across the UK:

- Passengers aged 18-25 (57%); and
- Female passengers (55%).

In Wave 3, the following groups were significantly more likely to say they were likely to increase their frequency of rail travel if Simpler Fares was introduced across the UK:

- Passengers travelling for personal business (26%);
- Passengers travelling on non-London flows (26%);
- Passengers aged 18-25 (27%);
- \Unemployed passengers (36%);
- Passengers with no option to work from home (25%);
- Passengers travelling with other adults, or with children (both 27%).

Passengers ticket purchasing behaviour for current trips

The following groups were significantly more likely to purchase their ticket on the day of travel in Wave 3:

- Passengers travelling on personal business (24%);
- Passengers who make the same rail trip once a week or more (25%);

- Passengers who travel by rail overall once a week or more (17%);
- Passengers aged 18-25 (18%);
- Students (21%); and
- Passengers who do not have the option to work from home (15%).

The following groups were significantly more likely to purchase return leg ticket at the same time as they purchased their ticket for outward leg in Wave 3:

- Passengers aged 46-59 (88%);
- Passengers travelling with children (90%); and
- Passengers who do not own a railcard (86%).

Passengers' satisfaction, perceptions and willingness to pay

With regards to statistically significant differences between demographics with regards to how 'easy' passengers found it to choose the ticket they needed in Wave 3:

- Passengers on non-London flows were more likely to find it 'easy' to choose (93%) than those on London flows (87%);
- Passengers with a long-term illness or disability were less likely to find it easy to choose (86%), compared to passengers without an illness or disability (92%). For passengers with a long-term illness or disability specifically, the percentage who found it 'easy' was lower than Wave 1 (90%); and
- Male passengers were less likely to find it easy to choose (87%), compared to female passengers (94%); with minimal changes to these percentage figures compared to Wave 1.

With regards to statistically significant differences between demographics, the following groups were more likely to be 'dissatisfied' with the value of the ticket for their current train in Wave 3:

- Passengers travelling on work/company business (29%);
- Passengers travelling on London flows (29%);
- Passengers travelling on the same journey at least three times a month (29%);
- Passengers travelling by rail in general between two to three times a month (25%);
- Passengers aged 26-45 (23%);
- Male passengers (19%);
- Passengers working full or part-time (19%);
- Passengers with the option to work from home (23%); and
- Passengers travelling alone (25%).

In Wave 3, the following groups were significantly more likely to say they were confident that they'd purchased the best value for money ticket at time of booking:

- Leisure passengers (79%);
- Passengers travelling on non-London flows (77%);
- Passengers aged 60+ (81%); and
- Passengers travelling with children (80%).

In Wave 3, SLP passengers who purchased an 'Advance' ticket were most likely to agree that they purchased the best value for money ticket (outbound 78%; return 89%). This was a significantly higher

level of agreement than other ticket types, particularly Anytime (outbound 64%; return 65%) and Off-Peak (outbound 71%; return 71%).

In Wave 3, there were no statistically significant differences for passengers with different ticket types regarding their level of agreement relating to whether they had purchased the most appropriate ticket to travel at the time they wanted.

In Wave 3, the leisure passengers, and passengers on personal business were significantly more likely to say they were confident that they'd purchased the most appropriate ticket at time of booking (both 88%).

For Wave 3, SLP passengers who had purchased their tickets through LNER were no more likely to agree that the difference between the various ticket types were clear and easy to understand (68%) than passengers who'd purchased through any non-LNER channel (67%)

For Wave 3, SLP passengers who had purchased their tickets through LNER were no more likely to agree that they understood the restrictions that applied to the different ticket types (71%) than passengers who'd purchased through any non-LNER channel (70%).

In Wave 3, the following groups were significantly more likely to say the range of different ticket options for their journey was appropriate:

- Leisure passengers (71%);
- Passengers travelling on non-London flows (73%);
- Passengers aged 18-25 (74%) or 60+ (75%);
- Female passengers (70%);
- Passengers without the option to work from home (74%);
- Passengers with a household income of £28,000 or less (80%);
- Passengers travelling with other adults, or children (both 72%); and
- Passengers using a railcard for their journey (70%).

In Wave 3, the following groups were significantly more likely to say the difference between various ticket types was clear and easy to understand:

- Leisure passengers (72%);
- Passengers travelling on non-London flows (72%);
- Passengers aged 18-25 (75%);
- Female passengers (71%);
- Retired passengers (73%);
- Passengers without the option to work from home (74%); and
- Passengers travelling with other adults, or children (both 72%).

In Wave 3, the following groups were significantly more likely to say that they understood the restrictions that applied to the different ticket types:

- Leisure passengers (74%);
- Passengers travelling on non-London flows (73%);
- Passengers aged 60+ (77%);
- Retired passengers (80%);
- Passengers without the option to work from home (75%); and

- Passengers travelling with other adults (75%), or children (76%).

In Wave 3, the following groups were significantly more likely to say it was clear how much flexibility in travel times was available with the ticket they purchased:

- Leisure passengers (74%);
- Passengers travelling on non-London flows (72%);
- Passengers aged 60+ (80%);
- Retired passengers (82%);
- Passengers with a household income of £28,000 or less (78%); and
- Passengers travelling with other adults (75%), or children (76%).

In Wave 3, the following groups were significantly more likely to say it was easy to identify the right ticket for their journey:

- Leisure passengers (82%);
- Passengers travelling on non-London flows (81%);
- Passengers making this specific trip once or twice a year (82%);
- Passengers who travel by rail generally once or twice a year (88%);
- Female passengers (82%);
- Students (92%);
- Passengers without the option to work from home (82%);
- Passengers travelling with other adults, or children (both 81%); and
- Passengers using a railcard for their journey (81%).

In Wave 3, the following groups were significantly more likely to say it was easy to find necessary information and options about tickets to make an informed decision:

- Leisure passengers (74%);
- Passengers travelling on non-London flows (73%);
- Passengers making this specific trip less than once a year (76%);
- Passengers who travel by rail generally once or twice a year (83%);
- Passengers without a long term illness or disability (70%);
- Female passengers (73%);
- Passengers without the option to work from home (77%); and
- Passengers travelling with other adults (75%).

In Wave 3, the following groups were significantly more likely to say it was easy to buy the right ticket:

- Leisure passengers (88%);
- Passengers travelling on non-London flows (89%);
- Passengers making this specific trip less than once a year (91%);
- Passengers who travel by rail generally once or twice a year (91%);
- Passengers without a long term illness or disability (87%); and
- Passengers with a household income of £28,000 or less (93%).

In Wave 3, the following groups were significantly more likely to say they purchased the most appropriate ticket for their journey:

- Leisure passengers (88%);

- Passengers making this specific trip once or twice a year (88%); and
- Passengers using a railcard for their journey (86%).

In Wave 3, the following groups were significantly more likely to say the price they were paying for their ticket was clear:

- Passengers making this specific trip less than once a year (94%); and
- Passengers without a long term illness or disability (93%);
- Passengers using a railcard for their journey (92%).

In Wave 3, the following groups were significantly more likely to say it was clear what the price of their ticket included:

- Leisure passengers (87%); and
- Passengers making this specific trip once or twice a year (88%).

Passengers travel behaviour

In Wave 3, the following groups were significantly more likely to travel by rail once a week or more:

- Passengers travelling for work or company business (38%);
- Passengers travelling on London flows (28%);
- Passengers aged 26-30 (30%);
- Male passengers (30%);
- Passengers with the option to work from home some of the time (32%);
- Passengers travelling alone (30%); and
- Passengers with a railcard (27%).

APPENDIX E2 – SIGNIFICANT DIFFERENCES IN SIMPLER FARES PASSENGER VIEWS AND BEHAVIOURS BY DEMOGRAPHICS

This appendix outlines the instances in the primary research with Simpler Fares passengers where there were statistically significant differences between sub-groups in Wave 3 (approximately 5 months post-implementation) and Wave 4 (approximately 12 months post-implementation).

Awareness of Simpler Fares trial and attitudes towards its' characteristics

In Wave 4, the following groups were significantly more likely to be 'fully aware' of Simpler Fares being in operation:

- Passengers travelling between London and Newcastle (21%);
- Passengers travelling with a Semi-flexible ticket (outward 40%; return 33%); and
- Passengers who make the same trip by rail 2-3 times a month (26%).

In Wave 3, passengers travelling about 2-3 times a month (25%) were significantly more likely to be 'fully aware' of Simpler Fares being in operation than those travelling more or less frequently than this.

In Wave 4, the following groups of Simpler Fares passengers were significantly more likely to consider the former ticketing system to be 'unfair' compared to other groups:

- Passengers travelling between London and Newcastle (34%);
- Passengers travelling by rail once month (36%) or 2-3 times a month (35%);
- Passengers without a disability or long-term health condition (29%);
- Male passengers (32%);
- Passengers with the option to work from home some of the time (36%);
- Passengers traveling alone (33%); and
- Passengers who own a railcard (30%).

In Wave 3, the following groups of Simpler Fares passengers were significantly more likely to consider the former ticketing system to be 'unfair' compared to other groups:

- Passengers making their specific rail journey less than once a month, but at least three times a year (38%);
- Passengers travelling by rail once a week or more (38%);
- Passengers with the option to work from home (36%);
- Passengers traveling alone (35%); and
- Passengers who own a railcard (36%).

In Wave 4, the following groups of Simpler Fares passengers were significantly more likely to consider the new SLP ticketing system to be 'unfair' compared to other groups:

- Passengers travelling on the same trip at least once a week, or once a month (32%);
- Passengers travelling by rail generally 2-3 times a month (28%); and
- Passengers travelling alone (25%).

In Wave 3, Simpler Fares passengers aged 31-45 were significantly more likely to consider the new SLP ticketing system to be 'fair' (59%).

In Wave 4, the following groups of Simpler Fares passengers were significantly more likely to consider the new Simpler Fares ticketing system to be 'unfair':

- Passengers travelling between London and Newcastle (56%);
- Passengers using a semi-flexible ticket for their return journey (72%);
- Passengers travelling for work/company business (60%);
- Passengers making the same trip by rail 2-3 times a month (68%);
- Passengers travelling by rail generally 2-3 times a month (62%);
- Passengers aged 26-30 (64%);
- Passengers with the option to work from home some of the time (55%);
- Passengers travelling alone (55%); and
- Passengers who own a railcard (53%).

In Wave 3, the following groups of Simpler Fares passengers were significantly more likely to consider the new Simpler Fares ticketing system to be 'unfair':

- Passengers travelling for personal business (63%);
- Passengers travelling at least three times a year, but less than once a month (62%);
- Passengers travelling by more than twice a month (61%); and
- Passengers working full-time or part-time (58%).

In Wave 4, there were several statistically significant differences in how the assurances regarding the Simpler Fares model impacted on passengers' perceptions of fairness.

- Passengers who travelled by rail on the same trip, and passengers aged 60+ were more likely to say the assurances did not change their views (58% and 54% respectively); and
- Passengers with the option to work from home some of the time, and passengers with children, were more likely to say the assurances made them feel that Simpler Fares was fairer (23% and 26% respectively).

In Wave 3, there were several statistically significant differences in how the assurances regarding the Simpler Fares model impacted on passengers' perceptions of fairness.

- Male passengers and passengers travelling alone were more likely to say the assurances did not change their views (46% and 45% respectively);
- Passengers travelling once or twice a year by rail were more likely to say the assurances made them feel that Simpler Fares was fairer (24%); and
- The following were more likely to say they did not know how the assurances impacted their views:
 - Passengers travelling on their specific journey for the first time (37%);
 - Passengers travelling by less than once a year or for the first time by rail (40%);
 - Female passengers (31%); and
 - Passengers travelling with children (36%).

Impact of Simpler Fares on travel behaviour

In both Wave 4 and Wave 3, there were no statistically significant differences between different demographic groups with regards to whether or not they would be likely to increase their frequency of rail travel if SLP was introduced across the UK.

In Wave 4, the following groups were significantly more likely to say they were likely to increase their frequency of rail travel if Simpler Fares was introduced across the UK:

- Passengers who were fully or somewhat aware of Simpler Fares prior to seeing the assurance (24%), compared to those who were not at all aware (16%) – implying that greater awareness of Simpler Fares could increase propensity to travel by rail if the policy was introduced nationwide;
- Passengers who travel by rail generally for the first time (36%);
- Passengers with a household income of between £41,001 and £55,000 (32%); and
- Passengers travelling with children (27%).

In Wave 3, the following groups were significantly more likely to say they were likely to increase their frequency of rail travel if Simpler Fares was introduced across the UK:

- Leisure passengers (24%);
- Passengers travelling on the specific rail journey for the first time (26%); and
- Passengers with no option to work from home (29%).

In Wave 3, the following groups of passengers on SLP flows were significantly more likely to say they would increase their frequency of rail travel if Simpler Fares was introduced across the UK, after they had been presented with assurances regarding the Simpler Fares model:

- Passengers travelling by rail for the first time (41%);
- Passengers aged 46-59 (25%);
- Passengers travelling with children (32%); and
- Passengers who do not own a railcard (24%).

The following groups of Wave 4 passengers were more likely to express a change in sentiment between their initial and informed opinions of Simpler Fares:

- Passengers travelling by rail generally about two to three times a week (41% moved towards an increased likelihood to travel more often);
- Passengers with the option to work from home some of the time (34% transitioned towards an increased likelihood to travel more often); and
- Passengers who own a railcard (35% transitioned towards an increased likelihood to travel more often).

In Wave 4, the following groups of passengers on Simpler Fares flows were significantly more likely to say they would increase their frequency of rail travel if Simpler Fares was introduced across the UK, after they had been presented with assurances regarding the Simpler Fares model:

- Passengers who travel by rail generally for the first time (40%);
- Passengers aged 26-30 (29%);
- Passengers without the option to work from home (22%) or with the option to work from home at least some of the time (21%); and
- Passengers travelling with children (34%).

In Wave 3, passengers on Simpler Fares flows who were travelling by rail for the first time were significantly more likely to say they would increase their frequency of rail travel if Simpler Fares was

introduced across the UK, after they had been presented with assurances regarding the Simpler Fares model (42%).

In Wave 4, the following groups were significantly more likely to purchase their ticket up to one week before, or on the day of travel:

- Passengers travelling between London and Newcastle (36%);
- Passengers travelling on personal business (52%);
- Passengers aged 18-25 (46%);
- Male passengers (36%); and
- Passengers travelling alone (40%).

In Wave 3, the following groups were significantly more likely to purchase their ticket up to one week before, or on the day of travel:

- Passengers travelling on personal business (49%);
- Passengers aged 18-25 (41%);
- Male passengers (36%);
- Students (51%); and
- Passengers travelling alone (42%).

In Wave 4, the following groups were significantly more likely to purchase return leg ticket at the same time as they purchased their ticket for outward leg.

- Passengers travelling between London and Newcastle (86%);
- Passengers with the option to work from home some of the time (88%); and
- Passengers travelling with children (90%).

In Wave 3, there were no significant differences between passengers' demographics and their likelihood of purchasing their return leg ticket at the same time as they purchased the ticket for their outward leg.

Passengers ticket purchasing behaviour for current trips

In Wave 4, the following groups were significantly more likely to be 'dissatisfied' with the value of the ticket for their current train:

- Passengers travelling between London and Newcastle (29%);
- Passengers travelling on personal business (32%);
- Passengers travelling on the same journey around once a month (38%);
- Passengers travelling by rail in general two to three times a month (32%);
- Passengers aged 18-45 (28%);
- Students and unemployed passengers (30%); and
- Passengers travelling alone (30%).

In Wave 3, the following groups were significantly more likely to be 'dissatisfied' with the value of the ticket for their current train:

- Passengers travelling on work/company business (34%);
- Passengers travelling on the same journey at least three times a month (47%);
- Passengers travelling by rail in general once or more a week (37%);

- Passengers aged 26-30 (35%);
- Passengers working full or part-time (29%);
- Passengers with the option to work from home at least some of the time (32%);
- Passengers with a household income of £28,001 to £41,000 per year (37%);
- Passengers travelling alone (35%);
- Passengers owning a railcard (29%); and
- Passengers not using a railcard for their current journey (40%).

In Wave 4, the following groups were significantly more likely to say they were confident that they had purchased the best value for money ticket at time of booking:

- Leisure passengers (74%);
- Passengers aged 46-59 (72%); and
- Passengers travelling with other adults (74%) or children (75%).

In Wave 3, the following groups were significantly more likely to say they were confident that they had purchased the best value for money ticket at time of booking:

- Passengers aged 60+ (78%); and
- Passengers travelling with other adults (75%) or children (74%).

In Wave 4, passengers without a disability or long-term health condition were significantly more likely to say they were confident that they had purchased the most appropriate ticket at time of booking (89%). In Wave 3, there were no statistically significant differences between difference passenger demographics with regards to whether they were 'confident' that they had purchased the most appropriate ticket at time of booking.

In Wave 4, the following groups were significantly more likely to say the range of different ticket options for their journey was appropriate:

- Passengers travelling between London and Edinburgh (69%);
- Passengers making their specific rail journey for the first time (71%);
- Passengers travelling by rail generally for the first time (78%) or once or twice a year (80%); and
- Passengers travelling with children (78%).

In Wave 3, the following groups were significantly more likely to say the range of different ticket options for their journey was appropriate:

- Leisure passengers (62%);
- Passengers making their specific rail journey for the first time (69%);
- Passengers aged 18-25 (70%);
- Female passengers (61%);
- Unemployed passengers (71%) or students (73%);
- Passengers travelling with other adults (66%); and
- Passengers using a railcard for their journey (59%).

In Wave 4, the following groups were significantly more likely to say the difference between various ticket types was clear and easy to understand:

- Passengers travelling by rail generally for the first time (76%); and
- Female passengers (72%).

In Wave 3, the following groups were significantly more likely to say the difference between various ticket types was clear and easy to understand:

- Passengers making their specific rail journey for the first time (72%);
- Passengers aged 18-25 (68%); and
- Passengers travelling with other adults (67%).

In Wave 4, the following groups were significantly more likely to say that they understood the restrictions that applied to the different ticket types:

- Passengers travelling between London and Edinburgh (77%);
- Passengers with a household income of £28,000 or less (87%); and
- Passengers travelling with other adults (77%).

In Wave 3, passengers aged 31-45 were significantly more likely to say that they understood the restrictions that applied to the different ticket types (73%) than other age groups.

In Wave 4, the following groups were significantly more likely to say it was clear how much flexibility in travel times was available with the ticket they purchased:

- Passengers travelling on work/company business (81%);
- Passengers with the option to work from home all of the time (86%);
- Passengers travelling with other adults (79%); and
- Passengers not using a railcard for their journey (89%).

In Wave 3, passengers without a long-term illness or disability were significantly more likely to say it was clear how much flexibility in travel times was available with the ticket they purchased (73%) compared to those with a long-term illness or disability (62%). However, in Wave 4, a greater share of passengers agreed it was clear how much flexibility was available (86% with a long-term illness or disability and 78% without a long-term illness or disability).

In Wave 4, passengers travelling with other adults, or children were significantly more likely to say it was easy to identify the right ticket for their journey (82%).

In Wave 3, the following groups were significantly more likely to say it was easy to identify the right ticket for their journey:

- Leisure passengers (79%);
- Passengers aged 18-25 (82%);
- Passengers without a long term illness or disability (67%);
- Female passengers (80%);
- Passengers without the option to work from home (85%); and
- Passengers travelling with other adults, or children (both 79%).

In Wave 4, the following groups were significantly more likely to say it was easy to find necessary information and options about tickets to make an informed decision:

- Passengers travelling on the same rail trip once or twice a year, or for the first time (both 75%);
- Female passengers (73%);
- Passengers with a household income of £28,000 or less (91%); and
- Passengers travelling with children (78%).

In Wave 3, the following groups were significantly more likely to say it was easy to find necessary information and options about tickets to make an informed decision:

- Passengers travelling on personal business (71%);
- Passengers who were travelling by rail for the first time (76%);
- Female passengers (69%);
- Passengers without the option to work from home (75%); and
- Passengers travelling with other adults (71%).

In Wave 4 and Wave 3, there were no statistically significant differences between different passenger demographics in their likelihood of agreeing that it was easy to buy the right ticket.

In Wave 4 there were no statistically significant differences between different passenger demographics with regards to whether they felt they purchased the most appropriate ticket for their journey; whether they felt it was clear what the price of their ticket included.

In Wave 4, passengers travelling between London and Edinburgh were significantly more likely to agree the price they paid for their ticket was fair (52%) compared to those travelling between London and Newcastle (39%). In Wave 3 there were no statistically significant differences between different passengers' demographics with regards to whether they felt they purchased the most appropriate ticket for their journey. However leisure passengers and those travelling on work/company business were significantly more likely to say the price they were paying for their ticket was clear (91%) compared to those travelling on personal business (86%), and passengers travelling alone were significantly more likely to say it was clear what the price of their ticket included (85%) compared to those travelling with children (76%).

Passengers travel behaviour

In Wave 4, the following groups were significantly more likely to travel by rail once a week or more:

- Passengers travelling for work or company business (29%);
- Male passengers (23%);
- Passengers with the option to work from home some of the time (28%);
- Passengers travelling alone (25%); and
- Passengers who own a railcard (23%).

In Wave 3, the following groups were significantly more likely to travel by rail once a week or more:

- Passengers travelling for work or company business (31%);
- Passengers with the option to work from home some of the time (35%);
- Passengers travelling alone (27%); and
- Passengers who own a railcard (29%).

In Wave 4, the following groups were significantly more likely to travel alone by rail:

- Passengers travelling between London and Newcastle (59%);
- Passengers on work/company business (74%);
- Passengers travelling at least two times a month on their current tip (84%);
- Passengers travelling at least two times a month by rail generally (65%);
- Passengers aged 18-25 (66%);
- Students (71%);

- Passengers with the option to work from home some of the time (57%); and
- Passengers who own a railcard (54%).

In Wave 3, the following groups were significantly more likely to travel alone by rail:

- Passengers on work/company business (77%);
- Passengers travelling at least two times a month on their current trip (87%);
- Passengers travelling at least once a month by rail generally (61%);
- Passengers aged 18-25 (60%);
- Students (66%);
- Passengers with the option to work from home all of the time (59%);
- Passengers with a household income of between £28,001 and £55,000 (60%), and
- Passengers who do not own a railcard (54%).

APPENDIX F1 – SPLIT TICKETING ADJUSTMENT BY FLOW – WAVE 3 SLP (JOURNEYS)

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2022/P04 - 2023/P08	2024/P04 - 2025/P08
Trial	DARLINGTON <-> London	1.11	1.17
Trial	DONCASTER <-> London	1.08	1.10
Trial	Edinburgh <-> NEWCASTLE	1.10	1.12
Trial	Edinburgh <-> YORK	1.14	1.19
Trial	London <-> YORK	1.08	1.11
Trial	NEWCASTLE <-> YORK	1.06	1.19
Control	ABERDEEN <-> Edinburgh	1.06	1.10
Control	ABERDEEN <-> GLASGOW CEN/QST	1.07	1.12
Control	BIRMINGHAM STNS <-> Bristol	2.28	2.15
Control	BIRMINGHAM STNS <-> London	1.06	1.08
Control	BIRMINGHAM STNS <-> MANCHESTER STNS	1.76	1.68
Control	BIRMINGHAM STNS <-> MILTON KEYNES C	1.12	1.14
Control	BIRMINGHAM STNS <-> NEWCASTLE	1.57	1.56
Control	BIRMINGHAM STNS <-> SHEFFIELD	3.00	2.85
Control	Bristol <-> London	1.06	1.11
Control	CARDIFF CENTRAL <-> London	1.09	1.19
Control	Edinburgh <-> MANCHESTER STNS	1.34	1.21
Control	GLASGOW CEN/QST <-> DUNDEE	1.28	1.37
Control	GLASGOW CEN/QST <-> MANCHESTER STNS	1.42	1.50
Control	LIVERPOOL STNS <-> London	1.04	1.07
Control	London <-> MANCHESTER STNS	1.10	1.13
Control	London <-> NORWICH	1.10	1.16
Control	London <-> STOCKPORT	1.06	1.22
Control	MANCHESTER STNS <-> YORK	1.05	1.19
Control	NOTTINGHAM <-> MANCHESTER STNS	1.45	1.53

APPENDIX F1 – SPLIT TICKETING ADJUSTMENT BY FLOW – WAVE 4 SFS (JOURNEYS)

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2023/P01 - 2023/P013	2025/P01 - 2025/P013
Not included - low volumes	ALNMOUTH <-> LONDON	1	1
Not included - low volumes	BERWICK-UPON-TWEED <-> LONDON	1	1
Control	BODMIN PARKWAY <-> LONDON	1.06	1.09
Control	BRADFORD BR <-> LONDON	1.20	1.24
Control	CARDIFF <-> LONDON	1.11	1.18
Control	CARLISLE <-> LONDON	1.20	1.30
Control	DARLINGTON <-> LONDON	1.14	1.19
Control	DONCASTER <-> LONDON	1.12	1.11
Not included - low volumes	DUNBAR <-> LONDON	1	1
Control	DUNDEE <-> LONDON BR	1.23	1.33
Control	DURHAM <-> LONDON	1.21	1.28
Trial	EDINBURGH <-> LONDON	1.06	1.10
Control	FALKIRK BR <-> LONDON BR	1.09	1.14
Control	GLASGOW BR <-> LONDON	1.16	1.21
Control	HARROGATE <-> LONDON	1.15	1.16
Control	INVERKEITHING <-> LONDON BR	1.17	1.21
Control	KIRKCALDY <-> LONDON BR	1.16	1.22
Control	LEEDS <-> LONDON	1.19	1.19
Control	LIVERPOOL <-> LONDON	1.05	1.06
Control	LOCKERBIE <-> LONDON BR	1.14	1.16
Control	LONDON BR <-> MANCHESTER BR	1.11	1.13
Not included - low volumes	LONDON BR <-> MORPETH	1	1
Control	LONDON BR <-> MOTHERWELL	1.12	1.14
Trial	LONDON BR <-> NEWCASTLE	1.09	1.18
Control	LONDON BR <-> NEWQUAY	1.06	1.13

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2023/P01 - 2023/P013	2025/P01 - 2025/P013
Control	LONDON BR <-> OXENHOLME	1.12	1.18
Control	LONDON BR <-> PAR	1.07	1.09
Control	LONDON BR <-> PENRITH	1.12	1.22
Control	LONDON BR <-> PENZANCE	1.07	1.08
Control	LONDON BR <-> PERTH	1.22	1.34
Control	LONDON BR <-> SHEFFIELD	1.24	1.19
Control	LONDON BR <-> SHIPLEY	1.19	1.30
Control	LONDON BR <-> STIRLING	1.11	1.13
Control	LONDON BR <-> STOCKPORT	1.08	1.22
Control	LONDON BR <-> SUNDERLAND	1.04	1.04
Control	LONDON BR <-> YORK	1.11	1.11

APPENDIX F2 – SPLIT TICKETING ADJUSTMENT BY FLOW – WAVE 3 SLP (REVENUES)

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2022/P04 - 2023/P08	2024/P04 - 2025/P08
Trial	DARLINGTON <-> London	1.11	1.18
Trial	DONCASTER <-> London	1.11	1.16
Trial	Edinburgh <-> NEWCASTLE	1.10	1.14
Trial	Edinburgh <-> YORK	1.15	1.18
Trial	London <-> YORK	1.09	1.13
Trial	NEWCASTLE <-> YORK	1.08	1.20
Control	ABERDEEN <-> Edinburgh	1.05	1.09
Control	ABERDEEN <-> GLASGOW CEN/QST	1.07	1.10
Control	BIRMINGHAM STNS <-> Bristol	1.63	1.64
Control	BIRMINGHAM STNS <-> London	1.08	1.10
Control	BIRMINGHAM STNS <-> MANCHESTER STNS	1.50	1.49
Control	BIRMINGHAM STNS <-> MILTON KEYNES C	1.14	1.18
Control	BIRMINGHAM STNS <-> NEWCASTLE	1.32	1.35
Control	BIRMINGHAM STNS <-> SHEFFIELD	2.07	2.03
Control	Bristol <-> London	1.10	1.16
Control	CARDIFF CENTRAL <-> London	1.09	1.17
Control	Edinburgh <-> MANCHESTER STNS	1.30	1.22
Control	GLASGOW CEN/QST <-> DUNDEE	1.29	1.42
Control	GLASGOW CEN/QST <-> MANCHESTER STNS	1.32	1.41
Control	LIVERPOOL STNS <-> London	1.04	1.10
Control	London <-> MANCHESTER STNS	1.09	1.15
Control	London <-> NORWICH	1.13	1.18
Control	London <-> STOCKPORT	1.07	1.16
Control	MANCHESTER STNS <-> YORK	1.05	1.15
Control	NOTTINGHAM <-> MANCHESTER STNS	1.33	1.41

APPENDIX F2 – SPLIT TICKETING ADJUSTMENT BY FLOW – WAVE 4 (REVENUES)

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2023/P01 - 2023/P013	2025/P01 - 2025/P013
Not included - low volumes	ALNMOUTH <-> LONDON	1	1
Not included - low volumes	BERWICK-UPON-TWEED <-> LONDON	1	1
Control	BODMIN PARKWAY <-> LONDON	1.05	1.08
Control	BRADFORD BR <-> LONDON	1.22	1.23
Control	CARDIFF <-> LONDON	1.12	1.18
Control	CARLISLE <-> LONDON	1.16	1.25
Control	DARLINGTON <-> LONDON	1.13	1.20
Control	DONCASTER <-> LONDON	1.14	1.17
Not included - low volumes	DUNBAR <-> LONDON	1	1
Control	DUNDEE <-> LONDON BR	1.21	1.30
Control	DURHAM <-> LONDON	1.18	1.25
Trial	EDINBURGH <-> LONDON	1.05	1.10
Control	FALKIRK BR <-> LONDON BR	1.08	1.13
Control	GLASGOW BR <-> LONDON	1.13	1.18
Control	HARROGATE <-> LONDON	1.12	1.15
Control	INVERKEITHING <-> LONDON BR	1.15	1.19
Control	KIRKCALDY <-> LONDON BR	1.15	1.20
Control	LEEDS <-> LONDON	1.17	1.20
Control	LIVERPOOL <-> LONDON	1.06	1.09
Control	LOCKERBIE <-> LONDON BR	1.09	1.13
Control	LONDON BR <-> MANCHESTER BR	1.11	1.15
Not included - low volumes	LONDON BR <-> MORPETH	1	1
Control	LONDON BR <-> MOTHERWELL	1.11	1.13
Trial	LONDON BR <-> NEWCASTLE	1.10	1.17
Control	LONDON BR <-> NEWQUAY	1.04	1.10

FLOW CATEGORY	BIDIRECTIONAL FLOWS	2023/P01 - 2023/P013	2025/P01 - 2025/P013
Control	LONDON BR <-> OXENHOLME	1.08	1.11
Control	LONDON BR <-> PAR	1.06	1.08
Control	LONDON BR <-> PENRITH	1.08	1.14
Control	LONDON BR <-> PENZANCE	1.05	1.06
Control	LONDON BR <-> PERTH	1.19	1.28
Control	LONDON BR <-> SHEFFIELD	1.20	1.19
Control	LONDON BR <-> SHIPLEY	1.10	1.19
Control	LONDON BR <-> STIRLING	1.10	1.12
Control	LONDON BR <-> STOCKPORT	1.08	1.18
Control	LONDON BR <-> SUNDERLAND	1.05	1.04
Control	LONDON BR <-> YORK	1.11	1.13

APPENDIX F3 – SPLIT TICKETING ADJUSTMENT BY FLOW – WAVE 4 (SUMMARY)

Split ticketing sensitivity testing

The tables below demonstrate the effects of split ticketing on the analysis by showing the journeys and yield growth between the pre-trial and post-trial periods, with and without the split ticketing weighting applied. The difference between the two is specified in the third column.

LONDON-RESTON (BERWICK)	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	7%	24%	20%	22%
Journeys - no split ticketing	7%	23%	15%	18%
Difference	0%	1%	6%	4%
Revenues - split ticketing	8%	19%	17%	18%
Revenues - no split ticketing	8%	17%	13%	15%
Difference	0%	2%	4%	3%
Yield - split ticketing	0.1%	-4%	-3%	-3%
Yield - no split ticketing	0.1%	-5%	-1%	-3%
Difference	0%	1%	-1%	-1%

LONDON-EDINBURGH	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	1%	12%	25%	20%
Journeys - no split ticketing	-3%	12%	23%	19%
Difference	4%	0%	2%	1%
Revenues - split ticketing	2%	12%	12%	12%
Revenues - no split ticketing	-3%	9%	8%	8%
Difference	4%	3%	4%	4%
Yield - split ticketing	1%	0%	-10%	-7%
Yield - no split ticketing	1%	-3%	-12%	-9%
Difference	0%	2%	2%	2%

LONDON-NEWCASTLE	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	-7%	22%	17%	20%
Journeys - no split ticketing	-14%	19%	8%	14%
Difference	6%	3%	10%	6%
Revenues - split ticketing	0%	25%	15%	20%
Revenues - no split ticketing	-6%	19%	8%	14%
Difference	6%	6%	7%	7%
Yield - split ticketing	8%	3%	-2%	0%
Yield - no split ticketing	9%	0%	1%	0%
Difference	-1%	2%	-2%	0%

LONDON-DUNBAR (BERWICK)	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	-6%	8%	11%	10%
Journeys - no split ticketing	-6%	4%	9%	7%
Difference	0%	4%	3%	3%
Revenues - split ticketing	-5%	8%	9%	9%
Revenues - no split ticketing	-5%	5%	7%	6%
Difference	0%	4%	3%	3%
Yield - split ticketing	1%	0%	-2%	-1%
Yield - no split ticketing	1%	1%	-2%	-1%
Difference	0%	-1%	0%	0%

LONDON-ALNMOUTH (MORPETH)	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	-9%	10%	33%	27%
Journeys - no split ticketing	-9%	6%	27%	21%
Difference	0%	4%	6%	6%
Revenues - split ticketing	-3%	5%	31%	23%
Revenues - no split ticketing	-3%	1%	27%	20%
Difference	0%	3%	3%	3%
Yield - split ticketing	7%	-5%	-2%	-3%
Yield - no split ticketing	7%	-4%	0%	-1%
Difference	0%	-1%	-2%	-2%

LONDON-MORPETH ⁷⁴	LNER TRIAL	LNER CONTROL	NON-LNER CONTROL	ALL CONTROL
Journeys - split ticketing	-9%	3%	39%	21%
Journeys - no split ticketing	-9%	-2%	34%	16%
Difference	0%	5%	5%	4%
Revenues - split ticketing	-3%	8%	56%	28%
Revenues - no split ticketing	-3%	4%	52%	25%
Difference	0%	4%	5%	4%
Yield - split ticketing	7%	5%	12%	7%
Yield - no split ticketing	7%	6%	13%	7%
Difference	0%	-1%	-1%	-1%

⁷⁴ London-Morpeth uses different control flows than London-Alnmouth (Morpeth) despite both stations being in the same Travel Zone. These two stations were initially considered two different trial flows. A decision was taken to maintain the sample design and so to have two sets of control flows, one for each station. Where trial flows were not adjusted for split ticketing due to low volumes, the same approach was taken to respective control flows to enable consistency.

APPENDIX G1 – REVENUE REGRESSION MODELS – SLP

Model 1 (unweighted)

MODEL 1 (UNWEIGHTED)	COUNTER- FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£3,866	£1,225	3.16	0.00	
Impact of SLP	All flows in 2023 and control flows in 2024	£12,645	£3,475	3.64	0.00	
Number of observations						43,762
Adjusted R-squared						36.52%

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£219,769
London-Darlington (LNER)	No flow fixed effect	£264,659
London-Stockport	No flow fixed effect	£213,739
London-Bristol	No flow fixed effect	£231,003
London-Doncaster (LNER)	No flow fixed effect	£259,747
London-Norwich	No flow fixed effect	£204,760
London-Birmingham	No flow fixed effect	£208,520
London-Liverpool	No flow fixed effect	£261,066
London-Manchester	No flow fixed effect	£296,662
London-York (LNER)	No flow fixed effect	£309,866
Aberdeen-Edinburgh	No flow fixed effect	£192,591
Aberdeen-Glasgow	No flow fixed effect	£170,263
Newcastle-Edinburgh (LNER)	No flow fixed effect	£79,101
Manchester-Edinburgh	No flow fixed effect	£195,658
Manchester-Glasgow	No flow fixed effect	£145,044
Newcastle-Birmingham	No flow fixed effect	£172,697
York-Edinburgh (LNER)	No flow fixed effect	£74,258
Bristol-Birmingham	No flow fixed effect	£184,277
Dundee-Glasgow	No flow fixed effect	£148,630
Manchester-Birmingham	No flow fixed effect	£191,466
Milton Keynes-Birmingham	No flow fixed effect	£136,091
Nottingham-Manchester	No flow fixed effect	£186,909
Sheffield-Birmingham	No flow fixed effect	£174,398
York-Manchester	No flow fixed effect	£188,356
York-Newcastle (LNER)	No flow fixed effect	£94,223

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£586
P03	No period time fixed effect	-£2,008
P04	No period time fixed effect	-£26,578
P05	No period time fixed effect	-£13,226
P06	No period time fixed effect	-£10,461
P07	No period time fixed effect	-£1,415
P08	No period time fixed effect	£8,227
P09	No period time fixed effect	£6,033
P10	No period time fixed effect	-£1,039
P11	No period time fixed effect	£10,065
P12	No period time fixed effect	£11,686
P13	No period time fixed effect	£13,197
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£399
W03	No weekly time fixed effect	£1,673
W04	No weekly time fixed effect	£3,398
W05	No weekly time fixed effect	£4,979
W06	No weekly time fixed effect	-£174
W07	No weekly time fixed effect	£2,534
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	£135
W10	No weekly time fixed effect	£6,489
W11	No weekly time fixed effect	£6,401
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£29,566
W14	No weekly time fixed effect	£25,235
W15	No weekly time fixed effect	£24,394
W16	No weekly time fixed effect	£20,234
W17	No weekly time fixed effect	£12,155
W18	No weekly time fixed effect	£6,514
W19	No weekly time fixed effect	£5,697
W20	No weekly time fixed effect	£7,722
W21	No weekly time fixed effect	£6,331
W22	No weekly time fixed effect	£3,990
W23	No weekly time fixed effect	£10,938
W24	No weekly time fixed effect	£11,407
W25	No weekly time fixed effect	£4,097
W26	No weekly time fixed effect	£3,456
W27	No weekly time fixed effect	£6,969
W28	No weekly time fixed effect	£7,303
W29	No weekly time fixed effect	-£3,062
W30	No weekly time fixed effect	-£5,824
W31	No weekly time fixed effect	-£5,728
W32	No weekly time fixed effect	-£2,286
W33	No weekly time fixed effect	-£4,689
W34	No weekly time fixed effect	-£3,417
W35	No weekly time fixed effect	£2,904
W36	No weekly time fixed effect	-£6,405
W37	No weekly time fixed effect	-£2,319

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£15,974
W39	No weekly time fixed effect	-£29,014
W40	No weekly time fixed effect	-£19,441
W41	No weekly time fixed effect	-£17,903
W42	No weekly time fixed effect	-£18,490
W43	No weekly time fixed effect	-£15,083
W44	No weekly time fixed effect	-£15,525
W45	No weekly time fixed effect	-£15,727
W46	No weekly time fixed effect	-£16,146
W47	No weekly time fixed effect	-£10,828
W48	No weekly time fixed effect	-£10,784
W49	No weekly time fixed effect	-£10,999
W50	No weekly time fixed effect	-£13,351
W51	No weekly time fixed effect	-£12,648
W52	No weekly time fixed effect	£0

Model 1 (weighted)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£6,151	£1,363	4.51	0.00	
Impact of SLP	All flows in 2023 and control flows in 2024	£15,647	£3,865	4.05	0.00	
Number of observations						43,762
Adjusted R-squared						37.24%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£248,634
London-Darlington (LNER)	No flow fixed effect	£296,818
London-Stockport	No flow fixed effect	£241,259
London-Bristol	No flow fixed effect	£261,144
London-Doncaster (LNER)	No flow fixed effect	£290,447
London-Norwich	No flow fixed effect	£232,520
London-Birmingham	No flow fixed effect	£233,016
London-Liverpool	No flow fixed effect	£290,408
London-Manchester	No flow fixed effect	£334,754
London-York (LNER)	No flow fixed effect	£345,200
Aberdeen-Edinburgh	No flow fixed effect	£217,208
Aberdeen-Glasgow	No flow fixed effect	£191,978
Newcastle-Edinburgh (LNER)	No flow fixed effect	£86,701
Manchester-Edinburgh	No flow fixed effect	£222,329
Manchester-Glasgow	No flow fixed effect	£165,929
Newcastle-Birmingham	No flow fixed effect	£196,716
York-Edinburgh (LNER)	No flow fixed effect	£85,198
Bristol-Birmingham	No flow fixed effect	£210,426
Dundee-Glasgow	No flow fixed effect	£169,418
Manchester-Birmingham	No flow fixed effect	£219,714
Milton Keynes-Birmingham	No flow fixed effect	£154,013
Nottingham-Manchester	No flow fixed effect	£212,614
Sheffield-Birmingham	No flow fixed effect	£201,274
York-Manchester	No flow fixed effect	£211,504
York-Newcastle (LNER)	No flow fixed effect	£105,329

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£1,034
P03	No period time fixed effect	-£1,715
P04	No period time fixed effect	-£29,472
P05	No period time fixed effect	-£14,769
P06	No period time fixed effect	-£12,001
P07	No period time fixed effect	-£1,608
P08	No period time fixed effect	£9,150
P09	No period time fixed effect	£6,935
P10	No period time fixed effect	-£1,352
P11	No period time fixed effect	£10,913
P12	No period time fixed effect	£12,824
P13	No period time fixed effect	£14,808
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£909
W03	No weekly time fixed effect	£2,243
W04	No weekly time fixed effect	£4,105
W05	No weekly time fixed effect	£5,480
W06	No weekly time fixed effect	-£348
W07	No weekly time fixed effect	£2,880
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£153
W10	No weekly time fixed effect	£7,104
W11	No weekly time fixed effect	£7,129
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£33,115
W14	No weekly time fixed effect	£28,273
W15	No weekly time fixed effect	£27,247
W16	No weekly time fixed effect	£22,610
W17	No weekly time fixed effect	£13,856
W18	No weekly time fixed effect	£7,680
W19	No weekly time fixed effect	£6,566
W20	No weekly time fixed effect	£8,833
W21	No weekly time fixed effect	£7,641
W22	No weekly time fixed effect	£4,881
W23	No weekly time fixed effect	£12,920
W24	No weekly time fixed effect	£13,623
W25	No weekly time fixed effect	£5,055
W26	No weekly time fixed effect	£4,324
W27	No weekly time fixed effect	£8,149
W28	No weekly time fixed effect	£8,469
W29	No weekly time fixed effect	-£2,932
W30	No weekly time fixed effect	-£6,175
W31	No weekly time fixed effect	-£5,875
W32	No weekly time fixed effect	-£1,903
W33	No weekly time fixed effect	-£4,954
W34	No weekly time fixed effect	-£3,612
W35	No weekly time fixed effect	£3,317
W36	No weekly time fixed effect	-£7,049
W37	No weekly time fixed effect	-£2,475

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£17,644
W39	No weekly time fixed effect	-£32,334
W40	No weekly time fixed effect	-£21,603
W41	No weekly time fixed effect	-£19,683
W42	No weekly time fixed effect	-£20,060
W43	No weekly time fixed effect	-£16,518
W44	No weekly time fixed effect	-£16,940
W45	No weekly time fixed effect	-£17,020
W46	No weekly time fixed effect	-£17,682
W47	No weekly time fixed effect	-£11,646
W48	No weekly time fixed effect	-£11,481
W49	No weekly time fixed effect	-£11,911
W50	No weekly time fixed effect	-£14,545
W51	No weekly time fixed effect	-£13,975
W52	No weekly time fixed effect	£0

Model 2 (unweighted)

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£3,866	£1,225	3.16	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	£14,314	£3,736	3.83	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	£3,116	£8,563	0.36	0.72	ns
Number of observations						43,762
Adjusted R-squared						36.52%

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£219,781
London-Darlington (LNER)	No flow fixed effect	£263,864
London-Stockport	No flow fixed effect	£213,754
London-Bristol	No flow fixed effect	£231,017
London-Doncaster (LNER)	No flow fixed effect	£258,872
London-Norwich	No flow fixed effect	£204,775
London-Birmingham	No flow fixed effect	£208,535
London-Liverpool	No flow fixed effect	£261,081
London-Manchester	No flow fixed effect	£296,676
London-York (LNER)	No flow fixed effect	£309,057
Aberdeen-Edinburgh	No flow fixed effect	£192,604
Aberdeen-Glasgow	No flow fixed effect	£170,279
Newcastle-Edinburgh (LNER)	No flow fixed effect	£83,913
Manchester-Edinburgh	No flow fixed effect	£195,671
Manchester-Glasgow	No flow fixed effect	£145,057
Newcastle-Birmingham	No flow fixed effect	£172,711
York-Edinburgh (LNER)	No flow fixed effect	£79,070
Bristol-Birmingham	No flow fixed effect	£184,291
Dundee-Glasgow	No flow fixed effect	£148,644
Manchester-Birmingham	No flow fixed effect	£191,480
Milton Keynes-Birmingham	No flow fixed effect	£136,105
Nottingham-Manchester	No flow fixed effect	£186,923
Sheffield-Birmingham	No flow fixed effect	£174,412
York-Manchester	No flow fixed effect	£188,371
York-Newcastle (LNER)	No flow fixed effect	£99,035

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£569
P03	No period time fixed effect	-£2,012
P04	No period time fixed effect	-£26,563
P05	No period time fixed effect	-£13,226
P06	No period time fixed effect	-£10,471
P07	No period time fixed effect	-£1,414
P08	No period time fixed effect	£8,235
P09	No period time fixed effect	£6,032
P10	No period time fixed effect	-£1,050
P11	No period time fixed effect	£10,042
P12	No period time fixed effect	£11,669
P13	No period time fixed effect	£13,191
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£384
W03	No weekly time fixed effect	£1,646
W04	No weekly time fixed effect	£3,392
W05	No weekly time fixed effect	£4,992
W06	No weekly time fixed effect	-£158
W07	No weekly time fixed effect	£2,595
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	£146
W10	No weekly time fixed effect	£6,474
W11	No weekly time fixed effect	£6,408
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£29,550
W14	No weekly time fixed effect	£25,197
W15	No weekly time fixed effect	£24,366
W16	No weekly time fixed effect	£20,186
W17	No weekly time fixed effect	£12,132
W18	No weekly time fixed effect	£6,498
W19	No weekly time fixed effect	£5,685
W20	No weekly time fixed effect	£7,695
W21	No weekly time fixed effect	£6,304
W22	No weekly time fixed effect	£3,974
W23	No weekly time fixed effect	£10,918
W24	No weekly time fixed effect	£11,421
W25	No weekly time fixed effect	£4,075
W26	No weekly time fixed effect	£3,445
W27	No weekly time fixed effect	£6,956
W28	No weekly time fixed effect	£7,275
W29	No weekly time fixed effect	-£3,086
W30	No weekly time fixed effect	-£5,856
W31	No weekly time fixed effect	-£5,746
W32	No weekly time fixed effect	-£2,305
W33	No weekly time fixed effect	-£4,702
W34	No weekly time fixed effect	-£3,442
W35	No weekly time fixed effect	£2,930
W36	No weekly time fixed effect	-£6,414
W37	No weekly time fixed effect	-£2,325

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£15,980
W39	No weekly time fixed effect	-£29,014
W40	No weekly time fixed effect	-£19,446
W41	No weekly time fixed effect	-£17,899
W42	No weekly time fixed effect	-£18,480
W43	No weekly time fixed effect	-£15,074
W44	No weekly time fixed effect	-£15,532
W45	No weekly time fixed effect	-£15,727
W46	No weekly time fixed effect	-£16,147
W47	No weekly time fixed effect	-£10,815
W48	No weekly time fixed effect	-£10,782
W49	No weekly time fixed effect	-£10,995
W50	No weekly time fixed effect	-£13,365
W51	No weekly time fixed effect	-£12,647
W52	No weekly time fixed effect	£0

Model 2 (weighted)

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£6,152	£1,363	4.51	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	£17,187	£4,154	4.14	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	£6,853	£9,523	0.72	0.47	ns
Number of observations						43,762
Adjusted R-squared						37.24%

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£248,646
London-Darlington (LNER)	No flow fixed effect	£296,085
London-Stockport	No flow fixed effect	£241,273
London-Bristol	No flow fixed effect	£261,157
London-Doncaster (LNER)	No flow fixed effect	£289,639
London-Norwich	No flow fixed effect	£232,534
London-Birmingham	No flow fixed effect	£233,029
London-Liverpool	No flow fixed effect	£290,422
London-Manchester	No flow fixed effect	£334,767
London-York (LNER)	No flow fixed effect	£344,454
Aberdeen-Edinburgh	No flow fixed effect	£217,221
Aberdeen-Glasgow	No flow fixed effect	£191,993
Newcastle-Edinburgh (LNER)	No flow fixed effect	£91,142
Manchester-Edinburgh	No flow fixed effect	£222,341
Manchester-Glasgow	No flow fixed effect	£165,942
Newcastle-Birmingham	No flow fixed effect	£196,730
York-Edinburgh (LNER)	No flow fixed effect	£89,639
Bristol-Birmingham	No flow fixed effect	£210,439
Dundee-Glasgow	No flow fixed effect	£169,431
Manchester-Birmingham	No flow fixed effect	£219,727
Milton Keynes-Birmingham	No flow fixed effect	£154,025
Nottingham-Manchester	No flow fixed effect	£212,628
Sheffield-Birmingham	No flow fixed effect	£201,287
York-Manchester	No flow fixed effect	£211,517
York-Newcastle (LNER)	No flow fixed effect	£109,770

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£1,018
P03	No period time fixed effect	-£1,720
P04	No period time fixed effect	-£29,459
P05	No period time fixed effect	-£14,768
P06	No period time fixed effect	-£12,011
P07	No period time fixed effect	-£1,608
P08	No period time fixed effect	£9,157
P09	No period time fixed effect	£6,934
P10	No period time fixed effect	-£1,361
P11	No period time fixed effect	£10,892
P12	No period time fixed effect	£12,809
P13	No period time fixed effect	£14,802
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£895
W03	No weekly time fixed effect	£2,218
W04	No weekly time fixed effect	£4,099
W05	No weekly time fixed effect	£5,492
W06	No weekly time fixed effect	-£334
W07	No weekly time fixed effect	£2,937
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£143
W10	No weekly time fixed effect	£7,089
W11	No weekly time fixed effect	£7,136
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£33,101
W14	No weekly time fixed effect	£28,238
W15	No weekly time fixed effect	£27,221
W16	No weekly time fixed effect	£22,567
W17	No weekly time fixed effect	£13,835
W18	No weekly time fixed effect	£7,665
W19	No weekly time fixed effect	£6,555
W20	No weekly time fixed effect	£8,808
W21	No weekly time fixed effect	£7,616
W22	No weekly time fixed effect	£4,866
W23	No weekly time fixed effect	£12,901
W24	No weekly time fixed effect	£13,636
W25	No weekly time fixed effect	£5,034
W26	No weekly time fixed effect	£4,313
W27	No weekly time fixed effect	£8,137
W28	No weekly time fixed effect	£8,443
W29	No weekly time fixed effect	-£2,955
W30	No weekly time fixed effect	-£6,205
W31	No weekly time fixed effect	-£5,892
W32	No weekly time fixed effect	-£1,920
W33	No weekly time fixed effect	-£4,966
W34	No weekly time fixed effect	-£3,635
W35	No weekly time fixed effect	£3,342
W36	No weekly time fixed effect	-£7,057
W37	No weekly time fixed effect	-£2,480

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£17,650
W39	No weekly time fixed effect	-£32,334
W40	No weekly time fixed effect	-£21,608
W41	No weekly time fixed effect	-£19,679
W42	No weekly time fixed effect	-£20,051
W43	No weekly time fixed effect	-£16,510
W44	No weekly time fixed effect	-£16,947
W45	No weekly time fixed effect	-£17,020
W46	No weekly time fixed effect	-£17,682
W47	No weekly time fixed effect	-£11,635
W48	No weekly time fixed effect	-£11,479
W49	No weekly time fixed effect	-£11,907
W50	No weekly time fixed effect	-£14,558
W51	No weekly time fixed effect	-£13,974
W52	No weekly time fixed effect	£0

Model 3 (unweighted)

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£3,868	£1,163	3.33	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	£17,175	£3,271	5.25	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	-£1,073	£3,496	-0.31	0.76	ns
Non-London LNER Trial Competition	Flows with no competition	-£56,284	£5,354	-10.51	0.00	
London LNER Trial Competition	Flows with no competition	-£210,040	£5,402	-38.88	0.00	
Number of observations						43,762
Adjusted R-squared						36.88%

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£219,740
London-Darlington (LNER)	No flow fixed effect	£262,573
London-Stockport	No flow fixed effect	£213,843
London-Bristol	No flow fixed effect	£231,006
London-Doncaster (LNER)	No flow fixed effect	£255,397
London-Norwich	No flow fixed effect	£204,707
London-Birmingham	No flow fixed effect	£208,522
London-Liverpool	No flow fixed effect	£261,092
London-Manchester	No flow fixed effect	£296,641
London-York (LNER)	No flow fixed effect	£309,565
Aberdeen-Edinburgh	No flow fixed effect	£192,688
Aberdeen-Glasgow	No flow fixed effect	£170,299
Newcastle-Edinburgh (LNER)	No flow fixed effect	£80,545
Manchester-Edinburgh	No flow fixed effect	£195,641
Manchester-Glasgow	No flow fixed effect	£145,039
Newcastle-Birmingham	No flow fixed effect	£172,771
York-Edinburgh (LNER)	No flow fixed effect	£77,871
Bristol-Birmingham	No flow fixed effect	£184,386
Dundee-Glasgow	No flow fixed effect	£148,789
Manchester-Birmingham	No flow fixed effect	£191,475
Milton Keynes-Birmingham	No flow fixed effect	£136,164
Nottingham-Manchester	No flow fixed effect	£186,907
Sheffield-Birmingham	No flow fixed effect	£174,483
York-Manchester	No flow fixed effect	£188,508
York-Newcastle (LNER)	No flow fixed effect	£99,035

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£542
P03	No period time fixed effect	-£2,107
P04	No period time fixed effect	-£25,949
P05	No period time fixed effect	-£12,863
P06	No period time fixed effect	-£10,034
P07	No period time fixed effect	-£1,502
P08	No period time fixed effect	£7,688
P09	No period time fixed effect	£5,988
P10	No period time fixed effect	-£329
P11	No period time fixed effect	£9,770
P12	No period time fixed effect	£11,121
P13	No period time fixed effect	£12,389
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£163
W03	No weekly time fixed effect	£1,331
W04	No weekly time fixed effect	£2,757
W05	No weekly time fixed effect	£4,268
W06	No weekly time fixed effect	-£552
W07	No weekly time fixed effect	£2,325
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	£416
W10	No weekly time fixed effect	£6,200
W11	No weekly time fixed effect	£6,197
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£28,764
W14	No weekly time fixed effect	£24,614
W15	No weekly time fixed effect	£23,844
W16	No weekly time fixed effect	£19,845
W17	No weekly time fixed effect	£11,958
W18	No weekly time fixed effect	£6,672
W19	No weekly time fixed effect	£5,826
W20	No weekly time fixed effect	£7,639
W21	No weekly time fixed effect	£6,240
W22	No weekly time fixed effect	£3,961
W23	No weekly time fixed effect	£10,250
W24	No weekly time fixed effect	£10,796
W25	No weekly time fixed effect	£3,915
W26	No weekly time fixed effect	£3,484
W27	No weekly time fixed effect	£6,691
W28	No weekly time fixed effect	£6,915
W29	No weekly time fixed effect	-£2,804
W30	No weekly time fixed effect	-£5,442
W31	No weekly time fixed effect	-£5,263
W32	No weekly time fixed effect	-£2,017
W33	No weekly time fixed effect	-£4,530
W34	No weekly time fixed effect	-£3,483
W35	No weekly time fixed effect	£2,582
W36	No weekly time fixed effect	-£6,610
W37	No weekly time fixed effect	-£3,168

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£15,990
W39	No weekly time fixed effect	-£27,887
W40	No weekly time fixed effect	-£19,023
W41	No weekly time fixed effect	-£17,545
W42	No weekly time fixed effect	-£17,660
W43	No weekly time fixed effect	-£14,895
W44	No weekly time fixed effect	-£15,450
W45	No weekly time fixed effect	-£15,526
W46	No weekly time fixed effect	-£15,696
W47	No weekly time fixed effect	-£10,622
W48	No weekly time fixed effect	-£10,604
W49	No weekly time fixed effect	-£10,690
W50	No weekly time fixed effect	-£12,947
W51	No weekly time fixed effect	-£12,085
W52	No weekly time fixed effect	£0

Model 3 (weighted)

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	£6,155	£1,293	4.76	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	£20,413	£3,638	5.61	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	-£1,499	£3,888	-0.39	0.70	ns
Non-London LNER Trial Competition	Flows with no competition	-£64,321	£5,954	-10.80	0.00	
London LNER Trial Competition	Flows with no competition	-£236,056	£6,008	-39.29	0.00	
Number of observations						43,762
Adjusted R-squared						37.59%

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£248,614
London-Darlington (LNER)	No flow fixed effect	£294,638
London-Stockport	No flow fixed effect	£241,388
London-Bristol	No flow fixed effect	£261,158
London-Doncaster (LNER)	No flow fixed effect	£285,799
London-Norwich	No flow fixed effect	£232,469
London-Birmingham	No flow fixed effect	£233,029
London-Liverpool	No flow fixed effect	£290,449
London-Manchester	No flow fixed effect	£334,741
London-York (LNER)	No flow fixed effect	£344,983
Aberdeen-Edinburgh	No flow fixed effect	£217,329
Aberdeen-Glasgow	No flow fixed effect	£192,030
Newcastle-Edinburgh (LNER)	No flow fixed effect	£90,673
Manchester-Edinburgh	No flow fixed effect	£222,320
Manchester-Glasgow	No flow fixed effect	£165,935
Newcastle-Birmingham	No flow fixed effect	£196,812
York-Edinburgh (LNER)	No flow fixed effect	£88,417
Bristol-Birmingham	No flow fixed effect	£210,558
Dundee-Glasgow	No flow fixed effect	£169,607
Manchester-Birmingham	No flow fixed effect	£219,735
Milton Keynes-Birmingham	No flow fixed effect	£154,107
Nottingham-Manchester	No flow fixed effect	£212,623
Sheffield-Birmingham	No flow fixed effect	£201,382
York-Manchester	No flow fixed effect	£211,687
York-Newcastle (LNER)	No flow fixed effect	£134,368

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£960
P03	No period time fixed effect	-£1,861
P04	No period time fixed effect	-£28,612
P05	No period time fixed effect	-£14,195
P06	No period time fixed effect	-£11,385
P07	No period time fixed effect	-£1,593
P08	No period time fixed effect	£8,660
P09	No period time fixed effect	£6,991
P10	No period time fixed effect	-£469
P11	No period time fixed effect	£10,650
P12	No period time fixed effect	£12,226
P13	No period time fixed effect	£13,902
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	£621
W03	No weekly time fixed effect	£1,846
W04	No weekly time fixed effect	£3,370
W05	No weekly time fixed effect	£4,696
W06	No weekly time fixed effect	-£760
W07	No weekly time fixed effect	£2,638
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	£181
W10	No weekly time fixed effect	£6,796
W11	No weekly time fixed effect	£6,904
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£32,049
W14	No weekly time fixed effect	£27,414
W15	No weekly time fixed effect	£26,474
W16	No weekly time fixed effect	£22,017
W17	No weekly time fixed effect	£13,455
W18	No weekly time fixed effect	£7,665
W19	No weekly time fixed effect	£6,535
W20	No weekly time fixed effect	£8,569
W21	No weekly time fixed effect	£7,399
W22	No weekly time fixed effect	£4,713
W23	No weekly time fixed effect	£11,992
W24	No weekly time fixed effect	£12,765
W25	No weekly time fixed effect	£4,712
W26	No weekly time fixed effect	£4,217
W27	No weekly time fixed effect	£7,710
W28	No weekly time fixed effect	£7,915
W29	No weekly time fixed effect	-£2,780
W30	No weekly time fixed effect	-£5,872
W31	No weekly time fixed effect	-£5,494
W32	No weekly time fixed effect	-£1,752
W33	No weekly time fixed effect	-£4,903
W34	No weekly time fixed effect	-£3,802
W35	No weekly time fixed effect	£2,834
W36	No weekly time fixed effect	-£7,397
W37	No weekly time fixed effect	-£3,502

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-£17,741
W39	No weekly time fixed effect	-£31,144
W40	No weekly time fixed effect	-£21,197
W41	No weekly time fixed effect	-£19,358
W42	No weekly time fixed effect	-£19,193
W43	No weekly time fixed effect	-£16,355
W44	No weekly time fixed effect	-£16,915
W45	No weekly time fixed effect	-£16,859
W46	No weekly time fixed effect	-£17,199
W47	No weekly time fixed effect	-£11,461
W48	No weekly time fixed effect	-£11,329
W49	No weekly time fixed effect	-£11,602
W50	No weekly time fixed effect	-£14,123
W51	No weekly time fixed effect	-£13,355
W52	No weekly time fixed effect	£0

APPENDIX G2 – DEMAND REGRESSION MODELS – SLP

Model 1 (unweighted)

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	76	26	2.90	0.00	
Impact of SLP	All flows in 2023 and control flows in 2024	378	231	1.63	0.10	ns
Number of observations						43,762
Adjusted R-squared						49.18%

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	6,011
London-Darlington (LNER)	No flow fixed effect	6,619
London-Stockport	No flow fixed effect	5,725
London-Bristol	No flow fixed effect	6,693
London-Doncaster (LNER)	No flow fixed effect	6,917
London-Norwich	No flow fixed effect	6,459
London-Birmingham	No flow fixed effect	6,936
London-Liverpool	No flow fixed effect	7,020
London-Manchester	No flow fixed effect	7,659
London-York (LNER)	No flow fixed effect	7,741
Aberdeen-Edinburgh	No flow fixed effect	5,698
Aberdeen-Glasgow	No flow fixed effect	4,990
Newcastle-Edinburgh (LNER)	No flow fixed effect	4,616
Manchester-Edinburgh	No flow fixed effect	5,593
Manchester-Glasgow	No flow fixed effect	4,208
Newcastle-Birmingham	No flow fixed effect	4,819
York-Edinburgh (LNER)	No flow fixed effect	2,618
Bristol-Birmingham	No flow fixed effect	5,256
Dundee-Glasgow	No flow fixed effect	4,471
Manchester-Birmingham	No flow fixed effect	5,578
Milton Keynes-Birmingham	No flow fixed effect	4,246
Nottingham-Manchester	No flow fixed effect	5,497
Sheffield-Birmingham	No flow fixed effect	5,024
York-Manchester	No flow fixed effect	6,736
York-Newcastle (LNER)	No flow fixed effect	7,114

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-81
P03	No period time fixed effect	-180
P04	No period time fixed effect	-640
P05	No period time fixed effect	-225
P06	No period time fixed effect	-162
P07	No period time fixed effect	34
P08	No period time fixed effect	305
P09	No period time fixed effect	203
P10	No period time fixed effect	102
P11	No period time fixed effect	410
P12	No period time fixed effect	423
P13	No period time fixed effect	398
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-40
W03	No weekly time fixed effect	-13
W04	No weekly time fixed effect	23
W05	No weekly time fixed effect	156
W06	No weekly time fixed effect	23
W07	No weekly time fixed effect	72
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	187
W10	No weekly time fixed effect	207
W11	No weekly time fixed effect	172
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	626
W14	No weekly time fixed effect	517
W15	No weekly time fixed effect	500
W16	No weekly time fixed effect	427
W17	No weekly time fixed effect	184
W18	No weekly time fixed effect	73
W19	No weekly time fixed effect	41
W20	No weekly time fixed effect	74
W21	No weekly time fixed effect	65
W22	No weekly time fixed effect	10
W23	No weekly time fixed effect	103
W24	No weekly time fixed effect	104
W25	No weekly time fixed effect	-60
W26	No weekly time fixed effect	-48
W27	No weekly time fixed effect	62
W28	No weekly time fixed effect	81
W29	No weekly time fixed effect	-211
W30	No weekly time fixed effect	-218
W31	No weekly time fixed effect	-254
W32	No weekly time fixed effect	-216
W33	No weekly time fixed effect	-275
W34	No weekly time fixed effect	-235
W35	No weekly time fixed effect	-78
W36	No weekly time fixed effect	-301
W37	No weekly time fixed effect	-229

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-573
W39	No weekly time fixed effect	-909
W40	No weekly time fixed effect	-612
W41	No weekly time fixed effect	-630
W42	No weekly time fixed effect	-659
W43	No weekly time fixed effect	-533
W44	No weekly time fixed effect	-563
W45	No weekly time fixed effect	-554
W46	No weekly time fixed effect	-522
W47	No weekly time fixed effect	-453
W48	No weekly time fixed effect	-425
W49	No weekly time fixed effect	-430
W50	No weekly time fixed effect	-499
W51	No weekly time fixed effect	-465
W52	No weekly time fixed effect	0

Model 1 (weighted)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	126	30	4.22	0.00	
Impact of SLP	All flows in 2023 and control flows in 2024	74	85	0.88	0.38	ns
<i>Number of observations</i>						43,762
<i>Adjusted R-squared</i>						49.05%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	7,010
London-Darlington (LNER)	No flow fixed effect	7,307
London-Stockport	No flow fixed effect	6,593
London-Bristol	No flow fixed effect	7,617
London-Doncaster (LNER)	No flow fixed effect	7,574
London-Norwich	No flow fixed effect	7,406
London-Birmingham	No flow fixed effect	7,744
London-Liverpool	No flow fixed effect	7,901
London-Manchester	No flow fixed effect	8,752
London-York (LNER)	No flow fixed effect	8,494
Aberdeen-Edinburgh	No flow fixed effect	6,531
Aberdeen-Glasgow	No flow fixed effect	5,718
Newcastle-Edinburgh (LNER)	No flow fixed effect	5,058
Manchester-Edinburgh	No flow fixed effect	6,475
Manchester-Glasgow	No flow fixed effect	4,943
Newcastle-Birmingham	No flow fixed effect	5,587
York-Edinburgh (LNER)	No flow fixed effect	2,996
Bristol-Birmingham	No flow fixed effect	6,193
Dundee-Glasgow	No flow fixed effect	5,221
Manchester-Birmingham	No flow fixed effect	6,639
Milton Keynes-Birmingham	No flow fixed effect	4,873
Nottingham-Manchester	No flow fixed effect	6,443
Sheffield-Birmingham	No flow fixed effect	6,111
York-Manchester	No flow fixed effect	7,681
York-Newcastle (LNER)	No flow fixed effect	7,894

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-70
P03	No period time fixed effect	-183
P04	No period time fixed effect	-807
P05	No period time fixed effect	-341
P06	No period time fixed effect	-261
P07	No period time fixed effect	-25
P08	No period time fixed effect	277
P09	No period time fixed effect	183
P10	No period time fixed effect	76
P11	No period time fixed effect	436
P12	No period time fixed effect	467
P13	No period time fixed effect	451
W01	No weekly time fixed effect	-27
W02	No weekly time fixed effect	-2
W03	No weekly time fixed effect	36
W04	No weekly time fixed effect	168
W05	No weekly time fixed effect	15
W06	No weekly time fixed effect	74
W07	No weekly time fixed effect	0
W08	No weekly time fixed effect	197
W09	No weekly time fixed effect	224
W10	No weekly time fixed effect	189
W11	No weekly time fixed effect	0
W12	No weekly time fixed effect	802
W13	No weekly time fixed effect	838
W14	No weekly time fixed effect	658
W15	No weekly time fixed effect	582
W16	No weekly time fixed effect	311
W17	No weekly time fixed effect	187
W18	No weekly time fixed effect	141
W19	No weekly time fixed effect	178
W20	No weekly time fixed effect	169
W21	No weekly time fixed effect	97
W22	No weekly time fixed effect	210
W23	No weekly time fixed effect	219
W24	No weekly time fixed effect	18
W25	No weekly time fixed effect	31
W26	No weekly time fixed effect	152
W27	No weekly time fixed effect	172
W28	No weekly time fixed effect	-147
W29	No weekly time fixed effect	-163
W30	No weekly time fixed effect	-193
W31	No weekly time fixed effect	-148
W32	No weekly time fixed effect	-235
W33	No weekly time fixed effect	-194
W34	No weekly time fixed effect	-31
W35	No weekly time fixed effect	-281
W36	No weekly time fixed effect	-211
W37	No weekly time fixed effect	-598

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-978
W39	No weekly time fixed effect	-652
W40	No weekly time fixed effect	-677
W41	No weekly time fixed effect	-695
W42	No weekly time fixed effect	-571
W43	No weekly time fixed effect	-602
W44	No weekly time fixed effect	-591
W45	No weekly time fixed effect	-568
W46	No weekly time fixed effect	-488
W47	No weekly time fixed effect	-448
W48	No weekly time fixed effect	-476
W49	No weekly time fixed effect	-547
W50	No weekly time fixed effect	-522
W51	No weekly time fixed effect	0
W52	No weekly time fixed effect	-27

Model 2 (unweighted)

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	76	26	2.90	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	118	80	1.49	0.14	ns
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	-511	183	-2.79	0.01	
Number of observations					43,762	
Adjusted R-squared					49.19%	

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	6,012
London-Darlington (LNER)	No flow fixed effect	6,574
London-Stockport	No flow fixed effect	5,726
London-Bristol	No flow fixed effect	6,693
London-Doncaster (LNER)	No flow fixed effect	6,868
London-Norwich	No flow fixed effect	6,459
London-Birmingham	No flow fixed effect	6,937
London-Liverpool	No flow fixed effect	7,021
London-Manchester	No flow fixed effect	7,660
London-York (LNER)	No flow fixed effect	7,695
Aberdeen-Edinburgh	No flow fixed effect	5,699
Aberdeen-Glasgow	No flow fixed effect	4,991
Newcastle-Edinburgh (LNER)	No flow fixed effect	4,887
Manchester-Edinburgh	No flow fixed effect	5,593
Manchester-Glasgow	No flow fixed effect	4,209
Newcastle-Birmingham	No flow fixed effect	4,819
York-Edinburgh (LNER)	No flow fixed effect	2,888
Bristol-Birmingham	No flow fixed effect	5,257
Dundee-Glasgow	No flow fixed effect	4,472
Manchester-Birmingham	No flow fixed effect	5,578
Milton Keynes-Birmingham	No flow fixed effect	4,247
Nottingham-Manchester	No flow fixed effect	5,498
Sheffield-Birmingham	No flow fixed effect	5,025
York-Manchester	No flow fixed effect	6,737
York-Newcastle (LNER)	No flow fixed effect	7,385

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-82
P03	No period time fixed effect	-181
P04	No period time fixed effect	-640
P05	No period time fixed effect	-225
P06	No period time fixed effect	-163
P07	No period time fixed effect	34
P08	No period time fixed effect	306
P09	No period time fixed effect	203
P10	No period time fixed effect	102
P11	No period time fixed effect	408
P12	No period time fixed effect	422
P13	No period time fixed effect	398
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-41
W03	No weekly time fixed effect	-14
W04	No weekly time fixed effect	22
W05	No weekly time fixed effect	156
W06	No weekly time fixed effect	24
W07	No weekly time fixed effect	76
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	188
W10	No weekly time fixed effect	206
W11	No weekly time fixed effect	172
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	625
W14	No weekly time fixed effect	514
W15	No weekly time fixed effect	499
W16	No weekly time fixed effect	424
W17	No weekly time fixed effect	182
W18	No weekly time fixed effect	72
W19	No weekly time fixed effect	40
W20	No weekly time fixed effect	72
W21	No weekly time fixed effect	64
W22	No weekly time fixed effect	9
W23	No weekly time fixed effect	102
W24	No weekly time fixed effect	104
W25	No weekly time fixed effect	-62
W26	No weekly time fixed effect	-49
W27	No weekly time fixed effect	61
W28	No weekly time fixed effect	80
W29	No weekly time fixed effect	-213
W30	No weekly time fixed effect	-220
W31	No weekly time fixed effect	-255
W32	No weekly time fixed effect	-217
W33	No weekly time fixed effect	-276
W34	No weekly time fixed effect	-237
W35	No weekly time fixed effect	-77
W36	No weekly time fixed effect	-301
W37	No weekly time fixed effect	-229

MODEL 2 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-573
W39	No weekly time fixed effect	-909
W40	No weekly time fixed effect	-612
W41	No weekly time fixed effect	-630
W42	No weekly time fixed effect	-658
W43	No weekly time fixed effect	-532
W44	No weekly time fixed effect	-563
W45	No weekly time fixed effect	-554
W46	No weekly time fixed effect	-522
W47	No weekly time fixed effect	-453
W48	No weekly time fixed effect	-425
W49	No weekly time fixed effect	-430
W50	No weekly time fixed effect	-500
W51	No weekly time fixed effect	-465
W52	No weekly time fixed effect	0

Model 2 (weighted)

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	126	30	4.22	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	142	91	1.56	0.12	ns
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	-312	208	-1.50	0.14	ns
Number of observations						43,762
Adjusted R-squared						49.05%

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	7,011
London-Darlington (LNER)	No flow fixed effect	7,275
London-Stockport	No flow fixed effect	6,593
London-Bristol	No flow fixed effect	7,618
London-Doncaster (LNER)	No flow fixed effect	7,539
London-Norwich	No flow fixed effect	7,407
London-Birmingham	No flow fixed effect	7,745
London-Liverpool	No flow fixed effect	7,901
London-Manchester	No flow fixed effect	8,752
London-York (LNER)	No flow fixed effect	8,461
Aberdeen-Edinburgh	No flow fixed effect	6,531
Aberdeen-Glasgow	No flow fixed effect	5,718
Newcastle-Edinburgh (LNER)	No flow fixed effect	5,252
Manchester-Edinburgh	No flow fixed effect	6,475
Manchester-Glasgow	No flow fixed effect	4,944
Newcastle-Birmingham	No flow fixed effect	5,587
York-Edinburgh (LNER)	No flow fixed effect	3,191
Bristol-Birmingham	No flow fixed effect	6,193
Dundee-Glasgow	No flow fixed effect	5,222
Manchester-Birmingham	No flow fixed effect	6,639
Milton Keynes-Birmingham	No flow fixed effect	4,874
Nottingham-Manchester	No flow fixed effect	6,444
Sheffield-Birmingham	No flow fixed effect	6,111
York-Manchester	No flow fixed effect	7,681
York-Newcastle (LNER)	No flow fixed effect	8,089

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-71
P03	No period time fixed effect	-183
P04	No period time fixed effect	-806
P05	No period time fixed effect	-341
P06	No period time fixed effect	-261
P07	No period time fixed effect	-25
P08	No period time fixed effect	277
P09	No period time fixed effect	183
P10	No period time fixed effect	75
P11	No period time fixed effect	435
P12	No period time fixed effect	466
P13	No period time fixed effect	451
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-27
W03	No weekly time fixed effect	-3
W04	No weekly time fixed effect	36
W05	No weekly time fixed effect	169
W06	No weekly time fixed effect	15
W07	No weekly time fixed effect	76
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	197
W10	No weekly time fixed effect	223
W11	No weekly time fixed effect	190
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	802
W14	No weekly time fixed effect	837
W15	No weekly time fixed effect	657
W16	No weekly time fixed effect	580
W17	No weekly time fixed effect	310
W18	No weekly time fixed effect	186
W19	No weekly time fixed effect	140
W20	No weekly time fixed effect	177
W21	No weekly time fixed effect	168
W22	No weekly time fixed effect	97
W23	No weekly time fixed effect	209
W24	No weekly time fixed effect	220
W25	No weekly time fixed effect	17
W26	No weekly time fixed effect	30
W27	No weekly time fixed effect	151
W28	No weekly time fixed effect	171
W29	No weekly time fixed effect	-148
W30	No weekly time fixed effect	-164
W31	No weekly time fixed effect	-193
W32	No weekly time fixed effect	-149
W33	No weekly time fixed effect	-236
W34	No weekly time fixed effect	-195
W35	No weekly time fixed effect	-30
W36	No weekly time fixed effect	-281
W37	No weekly time fixed effect	-211

MODEL 2 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-598
W39	No weekly time fixed effect	-978
W40	No weekly time fixed effect	-652
W41	No weekly time fixed effect	-676
W42	No weekly time fixed effect	-695
W43	No weekly time fixed effect	-571
W44	No weekly time fixed effect	-602
W45	No weekly time fixed effect	-591
W46	No weekly time fixed effect	-568
W47	No weekly time fixed effect	-488
W48	No weekly time fixed effect	-448
W49	No weekly time fixed effect	-475
W50	No weekly time fixed effect	-547
W51	No weekly time fixed effect	-522
W52	No weekly time fixed effect	0

Model 3 (unweighted)

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	75	25	3.01	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	250	70	3.56	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	-26	75	-0.34	0.73	ns
Non-London LNER Trial Competition	Flows with no competition	-2,036	115	- 17.70	0.00	
London LNER Trial Competition	Flows with no competition	-4,752	116	- 40.94	0.00	
Number of observations						43,762
Adjusted R-squared						36.88%

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	6,011
London-Darlington (LNER)	No flow fixed effect	6,515
London-Stockport	No flow fixed effect	5,730
London-Bristol	No flow fixed effect	6,693
London-Doncaster (LNER)	No flow fixed effect	6,713
London-Norwich	No flow fixed effect	6,457
London-Birmingham	No flow fixed effect	6,936
London-Liverpool	No flow fixed effect	7,022
London-Manchester	No flow fixed effect	7,659
London-York (LNER)	No flow fixed effect	7,713
Aberdeen-Edinburgh	No flow fixed effect	5,702
Aberdeen-Glasgow	No flow fixed effect	4,992
Newcastle-Edinburgh (LNER)	No flow fixed effect	3,896
Manchester-Edinburgh	No flow fixed effect	5,592
Manchester-Glasgow	No flow fixed effect	4,208
Newcastle-Birmingham	No flow fixed effect	4,821
York-Edinburgh (LNER)	No flow fixed effect	3,306
Bristol-Birmingham	No flow fixed effect	5,260
Dundee-Glasgow	No flow fixed effect	4,477
Manchester-Birmingham	No flow fixed effect	5,578
Milton Keynes-Birmingham	No flow fixed effect	4,249
Nottingham-Manchester	No flow fixed effect	5,497
Sheffield-Birmingham	No flow fixed effect	5,028
York-Manchester	No flow fixed effect	6,743
York-Newcastle (LNER)	No flow fixed effect	7,316

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-73
P03	No period time fixed effect	-182
P04	No period time fixed effect	-651
P05	No period time fixed effect	-240
P06	No period time fixed effect	-159
P07	No period time fixed effect	22
P08	No period time fixed effect	282
P09	No period time fixed effect	195
P10	No period time fixed effect	116
P11	No period time fixed effect	409
P12	No period time fixed effect	419
P13	No period time fixed effect	390
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-47
W03	No weekly time fixed effect	-14
W04	No weekly time fixed effect	15
W05	No weekly time fixed effect	131
W06	No weekly time fixed effect	-0
W07	No weekly time fixed effect	62
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	190
W10	No weekly time fixed effect	207
W11	No weekly time fixed effect	173
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	638
W14	No weekly time fixed effect	531
W15	No weekly time fixed effect	514
W16	No weekly time fixed effect	439
W17	No weekly time fixed effect	201
W18	No weekly time fixed effect	95
W19	No weekly time fixed effect	61
W20	No weekly time fixed effect	89
W21	No weekly time fixed effect	62
W22	No weekly time fixed effect	9
W23	No weekly time fixed effect	90
W24	No weekly time fixed effect	94
W25	No weekly time fixed effect	-56
W26	No weekly time fixed effect	-36
W27	No weekly time fixed effect	66
W28	No weekly time fixed effect	82
W29	No weekly time fixed effect	-194
W30	No weekly time fixed effect	-202
W31	No weekly time fixed effect	-230
W32	No weekly time fixed effect	-194
W33	No weekly time fixed effect	-257
W34	No weekly time fixed effect	-225
W35	No weekly time fixed effect	-72
W36	No weekly time fixed effect	-301
W37	No weekly time fixed effect	-253

MODEL 3 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-591
W39	No weekly time fixed effect	-903
W40	No weekly time fixed effect	-616
W41	No weekly time fixed effect	-627
W42	No weekly time fixed effect	-598
W43	No weekly time fixed effect	-536
W44	No weekly time fixed effect	-579
W45	No weekly time fixed effect	-564
W46	No weekly time fixed effect	-528
W47	No weekly time fixed effect	-457
W48	No weekly time fixed effect	-431
W49	No weekly time fixed effect	-433
W50	No weekly time fixed effect	-496
W51	No weekly time fixed effect	-454
W52	No weekly time fixed effect	0

Model 3 (weighted)

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25	Rail Year 2022/23	125	28	4.40	0.00	
Impact of SLP (LNER London flows)	All flows in 2022/23 and control flows in 2024/25	286	80	3.58	0.00	
Impact of SLP (LNER Non-London flows)	All flows in 2022/23 and control flows in 2024/25	28	86	0.33	0.74	ns
Non-London LNER Trial Competition	Flows with no competition	-2,301	131	-17.57	0.00	
London LNER Trial Competition	Flows with no competition	-5,265	132	-39.82	0.00	
Number of observations						48,171
Adjusted R-squared						49.56%

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	7,010
London-Darlington (LNER)	No flow fixed effect	7,211
London-Stockport	No flow fixed effect	6,598
London-Bristol	No flow fixed effect	7,619
London-Doncaster (LNER)	No flow fixed effect	7,369
London-Norwich	No flow fixed effect	7,405
London-Birmingham	No flow fixed effect	7,746
London-Liverpool	No flow fixed effect	7,904
London-Manchester	No flow fixed effect	8,752
London-York (LNER)	No flow fixed effect	8,482
Aberdeen-Edinburgh	No flow fixed effect	6,535
Aberdeen-Glasgow	No flow fixed effect	5,721
Newcastle-Edinburgh (LNER)	No flow fixed effect	4,311
Manchester-Edinburgh	No flow fixed effect	6,475
Manchester-Glasgow	No flow fixed effect	4,944
Newcastle-Birmingham	No flow fixed effect	5,590
York-Edinburgh (LNER)	No flow fixed effect	3,684
Bristol-Birmingham	No flow fixed effect	6,198
Dundee-Glasgow	No flow fixed effect	5,228
Manchester-Birmingham	No flow fixed effect	6,640
Milton Keynes-Birmingham	No flow fixed effect	4,877
Nottingham-Manchester	No flow fixed effect	6,445
Sheffield-Birmingham	No flow fixed effect	6,116
York-Manchester	No flow fixed effect	7,688
York-Newcastle (LNER)	No flow fixed effect	8,140

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-63
P03	No period time fixed effect	-185
P04	No period time fixed effect	-801
P05	No period time fixed effect	-340
P06	No period time fixed effect	-245
P07	No period time fixed effect	-27
P08	No period time fixed effect	262
P09	No period time fixed effect	185
P10	No period time fixed effect	97
P11	No period time fixed effect	438
P12	No period time fixed effect	463
P13	No period time fixed effect	441
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-34
W03	No weekly time fixed effect	-3
W04	No weekly time fixed effect	27
W05	No weekly time fixed effect	141
W06	No weekly time fixed effect	-11
W07	No weekly time fixed effect	62
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	201
W10	No weekly time fixed effect	225
W11	No weekly time fixed effect	190
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	798
W14	No weekly time fixed effect	823
W15	No weekly time fixed effect	656
W16	No weekly time fixed effect	577
W17	No weekly time fixed effect	312
W18	No weekly time fixed effect	194
W19	No weekly time fixed effect	147
W20	No weekly time fixed effect	178
W21	No weekly time fixed effect	152
W22	No weekly time fixed effect	84
W23	No weekly time fixed effect	183
W24	No weekly time fixed effect	194
W25	No weekly time fixed effect	11
W26	No weekly time fixed effect	32
W27	No weekly time fixed effect	144
W28	No weekly time fixed effect	162
W29	No weekly time fixed effect	-139
W30	No weekly time fixed effect	-157
W31	No weekly time fixed effect	-179
W32	No weekly time fixed effect	-136
W33	No weekly time fixed effect	-227
W34	No weekly time fixed effect	-194
W35	No weekly time fixed effect	-35
W36	No weekly time fixed effect	-291
W37	No weekly time fixed effect	-245

MODEL 3 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-623
W39	No weekly time fixed effect	-976
W40	No weekly time fixed effect	-660
W41	No weekly time fixed effect	-676
W42	No weekly time fixed effect	-628
W43	No weekly time fixed effect	-576
W44	No weekly time fixed effect	-622
W45	No weekly time fixed effect	-604
W46	No weekly time fixed effect	-573
W47	No weekly time fixed effect	-493
W48	No weekly time fixed effect	-457
W49	No weekly time fixed effect	-480
W50	No weekly time fixed effect	-543
W51	No weekly time fixed effect	-508
W52	No weekly time fixed effect	0

APPENDIX H1 – REGRESSION MODELS – SFS (PHASE 1A)

Revenue Model 1b (unweighted)

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£376,333	£16,414	22.93	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£18,663	£6,261	2.98	0	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-£9,876	£16,414	-0.60	0.55	ns
Number of observations						7,757
Adjusted R-squared						64.71%

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£262,102
London-Edinburgh	No flow fixed effect	£845,937
London-Newcastle	No flow fixed effect	£574,230
London-Bradford	No flow fixed effect	£81,034
London-Harrogate	No flow fixed effect	£117,340
London-Sunderland	No flow fixed effect	£79,807
London-Dundee	No flow fixed effect	£74,616
London-Leeds	No flow fixed effect	£412,652
London-York	No flow fixed effect	£371,296
London-Darlington	No flow fixed effect	£175,274
London-Doncaster	No flow fixed effect	£212,680
London-Durham	No flow fixed effect	£150,171
London-Carlisle	No flow fixed effect	£29,095
London-Oxenholme	No flow fixed effect	£179,532
London-Penzance	No flow fixed effect	£121,359
London-Glasgow	No flow fixed effect	£212,437
London-Liverpool	No flow fixed effect	£650,602
London-Manchester	No flow fixed effect	£985,596
London-Stockport	No flow fixed effect	£418,342
London-Cardiff	No flow fixed effect	£346,700

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£18,510
P03	No period time fixed effect	£337
P04	No period time fixed effect	£15,167
P05	No period time fixed effect	-£13,028
P06	No period time fixed effect	£15,224
P07	No period time fixed effect	£30,498
P08	No period time fixed effect	£33,047
P09	No period time fixed effect	-£9,258
P10	No period time fixed effect	-£79,443
P11	No period time fixed effect	-£20,142
P12	No period time fixed effect	£6,407
P13	No period time fixed effect	£33,645
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,318
W03	No weekly time fixed effect	-£336
W04	No weekly time fixed effect	£1,202
W05	No weekly time fixed effect	-£14,290
W06	No weekly time fixed effect	-£12,168
W07	No weekly time fixed effect	£4,565
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£3,596
W10	No weekly time fixed effect	£28,688
W11	No weekly time fixed effect	£20,962
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£16,622
W14	No weekly time fixed effect	£14,533
W15	No weekly time fixed effect	£13,275
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£15,545
W18	No weekly time fixed effect	£14,148
W19	No weekly time fixed effect	-£8,210
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£26,052
W22	No weekly time fixed effect	-£37,464
W23	No weekly time fixed effect	-£3,661
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£5,963
W26	No weekly time fixed effect	-£13,581
W27	No weekly time fixed effect	-£15,689
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£16,888
W30	No weekly time fixed effect	-£32,981
W31	No weekly time fixed effect	-£35,856
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£38,226
W34	No weekly time fixed effect	£21,603
W35	No weekly time fixed effect	£16,201
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£20,371

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	£4,027
W39	No weekly time fixed effect	-£37,171
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£10,460
W42	No weekly time fixed effect	£13,115
W43	No weekly time fixed effect	£9,996
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£17,911
W46	No weekly time fixed effect	-£20,880
W47	No weekly time fixed effect	-£9,964
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£17,157
W50	No weekly time fixed effect	-£22,499
W51	No weekly time fixed effect	-£14,485
W52	No weekly time fixed effect	£0

Revenue Model 1a (weighted)

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£407,228	£18,739	21.73	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£31,221	£7,148	4.37	0.00	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£10,613	£18,739	0.57	0.57	ns
Number of observations					7,757	
Adjusted R-squared					63.50%	

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£287,717
London-Edinburgh	No flow fixed effect	£918,881
London-Newcastle	No flow fixed effect	£646,746
London-Bradford	No flow fixed effect	£110,833
London-Harrogate	No flow fixed effect	£150,020
London-Sunderland	No flow fixed effect	£105,504
London-Dundee	No flow fixed effect	£103,350
London-Leeds	No flow fixed effect	£502,873
London-York	No flow fixed effect	£433,380
London-Darlington	No flow fixed effect	£219,945
London-Doncaster	No flow fixed effect	£261,903
London-Durham	No flow fixed effect	£194,832
London-Carlisle	No flow fixed effect	£46,204
London-Oxenholme	No flow fixed effect	£210,736
London-Penzance	No flow fixed effect	£144,133
London-Glasgow	No flow fixed effect	£257,020
London-Liverpool	No flow fixed effect	£722,239
London-Manchester	No flow fixed effect	£1,123,866
London-Stockport	No flow fixed effect	£482,523
London-Cardiff	No flow fixed effect	£409,118

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£21,890
P03	No period time fixed effect	£1,845
P04	No period time fixed effect	£17,810
P05	No period time fixed effect	-£13,565
P06	No period time fixed effect	£18,586
P07	No period time fixed effect	£36,069
P08	No period time fixed effect	£38,650
P09	No period time fixed effect	-£8,299
P10	No period time fixed effect	-£88,264
P11	No period time fixed effect	-£20,955
P12	No period time fixed effect	£8,643
P13	No period time fixed effect	£40,289
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,690
W03	No weekly time fixed effect	£1,054
W04	No weekly time fixed effect	£2,769
W05	No weekly time fixed effect	-£16,015
W06	No weekly time fixed effect	-£14,067
W07	No weekly time fixed effect	£5,355
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£4,530
W10	No weekly time fixed effect	£31,893
W11	No weekly time fixed effect	£23,150
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£18,684
W14	No weekly time fixed effect	£16,249
W15	No weekly time fixed effect	£14,806
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£17,123
W18	No weekly time fixed effect	£15,360
W19	No weekly time fixed effect	-£9,315
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£29,968
W22	No weekly time fixed effect	-£42,679
W23	No weekly time fixed effect	-£4,109
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£6,807
W26	No weekly time fixed effect	-£15,299
W27	No weekly time fixed effect	-£17,554
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£18,887
W30	No weekly time fixed effect	-£36,684
W31	No weekly time fixed effect	-£39,814
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£42,454
W34	No weekly time fixed effect	£24,207
W35	No weekly time fixed effect	£17,908

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£23,878
W38	No weekly time fixed effect	£4,955
W39	No weekly time fixed effect	-£42,134
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£11,761
W42	No weekly time fixed effect	£15,137
W43	No weekly time fixed effect	£11,313
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£19,787
W46	No weekly time fixed effect	-£23,318
W47	No weekly time fixed effect	-£11,127
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£20,195
W50	No weekly time fixed effect	-£26,196
W51	No weekly time fixed effect	-£17,390
W52	No weekly time fixed effect	£0

Revenue Model 2b (unweighted)

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£376,333	£16,416	22.93	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£18,663	£6,262	2.98	0	
After SFs for LNER trial London-Reston (Impact of SFs)	After SFs for LNER control flows	-£4,896	£22,173	-0.22	0.83	ns
After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	-£16,744	£22,173	-0.76	0.45	ns
After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	-£7,987	£22,173	-0.36	0.72	ns
Number of observations					7,757	
Adjusted R-squared					64.70%	

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£230,934
London-Edinburgh	No flow fixed effect	£820,693
London-Newcastle	No flow fixed effect	£544,607
London-Bradford	No flow fixed effect	£52,355
London-Harrogate	No flow fixed effect	£88,661
London-Sunderland	No flow fixed effect	£51,129
London-Dundee	No flow fixed effect	£45,937
London-Leeds	No flow fixed effect	£383,974
London-York	No flow fixed effect	£342,618
London-Darlington	No flow fixed effect	£146,596
London-Doncaster	No flow fixed effect	£184,002
London-Durham	No flow fixed effect	£121,493
London-Carlisle	No flow fixed effect	£417
London-Oxenholme	No flow fixed effect	£150,854
London-Penzance	No flow fixed effect	£92,681
London-Glasgow	No flow fixed effect	£183,759
London-Liverpool	No flow fixed effect	£621,924
London-Manchester	No flow fixed effect	£956,918
London-Stockport	No flow fixed effect	£389,664
London-Cardiff	No flow fixed effect	£318,022

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£18,510
P03	No period time fixed effect	£337
P04	No period time fixed effect	£15,167
P05	No period time fixed effect	-£13,028
P06	No period time fixed effect	£15,224
P07	No period time fixed effect	£30,498
P08	No period time fixed effect	£33,047
P09	No period time fixed effect	-£9,258
P10	No period time fixed effect	-£79,443
P11	No period time fixed effect	-£20,142
P12	No period time fixed effect	£6,407
P13	No period time fixed effect	£33,645
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,318
W03	No weekly time fixed effect	-£336
W04	No weekly time fixed effect	£1,202
W05	No weekly time fixed effect	-£14,290
W06	No weekly time fixed effect	-£12,168
W07	No weekly time fixed effect	£4,565
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£3,596
W10	No weekly time fixed effect	£28,688
W11	No weekly time fixed effect	£20,962
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£16,622
W14	No weekly time fixed effect	£14,533
W15	No weekly time fixed effect	£13,275
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£15,545
W18	No weekly time fixed effect	£14,148
W19	No weekly time fixed effect	-£8,210
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£26,052
W22	No weekly time fixed effect	-£37,464
W23	No weekly time fixed effect	-£3,661
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£5,963
W26	No weekly time fixed effect	-£13,581
W27	No weekly time fixed effect	-£15,689
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£16,888
W30	No weekly time fixed effect	-£32,981
W31	No weekly time fixed effect	-£35,856
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£38,226
W34	No weekly time fixed effect	£21,603
W35	No weekly time fixed effect	£16,201
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£20,371

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	£4,027
W39	No weekly time fixed effect	-£37,171
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£10,460
W42	No weekly time fixed effect	£13,115
W43	No weekly time fixed effect	£9,996
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£17,911
W46	No weekly time fixed effect	-£20,880
W47	No weekly time fixed effect	-£9,964
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£17,157
W50	No weekly time fixed effect	-£22,499
W51	No weekly time fixed effect	-£14,485
W52	No weekly time fixed effect	£0

Revenue Model 2a (weighted)

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£407,228	£18,741	21.73	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£31,221	£7,149	4.37	0	
After SFs for LNER trial London-Reston (Impact of SFs)	After SFs for LNER control flows	-£2,344	£25,314	-0.09	0.926	ns
After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	£13,239	£25,314	0.52	0.601	ns
After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	£20,945	£25,314	0.83	0.408	ns
Number of observations						7,757
Adjusted R-squared						63.49%

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£242,356
London-Edinburgh	No flow fixed effect	£865,730
London-Newcastle	No flow fixed effect	£589,741
London-Bradford	No flow fixed effect	£58,994
London-Harrogate	No flow fixed effect	£98,181
London-Sunderland	No flow fixed effect	£53,665
London-Dundee	No flow fixed effect	£51,511
London-Leeds	No flow fixed effect	£451,034
London-York	No flow fixed effect	£381,541
London-Darlington	No flow fixed effect	£168,106
London-Doncaster	No flow fixed effect	£210,064
London-Durham	No flow fixed effect	£142,993
London-Carlisle	No flow fixed effect	-£5,635
London-Oxenholme	No flow fixed effect	£158,897
London-Penzance	No flow fixed effect	£92,294
London-Glasgow	No flow fixed effect	£205,181
London-Liverpool	No flow fixed effect	£670,400
London-Manchester	No flow fixed effect	£1,072,027
London-Stockport	No flow fixed effect	£430,684
London-Cardiff	No flow fixed effect	£357,279

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£21,890
P03	No period time fixed effect	£1,845
P04	No period time fixed effect	£17,810
P05	No period time fixed effect	-£13,565
P06	No period time fixed effect	£18,586
P07	No period time fixed effect	£36,069
P08	No period time fixed effect	£38,650
P09	No period time fixed effect	-£8,299
P10	No period time fixed effect	-£88,264
P11	No period time fixed effect	-£20,955
P12	No period time fixed effect	£8,643
P13	No period time fixed effect	£40,289
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,690
W03	No weekly time fixed effect	£1,054
W04	No weekly time fixed effect	£2,769
W05	No weekly time fixed effect	-£16,015
W06	No weekly time fixed effect	-£14,067
W07	No weekly time fixed effect	£5,355
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£4,530
W10	No weekly time fixed effect	£31,893
W11	No weekly time fixed effect	£23,150
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£18,684
W14	No weekly time fixed effect	£16,249
W15	No weekly time fixed effect	£14,806
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£17,123
W18	No weekly time fixed effect	£15,360
W19	No weekly time fixed effect	-£9,315
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£29,968
W22	No weekly time fixed effect	-£42,679
W23	No weekly time fixed effect	-£4,109
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£6,807
W26	No weekly time fixed effect	-£15,299
W27	No weekly time fixed effect	-£17,554
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£18,887
W30	No weekly time fixed effect	-£36,684
W31	No weekly time fixed effect	-£39,814
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£42,454
W34	No weekly time fixed effect	£24,207
W35	No weekly time fixed effect	£17,908
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£23,878

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	£4,955
W39	No weekly time fixed effect	-£42,134
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£11,761
W42	No weekly time fixed effect	£15,137
W43	No weekly time fixed effect	£11,313
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£19,787
W46	No weekly time fixed effect	-£23,318
W47	No weekly time fixed effect	-£11,127
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£20,195
W50	No weekly time fixed effect	-£26,196
W51	No weekly time fixed effect	-£17,390
W52	No weekly time fixed effect	£0

Revenue Model 3b (unweighted)

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£376,375	£16,406	22.94	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£18,663	£6,258	2.98	0.00	
After_Trial_P01	After SFs for LNER control flows	£22,123	£31,513	0.70	0.48	ns
After_Trial_P02	After SFs for LNER control flows	£16,991	£31,513	0.54	0.59	ns
After_Trial_P03	After SFs for LNER control flows	£36,749	£31,510	1.17	0.24	ns
After_Trial_P04	After SFs for LNER control flows	£27,979	£31,518	0.89	0.38	ns
After_Trial_P05	After SFs for LNER control flows	£23,146	£31,515	0.73	0.46	ns
After_Trial_P06	After SFs for LNER control flows	-£11,650	£31,515	-0.37	0.71	ns
After_Trial_P07	After SFs for LNER control flows	-£19,934	£31,512	-0.63	0.53	ns
After_Trial_P08	After SFs for LNER control flows	-£45,944	£31,518	-1.46	0.15	ns
After_Trial_P09	After SFs for LNER control flows	-£58,322	£31,524	-1.85	0.06	ns
After_Trial_P10	After SFs for LNER control flows	-£57,919	£31,516	-1.84	0.07	ns
After_Trial_P11	After SFs for LNER control flows	-£37,678	£31,507	-1.20	0.23	ns
After_Trial_P12	After SFs for LNER control flows	-£41,336	£31,518	-1.31	0.19	ns
After_Trial_P13	After SFs for LNER control flows	£16,869	£31,521	0.54	0.59	ns
Number of observations					7,757	
Adjusted R-squared					64.74%	

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£230,810
London-Edinburgh	No flow fixed effect	£814,645
London-Newcastle	No flow fixed effect	£542,938
London-Bradford	No flow fixed effect	£49,717
London-Harrogate	No flow fixed effect	£86,023
London-Sunderland	No flow fixed effect	£48,491
London-Dundee	No flow fixed effect	£43,299
London-Leeds	No flow fixed effect	£381,335
London-York	No flow fixed effect	£339,979
London-Darlington	No flow fixed effect	£143,958
London-Doncaster	No flow fixed effect	£181,364
London-Durham	No flow fixed effect	£118,854
London-Carlisle	No flow fixed effect	-£2,128
London-Oxenholme	No flow fixed effect	£148,190
London-Penzance	No flow fixed effect	£90,039
London-Glasgow	No flow fixed effect	£181,150
London-Liverpool	No flow fixed effect	£619,275
London-Manchester	No flow fixed effect	£954,336
London-Stockport	No flow fixed effect	£387,069
London-Cardiff	No flow fixed effect	£315,360

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£18,944
P03	No period time fixed effect	-£831
P04	No period time fixed effect	£14,712
P05	No period time fixed effect	-£13,054
P06	No period time fixed effect	£17,981
P07	No period time fixed effect	£33,928
P08	No period time fixed effect	£38,605
P09	No period time fixed effect	-£2,768
P10	No period time fixed effect	-£72,882
P11	No period time fixed effect	-£15,360
P12	No period time fixed effect	£11,490
P13	No period time fixed effect	£34,149
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,300
W03	No weekly time fixed effect	-£318
W04	No weekly time fixed effect	£1,220
W05	No weekly time fixed effect	-£14,305
W06	No weekly time fixed effect	-£12,184
W07	No weekly time fixed effect	£4,594
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£3,622
W10	No weekly time fixed effect	£28,714
W11	No weekly time fixed effect	£21,039
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£16,642
W14	No weekly time fixed effect	£14,552
W15	No weekly time fixed effect	£13,252
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£15,507
W18	No weekly time fixed effect	£14,092
W19	No weekly time fixed effect	-£8,249
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£26,052
W22	No weekly time fixed effect	-£37,464
W23	No weekly time fixed effect	-£3,662
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£5,984
W26	No weekly time fixed effect	-£13,592
W27	No weekly time fixed effect	-£15,691
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£16,946
W30	No weekly time fixed effect	-£32,981
W31	No weekly time fixed effect	-£35,875
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£38,253
W34	No weekly time fixed effect	£21,683
W35	No weekly time fixed effect	£16,253
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£20,318

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	£4,028
W39	No weekly time fixed effect	-£37,249
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£10,561
W42	No weekly time fixed effect	£13,115
W43	No weekly time fixed effect	£10,010
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£17,896
W46	No weekly time fixed effect	-£20,865
W47	No weekly time fixed effect	-£9,948
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£17,142
W50	No weekly time fixed effect	-£22,511
W51	No weekly time fixed effect	-£14,485
W52	No weekly time fixed effect	£0

Revenue Model 3a (weighted)

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£407,274	£18,732	21.74	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£31,221	£7,145	4.37	0	
After_Trial_P01	After SFs for LNER control flows	£46,314	£35,981	1.29	0.198	ns
After_Trial_P02	After SFs for LNER control flows	£40,090	£35,980	1.11	0.265	ns
After_Trial_P03	After SFs for LNER control flows	£62,000	£35,977	1.72	0.085	ns
After_Trial_P04	After SFs for LNER control flows	£52,366	£35,986	1.46	0.146	ns
After_Trial_P05	After SFs for LNER control flows	£46,505	£35,983	1.29	0.196	ns
After_Trial_P06	After SFs for LNER control flows	£9,093	£35,983	0.25	0.801	ns
After_Trial_P07	After SFs for LNER control flows	-£320	£35,979	-0.01	0.993	ns
After_Trial_P08	After SFs for LNER control flows	-£29,517	£35,986	-0.82	0.412	ns
After_Trial_P09	After SFs for LNER control flows	-£43,229	£35,993	-1.20	0.23	ns
After_Trial_P10	After SFs for LNER control flows	-£42,577	£35,983	-1.18	0.237	ns
After_Trial_P11	After SFs for LNER control flows	-£19,937	£35,973	-0.55	0.579	ns
After_Trial_P12	After SFs for LNER control flows	-£23,754	£35,986	-0.66	0.509	ns
After_Trial_P13	After SFs for LNER control flows	£40,350	£35,989	1.12	0.262	ns
Number of observations						7,757
Adjusted R-squared						63.53%

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£232,962
London-Edinburgh	No flow fixed effect	£864,127
London-Newcastle	No flow fixed effect	£591,991
London-Bradford	No flow fixed effect	£56,051
London-Harrogate	No flow fixed effect	£95,238
London-Sunderland	No flow fixed effect	£50,722
London-Dundee	No flow fixed effect	£48,568
London-Leeds	No flow fixed effect	£448,091
London-York	No flow fixed effect	£378,598
London-Darlington	No flow fixed effect	£165,164
London-Doncaster	No flow fixed effect	£207,121
London-Durham	No flow fixed effect	£140,050
London-Carlisle	No flow fixed effect	-£8,475
London-Oxenholme	No flow fixed effect	£155,925
London-Penzance	No flow fixed effect	£89,347
London-Glasgow	No flow fixed effect	£202,270
London-Liverpool	No flow fixed effect	£667,447
London-Manchester	No flow fixed effect	£1,069,147
London-Stockport	No flow fixed effect	£427,790
London-Cardiff	No flow fixed effect	£354,310

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£22,415
P03	No period time fixed effect	£594
P04	No period time fixed effect	£17,342
P05	No period time fixed effect	-£13,518
P06	No period time fixed effect	£21,624
P07	No period time fixed effect	£39,872
P08	No period time fixed effect	£44,842
P09	No period time fixed effect	-£1,075
P10	No period time fixed effect	-£80,977
P11	No period time fixed effect	-£15,656
P12	No period time fixed effect	£14,256
P13	No period time fixed effect	£40,858
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£15,670
W03	No weekly time fixed effect	£1,074
W04	No weekly time fixed effect	£2,788
W05	No weekly time fixed effect	-£16,031
W06	No weekly time fixed effect	-£14,084
W07	No weekly time fixed effect	£5,387
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£4,558
W10	No weekly time fixed effect	£31,921
W11	No weekly time fixed effect	£23,234
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£18,707
W14	No weekly time fixed effect	£16,270
W15	No weekly time fixed effect	£14,782
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£17,081
W18	No weekly time fixed effect	£15,300
W19	No weekly time fixed effect	-£9,357
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£29,967
W22	No weekly time fixed effect	-£42,679
W23	No weekly time fixed effect	-£4,109
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£6,829
W26	No weekly time fixed effect	-£15,310
W27	No weekly time fixed effect	-£17,556
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£18,952
W30	No weekly time fixed effect	-£36,685
W31	No weekly time fixed effect	-£39,836
W32	No weekly time fixed effect	£0
W33	No weekly time fixed effect	£42,485
W34	No weekly time fixed effect	£24,295
W35	No weekly time fixed effect	£17,966
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£23,819

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	£4,956
W39	No weekly time fixed effect	-£42,221
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£11,871
W42	No weekly time fixed effect	£15,136
W43	No weekly time fixed effect	£11,330
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£19,770
W46	No weekly time fixed effect	-£23,301
W47	No weekly time fixed effect	-£11,110
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£20,178
W50	No weekly time fixed effect	-£26,210
W51	No weekly time fixed effect	-£17,389
W52	No weekly time fixed effect	£0

Demand Model 1b (unweighted)

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,395	353	15.29	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	818	135	6.08	0.00	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-532	353	-1.51	0.13	ns
Number of observations					7,757	
Adjusted R-squared					62.32%	

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	3,979
London-Edinburgh	No flow fixed effect	13,514
London-Newcastle	No flow fixed effect	10,126
London-Bradford	No flow fixed effect	1,798
London-Harrogate	No flow fixed effect	2,672
London-Sunderland	No flow fixed effect	1,581
London-Dundee	No flow fixed effect	1,338
London-Leeds	No flow fixed effect	9,797
London-York	No flow fixed effect	8,777
London-Darlington	No flow fixed effect	3,684
London-Doncaster	No flow fixed effect	6,257
London-Durham	No flow fixed effect	2,940
London-Carlisle	No flow fixed effect	-123
London-Oxenholme	No flow fixed effect	3,077
London-Penzance	No flow fixed effect	2,005
London-Glasgow	No flow fixed effect	2,696
London-Liverpool	No flow fixed effect	14,264
London-Manchester	No flow fixed effect	20,723
London-Stockport	No flow fixed effect	7,586
London-Cardiff	No flow fixed effect	7,295

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	74
P03	No period time fixed effect	-466
P04	No period time fixed effect	-129
P05	No period time fixed effect	-436
P06	No period time fixed effect	-280
P07	No period time fixed effect	220
P08	No period time fixed effect	266
P09	No period time fixed effect	-611
P10	No period time fixed effect	-1,572
P11	No period time fixed effect	-650
P12	No period time fixed effect	-175
P13	No period time fixed effect	345
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-478
W03	No weekly time fixed effect	-218
W04	No weekly time fixed effect	-335
W05	No weekly time fixed effect	-187
W06	No weekly time fixed effect	-228
W07	No weekly time fixed effect	13
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	432
W10	No weekly time fixed effect	643
W11	No weekly time fixed effect	411
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	238
W14	No weekly time fixed effect	258
W15	No weekly time fixed effect	203
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	264
W18	No weekly time fixed effect	262
W19	No weekly time fixed effect	-238
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-110
W22	No weekly time fixed effect	-448
W23	No weekly time fixed effect	-4
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-233
W26	No weekly time fixed effect	-402
W27	No weekly time fixed effect	-312
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-246
W30	No weekly time fixed effect	-438
W31	No weekly time fixed effect	-627
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	616
W34	No weekly time fixed effect	274
W35	No weekly time fixed effect	197
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	56

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-84
W39	No weekly time fixed effect	-823
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	301
W42	No weekly time fixed effect	631
W43	No weekly time fixed effect	250
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-292
W46	No weekly time fixed effect	-287
W47	No weekly time fixed effect	-167
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-462
W50	No weekly time fixed effect	-611
W51	No weekly time fixed effect	-477
W52	No weekly time fixed effect	0

Demand Model 1a (weighted)

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,833	402	14.52	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	1,048	153	6.84	0.00	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-182	402	-0.45	0.65	ns
Number of observations						7,757
Adjusted R-squared						61.10%

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	4,034
London-Edinburgh	No flow fixed effect	14,392
London-Newcastle	No flow fixed effect	11,107
London-Bradford	No flow fixed effect	2,092
London-Harrogate	No flow fixed effect	3,061
London-Sunderland	No flow fixed effect	1,733
London-Dundee	No flow fixed effect	1,547
London-Leeds	No flow fixed effect	11,595
London-York	No flow fixed effect	9,751
London-Darlington	No flow fixed effect	4,253
London-Doncaster	No flow fixed effect	6,965
London-Durham	No flow fixed effect	3,538
London-Carlisle	No flow fixed effect	-193
London-Oxenholme	No flow fixed effect	3,342
London-Penzance	No flow fixed effect	2,084
London-Glasgow	No flow fixed effect	3,113
London-Liverpool	No flow fixed effect	15,189
London-Manchester	No flow fixed effect	23,061
London-Stockport	No flow fixed effect	8,446
London-Cardiff	No flow fixed effect	8,232

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	93
P03	No period time fixed effect	-509
P04	No period time fixed effect	-139
P05	No period time fixed effect	-480
P06	No period time fixed effect	-298
P07	No period time fixed effect	269
P08	No period time fixed effect	312
P09	No period time fixed effect	-669
P10	No period time fixed effect	-1,754
P11	No period time fixed effect	-716
P12	No period time fixed effect	-184
P13	No period time fixed effect	421
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-523
W03	No weekly time fixed effect	-234
W04	No weekly time fixed effect	-357
W05	No weekly time fixed effect	-208
W06	No weekly time fixed effect	-259
W07	No weekly time fixed effect	15
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	481
W10	No weekly time fixed effect	716
W11	No weekly time fixed effect	453
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	266
W14	No weekly time fixed effect	288
W15	No weekly time fixed effect	228
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	294
W18	No weekly time fixed effect	289
W19	No weekly time fixed effect	-263
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-135
W22	No weekly time fixed effect	-512
W23	No weekly time fixed effect	-3
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-267
W26	No weekly time fixed effect	-455
W27	No weekly time fixed effect	-348
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-273
W30	No weekly time fixed effect	-482
W31	No weekly time fixed effect	-694
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	687
W34	No weekly time fixed effect	312
W35	No weekly time fixed effect	217
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	68

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-95
W39	No weekly time fixed effect	-936
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	344
W42	No weekly time fixed effect	721
W43	No weekly time fixed effect	283
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-322
W46	No weekly time fixed effect	-318
W47	No weekly time fixed effect	-183
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-539
W50	No weekly time fixed effect	-707
W51	No weekly time fixed effect	-556
W52	No weekly time fixed effect	0

Demand Model 2b (unweighted)

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,395	353	15.29	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	818	135	6.08	0.00	
After SFs for LNER trial London-Reston (Impact of SFs)	After SFs for LNER control flows	-183	477	-0.39	0.70	ns
After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	-653	477	-1.37	0.17	ns
After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	-759	477	-1.59	0.11	ns
Number of observations					7,757	
Adjusted R-squared					62.32%	

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	3,804
London-Edinburgh	No flow fixed effect	13,575
London-Newcastle	No flow fixed effect	10,239
London-Bradford	No flow fixed effect	1,798
London-Harrogate	No flow fixed effect	2,672
London-Sunderland	No flow fixed effect	1,581
London-Dundee	No flow fixed effect	1,338
London-Leeds	No flow fixed effect	9,797
London-York	No flow fixed effect	8,777
London-Darlington	No flow fixed effect	3,684
London-Doncaster	No flow fixed effect	6,257
London-Durham	No flow fixed effect	2,940
London-Carlisle	No flow fixed effect	-123
London-Oxenholme	No flow fixed effect	3,077
London-Penzance	No flow fixed effect	2,005
London-Glasgow	No flow fixed effect	2,696
London-Liverpool	No flow fixed effect	14,264
London-Manchester	No flow fixed effect	20,723
London-Stockport	No flow fixed effect	7,586
London-Cardiff	No flow fixed effect	7,295

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	74
P03	No period time fixed effect	-466
P04	No period time fixed effect	-129
P05	No period time fixed effect	-436
P06	No period time fixed effect	-280
P07	No period time fixed effect	220
P08	No period time fixed effect	266
P09	No period time fixed effect	-611
P10	No period time fixed effect	-1,572
P11	No period time fixed effect	-650
P12	No period time fixed effect	-175
P13	No period time fixed effect	345
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-478
W03	No weekly time fixed effect	-218
W04	No weekly time fixed effect	-335
W05	No weekly time fixed effect	-187
W06	No weekly time fixed effect	-228
W07	No weekly time fixed effect	13
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	432
W10	No weekly time fixed effect	643
W11	No weekly time fixed effect	411
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	238
W14	No weekly time fixed effect	258
W15	No weekly time fixed effect	203
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	264
W18	No weekly time fixed effect	262
W19	No weekly time fixed effect	-238
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-110
W22	No weekly time fixed effect	-448
W23	No weekly time fixed effect	-4
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-233
W26	No weekly time fixed effect	-402
W27	No weekly time fixed effect	-312
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-246
W30	No weekly time fixed effect	-438
W31	No weekly time fixed effect	-627
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	616
W34	No weekly time fixed effect	274
W35	No weekly time fixed effect	197
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	56

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-84
W39	No weekly time fixed effect	-823
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	301
W42	No weekly time fixed effect	631
W43	No weekly time fixed effect	250
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-292
W46	No weekly time fixed effect	-287
W47	No weekly time fixed effect	-167
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-462
W50	No weekly time fixed effect	-611
W51	No weekly time fixed effect	-477
W52	No weekly time fixed effect	0

Demand Model 2a (weighted)

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,833	402	14.52	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	1,048	153	6.84	0.00	
After SFs for LNER trial London-Reston (Impact of SFs)	After SFs for LNER control flows	-147	543	-0.27	0.79	ns
After SFs for LNER trial London-Edinburgh (Impact of SFs)	After SFs for LNER control flows	-175	543	-0.32	0.75	ns
After SFs for LNER trial London-Newcastle (Impact of SFs)	After SFs for LNER control flows	-224	543	-0.41	0.68	ns
Number of observations						7,757
Adjusted R-squared						61.09%

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	4,017
London-Edinburgh	No flow fixed effect	14,388
London-Newcastle	No flow fixed effect	11,128
London-Bradford	No flow fixed effect	2,092
London-Harrogate	No flow fixed effect	3,061
London-Sunderland	No flow fixed effect	1,733
London-Dundee	No flow fixed effect	1,547
London-Leeds	No flow fixed effect	11,595
London-York	No flow fixed effect	9,751
London-Darlington	No flow fixed effect	4,253
London-Doncaster	No flow fixed effect	6,965
London-Durham	No flow fixed effect	3,538
London-Carlisle	No flow fixed effect	-193
London-Oxenholme	No flow fixed effect	3,342
London-Penzance	No flow fixed effect	2,084
London-Glasgow	No flow fixed effect	3,113
London-Liverpool	No flow fixed effect	15,189
London-Manchester	No flow fixed effect	23,061
London-Stockport	No flow fixed effect	8,446
London-Cardiff	No flow fixed effect	8,232

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	93
P03	No period time fixed effect	-509
P04	No period time fixed effect	-139
P05	No period time fixed effect	-480
P06	No period time fixed effect	-298
P07	No period time fixed effect	269
P08	No period time fixed effect	312
P09	No period time fixed effect	-669
P10	No period time fixed effect	-1,754
P11	No period time fixed effect	-716
P12	No period time fixed effect	-184
P13	No period time fixed effect	421
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-523
W03	No weekly time fixed effect	-234
W04	No weekly time fixed effect	-357
W05	No weekly time fixed effect	-208
W06	No weekly time fixed effect	-259
W07	No weekly time fixed effect	15
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	481
W10	No weekly time fixed effect	716
W11	No weekly time fixed effect	453
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	266
W14	No weekly time fixed effect	288
W15	No weekly time fixed effect	228
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	294
W18	No weekly time fixed effect	289
W19	No weekly time fixed effect	-263
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-135
W22	No weekly time fixed effect	-512
W23	No weekly time fixed effect	-3
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-267
W26	No weekly time fixed effect	-455
W27	No weekly time fixed effect	-348
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-273
W30	No weekly time fixed effect	-482
W31	No weekly time fixed effect	-694
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	687
W34	No weekly time fixed effect	312
W35	No weekly time fixed effect	217
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	68

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-95
W39	No weekly time fixed effect	-936
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	344
W42	No weekly time fixed effect	721
W43	No weekly time fixed effect	283
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-322
W46	No weekly time fixed effect	-318
W47	No weekly time fixed effect	-183
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-539
W50	No weekly time fixed effect	-707
W51	No weekly time fixed effect	-556
W52	No weekly time fixed effect	0

Demand Model 3b (unweighted)

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,396	353	15.30	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	818	135	6.08	0.00	
After_Trial_P01	After SFs for LNER control flows	102	678	0.15	0.88	ns
After_Trial_P02	After SFs for LNER control flows	181	678	0.27	0.79	ns
After_Trial_P03	After SFs for LNER control flows	289	678	0.43	0.67	ns
After_Trial_P04	After SFs for LNER control flows	167	678	0.25	0.81	ns
After_Trial_P05	After SFs for LNER control flows	-123	678	-0.18	0.86	ns
After_Trial_P06	After SFs for LNER control flows	-755	678	-1.11	0.27	ns
After_Trial_P07	After SFs for LNER control flows	-838	678	-1.24	0.22	ns
After_Trial_P08	After SFs for LNER control flows	-1,256	678	-1.85	0.06	ns
After_Trial_P09	After SFs for LNER control flows	-1,408	678	-2.08	0.04	
After_Trial_P10	After SFs for LNER control flows	-970	678	-1.43	0.15	ns
After_Trial_P11	After SFs for LNER control flows	-740	677	-1.09	0.28	ns
After_Trial_P12	After SFs for LNER control flows	-1,305	678	-1.93	0.05	ns
After_Trial_P13	After SFs for LNER control flows	-275	678	-0.41	0.69	ns
Number of observations						7,757
Adjusted R-squared						62.33%

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	3,927
London-Edinburgh	No flow fixed effect	13,462
London-Newcastle	No flow fixed effect	10,074
London-Bradford	No flow fixed effect	1,745
London-Harrogate	No flow fixed effect	2,619
London-Sunderland	No flow fixed effect	1,528
London-Dundee	No flow fixed effect	1,285
London-Leeds	No flow fixed effect	9,745
London-York	No flow fixed effect	8,724
London-Darlington	No flow fixed effect	3,632
London-Doncaster	No flow fixed effect	6,204
London-Durham	No flow fixed effect	2,888
London-Carlisle	No flow fixed effect	-174
London-Oxenholme	No flow fixed effect	3,024
London-Penzance	No flow fixed effect	1,953
London-Glasgow	No flow fixed effect	2,644
London-Liverpool	No flow fixed effect	14,212
London-Manchester	No flow fixed effect	20,671
London-Stockport	No flow fixed effect	7,535
London-Cardiff	No flow fixed effect	7,242

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	68
P03	No period time fixed effect	-481
P04	No period time fixed effect	-134
P05	No period time fixed effect	-417
P06	No period time fixed effect	-210
P07	No period time fixed effect	297
P08	No period time fixed effect	377
P09	No period time fixed effect	-490
P10	No period time fixed effect	-1,485
P11	No period time fixed effect	-582
P12	No period time fixed effect	-62
P13	No period time fixed effect	376
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-478
W03	No weekly time fixed effect	-218
W04	No weekly time fixed effect	-335
W05	No weekly time fixed effect	-187
W06	No weekly time fixed effect	-229
W07	No weekly time fixed effect	14
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	431
W10	No weekly time fixed effect	643
W11	No weekly time fixed effect	412
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	238
W14	No weekly time fixed effect	258
W15	No weekly time fixed effect	203
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	263
W18	No weekly time fixed effect	261
W19	No weekly time fixed effect	-238
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-110
W22	No weekly time fixed effect	-448
W23	No weekly time fixed effect	-4
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-233
W26	No weekly time fixed effect	-403
W27	No weekly time fixed effect	-312
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-247
W30	No weekly time fixed effect	-438
W31	No weekly time fixed effect	-628
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	616
W34	No weekly time fixed effect	276
W35	No weekly time fixed effect	198
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	55

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-84
W39	No weekly time fixed effect	-824
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	301
W42	No weekly time fixed effect	631
W43	No weekly time fixed effect	250
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-291
W46	No weekly time fixed effect	-286
W47	No weekly time fixed effect	-166
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-462
W50	No weekly time fixed effect	-612
W51	No weekly time fixed effect	-477
W52	No weekly time fixed effect	0

Demand Model 3a (weighted)

MODEL 3A (WEIGHTED)	COUNTER- FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	5,834	402	14.52	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	1,048	153	6.84	0.00	
After_Trial_P01	After SFs for LNER control flows	523	772	0.68	0.50	ns
After_Trial_P02	After SFs for LNER control flows	610	772	0.79	0.43	ns
After_Trial_P03	After SFs for LNER control flows	729	772	0.95	0.35	ns
After_Trial_P04	After SFs for LNER control flows	588	772	0.76	0.45	ns
After_Trial_P05	After SFs for LNER control flows	258	772	0.33	0.74	ns
After_Trial_P06	After SFs for LNER control flows	-421	772	-0.55	0.59	ns
After_Trial_P07	After SFs for LNER control flows	-518	772	-0.67	0.50	ns
After_Trial_P08	After SFs for LNER control flows	-993	772	-1.29	0.20	ns
After_Trial_P09	After SFs for LNER control flows	-1,159	772	-1.50	0.13	ns
After_Trial_P10	After SFs for LNER control flows	-668	772	-0.87	0.39	ns
After_Trial_P11	After SFs for LNER control flows	-405	772	-0.53	0.60	ns
After_Trial_P12	After SFs for LNER control flows	-1,035	772	-1.34	0.18	ns
After_Trial_P13	After SFs for LNER control flows	107	772	0.14	0.89	ns
Number of observations						7,757
Adjusted R-squared						61.10%

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	3,977
London-Edinburgh	No flow fixed effect	14,334
London-Newcastle	No flow fixed effect	11,050
London-Bradford	No flow fixed effect	2,033
London-Harrogate	No flow fixed effect	3,003
London-Sunderland	No flow fixed effect	1,675
London-Dundee	No flow fixed effect	1,489
London-Leeds	No flow fixed effect	11,537
London-York	No flow fixed effect	9,693
London-Darlington	No flow fixed effect	4,195
London-Doncaster	No flow fixed effect	6,907
London-Durham	No flow fixed effect	3,480
London-Carlisle	No flow fixed effect	-250
London-Oxenholme	No flow fixed effect	3,283
London-Penzance	No flow fixed effect	2,026
London-Glasgow	No flow fixed effect	3,055
London-Liverpool	No flow fixed effect	15,130
London-Manchester	No flow fixed effect	23,004
London-Stockport	No flow fixed effect	8,388
London-Cardiff	No flow fixed effect	8,173

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	86
P03	No period time fixed effect	-526
P04	No period time fixed effect	-144
P05	No period time fixed effect	-457
P06	No period time fixed effect	-221
P07	No period time fixed effect	354
P08	No period time fixed effect	436
P09	No period time fixed effect	-534
P10	No period time fixed effect	-1,657
P11	No period time fixed effect	-641
P12	No period time fixed effect	-60
P13	No period time fixed effect	456
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-523
W03	No weekly time fixed effect	-234
W04	No weekly time fixed effect	-357
W05	No weekly time fixed effect	-208
W06	No weekly time fixed effect	-259
W07	No weekly time fixed effect	16
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	480
W10	No weekly time fixed effect	717
W11	No weekly time fixed effect	455
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	266
W14	No weekly time fixed effect	288
W15	No weekly time fixed effect	227
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	293
W18	No weekly time fixed effect	288
W19	No weekly time fixed effect	-264
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-135
W22	No weekly time fixed effect	-512
W23	No weekly time fixed effect	-3
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-268
W26	No weekly time fixed effect	-455
W27	No weekly time fixed effect	-348
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-274
W30	No weekly time fixed effect	-482
W31	No weekly time fixed effect	-694
W32	No weekly time fixed effect	0
W33	No weekly time fixed effect	688
W34	No weekly time fixed effect	313
W35	No weekly time fixed effect	218
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	68

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
W38	No weekly time fixed effect	-95
W39	No weekly time fixed effect	-937
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	345
W42	No weekly time fixed effect	721
W43	No weekly time fixed effect	283
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-321
W46	No weekly time fixed effect	-318
W47	No weekly time fixed effect	-183
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-538
W50	No weekly time fixed effect	-707
W51	No weekly time fixed effect	-556
W52	No weekly time fixed effect	0

APPENDIX H2 – REGRESSION MODELS – SFS (PHASE 1B)

Revenue Model 1b (unweighted)

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,219	£3,320	14.22	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£4,721	£1,255	3.76	0	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£1,128	£3,320	0.34	0.73	ns
<i>Number of observations</i>						<i>2,181</i>
<i>Adjusted R-squared</i>						<i>51.35%</i>

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£67,714
London-Morpeth	No flow fixed effect	£53,388
<i>London-Morpeth</i>	No flow fixed effect	£53,388
London-Falkirk	No flow fixed effect	£7,710
London-Fife South	No flow fixed effect	£11,822
London-Lockerbie	No flow fixed effect	£6,767
London-Par	No flow fixed effect	£29,121
London-Keighley	No flow fixed effect	£18,839
London-Liskeard	No flow fixed effect	£40,696
London-Oxenholme	No flow fixed effect	£70,482
London-Stirling	No flow fixed effect	£17,388
<i>London-Fife South</i>	No flow fixed effect	£11,822
London-Motherwell	No flow fixed effect	£13,801
London-Newquay	No flow fixed effect	£6,365
London-Perth	No flow fixed effect	£7,381

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,520
P10	No period time fixed effect	-£8,590
P11	No period time fixed effect	-£4,688
P12	No period time fixed effect	-£1,115
P13	No period time fixed effect	£2,470
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,055
W31	No weekly time fixed effect	-£2,168
W32	No weekly time fixed effect	£1,805
W33	No weekly time fixed effect	£4,649
W34	No weekly time fixed effect	£3,278
W35	No weekly time fixed effect	£2,375
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,113
W38	No weekly time fixed effect	£76
W39	No weekly time fixed effect	-£4,512
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,363
W42	No weekly time fixed effect	£1,631
W43	No weekly time fixed effect	-£205
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,870
W46	No weekly time fixed effect	-£2,552
W47	No weekly time fixed effect	-£1,912
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£3,997
W50	No weekly time fixed effect	-£4,671
W51	No weekly time fixed effect	-£2,310
W52	No weekly time fixed effect	£0

Revenue Model 1a (weighted)

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,334	£3,643	12.99	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£5,797	£1,377	4.21	0	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	£1,012	£3,643	0.28	0.78	ns
Number of observations					2,181	
Adjusted R-squared					49.19%	

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£67,989
London-Morpeth	No flow fixed effect	£53,662
<i>London-Morpeth</i>	<i>No flow fixed effect</i>	<i>£53,662</i>
London-Falkirk	No flow fixed effect	£8,483
London-Fife South	No flow fixed effect	£13,669
London-Lockerbie	No flow fixed effect	£6,960
London-Par	No flow fixed effect	£30,864
London-Keighley	No flow fixed effect	£21,959
London-Liskeard	No flow fixed effect	£43,146
London-Oxenholme	No flow fixed effect	£76,836
London-Stirling	No flow fixed effect	£19,258
<i>London-Fife South</i>	<i>No flow fixed effect</i>	<i>£13,669</i>
London-Motherwell	No flow fixed effect	£14,850
London-Newquay	No flow fixed effect	£6,514
London-Perth	No flow fixed effect	£8,830

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,870
P10	No period time fixed effect	-£9,359
P11	No period time fixed effect	-£5,098
P12	No period time fixed effect	-£1,278
P13	No period time fixed effect	£2,635
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,122
W31	No weekly time fixed effect	-£2,369
W32	No weekly time fixed effect	£1,927
W33	No weekly time fixed effect	£5,038
W34	No weekly time fixed effect	£3,568
W35	No weekly time fixed effect	£2,574
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,273
W38	No weekly time fixed effect	£126
W39	No weekly time fixed effect	-£4,843
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,558
W42	No weekly time fixed effect	£1,754
W43	No weekly time fixed effect	-£215
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,977
W46	No weekly time fixed effect	-£2,774
W47	No weekly time fixed effect	-£2,062
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£4,359
W50	No weekly time fixed effect	-£5,025
W51	No weekly time fixed effect	-£2,506
W52	No weekly time fixed effect	£0

Revenue Model 2b (unweighted)

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,219	£3,320	14.22	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£4,721	£1,255	3.76	0	
After SFs for LNER trial London-Berwick (Impact of SFs)	After SFs for LNER control flows	-£1,036	£3,919	-0.26	0.79	ns
After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	£3,292	£3,919	0.84	0.40	ns
Number of observations					2,181	
Adjusted R-squared					51.35%	

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£68,797
London-Morpeth	No flow fixed effect	£52,306
<i>London-Morpeth</i>	No flow fixed effect	£52,306
London-Falkirk	No flow fixed effect	£7,710
London-Fife South	No flow fixed effect	£11,822
London-Lockerbie	No flow fixed effect	£6,767
London-Par	No flow fixed effect	£29,121
London-Keighley	No flow fixed effect	£18,839
London-Liskeard	No flow fixed effect	£40,696
London-Oxenholme	No flow fixed effect	£70,482
London-Stirling	No flow fixed effect	£17,388
<i>London-Fife South</i>	No flow fixed effect	£11,822
London-Motherwell	No flow fixed effect	£13,801
London-Newquay	No flow fixed effect	£6,365
London-Perth	No flow fixed effect	£7,381

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,520
P10	No period time fixed effect	-£8,590
P11	No period time fixed effect	-£4,688
P12	No period time fixed effect	-£1,115
P13	No period time fixed effect	£2,470
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,055
W31	No weekly time fixed effect	-£2,168
W32	No weekly time fixed effect	£1,805
W33	No weekly time fixed effect	£4,649
W34	No weekly time fixed effect	£3,278
W35	No weekly time fixed effect	£2,375
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,113
W38	No weekly time fixed effect	£76
W39	No weekly time fixed effect	-£4,512
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,363
W42	No weekly time fixed effect	£1,631
W43	No weekly time fixed effect	-£205
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,870
W46	No weekly time fixed effect	-£2,552
W47	No weekly time fixed effect	-£1,912
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£3,997
W50	No weekly time fixed effect	-£4,671
W51	No weekly time fixed effect	-£2,310
W52	No weekly time fixed effect	£0

Revenue Model 2a (weighted)

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,334	£3,643	12.99	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£5,797	£1,377	4.21	0	
After SFs for LNER trial London-Berwick (Impact of SFs)	After SFs for LNER control flows	-£1,152	£4,300	-0.27	0.79	ns
After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	£3,177	£4,300	0.74	0.46	ns
Number of observations						2,181
Adjusted R-squared						49.19%

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£69,071
London-Morpeth	No flow fixed effect	£52,580
London-Morpeth	No flow fixed effect	£52,580
London-Falkirk	No flow fixed effect	£8,483
London-Fife South	No flow fixed effect	£13,669
London-Lockerbie	No flow fixed effect	£6,960
London-Par	No flow fixed effect	£30,864
London-Keighley	No flow fixed effect	£21,959
London-Liskeard	No flow fixed effect	£43,146
London-Oxenholme	No flow fixed effect	£76,836
London-Stirling	No flow fixed effect	£19,258
London-Fife South	No flow fixed effect	£13,669
London-Motherwell	No flow fixed effect	£14,850
London-Newquay	No flow fixed effect	£6,514
London-Perth	No flow fixed effect	£8,830

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,870
P10	No period time fixed effect	-£9,359
P11	No period time fixed effect	-£5,098
P12	No period time fixed effect	-£1,278
P13	No period time fixed effect	£2,635
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,122
W31	No weekly time fixed effect	-£2,369
W32	No weekly time fixed effect	£1,927
W33	No weekly time fixed effect	£5,038
W34	No weekly time fixed effect	£3,568
W35	No weekly time fixed effect	£2,574
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,273
W38	No weekly time fixed effect	£126
W39	No weekly time fixed effect	-£4,843
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,558
W42	No weekly time fixed effect	£1,754
W43	No weekly time fixed effect	-£215
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,977
W46	No weekly time fixed effect	-£2,774
W47	No weekly time fixed effect	-£2,062
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£4,359
W50	No weekly time fixed effect	-£5,025
W51	No weekly time fixed effect	-£2,506
W52	No weekly time fixed effect	£0

Revenue Model 3b (unweighted)

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,215	£3,323	14.21	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£4,721	£1,256	3.76	0	
After_Trial_P08	After SFs for LNER control flows	£580	£4,786	0.12	0.90	ns
After_Trial_P09	After SFs for LNER control flows	£1,087	£4,789	0.23	0.82	ns
After_Trial_P10	After SFs for LNER control flows	-£1,333	£4,787	-0.28	0.78	ns
After_Trial_P11	After SFs for LNER control flows	£1,751	£4,788	0.37	0.72	ns
After_Trial_P12	After SFs for LNER control flows	-£959	£4,793	-0.20	0.84	ns
After_Trial_P13	After SFs for LNER control flows	£5,666	£4,793	1.18	0.24	ns
Number of observations						2,181
Adjusted R-squared						51.29%

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£67,763
London-Morpeth	No flow fixed effect	£53,436
London-Morpeth	No flow fixed effect	£53,436
London-Falkirk	No flow fixed effect	£7,762
London-Fife South	No flow fixed effect	£11,874
London-Lockerbie	No flow fixed effect	£6,811
London-Par	No flow fixed effect	£29,176
London-Keighley	No flow fixed effect	£18,891
London-Liskeard	No flow fixed effect	£40,747
London-Oxenholme	No flow fixed effect	£70,536
London-Stirling	No flow fixed effect	£17,440
London-Fife South	No flow fixed effect	£11,874
London-Motherwell	No flow fixed effect	£13,848
London-Newquay	No flow fixed effect	£6,412
London-Perth	No flow fixed effect	£7,433

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,563
P10	No period time fixed effect	-£8,423
P11	No period time fixed effect	-£4,788
P12	No period time fixed effect	-£980
P13	No period time fixed effect	£2,013
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,054
W31	No weekly time fixed effect	-£2,167
W32	No weekly time fixed effect	£1,806
W33	No weekly time fixed effect	£4,649
W34	No weekly time fixed effect	£3,277
W35	No weekly time fixed effect	£2,375
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,115
W38	No weekly time fixed effect	£78
W39	No weekly time fixed effect	-£4,502
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,363
W42	No weekly time fixed effect	£1,629
W43	No weekly time fixed effect	-£208
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,870
W46	No weekly time fixed effect	-£2,551
W47	No weekly time fixed effect	-£1,909
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£3,992
W50	No weekly time fixed effect	-£4,666
W51	No weekly time fixed effect	-£2,296
W52	No weekly time fixed effect	£0

Revenue Model 3a (weighted)

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	£47,331	£3,646	12.98	0	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	£5,797	£1,379	4.20	0	
After_Trial_P08	After SFs for LNER control flows	£204	£5,252	0.04	0.97	ns
After_Trial_P09	After SFs for LNER control flows	£814	£5,255	0.15	0.88	ns
After_Trial_P10	After SFs for LNER control flows	-£872	£5,253	-0.17	0.87	ns
After_Trial_P11	After SFs for LNER control flows	£1,700	£5,255	0.32	0.75	ns
After_Trial_P12	After SFs for LNER control flows	-£1,067	£5,260	-0.20	0.84	ns
After_Trial_P13	After SFs for LNER control flows	£5,317	£5,259	1.01	0.31	ns
<i>Number of observations</i>					<i>2,181</i>	
<i>Adjusted R-squared</i>					<i>49.11%</i>	

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	£68,060
London-Morpeth	No flow fixed effect	£53,733
<i>London-Morpeth</i>	No flow fixed effect	£53,733
London-Falkirk	No flow fixed effect	£8,558
London-Fife South	No flow fixed effect	£13,743
London-Lockerbie	No flow fixed effect	£7,027
London-Par	No flow fixed effect	£30,942
London-Keighley	No flow fixed effect	£22,033
London-Liskeard	No flow fixed effect	£43,220
London-Oxenholme	No flow fixed effect	£76,912
London-Stirling	No flow fixed effect	£19,333
<i>London-Fife South</i>	No flow fixed effect	£13,743
London-Motherwell	No flow fixed effect	£14,919
London-Newquay	No flow fixed effect	£6,583
London-Perth	No flow fixed effect	£8,904

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	£0
P09	No period time fixed effect	-£4,923
P10	No period time fixed effect	-£9,266
P11	No period time fixed effect	-£5,227
P12	No period time fixed effect	-£1,165
P13	No period time fixed effect	£2,177
W29	No weekly time fixed effect	£0
W30	No weekly time fixed effect	-£1,121
W31	No weekly time fixed effect	-£2,367
W32	No weekly time fixed effect	£1,927
W33	No weekly time fixed effect	£5,037
W34	No weekly time fixed effect	£3,568
W35	No weekly time fixed effect	£2,574
W36	No weekly time fixed effect	£0
W37	No weekly time fixed effect	£1,275
W38	No weekly time fixed effect	£127
W39	No weekly time fixed effect	-£4,836
W40	No weekly time fixed effect	£0
W41	No weekly time fixed effect	£2,558
W42	No weekly time fixed effect	£1,751
W43	No weekly time fixed effect	-£219
W44	No weekly time fixed effect	£0
W45	No weekly time fixed effect	-£1,978
W46	No weekly time fixed effect	-£2,773
W47	No weekly time fixed effect	-£2,059
W48	No weekly time fixed effect	£0
W49	No weekly time fixed effect	-£4,355
W50	No weekly time fixed effect	-£5,021
W51	No weekly time fixed effect	-£2,492
W52	No weekly time fixed effect	£0

Demand Model 1b (unweighted)

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	761	59	12.95	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	92	22	4.15	0.00	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-19	59	-0.32	0.75	ns
Number of observations					2,181	
Adjusted R-squared					53.40%	

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,248
London-Morpeth	No flow fixed effect	998
<i>London-Morpeth</i>	No flow fixed effect	998
London-Falkirk	No flow fixed effect	132
London-Fife South	No flow fixed effect	182
London-Lockerbie	No flow fixed effect	196
London-Par	No flow fixed effect	512
London-Keighley	No flow fixed effect	463
London-Liskeard	No flow fixed effect	729
London-Oxenholme	No flow fixed effect	1,378
London-Stirling	No flow fixed effect	320
<i>London-Fife South</i>	No flow fixed effect	182
London-Motherwell	No flow fixed effect	313
London-Newquay	No flow fixed effect	176
London-Perth	No flow fixed effect	63

MODEL 1B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-110
P10	No period time fixed effect	-147
P11	No period time fixed effect	-82
P12	No period time fixed effect	-10
P13	No period time fixed effect	64
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-24
W31	No weekly time fixed effect	-67
W32	No weekly time fixed effect	24
W33	No weekly time fixed effect	88
W34	No weekly time fixed effect	61
W35	No weekly time fixed effect	43
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-12
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-100
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	58
W42	No weekly time fixed effect	55
W43	No weekly time fixed effect	-4
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-27
W46	No weekly time fixed effect	-41
W47	No weekly time fixed effect	-34
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-100
W50	No weekly time fixed effect	-115
W51	No weekly time fixed effect	-71
W52	No weekly time fixed effect	0

Demand Model 1a (weighted)

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	762	67	11.44	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	127	25	5.06	0.00	
After SFs for LNER trial flows (Impact of SFs)	After SFs for LNER control flows	-20	67	-0.30	0.77	ns
Number of observations					2,181	
Adjusted R-squared					51.65%	

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,256
London-Morpeth	No flow fixed effect	1,006
<i>London-Morpeth</i>	<i>No flow fixed effect</i>	1,006
London-Falkirk	No flow fixed effect	141
London-Fife South	No flow fixed effect	213
London-Lockerbie	No flow fixed effect	213
London-Par	No flow fixed effect	545
London-Keighley	No flow fixed effect	550
London-Liskeard	No flow fixed effect	777
London-Oxenholme	No flow fixed effect	1,571
London-Stirling	No flow fixed effect	352
<i>London-Fife South</i>	<i>No flow fixed effect</i>	213
London-Motherwell	No flow fixed effect	345
London-Newquay	No flow fixed effect	181
London-Perth	No flow fixed effect	81

MODEL 1A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-121
P10	No period time fixed effect	-166
P11	No period time fixed effect	-93
P12	No period time fixed effect	-15
P13	No period time fixed effect	69
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-26
W31	No weekly time fixed effect	-75
W32	No weekly time fixed effect	26
W33	No weekly time fixed effect	97
W34	No weekly time fixed effect	67
W35	No weekly time fixed effect	47
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-10
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-110
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	64
W42	No weekly time fixed effect	59
W43	No weekly time fixed effect	-5
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-30
W46	No weekly time fixed effect	-46
W47	No weekly time fixed effect	-38
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-112
W50	No weekly time fixed effect	-126
W51	No weekly time fixed effect	-79
W52	No weekly time fixed effect	0

Demand Model 2b (unweighted)

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	761	59	12.95	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	92	22	4.15	0.00	
After SFs for LNER trial London-Berwick (Impact of SFs)	After SFs for LNER control flows	-63	69	-0.90	0.37	ns
After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	25	69	0.37	0.71	ns
Number of observations						2,181
Adjusted R-squared						59.12%

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,270
London-Morpeth	No flow fixed effect	976
London-Morpeth	No flow fixed effect	976
London-Falkirk	No flow fixed effect	132
London-Fife South	No flow fixed effect	182
London-Lockerbie	No flow fixed effect	196
London-Par	No flow fixed effect	512
London-Keighley	No flow fixed effect	463
London-Liskeard	No flow fixed effect	729
London-Oxenholme	No flow fixed effect	1,378
London-Stirling	No flow fixed effect	320
London-Fife South	No flow fixed effect	182
London-Motherwell	No flow fixed effect	313
London-Newquay	No flow fixed effect	176
London-Perth	No flow fixed effect	63

MODEL 2B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-110
P10	No period time fixed effect	-147
P11	No period time fixed effect	-82
P12	No period time fixed effect	-10
P13	No period time fixed effect	64
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-24
W31	No weekly time fixed effect	-67
W32	No weekly time fixed effect	24
W33	No weekly time fixed effect	88
W34	No weekly time fixed effect	61
W35	No weekly time fixed effect	43
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-12
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-100
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	58
W42	No weekly time fixed effect	55
W43	No weekly time fixed effect	-4
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-27
W46	No weekly time fixed effect	-41
W47	No weekly time fixed effect	-34
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-100
W50	No weekly time fixed effect	-115
W51	No weekly time fixed effect	-71
W52	No weekly time fixed effect	0

Demand Model 2a (weighted)

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	762	67	11.44	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	127	25	5.06	0.00	
After SFs for LNER trial London-Berwick (Impact of SFs)	After SFs for LNER control flows	-64	79	-0.81	0.42	ns
After SFs for LNER trial London-Morpeth (Impact of SFs)	After SFs for LNER control flows	24	79	0.31	0.76	ns
<i>Number of observations</i>					2,181	
<i>Adjusted R-squared</i>					51.65%	

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,278
London-Morpeth	No flow fixed effect	984
<i>London-Morpeth</i>	No flow fixed effect	984
London-Falkirk	No flow fixed effect	141
London-Fife South	No flow fixed effect	213
London-Lockerbie	No flow fixed effect	213
London-Par	No flow fixed effect	545
London-Keighley	No flow fixed effect	550
London-Liskeard	No flow fixed effect	777
London-Oxenholme	No flow fixed effect	1,571
London-Stirling	No flow fixed effect	352
<i>London-Fife South</i>	No flow fixed effect	213
London-Motherwell	No flow fixed effect	345
London-Newquay	No flow fixed effect	181
London-Perth	No flow fixed effect	81

MODEL 2A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-121
P10	No period time fixed effect	-166
P11	No period time fixed effect	-93
P12	No period time fixed effect	-15
P13	No period time fixed effect	69
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-26
W31	No weekly time fixed effect	-75
W32	No weekly time fixed effect	26
W33	No weekly time fixed effect	97
W34	No weekly time fixed effect	67
W35	No weekly time fixed effect	47
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-10
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-110
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	64
W42	No weekly time fixed effect	59
W43	No weekly time fixed effect	-5
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-30
W46	No weekly time fixed effect	-46
W47	No weekly time fixed effect	-38
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-112
W50	No weekly time fixed effect	-126
W51	No weekly time fixed effect	-79
W52	No weekly time fixed effect	0

Demand Model 3b (unweighted)

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	761	59	12.95	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	92	22	4.15	0.00	
After_Trial_P08	After SFs for LNER control flows	-62	85	-0.73	0.46	ns
After_Trial_P09	After SFs for LNER control flows	-45	85	-0.53	0.60	ns
After_Trial_P10	After SFs for LNER control flows	-27	85	-0.32	0.75	ns
After_Trial_P11	After SFs for LNER control flows	31	85	0.37	0.72	ns
After_Trial_P12	After SFs for LNER control flows	-90	85	-1.06	0.29	ns
After_Trial_P13	After SFs for LNER control flows	83	85	0.97	0.33	ns
<i>Number of observations</i>						<i>2,181</i>
<i>Adjusted R-squared</i>						<i>54.14%</i>

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,252
London-Morpeth	No flow fixed effect	1,002
<i>London-Morpeth</i>	No flow fixed effect	1,002
London-Falkirk	No flow fixed effect	136
London-Fife South	No flow fixed effect	186
London-Lockerbie	No flow fixed effect	200
London-Par	No flow fixed effect	516
London-Keighley	No flow fixed effect	467
London-Liskeard	No flow fixed effect	733
London-Oxenholme	No flow fixed effect	1,382
London-Stirling	No flow fixed effect	323
<i>London-Fife South</i>	No flow fixed effect	186
London-Motherwell	No flow fixed effect	317
London-Newquay	No flow fixed effect	179
London-Perth	No flow fixed effect	67

MODEL 3B (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-111
P10	No period time fixed effect	-150
P11	No period time fixed effect	-90
P12	No period time fixed effect	-8
P13	No period time fixed effect	51
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-24
W31	No weekly time fixed effect	-67
W32	No weekly time fixed effect	24
W33	No weekly time fixed effect	88
W34	No weekly time fixed effect	61
W35	No weekly time fixed effect	43
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-12
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-100
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	58
W42	No weekly time fixed effect	55
W43	No weekly time fixed effect	-4
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-27
W46	No weekly time fixed effect	-41
W47	No weekly time fixed effect	-34
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-100
W50	No weekly time fixed effect	-114
W51	No weekly time fixed effect	-71
W52	No weekly time fixed effect	0

Demand Model 3a (weighted)

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
After SFs for all LNER flows (trial & control)	Before SFs for all LNER flows (trial & control)	762	67	11.43	0.00	
After SFs for non-LNER control flows	Before SFs for non-LNER control flows	127	25	5.06	0.00	
After_Trial_P08	After SFs for LNER control flows	-70	96	-0.73	0.47	ns
After_Trial_P09	After SFs for LNER control flows	-48	96	-0.50	0.62	ns
After_Trial_P10	After SFs for LNER control flows	-15	96	-0.15	0.88	ns
After_Trial_P11	After SFs for LNER control flows	30	96	0.31	0.76	ns
After_Trial_P12	After SFs for LNER control flows	-92	96	-0.96	0.34	ns
After_Trial_P13	After SFs for LNER control flows	76	96	0.79	0.43	ns
<i>Number of observations</i>					<i>2,181</i>	
<i>Adjusted R-squared</i>					<i>51.61%</i>	

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Berwick	No flow fixed effect	1,260
London-Morpeth	No flow fixed effect	1,010
<i>London-Morpeth</i>	No flow fixed effect	1,010
London-Falkirk	No flow fixed effect	145
London-Fife South	No flow fixed effect	217
London-Lockerbie	No flow fixed effect	217
London-Par	No flow fixed effect	549
London-Keighley	No flow fixed effect	554
London-Liskeard	No flow fixed effect	781
London-Oxenholme	No flow fixed effect	1,576
London-Stirling	No flow fixed effect	356
<i>London-Fife South</i>	No flow fixed effect	217
London-Motherwell	No flow fixed effect	349
London-Newquay	No flow fixed effect	186
London-Perth	No flow fixed effect	85

MODEL 3A (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P08	No period time fixed effect	0
P09	No period time fixed effect	-123
P10	No period time fixed effect	-170
P11	No period time fixed effect	-101
P12	No period time fixed effect	-13
P13	No period time fixed effect	56
W29	No weekly time fixed effect	0
W30	No weekly time fixed effect	-26
W31	No weekly time fixed effect	-74
W32	No weekly time fixed effect	26
W33	No weekly time fixed effect	97
W34	No weekly time fixed effect	67
W35	No weekly time fixed effect	47
W36	No weekly time fixed effect	0
W37	No weekly time fixed effect	-10
W38	No weekly time fixed effect	-19
W39	No weekly time fixed effect	-110
W40	No weekly time fixed effect	0
W41	No weekly time fixed effect	64
W42	No weekly time fixed effect	59
W43	No weekly time fixed effect	-5
W44	No weekly time fixed effect	0
W45	No weekly time fixed effect	-30
W46	No weekly time fixed effect	-46
W47	No weekly time fixed effect	-38
W48	No weekly time fixed effect	0
W49	No weekly time fixed effect	-112
W50	No weekly time fixed effect	-126
W51	No weekly time fixed effect	-78
W52	No weekly time fixed effect	0

APPENDIX I – REGRESSION MODELS – COMBINED SLP & SFS

Revenue Model (unweighted)

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P-VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	£1,799	£1,866	0.96	0.34	ns
Impact of SLP & SFS	All flows in 2022/23 and control flows in 2024/25	£9,772	£4,240	2.30	0.02	
Number of observations					25,619	
Adjusted R-squared					57.29%	

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£324,923
London-Darlington	No flow fixed effect	£276,666
London-Stockport	No flow fixed effect	£326,691
London-Bristol	No flow fixed effect	£275,962
London-Doncaster	No flow fixed effect	£266,908
London-Norwich	No flow fixed effect	£249,441
London-Birmingham	No flow fixed effect	£244,375
London-Liverpool	No flow fixed effect	£311,201
London-Manchester	No flow fixed effect	£347,809
London-York	No flow fixed effect	£387,253
Aberdeen-Edinburgh	No flow fixed effect	£237,296
Aberdeen-Glasgow	No flow fixed effect	£214,060
Newcastle-Edinburgh	No flow fixed effect	£42,925
Manchester-Edinburgh	No flow fixed effect	£240,746
Manchester-Glasgow	No flow fixed effect	£177,671
Newcastle-Birmingham	No flow fixed effect	£206,893
York-Edinburgh	No flow fixed effect	£45,684
Bristol-Birmingham	No flow fixed effect	£214,140
Dundee-Glasgow	No flow fixed effect	£178,649
Manchester-Birmingham	No flow fixed effect	£232,072
Milton Keynes-Birmingham	No flow fixed effect	£162,740
Nottingham-Manchester	No flow fixed effect	£226,063
Sheffield-Birmingham	No flow fixed effect	£212,124
York-Manchester	No flow fixed effect	£233,307
York-Newcastle	No flow fixed effect	£89,042
London-Berwick	No flow fixed effect	£235,330
London-Edinburgh	No flow fixed effect	£878,529
London-Newcastle	No flow fixed effect	£555,466
London-Bradford	No flow fixed effect	£52,945
London-Harrogate	No flow fixed effect	£89,979
London-Sunderland	No flow fixed effect	£51,484
London-Dundee	No flow fixed effect	£46,749
London-Leeds	No flow fixed effect	£393,769
London-Durham	No flow fixed effect	£125,094
London-Carlisle	No flow fixed effect	£207,456
London-Oxenholme	No flow fixed effect	£301,807

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Penzance	No flow fixed effect	£164,587
London-Glasgow	No flow fixed effect	£422,231
London-Liverpool	No flow fixed effect	£628,847
London-Manchester	No flow fixed effect	£952,818

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£2,500
P03	No period time fixed effect	-£4,624
P04	No period time fixed effect	-£2,065
P05	No period time fixed effect	-£8,167
P06	No period time fixed effect	£4,495
P07	No period time fixed effect	£12,289
P08	No period time fixed effect	£11,315
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£3,599
W03	No weekly time fixed effect	£297
W04	No weekly time fixed effect	£1,568
W05	No weekly time fixed effect	£952
W06	No weekly time fixed effect	-£2,715
W07	No weekly time fixed effect	£2,264
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£529
W10	No weekly time fixed effect	£11,303
W11	No weekly time fixed effect	£11,380
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£8,017
W14	No weekly time fixed effect	£8,759
W15	No weekly time fixed effect	£7,450
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£7,984
W18	No weekly time fixed effect	£3,434
W19	No weekly time fixed effect	-£2,903
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£12,024
W22	No weekly time fixed effect	-£13,793
W23	No weekly time fixed effect	-£1,489
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£9,022
W26	No weekly time fixed effect	-£4,646
W27	No weekly time fixed effect	-£5,340
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£4,884
W30	No weekly time fixed effect	-£12,164
W31	No weekly time fixed effect	-£12,364
W32	No weekly time fixed effect	£0

Revenue Model (weighted with 75% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	£2,692	£1,922	1.40	0.16	ns
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	£10,517	£4,367	2.41	0.02	
Number of observations						25,619
Adjusted R-squared						57.27%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£336,209
London-Darlington	No flow fixed effect	£285,667
London-Stockport	No flow fixed effect	£337,674
London-Bristol	No flow fixed effect	£284,776
London-Doncaster	No flow fixed effect	£275,434
London-Norwich	No flow fixed effect	£257,691
London-Birmingham	No flow fixed effect	£251,455
London-Liverpool	No flow fixed effect	£319,831
London-Manchester	No flow fixed effect	£358,834
London-York	No flow fixed effect	£398,425
Aberdeen-Edinburgh	No flow fixed effect	£244,777
Aberdeen-Glasgow	No flow fixed effect	£220,801
Newcastle-Edinburgh	No flow fixed effect	£43,657
Manchester-Edinburgh	No flow fixed effect	£248,767
Manchester-Glasgow	No flow fixed effect	£183,910
Newcastle-Birmingham	No flow fixed effect	£214,038
York-Edinburgh	No flow fixed effect	£46,744
Bristol-Birmingham	No flow fixed effect	£221,781
Dundee-Glasgow	No flow fixed effect	£184,840
Manchester-Birmingham	No flow fixed effect	£240,387
Milton Keynes-Birmingham	No flow fixed effect	£167,959
Nottingham-Manchester	No flow fixed effect	£233,622
Sheffield-Birmingham	No flow fixed effect	£219,969
York-Manchester	No flow fixed effect	£240,395
York-Newcastle	No flow fixed effect	£91,390
London-Berwick	No flow fixed effect	£238,857
London-Edinburgh	No flow fixed effect	£895,036
London-Newcastle	No flow fixed effect	£571,002
London-Bradford	No flow fixed effect	£55,435
London-Harrogate	No flow fixed effect	£93,192
London-Sunderland	No flow fixed effect	£52,905
London-Dundee	No flow fixed effect	£48,987
London-Leeds	No flow fixed effect	£411,772
London-Durham	No flow fixed effect	£131,459
London-Carlisle	No flow fixed effect	£215,453
London-Oxenholme	No flow fixed effect	£311,476
London-Penzance	No flow fixed effect	£169,196
London-Glasgow	No flow fixed effect	£438,245

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Liverpool	No flow fixed effect	£643,661
London-Manchester	No flow fixed effect	£984,507

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£2,690
P03	No period time fixed effect	-£4,604
P04	No period time fixed effect	-£2,044
P05	No period time fixed effect	-£8,363
P06	No period time fixed effect	£4,835
P07	No period time fixed effect	£12,819
P08	No period time fixed effect	£11,835
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£3,550
W03	No weekly time fixed effect	£440
W04	No weekly time fixed effect	£1,721
W05	No weekly time fixed effect	£966
W06	No weekly time fixed effect	-£2,831
W07	No weekly time fixed effect	£2,362
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£635
W10	No weekly time fixed effect	£11,601
W11	No weekly time fixed effect	£11,724
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£8,280
W14	No weekly time fixed effect	£9,022
W15	No weekly time fixed effect	£7,641
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£8,280
W18	No weekly time fixed effect	£3,578
W19	No weekly time fixed effect	-£2,935
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£12,491
W22	No weekly time fixed effect	-£14,323
W23	No weekly time fixed effect	-£1,598
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£9,277
W26	No weekly time fixed effect	-£4,791
W27	No weekly time fixed effect	-£5,513
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£5,040
W30	No weekly time fixed effect	-£12,529
W31	No weekly time fixed effect	-£12,738
W32	No weekly time fixed effect	£0

Revenue Model (weighted with 50% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	£3,585	£1,979	1.81	0.07	ns
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	£11,261	£4,495	2.51	0.01	
Number of observations						25,619
Adjusted R-squared						57.25%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£347,495
London-Darlington	No flow fixed effect	£294,668
London-Stockport	No flow fixed effect	£348,658
London-Bristol	No flow fixed effect	£293,589
London-Doncaster	No flow fixed effect	£283,960
London-Norwich	No flow fixed effect	£265,940
London-Birmingham	No flow fixed effect	£258,536
London-Liverpool	No flow fixed effect	£328,462
London-Manchester	No flow fixed effect	£369,858
London-York	No flow fixed effect	£409,598
Aberdeen-Edinburgh	No flow fixed effect	£252,258
Aberdeen-Glasgow	No flow fixed effect	£227,542
Newcastle-Edinburgh	No flow fixed effect	£44,388
Manchester-Edinburgh	No flow fixed effect	£256,787
Manchester-Glasgow	No flow fixed effect	£190,148
Newcastle-Birmingham	No flow fixed effect	£221,182
York-Edinburgh	No flow fixed effect	£47,803
Bristol-Birmingham	No flow fixed effect	£229,421
Dundee-Glasgow	No flow fixed effect	£191,032
Manchester-Birmingham	No flow fixed effect	£248,702
Milton Keynes-Birmingham	No flow fixed effect	£173,178
Nottingham-Manchester	No flow fixed effect	£241,182
Sheffield-Birmingham	No flow fixed effect	£227,815
York-Manchester	No flow fixed effect	£247,483
York-Newcastle	No flow fixed effect	£93,737
London-Berwick	No flow fixed effect	£242,384
London-Edinburgh	No flow fixed effect	£911,543
London-Newcastle	No flow fixed effect	£586,537
London-Bradford	No flow fixed effect	£57,926
London-Harrogate	No flow fixed effect	£96,405
London-Sunderland	No flow fixed effect	£54,325
London-Dundee	No flow fixed effect	£51,224
London-Leeds	No flow fixed effect	£429,775
London-Durham	No flow fixed effect	£137,824
London-Carlisle	No flow fixed effect	£223,451
London-Oxenholme	No flow fixed effect	£321,146
London-Penzance	No flow fixed effect	£173,805
London-Glasgow	No flow fixed effect	£454,260

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Liverpool	No flow fixed effect	£658,474
London-Manchester	No flow fixed effect	£1,016,196

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£2,880
P03	No period time fixed effect	-£4,584
P04	No period time fixed effect	-£2,023
P05	No period time fixed effect	-£8,558
P06	No period time fixed effect	£5,176
P07	No period time fixed effect	£13,349
P08	No period time fixed effect	£12,355
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£3,501
W03	No weekly time fixed effect	£583
W04	No weekly time fixed effect	£1,874
W05	No weekly time fixed effect	£979
W06	No weekly time fixed effect	-£2,947
W07	No weekly time fixed effect	£2,460
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£740
W10	No weekly time fixed effect	£11,899
W11	No weekly time fixed effect	£12,068
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£8,544
W14	No weekly time fixed effect	£9,285
W15	No weekly time fixed effect	£7,831
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£8,576
W18	No weekly time fixed effect	£3,722
W19	No weekly time fixed effect	-£2,967
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£12,957
W22	No weekly time fixed effect	-£14,853
W23	No weekly time fixed effect	-£1,707
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£9,533
W26	No weekly time fixed effect	-£4,937
W27	No weekly time fixed effect	-£5,687
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£5,196
W30	No weekly time fixed effect	-£12,895
W31	No weekly time fixed effect	-£13,111
W32	No weekly time fixed effect	£0

Revenue Model (weighted with 25% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	£4,479	£2,035	2.20	0.03	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	£12,006	£4,624	2.60	0.01	
Number of observations						25,619
Adjusted R-squared						57.23%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£358,781
London-Darlington	No flow fixed effect	£303,669
London-Stockport	No flow fixed effect	£359,641
London-Bristol	No flow fixed effect	£302,403
London-Doncaster	No flow fixed effect	£292,487
London-Norwich	No flow fixed effect	£274,190
London-Birmingham	No flow fixed effect	£265,616
London-Liverpool	No flow fixed effect	£337,092
London-Manchester	No flow fixed effect	£380,883
London-York	No flow fixed effect	£420,770
Aberdeen-Edinburgh	No flow fixed effect	£259,739
Aberdeen-Glasgow	No flow fixed effect	£234,284
Newcastle-Edinburgh	No flow fixed effect	£45,119
Manchester-Edinburgh	No flow fixed effect	£264,808
Manchester-Glasgow	No flow fixed effect	£196,386
Newcastle-Birmingham	No flow fixed effect	£228,327
York-Edinburgh	No flow fixed effect	£48,862
Bristol-Birmingham	No flow fixed effect	£237,062
Dundee-Glasgow	No flow fixed effect	£197,224
Manchester-Birmingham	No flow fixed effect	£257,017
Milton Keynes-Birmingham	No flow fixed effect	£178,398
Nottingham-Manchester	No flow fixed effect	£248,742
Sheffield-Birmingham	No flow fixed effect	£235,660
York-Manchester	No flow fixed effect	£254,572
York-Newcastle	No flow fixed effect	£96,085
London-Berwick	No flow fixed effect	£245,911
London-Edinburgh	No flow fixed effect	£928,050
London-Newcastle	No flow fixed effect	£602,073
London-Bradford	No flow fixed effect	£60,416
London-Harrogate	No flow fixed effect	£99,618
London-Sunderland	No flow fixed effect	£55,746
London-Dundee	No flow fixed effect	£53,462
London-Leeds	No flow fixed effect	£447,778
London-Durham	No flow fixed effect	£144,189
London-Carlisle	No flow fixed effect	£231,449
London-Oxenholme	No flow fixed effect	£330,815
London-Penzance	No flow fixed effect	£178,415
London-Glasgow	No flow fixed effect	£470,274
London-Liverpool	No flow fixed effect	£673,287

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	£1,047,884

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£3,070
P03	No period time fixed effect	-£4,563
P04	No period time fixed effect	-£2,002
P05	No period time fixed effect	-£8,754
P06	No period time fixed effect	£5,516
P07	No period time fixed effect	£13,879
P08	No period time fixed effect	£12,875
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£3,452
W03	No weekly time fixed effect	£726
W04	No weekly time fixed effect	£2,028
W05	No weekly time fixed effect	£993
W06	No weekly time fixed effect	-£3,063
W07	No weekly time fixed effect	£2,558
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£845
W10	No weekly time fixed effect	£12,197
W11	No weekly time fixed effect	£12,411
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£8,807
W14	No weekly time fixed effect	£9,549
W15	No weekly time fixed effect	£8,022
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£8,872
W18	No weekly time fixed effect	£3,865
W19	No weekly time fixed effect	-£2,999
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£13,424
W22	No weekly time fixed effect	-£15,382
W23	No weekly time fixed effect	-£1,817
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£9,789
W26	No weekly time fixed effect	-£5,082
W27	No weekly time fixed effect	-£5,861
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£5,352
W30	No weekly time fixed effect	-£13,261
W31	No weekly time fixed effect	-£13,485
W32	No weekly time fixed effect	£0

Revenue Model (weighted)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T- STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	£5,372	£2,092	2.57	0.01	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	£12,751	£4,753	2.68	0.01	
Number of observations						25,619
Adjusted R-squared						57.20%

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£370,067
London-Darlington	No flow fixed effect	£312,671
London-Stockport	No flow fixed effect	£370,625
London-Bristol	No flow fixed effect	£311,216
London-Doncaster	No flow fixed effect	£301,013
London-Norwich	No flow fixed effect	£282,439
London-Birmingham	No flow fixed effect	£272,697
London-Liverpool	No flow fixed effect	£345,722
London-Manchester	No flow fixed effect	£391,907
London-York	No flow fixed effect	£431,943
Aberdeen-Edinburgh	No flow fixed effect	£267,219
Aberdeen-Glasgow	No flow fixed effect	£241,025
Newcastle-Edinburgh	No flow fixed effect	£45,850
Manchester-Edinburgh	No flow fixed effect	£272,828
Manchester-Glasgow	No flow fixed effect	£202,625
Newcastle-Birmingham	No flow fixed effect	£235,472
York-Edinburgh	No flow fixed effect	£49,921
Bristol-Birmingham	No flow fixed effect	£244,703
Dundee-Glasgow	No flow fixed effect	£203,415
Manchester-Birmingham	No flow fixed effect	£265,332
Milton Keynes-Birmingham	No flow fixed effect	£183,617
Nottingham-Manchester	No flow fixed effect	£256,302
Sheffield-Birmingham	No flow fixed effect	£243,505
York-Manchester	No flow fixed effect	£261,660
York-Newcastle	No flow fixed effect	£98,433
London-Berwick	No flow fixed effect	£249,438
London-Edinburgh	No flow fixed effect	£944,557
London-Newcastle	No flow fixed effect	£617,609
London-Bradford	No flow fixed effect	£62,907
London-Harrogate	No flow fixed effect	£102,831
London-Sunderland	No flow fixed effect	£57,167
London-Dundee	No flow fixed effect	£55,700
London-Leeds	No flow fixed effect	£465,781
London-Durham	No flow fixed effect	£150,554
London-Carlisle	No flow fixed effect	£239,447
London-Oxenholme	No flow fixed effect	£340,484
London-Penzance	No flow fixed effect	£183,024
London-Glasgow	No flow fixed effect	£486,288
London-Liverpool	No flow fixed effect	£688,100
London-Manchester	No flow fixed effect	£1,079,573

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	£0
P02	No period time fixed effect	£3,260
P03	No period time fixed effect	-£4,543
P04	No period time fixed effect	-£1,981
P05	No period time fixed effect	-£8,949
P06	No period time fixed effect	£5,856
P07	No period time fixed effect	£14,408
P08	No period time fixed effect	£13,395
W01	No weekly time fixed effect	£0
W02	No weekly time fixed effect	-£3,403
W03	No weekly time fixed effect	£868
W04	No weekly time fixed effect	£2,181
W05	No weekly time fixed effect	£1,007
W06	No weekly time fixed effect	-£3,178
W07	No weekly time fixed effect	£2,655
W08	No weekly time fixed effect	£0
W09	No weekly time fixed effect	-£951
W10	No weekly time fixed effect	£12,495
W11	No weekly time fixed effect	£12,755
W12	No weekly time fixed effect	£0
W13	No weekly time fixed effect	£9,071
W14	No weekly time fixed effect	£9,812
W15	No weekly time fixed effect	£8,213
W16	No weekly time fixed effect	£0
W17	No weekly time fixed effect	£9,168
W18	No weekly time fixed effect	£4,009
W19	No weekly time fixed effect	-£3,031
W20	No weekly time fixed effect	£0
W21	No weekly time fixed effect	-£13,891
W22	No weekly time fixed effect	-£15,912
W23	No weekly time fixed effect	-£1,926
W24	No weekly time fixed effect	£0
W25	No weekly time fixed effect	-£10,045
W26	No weekly time fixed effect	-£5,228
W27	No weekly time fixed effect	-£6,034
W28	No weekly time fixed effect	£0
W29	No weekly time fixed effect	-£5,508
W30	No weekly time fixed effect	-£13,627
W31	No weekly time fixed effect	-£13,859
W32	No weekly time fixed effect	£0

Demand Model (unweighted)

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	77	39	1.95	0.05	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	34	89	0.38	0.71	ns
Number of observations					25,619	
Adjusted R-squared					59.84%	

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	7,890
London-Darlington	No flow fixed effect	6,374
London-Stockport	No flow fixed effect	7,571
London-Bristol	No flow fixed effect	7,599
London-Doncaster	No flow fixed effect	7,215
London-Norwich	No flow fixed effect	7,366
London-Birmingham	No flow fixed effect	7,708
London-Liverpool	No flow fixed effect	7,994
London-Manchester	No flow fixed effect	8,652
London-York (LNER)	No flow fixed effect	9,280
Aberdeen-Edinburgh	No flow fixed effect	6,593
Aberdeen-Glasgow	No flow fixed effect	5,839
Newcastle-Edinburgh	No flow fixed effect	2,815
Manchester-Edinburgh	No flow fixed effect	6,461
Manchester-Glasgow	No flow fixed effect	4,824
Newcastle-Birmingham	No flow fixed effect	5,315
York-Edinburgh	No flow fixed effect	2,371
Bristol-Birmingham	No flow fixed effect	5,800
Dundee-Glasgow	No flow fixed effect	4,962
Manchester-Birmingham	No flow fixed effect	6,412
Milton Keynes-Birmingham	No flow fixed effect	4,808
Nottingham-Manchester	No flow fixed effect	6,288
Sheffield-Birmingham	No flow fixed effect	5,787
York-Manchester	No flow fixed effect	7,739
York-Newcastle	No flow fixed effect	6,530
London-Berwick	No flow fixed effect	3,583
London-Edinburgh	No flow fixed effect	14,158
London-Newcastle	No flow fixed effect	9,958
London-Bradford	No flow fixed effect	1,769
London-Harrogate	No flow fixed effect	2,671
London-Sunderland	No flow fixed effect	1,534
London-Dundee	No flow fixed effect	1,290
London-Leeds	No flow fixed effect	10,099
London-Durham	No flow fixed effect	2,934
London-Carlisle	No flow fixed effect	5,097
London-Oxenholme	No flow fixed effect	6,970
London-Penzance	No flow fixed effect	4,074
London-Glasgow	No flow fixed effect	8,469
London-Liverpool	No flow fixed effect	14,997

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	21,037

MODEL 1 (UNWEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-69
P03	No period time fixed effect	-295
P04	No period time fixed effect	-174
P05	No period time fixed effect	-231
P06	No period time fixed effect	-59
P07	No period time fixed effect	203
P08	No period time fixed effect	141
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-139
W03	No weekly time fixed effect	-62
W04	No weekly time fixed effect	-62
W05	No weekly time fixed effect	73
W06	No weekly time fixed effect	-39
W07	No weekly time fixed effect	46
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	238
W10	No weekly time fixed effect	310
W11	No weekly time fixed effect	271
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	159
W14	No weekly time fixed effect	164
W15	No weekly time fixed effect	175
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	187
W18	No weekly time fixed effect	114
W19	No weekly time fixed effect	-78
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-130
W22	No weekly time fixed effect	-199
W23	No weekly time fixed effect	-14
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-273
W26	No weekly time fixed effect	-167
W27	No weekly time fixed effect	-141
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-43
W30	No weekly time fixed effect	-152
W31	No weekly time fixed effect	-222
W32	No weekly time fixed effect	0

Demand Model (weighted with 75% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	96	40	2.38	0.02	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	49	92	0.53	0.59	ns
Number of observations					25,619	
Adjusted R-squared					60.13%	

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£8,183
London-Darlington	No flow fixed effect	£6,552
London-Stockport	No flow fixed effect	£7,852
London-Bristol	No flow fixed effect	£7,853
London-Doncaster	No flow fixed effect	£7,389
London-Norwich	No flow fixed effect	£7,628
London-Birmingham	No flow fixed effect	£7,928
London-Liverpool	No flow fixed effect	£8,237
London-Manchester	No flow fixed effect	£8,953
London-York	No flow fixed effect	£9,509
Aberdeen-Edinburgh	No flow fixed effect	£6,825
Aberdeen-Glasgow	No flow fixed effect	£6,043
Newcastle-Edinburgh	No flow fixed effect	£2,881
Manchester-Edinburgh	No flow fixed effect	£6,706
Manchester-Glasgow	No flow fixed effect	£5,027
Newcastle-Birmingham	No flow fixed effect	£5,521
York-Edinburgh	No flow fixed effect	£2,434
Bristol-Birmingham	No flow fixed effect	£6,066
Dundee-Glasgow	No flow fixed effect	£5,166
Manchester-Birmingham	No flow fixed effect	£6,709
Milton Keynes-Birmingham	No flow fixed effect	£4,979
Nottingham-Manchester	No flow fixed effect	£6,549
Sheffield-Birmingham	No flow fixed effect	£6,075
York-Manchester	No flow fixed effect	£8,002
York-Newcastle	No flow fixed effect	£6,704
London-Berwick	No flow fixed effect	£3,627
London-Edinburgh	No flow fixed effect	£14,429
London-Newcastle	No flow fixed effect	£10,240
London-Bradford	No flow fixed effect	£1,853
London-Harrogate	No flow fixed effect	£2,780
London-Sunderland	No flow fixed effect	£1,581
London-Dundee	No flow fixed effect	£1,353
London-Leeds	No flow fixed effect	£10,575
London-Durham	No flow fixed effect	£3,096
London-Carlisle	No flow fixed effect	£5,311
London-Oxenholme	No flow fixed effect	£7,226
London-Penzance	No flow fixed effect	£4,210
London-Glasgow	No flow fixed effect	£8,827
London-Liverpool	No flow fixed effect	£15,307

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	£21,708

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-66
P03	No period time fixed effect	-299
P04	No period time fixed effect	-175
P05	No period time fixed effect	-237
P06	No period time fixed effect	-55
P07	No period time fixed effect	216
P08	No period time fixed effect	152
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-139
W03	No weekly time fixed effect	-60
W04	No weekly time fixed effect	-60
W05	No weekly time fixed effect	74
W06	No weekly time fixed effect	-42
W07	No weekly time fixed effect	45
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	243
W10	No weekly time fixed effect	318
W11	No weekly time fixed effect	279
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	162
W14	No weekly time fixed effect	168
W15	No weekly time fixed effect	176
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	197
W18	No weekly time fixed effect	120
W19	No weekly time fixed effect	-79
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-135
W22	No weekly time fixed effect	-208
W23	No weekly time fixed effect	-17
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-281
W26	No weekly time fixed effect	-173
W27	No weekly time fixed effect	-146
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-43
W30	No weekly time fixed effect	-156
W31	No weekly time fixed effect	-229
W32	No weekly time fixed effect	0

Demand Model (weighted with 50% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	116	41	2.80	0.01	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	64	94	0.68	0.50	ns
Number of observations					25,619	
Adjusted R-squared					60.40%	

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£8,475
London-Darlington	No flow fixed effect	£6,730
London-Stockport	No flow fixed effect	£8,133
London-Bristol	No flow fixed effect	£8,107
London-Doncaster	No flow fixed effect	£7,563
London-Norwich	No flow fixed effect	£7,890
London-Birmingham	No flow fixed effect	£8,149
London-Liverpool	No flow fixed effect	£8,480
London-Manchester	No flow fixed effect	£9,254
London-York	No flow fixed effect	£9,739
Aberdeen-Edinburgh	No flow fixed effect	£7,058
Aberdeen-Glasgow	No flow fixed effect	£6,248
Newcastle-Edinburgh	No flow fixed effect	£2,947
Manchester-Edinburgh	No flow fixed effect	£6,952
Manchester-Glasgow	No flow fixed effect	£5,229
Newcastle-Birmingham	No flow fixed effect	£5,727
York-Edinburgh	No flow fixed effect	£2,497
Bristol-Birmingham	No flow fixed effect	£6,332
Dundee-Glasgow	No flow fixed effect	£5,371
Manchester-Birmingham	No flow fixed effect	£7,006
Milton Keynes-Birmingham	No flow fixed effect	£5,151
Nottingham-Manchester	No flow fixed effect	£6,810
Sheffield-Birmingham	No flow fixed effect	£6,363
York-Manchester	No flow fixed effect	£8,266
York-Newcastle	No flow fixed effect	£6,877
London-Berwick	No flow fixed effect	£3,671
London-Edinburgh	No flow fixed effect	£14,700
London-Newcastle	No flow fixed effect	£10,523
London-Bradford	No flow fixed effect	£1,938
London-Harrogate	No flow fixed effect	£2,889
London-Sunderland	No flow fixed effect	£1,628
London-Dundee	No flow fixed effect	£1,415
London-Leeds	No flow fixed effect	£11,051
London-Durham	No flow fixed effect	£3,258
London-Carlisle	No flow fixed effect	£5,524
London-Oxenholme	No flow fixed effect	£7,483
London-Penzance	No flow fixed effect	£4,347
London-Glasgow	No flow fixed effect	£9,185
London-Liverpool	No flow fixed effect	£15,618

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	£22,379

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-64
P03	No period time fixed effect	-303
P04	No period time fixed effect	-176
P05	No period time fixed effect	-244
P06	No period time fixed effect	-50
P07	No period time fixed effect	228
P08	No period time fixed effect	163
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-139
W03	No weekly time fixed effect	-59
W04	No weekly time fixed effect	-58
W05	No weekly time fixed effect	74
W06	No weekly time fixed effect	-46
W07	No weekly time fixed effect	45
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	247
W10	No weekly time fixed effect	325
W11	No weekly time fixed effect	287
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	165
W14	No weekly time fixed effect	172
W15	No weekly time fixed effect	178
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	207
W18	No weekly time fixed effect	126
W19	No weekly time fixed effect	-79
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-141
W22	No weekly time fixed effect	-217
W23	No weekly time fixed effect	-20
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-290
W26	No weekly time fixed effect	-180
W27	No weekly time fixed effect	-151
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-44
W30	No weekly time fixed effect	-159
W31	No weekly time fixed effect	-235
W32	No weekly time fixed effect	0

Demand Model (weighted with 25% double counting)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	135	42	3.19	0.00	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	79	96	0.82	0.41	ns
Number of observations					25,619	
Adjusted R-squared					60.63%	

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	£8,767
London-Darlington	No flow fixed effect	£6,908
London-Stockport	No flow fixed effect	£8,413
London-Bristol	No flow fixed effect	£8,361
London-Doncaster	No flow fixed effect	£7,737
London-Norwich	No flow fixed effect	£8,152
London-Birmingham	No flow fixed effect	£8,370
London-Liverpool	No flow fixed effect	£8,723
London-Manchester	No flow fixed effect	£9,555
London-York	No flow fixed effect	£9,969
Aberdeen-Edinburgh	No flow fixed effect	£7,290
Aberdeen-Glasgow	No flow fixed effect	£6,452
Newcastle-Edinburgh	No flow fixed effect	£3,013
Manchester-Edinburgh	No flow fixed effect	£7,197
Manchester-Glasgow	No flow fixed effect	£5,432
Newcastle-Birmingham	No flow fixed effect	£5,933
York-Edinburgh	No flow fixed effect	£2,561
Bristol-Birmingham	No flow fixed effect	£6,599
Dundee-Glasgow	No flow fixed effect	£5,575
Manchester-Birmingham	No flow fixed effect	£7,304
Milton Keynes-Birmingham	No flow fixed effect	£5,323
Nottingham-Manchester	No flow fixed effect	£7,072
Sheffield-Birmingham	No flow fixed effect	£6,652
York-Manchester	No flow fixed effect	£8,529
York-Newcastle	No flow fixed effect	£7,051
London-Berwick	No flow fixed effect	£3,716
London-Edinburgh	No flow fixed effect	£14,970
London-Newcastle	No flow fixed effect	£10,805
London-Bradford	No flow fixed effect	£2,022
London-Harrogate	No flow fixed effect	£2,997
London-Sunderland	No flow fixed effect	£1,675
London-Dundee	No flow fixed effect	£1,478
London-Leeds	No flow fixed effect	£11,528
London-Durham	No flow fixed effect	£3,420
London-Carlisle	No flow fixed effect	£5,738
London-Oxenholme	No flow fixed effect	£7,739
London-Penzance	No flow fixed effect	£4,484
London-Glasgow	No flow fixed effect	£9,543
London-Liverpool	No flow fixed effect	£15,929

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	£23,050

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-61
P03	No period time fixed effect	-307
P04	No period time fixed effect	-177
P05	No period time fixed effect	-250
P06	No period time fixed effect	-45
P07	No period time fixed effect	240
P08	No period time fixed effect	174
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-139
W03	No weekly time fixed effect	-57
W04	No weekly time fixed effect	-57
W05	No weekly time fixed effect	75
W06	No weekly time fixed effect	-49
W07	No weekly time fixed effect	45
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	251
W10	No weekly time fixed effect	333
W11	No weekly time fixed effect	294
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	168
W14	No weekly time fixed effect	176
W15	No weekly time fixed effect	180
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	216
W18	No weekly time fixed effect	133
W19	No weekly time fixed effect	-79
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-147
W22	No weekly time fixed effect	-226
W23	No weekly time fixed effect	-23
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-298
W26	No weekly time fixed effect	-186
W27	No weekly time fixed effect	-156
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-45
W30	No weekly time fixed effect	-163
W31	No weekly time fixed effect	-242
W32	No weekly time fixed effect	0

Demand Model (weighted)

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT	STD. ERROR	T-STAT	P- VALUE	STAT. SIG.
Rail Year 2024/25 P01-P08	Rail Year 2022/23 P01-P08	154	43	3.56	0.00	
Impact of SLP & SFs	All flows in 2022/23 and control flows in 2024/25	94	98	0.96	0.34	ns
Number of observations					25,619	
Adjusted R-squared					60.84%	

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Cardiff	No flow fixed effect	9,060
London-Darlington	No flow fixed effect	7,085
London-Stockport	No flow fixed effect	8,694
London-Bristol	No flow fixed effect	8,615
London-Doncaster	No flow fixed effect	7,911
London-Norwich	No flow fixed effect	8,414
London-Birmingham	No flow fixed effect	8,591
London-Liverpool	No flow fixed effect	8,966
London-Manchester	No flow fixed effect	9,855
London-York	No flow fixed effect	10,198
Aberdeen-Edinburgh	No flow fixed effect	7,522
Aberdeen-Glasgow	No flow fixed effect	6,656
Newcastle-Edinburgh	No flow fixed effect	3,079
Manchester-Edinburgh	No flow fixed effect	7,442
Manchester-Glasgow	No flow fixed effect	5,635
Newcastle-Birmingham	No flow fixed effect	6,140
York-Edinburgh	No flow fixed effect	2,624
Bristol-Birmingham	No flow fixed effect	6,865
Dundee-Glasgow	No flow fixed effect	5,779
Manchester-Birmingham	No flow fixed effect	7,601
Milton Keynes-Birmingham	No flow fixed effect	5,495
Nottingham-Manchester	No flow fixed effect	7,333
Sheffield-Birmingham	No flow fixed effect	6,940
York-Manchester	No flow fixed effect	8,792
York-Newcastle	No flow fixed effect	7,225
London-Berwick	No flow fixed effect	3,760
London-Edinburgh	No flow fixed effect	15,241
London-Newcastle	No flow fixed effect	11,087
London-Bradford	No flow fixed effect	2,106
London-Harrogate	No flow fixed effect	3,106
London-Sunderland	No flow fixed effect	1,722
London-Dundee	No flow fixed effect	1,540
London-Leeds	No flow fixed effect	12,004
London-Durham	No flow fixed effect	3,582
London-Carlisle	No flow fixed effect	5,952
London-Oxenholme	No flow fixed effect	7,996
London-Penzance	No flow fixed effect	4,621
London-Glasgow	No flow fixed effect	9,901
London-Liverpool	No flow fixed effect	16,239

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
London-Manchester	No flow fixed effect	23,722

MODEL 1 (WEIGHTED)	COUNTER-FACTUAL	COEFFICIENT
P01	No period time fixed effect	0
P02	No period time fixed effect	-58
P03	No period time fixed effect	-311
P04	No period time fixed effect	-178
P05	No period time fixed effect	-256
P06	No period time fixed effect	-40
P07	No period time fixed effect	252
P08	No period time fixed effect	185
W01	No weekly time fixed effect	0
W02	No weekly time fixed effect	-139
W03	No weekly time fixed effect	-55
W04	No weekly time fixed effect	-55
W05	No weekly time fixed effect	76
W06	No weekly time fixed effect	-53
W07	No weekly time fixed effect	45
W08	No weekly time fixed effect	0
W09	No weekly time fixed effect	256
W10	No weekly time fixed effect	340
W11	No weekly time fixed effect	302
W12	No weekly time fixed effect	0
W13	No weekly time fixed effect	171
W14	No weekly time fixed effect	180
W15	No weekly time fixed effect	182
W16	No weekly time fixed effect	0
W17	No weekly time fixed effect	226
W18	No weekly time fixed effect	139
W19	No weekly time fixed effect	-79
W20	No weekly time fixed effect	0
W21	No weekly time fixed effect	-153
W22	No weekly time fixed effect	-234
W23	No weekly time fixed effect	-26
W24	No weekly time fixed effect	0
W25	No weekly time fixed effect	-307
W26	No weekly time fixed effect	-193
W27	No weekly time fixed effect	-161
W28	No weekly time fixed effect	0
W29	No weekly time fixed effect	-45
W30	No weekly time fixed effect	-167
W31	No weekly time fixed effect	-249
W32	No weekly time fixed effect	0

APPENDIX J – SPLIT TICKETING METHODOLOGY

Relevance of split ticketing

Where split ticketing occurs on the rail network, LENNON data (which is used for the descriptive and regression analysis in this report) effectively misrepresents the actual end-to-end journeys undertaken by passengers⁷⁵. The misrepresentation of journeys in LENNON occurs in two ways:

- 1) Where passengers are splitting a journey rather than buying direct tickets to their end destination, the LENNON figures will effectively be **underreported**, because tickets will be instead attributed to other flows along the route.
- 2) Where passengers are purchasing direct tickets for a flow, but using this ticket as one leg of a longer journey, the LENNON figures will effectively be **overestimated**, because the actual journey is taking place on a different flow.

It could be assumed that the rate and patterns of split ticketing are the same year-on-year, and therefore it could be treated as a fixed effect in this report's regression analysis. However, given the rise in prevalence of split ticketing and the ease of using this method across ticketing platforms during the period of this study, it is likely that rates of split ticketing have changed over the baseline and trial periods. Analysis from the Rail Delivery Group (RDG) supports the assumption that the prevalence of split journeys has increased during this period, but that there is substantial variation in the use of split ticketing across different parts of the rail network.

Split-ticketing methodology

Given this context, this report takes the following approach to account for split ticketing.

RDG have developed a methodology for identifying split ticketing in LENNON data. RDG assumes that tickets in LENNON are part of a single journey (i.e. a passenger has used split ticketing) when the conditions in Figure 7 are met. In essence, this aims to capture tickets that were bought at similar times or locations, and which make up longer journeys via connecting stations.

Using this method, RDG can reassign passengers that used split ticketing to their actual end-to-end journey. Therefore, flows that are frequently used as split points would see fewer journeys in RDG outputs compared to LENNON data, whilst flows where passengers frequently buy split tickets instead of a direct ticket would see more journeys in RDG outputs compared to LENNON data.

Application of this methodology

For this study, LENNON data on the relevant flows for both SLP and SF were shared with RDG, who then appended split ticketing data, as per the conditions in Figure 7. Data were provided for the pre-trial and post-trial periods, so the difference between these figures accounts for changes in split ticketing before and after the trial. The aim is to standardise the effects of changing rates of split ticketing before and after the trial to make the pre- and post-trial periods as comparable as possible.

⁷⁵ When referring to 'journeys', this appendix refers to the end-to-end rail journey that the passenger undertakes, as opposed to the different legs of that journey where they bought individual split tickets.

This methodology was applied in the same way for London and non-London flows. The weighting factors are outlined in Appendices F1, F2 and F3. There are no weighting factors of less than 1; this is because outputs from RDG reassign all passengers that used split ticketing to their actual overall journey. In short, the demand data for each flow is adjusted to remove any instances where that flow is used as a split point for a longer journey. Therefore, flows that are being frequently used as split points would see fewer journeys in their outputs compared to LENNON data, whilst flows where passengers frequently buy split tickets instead of a direct ticket would see more journeys.

A limitation to this methodology is that it controls for *all variation* in split ticketing, regardless of the cause. It could be that the SLP and SF interventions themselves will have an effect on the level of split ticketing. This variation between the pre- and post-trial data will be removed by the weighting factors.

Another consideration around this methodology is the representativeness of the results for wider contexts beyond the interventions considered in this report. For example, it is possible that the nature of the SF trial makes split ticketing more likely to occur – given that SF was only trialled on specific flows, there were opportunities for passengers to ‘opt-out’ by using split ticketing. Due to these questions around the representativeness of findings, this report therefore presents findings both **with** and **without** the split ticketing weighting applied to act as a form of sensitivity analysis.

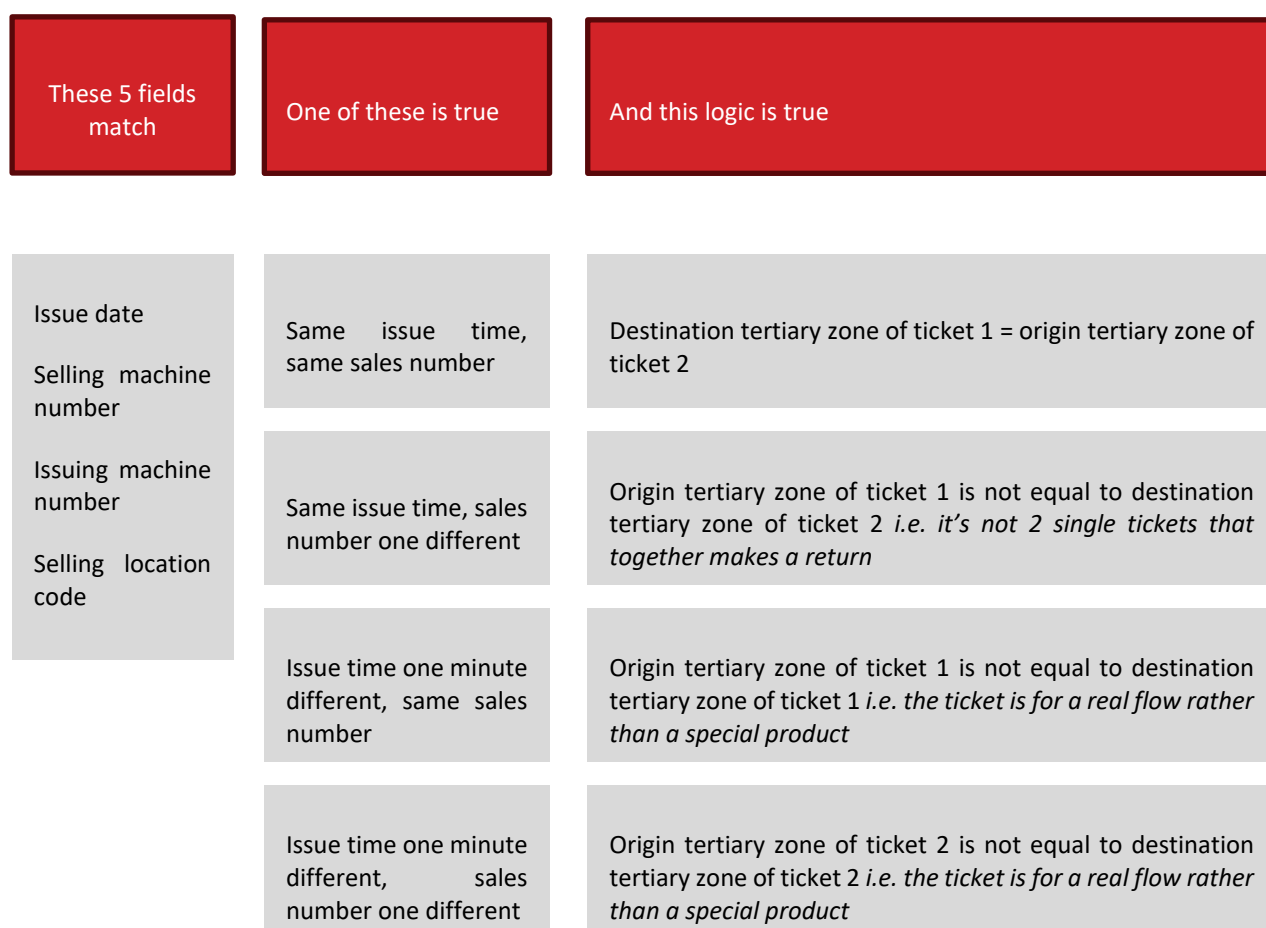


Figure 7. Rail Delivery Group methodology for assigning split tickets to an end-to-end journey