

Bus Strategy Appendix E

EVIDENCE OF MEASURES DELIVERING BUS PATRONAGE GROWTH

June 2016

INTRODUCTION

- 1.1 The Bus Strategy seeks to provide a framework for a growing bus system in West Yorkshire; one which reflects the needs of current and future users. The Strategy identifies that this growth must come from encouraging more young people and people of working age to use the bus, otherwise, long term demographic trends will lead to an increased reliance on concessionary travellers, with consequent implications for the financial sustainability of the system. This financial sustainability is an important theme of the Strategy, and consequently the measures identified within the Strategy have a strong emphasis on promoting passenger growth.
- 1.2 The Strategy furthermore identifies that substantial bus patronage growth is achievable, and notes that other towns and cities across the UK and Europe are seeing substantial bus patronage increases. This appendix therefore provides some of the evidence of where investment in the bus network has delivered patronage growth. It demonstrates the types of investment, and the wide range of investments, that can contribute to delivering passenger growth. These investments in turn inform the Bus Strategy proposals outlined within the main report.
- 1.3 Consequently, the appendix is structured to provide the available evidence in line with the Bus Strategy Proposals presented in Chapter 6 of the Bus Strategy. The annex at the conclusion of this appendix details the data sources referenced.
- 1.4 Often there is limited evidence available, and from the information which is available it can be difficult to identify the impact of individual measures. Some examples were some time ago and others reflect different geographies / demographics and as such a direct read across to the West Yorkshire situation is not suggested. As such greater emphasis should be given to the broad conclusions summarised in this report, rather than the impact of individual / specific measures described below.

BUS SERVICES AND INFRASTRUCTURE

Network design

- 1.5 Network design interventions have been shown to significantly influence demand for bus services. Network design changes are generally implemented as part of wider improvement programmes which can include new vehicles, marketing, and reviews of ticketing. Revisions to networks in urban areas have shown patronage growth of 18% over a five year period (Nottingham), and 11% growth over two years (Glasgow), and 10% fare-paying passenger growth over 18 months (Sheffield). However, all of these schemes, included broader measures than just network design and as such the network design only contributes to a proportion of the growth.

Quality corridors / high frequency corridors

- 1.6 There are several examples of corridor improvements increasing bus patronage. The most comprehensive Quality Bus Corridor scheme in Manchester has seen 24 routes upgraded. This delivered 8.9% increase in patronage on the corridors over 3 years. The Manchester A6 corridor partnership meanwhile delivered a 1% increase in patronage against a background of declining ridership in other parts of the area. In West Yorkshire the A65 Quality Bus Corridor has resulted in 12% increase in inbound passengers on key services in the first year of operation. Other smaller, but more targeted, schemes in Nottingham and Hampshire have delivered 19% and 18% growth along the corridors respectively.

Quality Partnership

- 1.7 There are examples of Quality Partnerships increasing bus use. The Statutory and Voluntary partnerships in South Yorkshire have delivered 10% growth in fare-paying patronage in Sheffield over 18 months and 6% growth in 6 months in Rotherham.

Bus priority measures, and other measures to improve punctuality and reliability

- 1.8 Studies of Leeds Superbus and Aberdeen bus priority routes show demand increases on the routes with bus priority of 6% and 3% respectively. Punctuality and reliability improvements are rarely introduced other than as part of a more comprehensive package of service improvements, but intuitively, given the number of complaints that relate to these issues, they should deliver a solid underpinning to the achievement of passenger growth.

Stop and interchange improvements

- 1.9 There is no direct evidence of stops and interchange policy influencing network-wide demand. Examples in Leicester and Warrington suggest that bus stop improvements can generate growth alongside wider service improvements. Investment in new bus interchanges in Hull and Mansfield contributed to 15% growth over 4 years and 7% growth in one year respectively.

FARES AND TICKETING

Smart Ticketing

- 1.10 There are limited UK case studies of the impacts of smart ticketing on bus patronage. The Pop ticket in Tyne & Wear has increased overall public transport usage by 7.5% in one year, with a revenue increase of 5%. However, the public transport market there is strongly influenced by the performance of the Metro system and the impact on buses specifically has not been reported.

Transferable tickets

- 1.11 There is limited UK evidence of impact of transferable ticketing in isolation. Fare integration between operators was provided part of the Sheffield and Rotherham bus partnerships (generating 9.6% and 6% growth in fare paying passengers respectively). However, the effect of the transferable ticketing alone cannot be isolated. Transferable ticketing to allow tickets to be used on all city and regional buses in Sevilla in Spain increased patronage by 3% between 2002 and 2005.

Simplified fares and pricing

- 1.12 There is strong recent evidence to suggest that lower fares and/or simplified fare structures can increase bus demand. Major reviews of zones and fares (and networks) have recently taken place in as part of the Sheffield and Rotherham bus partnerships which the results quoted above. In Bristol and Bath 'Fairer Fares' campaigns increased demand by 25% over two years and 15% over 18 months respectively.

Flat-fare tickets

- 1.13 The 1999 Brighton & Hove £1 flat fare initiative increased patronage between 3% and 8%. The impact of increased marketing at the time is thought to have also influenced the increase in demand.

Fares integration between modes

- 1.14 Fares integration between modes in London shows increase in bus use of 16% over 9 years. In South East Queensland it was estimated 3.5% of growth in bus use was due solely due to integration of fares.

CUSTOMER EXPERIENCE

New vehicles

1.15 New buses are generally incorporated in wider improvements, such as customer service and network changes. As such it is difficult to isolate individual impact, particularly as part of wider network changes. However, new vehicles form a key component of the following interventions which have increased passenger demand:

- New vehicles with Wi-Fi and customer information on the West Sussex Fastway generated 8% passenger growth;
- New vehicles on the 662 'Shuttle' route between Keighley and Bradford generated 5% passenger growth;
- Leamington Goldline new buses and other improvements generated 10% passenger growth over 12 months;
- Bristol Airport Link new buses with Wi-Fi and leather seating generated 7% passenger growth over 12 months.

In general, improvements to local bus fleets, as part of a general programme, can contribute to patronage growth, but unless there has been a significant period of under-investment, the impact of new vehicles can easily be over-played in the context of more wide-ranging improvements to the service.

Driver customer training

1.16 Driver customer training is almost invariably incorporated in wider improvements such as marketing and new vehicles, and so it is difficult to isolate the impacts on the market. Transdev service 36 (Leeds to Harrogate & Ripon) generated 22% passenger growth between 2003 and 2007 with a series of improvements which included driver customer training. The Trent Barton Rainbow 5 route is an example of a smaller scale improvement scheme which incorporated driver training and delivered passenger growth of 8%.

Cleaner buses

1.17 Improved cleanliness on buses is generally included as part of wider improvements to services and therefore the impact of this measure on demand cannot be isolated.

Safety and security improvements

1.18 A Crime Concern bus stop safety study estimated that that patronage increase of 10% may be possible with security improvements. However, there is no observed evidence regarding the impact of safety and security on bus patronage to verify this research.

Wi-Fi

1.19 There is limited evidence on the impact of Wi-Fi in isolation, particularly as the quality of the connection is an important consideration. The best example is that of the Transdev 36 bus refurbishment, which fitted Wi-Fi to existing vehicles and saw a growth in patronage of 3% over 2 years.

INFORMATON AND BRAND

Programme of 'smarter choices' and/or Personalised Travel Planning (PTP)

- 1.20 There are several examples of 'smarter choices' and PTP influencing demand for bus travel. These are split between schemes which have included only travel planning measures and those which have combined travel planning with other service improvements.
- 1.21 The 'TravelSmart' initiative in Perth, Australia, in which PTP was introduced in isolation, achieved a 17% increase in bus trips in the area. A 6% increase in bus use over 3 years was observed as a result of the Travel Sutton project in south London.
- 1.22 In a Nottingham, corridor-based, approach in which targeted houses within 400m of an enhanced bus corridor achieved patronage growth of 5.5% after 6 months (and 5% revenue growth). The York i-Travel programme provided a joint marketing strategy and PTP, together with improvements to services. This contributed to increased bus patronage of 11% over a 3 year period.

Real-time information (RTI)

- 1.23 There is limited evidence on the impacts of RTI on passenger demand in isolation. However, RTI was assessed in isolation as part of the London 'Countdown' information system, showing 1% demand impact. However, this is very old evidence and the value of RTI is much more limited on the high-frequency routes that are typical of London.

On-bus announcements

- 1.24 There is no evidence of the direct impact of on-bus announcements on passenger demand in isolation. However, buses with visual and audio announcements have been provided as part of wider interventions such as on the Fastway BRT network, which have demonstrated passenger growth as a result of the investments.

Table E1 Evidence sources informing bus services and infrastructure

Scheme name/location	Elements of investment	Source	Impact %
Network Design			
Nottingham City Transport GO2 network	Route reorganisation and simplification in 2001, including: - Colour-coded routes - Services terminate in city centre (reduced through-city services) - Interchange points improved and services run a 'city loop'	The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England: https://www.cambridge.gov.uk/sites/default/files/documents/rd-t-050.pdf (Original source: Route to Revenue growth, the Ten Percent Club, 2006)	Ridership increase of 11% over 2 years.
Sheffield City Bus Partnership	Voluntary partnership with First SY, Stagecoach, Sheffield CC and SYPTE. The bus network was revamped and fares reduced which 'benefitted 60% of adult passengers.' Introduced in October 2012 Operators have invested in new vehicles and a £22.5m five-year infrastructure investment is being delivered.	Sheffield reports bus patronage growth - 18 month review of city's bus partnership (Local Transport Today article, published 11 July 2014) and Transport Constraints and Opportunities in N England (SDG, 2014) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374714/Transport_constraints_and_opportunities_in_the_North_of_England.pdf	18% growth in patronage between 2001 and 2006
Glasgow network simplification	Rollout of the simplified 'Overground' network in Glasgow in 1999. Other measures such as improved vehicles and ticketing improvements were also introduced.	The Demand for Public Transport: a practical guide. (TRL, 2004)	Passenger numbers up 0.9% after 18 months. Fare paying passengers grew 9.6% whilst concessionary passengers fell 9.6% and child trips dropped 12.4%. SDG report a 14% increase in adult fare-paying passengers from 2012-2014
Cambridge Network Overhaul	Simplified fare structure, fleet overhaul and bus priority measures	Moving forward: New Opportunities, New Passengers. (CPT, 2007) http://www.stagecoach.com/~media/Files/S/Stagecoach-Group/Attachments/media/publication-policy-documents/move.pdf	77% passenger growth (figures not time related)
Quality corridors/High frequency corridors			
A65 Quality Bus Corridor (Leeds)	Quality Bus Corridor scheme between West Yorkshire Combined Authority and operators, completed in 2012. The corridor improvements included: Bus priority measures including bus lanes and signal priority 17 New buses Multi-operator ticketing agreement on corridor New and more frequent services New/improved shelters with RTI	A65 Quality Bus Corridor One Year Monitoring and Evaluation Report, November 2014	Cordon counts show bus patronage to be almost 50% higher after scheme implementation. Farebox data shows an increase in inbound boardings of 12% on key services within the extent of the scheme. Morning boardings on service 33/33A have increased by 27% since completion of the scheme.

Scheme name/location	Elements of investment	Source	Impact %
Manchester Quality Bus Corridors	Range of measures provided along 24 QBC routes, including: - Priority to improve punctuality and journey times (17 miles of bus lane) - Bus stop reviews and upgrades - RTI where possible - Clearway restrictions at stops to prevent inconsiderate parking	Manchester City Council Quality Bus Corridors Patronage/Benefits (2007) www.tfgm.com/buses/Documents/QBC_Guidelines_270808.pdf	Sample of QBC corridors shows an average of 8.9% growth in passenger numbers between 2002/03 and 2005/06. This compares with a decline of 4% in bus passengers across the rest of the network.
Manchester A6 corridor partnership	Improvements to service on the A6 between Stockport and Manchester. The following measures are included as part of the scheme: - Bus lane enforcement - Stability of services and commitments to first and last buses - New vehicles which are low emission and include Wi-Fi	Bus and Coach (2013) http://busandcoach.com/news/articles/archive/success-for-manchester-s-a6-scheme/	1% patronage increase
Derby Road Quality Bus Corridor (QBC), Nottingham	A series of enhancements which were made on the Derby Road corridor which connects Nottingham city centre to the University of Nottingham, the Queens Medical Centre and suburbs. Measures included: - Bus stops with RTI - Bus lane - Operator investment in route branding - smartcards and on-vehicle information systems. - Marketing and Personalised Travel Planning	Small but mighty transport schemes: case studies report. (PTEG, 2015)	19% increase in patronage on NCT services on Derby Road. 8% increase in Trent Barton services on Derby Road.
A3 Corridor ZIP Bus Priority Corridor Project	Package of measures provided by Hampshire and Portsmouth Councils, including: - 6.5km of bus lane - Bus priority - 65 stops improved - Bus stops RTI provided	Moving forward: New Opportunities, New Passengers. (CPT, 2007) / A3 ZIP Bus Priority Corridor Review Summary Report Appendix 3	4.7% increase in passengers on Route 41. New services along the route which offer a faster journey time have increased passengers using this corridor by over 18%.
Greater Bristol Bus Network improvements	A range of improvements across ten routes to allow these to become showcase bus corridors. The measures included: - New bus lanes and priority - Customer service enhancements - Bus stop RTI - Improved shelters - Redesigned junctions and road widening	Small but mighty transport schemes: case studies report. (PTEG, 2015)	17.6% increase in patronage on FirstGroup services using the ten corridors between 2008/09 and 2013/14. The greatest increase was 52% on the Portishead-Bristol corridor. Increase in on-time buses from 73% to 80%.

Scheme name/location	Elements of investment	Source	Impact %
London Bus Initiative	<p>Improvements to 27 bus routes across London. The routes were selected for their heavy use and some ran on heavily congested roads. The initiative included the following measures:</p> <ul style="list-style-type: none"> - New buses - Bus priority - Bus stop improvements - Enforcement - Bus stop RTI - Driver training 	<p>Keeping London Moving' - Bus priority in London</p> <p>abstracts.aetransport.org/paper/download/id/280</p>	<p>Annual patronage on all 27 LBI routes increased 22% over a three year period.</p>
Quality Partnerships			
Sheffield City Bus Partnership	<p>Voluntary partnership with First SY, Stagecoach, Sheffield CC and SYPT. The bus network was revamped and fares reduced which 'benefitted 60% of adult passengers.' Introduced in October 2012</p> <p>Operators have invested in new vehicles and a £22.5m five-year infrastructure investment is being delivered.</p>	<p>Sheffield reports bus patronage growth - 18 month review of city's bus partnership (Local Transport Today article, published 11 July 2014) and Transport Constraints and Opportunities in N England (SDG, 2014)</p> <p>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374714/Transport_constraints_and_opportunities_in_the_North_of_England.pdf</p>	<p>Passenger numbers up 0.9% after 18 months. Fare paying passengers grew 9.6% whilst concessionary passengers fell 9.6% and child trips dropped 12.4%.</p> <p>SDG report a 14% increase in adult fare-paying passengers from 2012-2014</p>
Rotherham Bus Partnership	<p>Various improvements in Rotherham as part of a voluntary partnership between Operators, Council and SYPT. The improvements include:</p> <ul style="list-style-type: none"> - Introduction of multi-operator Rotherham Connect tickets - Timetable and service changes to improve reliability 	<p>Bus and Coach (2015)</p> <p>http://busandcoach.com/news/articles/archive/positive-results-for-rotherham-partnership/</p>	<p>6% increase in fare paying passengers in the first 6 months of the partnership</p>
Punctuality and reliability improvements			
Dublin Quality Bus Corridors	<p>A package of measures targeted along 15 key corridors into Dublin. The key measures implemented include:</p> <ul style="list-style-type: none"> - Direct high frequency services operated by comfortable buses - Staff customer service training - High quality shelters with RTI - Amended kerb alignments and traffic signals - Bus priority, including bus gates. 	<p>Quality Bus Corridors Monitoring Report (2009)</p> <p>https://www.nationaltransport.ie/downloads/quality_bus_corridor_2009.pdf</p>	<p>Increase in bus passengers crossing the Canal Cordon on QBC corridors of 35% between 1997 and 2009.</p>

Scheme name/location	Elements of investment	Source	Impact %
West Sussex Fastway	A wide-ranging scheme which included the construction of a bus only link and widening existing highways to provide a dedicated bus lane. Other elements of the scheme included: - Providing a more frequent service - Increasing bus speed and reliability - New vehicles with air conditioning - Peak service coordinated with rail services and rail info on buses - More attractive fares - Driver customer training	An economic evaluation of local bus infrastructure schemes (KPMG, 2015) http://www.greenerjourneys.com/publication/an-economic-evaluation-of-local-bus-infrastructure-schemes/	160% increase in bus use over 10 years
Rapid Transit Kent Thameside Fastrack B - Arriva Southern Counties	A comprehensive range of measures including new vehicles on dedicated tracks. Other measures include: - Bus lanes - High quality stops with RTI - Operator contract - Branding, promotion and marketing	The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England: https://www.cambridge.gov.uk/sites/default/files/documents/rd-t-050.pdf (Impact source: Route to Revenue growth, the Ten Percent Club, 2006)	59% increase in adult paying passengers from September 2005 -March 2006 to September 2007 - March 2008.
South East Hampshire BRT (Eclipse)	Sub regional public transport network improvements. The scheme included the following measures to improve journey times, reliability and service quality: - Off-road busway - New bus shelters with RTI	An economic evaluation of local bus infrastructure schemes (KPMG, 2015) http://www.greenerjourneys.com/publication/an-economic-evaluation-of-local-bus-infrastructure-schemes/	48% patronage growth over the first two years. This has been partly at the expense of other services experiencing lower demand. Surveys show 28% were new bus users and around 21-33% of Eclipse users were new bus users.
Leeds Superbus Guided Bus route	Introduction of buses on a priority guided route. Journey time improvements of between 3 and 5 minutes.	The Demand for Public Transport: a practical guide. (TRL, 2004)	Demand increase of between 3% and 5.7% on the route
Stop and interchange improvements			
Hull Interchange	Creation of new bus station with 30 bus and 4 coach bays. Includes facilities for interchange between taxis bicycles.	The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England: https://www.cambridge.gov.uk/sites/default/files/documents/rd-t-050.pdf	14.6% increase in Adult/Child passengers between 2004 and 2008
Mansfield Public Transport Interchange	New fully enclosed bus station with 80 metre footbridge connecting to Railway Station. Also includes public realm and junction improvements.	An economic evaluation of local bus infrastructure schemes (KPMG, 2015) http://www.greenerjourneys.com/publication/an-economic-evaluation-of-local-bus-infrastructure-schemes/	7% patronage growth in the first year 5% increase in bus reliability
Crime Concern bus stop safety study	The study examined the potential impact of safety and security improvements on bus demand. The findings are based on survey data on perceptions and concerns as opposed to observed data.	Included in: The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England: https://www.cambridge.gov.uk/sites/default/files/documents/rd-t-050.pdf	estimated 10.5% patronage increase (not an observed value)

Scheme name/location	Elements of investment	Source	Impact %
Leicester RTI and other route improvements	A range of improvements to the bus network including the implementation comprehensive Intelligent Transport Systems on buses, stops and traffic signals. This encompassed: - RTI at stops - Bus priority junctions - Bus stop improvements - 125 new buses	Department for Transport Traffic Advisory Leaflet ITS 13/03 http://www.ukroads.org/webfiles/its13-03.pdf	Improved routes have seen an average 28% increase in passengers 90% of users consider RTI screens useful or very useful

Table E2 Evidence sources informing fares and ticketing

Scheme name/location	Elements of investment	Source	Impact %
Smart ticketing			
Nexus Pop card system	Multi-modal smartcard introduced in Tyne and Wear. Features include: - 225 new ticket machines plus smart gates and validators at stations - New retail channels online - First Pay as You Go smartcard system outside London	ITSO news February 2015 https://www.itso.org.uk/wp-content/uploads/2012/05/ITSONews-February-2015.pdf	7.5% rise in patronage (not mode-specific) in one year and a 5% revenue increase
Multi-operator tickets			
Sevilla, Spain	Fare integration to allow tickets to be used on all regional and city buses. Prior to introduction bus use was decreasing.	The benefits of simplified and integrated ticketing in public transport (Booz&co/PTEG 2009) http://www.emta.com/IMG/pdf/Benefits_of_Simplified_and_Integrated_Ticketing.pdf	Patronage increase of 3% between 2002 and 2005
Rotherham Bus Partnership	Various improvements in Rotherham as part of a voluntary partnership between Operators, Council and SYPT. The improvements include: - Introduction of multi-operator Rotherham Connect tickets - Timetable and service changes to improve reliability	Bus and Coach (2015) http://busandcoach.com/news/articles/archive/positive-results-for-rotherham-partnership/	6% increase in fare paying passengers in the first 6 months of the partnership
Sheffield City Bus Partnership	Voluntary partnership with First SY, Stagecoach, Sheffield CC and SYPT. The bus network was revamped and fares reduced which 'benefitted 60% of adult passengers.' Introduced in October 2012 Operators have invested in new vehicles and a £22.5m five-year infrastructure investment is being delivered.	Sheffield reports bus patronage growth - 18 month review of city's bus partnership (Local Transport Today article, published 11 July 2014) and Transport Constraints and Opportunities in N England (SDG, 2014) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374714/Transport_constraints_and_opportunities_in_the_North_of_England.pdf	Passenger numbers up 0.9% after 18 months. Fare paying passengers grew 9.6% whilst concessionary passengers fell 9.6% and child trips dropped 12.4%. SDG report a 14% increase in adult fare-paying passengers from 2012-2014
South East Queensland, Australia	Full fares and ticketing integration, improved service coordination and marketing communications. A new zonal fare structure has been introduced.	The benefits of simplified and integrated ticketing in public transport (Booz&co/PTEG 2009) http://www.emta.com/IMG/pdf/Benefits_of_Simplified_and_Integrated_Ticketing.pdf	9.7% increase in total public transport journeys in 2004/05 as estimated 3.5% patronage increase could be attributed to the 'integration effect' alone

Scheme name/location	Elements of investment	Source	Impact %
Simplified fares and pricing			
Rotherham Bus Partnership	Various improvements in Rotherham as part of a voluntary partnership between Operators, Council and SYPT. The improvements include: - Introduction of multi-operator Rotherham Connect tickets - Timetable and service changes to improve reliability	Bus and Coach (2015) http://busandcoach.com/news/articles/archive/positive-results-for-rotherham-partnership/	6% increase in fare paying passengers in the first 6 months of the partnership
Sheffield City Bus Partnership	Voluntary partnership with First SY, Stagecoach, Sheffield CC and SYPT. The bus network was revamped and fares reduced which 'benefitted 60% of adult passengers.' Introduced in October 2012 Operators have invested in new vehicles and a £22.5m five-year infrastructure investment is being delivered.	Sheffield reports bus patronage growth - 18 month review of city's bus partnership (Local Transport Today article, published 11 July 2014) and Transport Constraints and Opportunities in N England (SDG, 2014) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374714/Transport_constraints_and_opportunities_in_the_North_of_England.pdf	Passenger numbers up 0.9% after 18 months. Fare paying passengers grew 9.6% whilst concessionary passengers fell 9.6% and child trips dropped 12.4%. SDG report a 14% increase in adult fare-paying passengers from 2012-2014
Bristol 'Fairer Fares'	A new set of fares across Bristol that are simpler to understand and for most customers cheaper. Introduced in 2013.	Routeone magazine: James Freeman, Watershed in the west http://www.route-one.net/industry/james-freeman-watershed-in-the-west/	Bus patronage increase of 25% between 2013 and the end of 2015.
Bath 'Fairer Fares'	A new set of fares across Bath that are simpler to understand and for most customers cheaper. Introduced in summer 2014.	Routeone magazine: James Freeman, Watershed in the west http://www.route-one.net/industry/james-freeman-watershed-in-the-west/	Bus patronage increase of 15-20% between summer 2014 and the end of 2015.
Flat fare tickets			
Brighton & Hove	In 1999 Brighton & Hove trialled a flat fare policy which switched fares from a distance-based fare scale to a widely advertised £1 flat fare.	The benefits of simplified and integrated ticketing in public transport (Booz&co/PTEG 2009) http://www.emta.com/IMG/pdf/Benefits_of_Simplified_and_Integrated_Ticketing.pdf	Increase in patronage of between 3 and 8.5%
Fares integration			
London	London Travelcard with integrated fares	The benefits of simplified and integrated ticketing in public transport (Booz&co/PTEG 2009) http://www.emta.com/IMG/pdf/Benefits_of_Simplified_and_Integrated_Ticketing.pdf	16% increase in bus patronage between 1983 and 1992

Table E3 Evidence sources informing customer experience

Scheme name/location	Elements of investment	Source	Impact %
New vehicles			
West Sussex Fastway new vehicles	New buses provided on Fastway Network. The buses include: - On Bus announcements - Connecting train information - Wi-Fi	Metrobus: Our operation (Metrobus, 2015) https://www.metrobus.co.uk/download/30466.8/metrobus-facts-2015/	8% passenger growth since introduction of new vehicles
Rainbow 5 - Long Eaton & Nottingham	Various route improvements including: - Driver customer training - New vehicles - Marketing	Demand impacts of bus quality improvements (Shires and Wardman, 2009) abstracts.aetransport.org/paper/download/id/3104	8% per annum
Transdev in Keighley route 662 Keighley- Bradford	New single decker buses introduced on high frequency route branded as 'Shuttle'	Bus and Coach (2007) http://busandcoach.com/news/articles/archive/blazefield-going-for-growth/	5% passenger growth (with strong rail competition)
Oxford - Kidlington	Package of measures provided by Oxford Bus Company and Oxfordshire County Council, including: - New fleet of high spec buses - Consistent fleet replacement - Core city routes on 5 or 10 minute frequencies - Comprehensive night bus network	Moving forward: New Opportunities, New Passengers. (CPT, 2007) http://www.stagecoach.com/~media/Files/S/Stagecoach-Group/Attachments/media/publication-policy-documents/move.pdf	33% growth over 7 years
Chesterfield - Sheffield	Significant increases in patronage following a new single deck fleet on the route in 2008. Patronage increases have funded new buses	Bus and Coach (2012) http://busandcoach.com/news/articles/archive/deckers-needed-as-passengers-increase/	55% growth on service in 12 months
Leamington Goldline	Various route improvements to Goldline service in Leamington, including: - New buses with leather seats - Driver customer training - Branding - Frequency increases	Bus and Coach (2008) http://busandcoach.com/news/articles/archive/leamington-goldline-10-per-cent-growth/	10% growth in 12 months
Bristol Airport Link	New buses on the Airport Flyer service in Bristol. The vehicles include the following features: - Leather seats - Air conditioning - Wi-Fi	Bus and Coach (2011) http://busandcoach.com/news/articles/archive/new-buses-boost-bristol-airport-link/	7% growth in 12 months

Scheme name/location	Elements of investment	Source	Impact %
Peterborough - Milton Keynes X4 Gold	New vehicle investment on X4 route. The vehicles include the following features: - Leather seats - Wi-Fi	Bus and Coach (2011) http://busandcoach.com/news/articles/archive/stagecoach-turns-x4-to-gold/	7% growth in 2 years
Driver Customer Training			
Transdev Harrogate & District route 36	New buses provided on Harrogate - Leeds route in 2003. The buses include the wide-spaced leather seats (in a 1+2 layout) and are regularly cleaned. Increased capacity of double deckers reduced crowding on buses. Driver customer training provided.	Bus and Coach (2007) http://busandcoach.com/news/articles/archive/blazefield-going-for-growth/	22% passenger increase 2003 - 2007 (excluding concessionary fares growth)
Aberdeen Platinum	Refurbished buses which include the following improvements: - New leather seats - TV screens with BBC news - Wi-Fi - New branding - Driver customer training	Bus and Coach (2014) http://busandcoach.com/news/articles/archive/passenger-numbers-up-on-aberdeen-platinum/	5.3% growth in 12 months
Leamington Goldline	Various route improvements to Goldline service in Leamington, including: - New buses with leather seats - Driver customer training - Branding - Frequency increases	Bus and Coach (2008) http://busandcoach.com/news/articles/archive/leamington-goldline-10-per-cent-growth/	10% growth in 12 months
Safety and security improvements			
Crime Concern bus stop safety study	The study examined the potential impact of safety and security improvements on bus demand. The findings are based on survey data on perceptions and concerns as opposed to observed data.	Included in: The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England: https://www.cambridge.gov.uk/sites/default/files/documents/rd-t-050.pdf	estimated 10.5% patronage increase (not an observed value)
Wi-Fi and USB			
Transdev Harrogate & District 36 bus refurbishment and Wi-Fi	Buses refreshed with interior and free Wi-Fi. Includes '2+1' leather seating.	Transdec Media Centre (2011) http://www.transdevplc.co.uk/media-centre/?newsID=21	3% increase on service over 2 years.

Table E4 Evidence sources informing information and brand

Scheme name/location	Elements of investment	Source	Impact %
Programme of 'smarter choices' and PTP			
TravelSmart' initiative in Perth, Western Australia. - TRL demand for public transport	Provision of more comprehensive public transport information at a household level. The area tested was of low density and high car ownership.	The Demand for Public Transport: a practical guide. (TRL, 2004)	Absolute number of bus trips in the area increased by 17%
Smarter Travel Sutton	Comprehensive PTP scheme including: - School travel planning - Workplace travel planning - Personal advice - Advertising, marketing and promotion	Smarter Travel Sutton third annual report 2010. http://epomm.eu/maxeva/uploads/STStthirdANNUALREPORT2010_V08.pdf	16.3% increase in patronage on monitored routes (vs 10.3% increase in control are) by the third year. Impact of PTP scheme therefore 6% increase.
Sustainable Travel Towns: Darlington, Worcester and Peterborough	Various measures were implemented in the Sustainable Travel Towns to increase bus usage including PTP.	The effects of Smarter Choice programmes in the Sustainable Travel Towns. Part III Chapter 14: Bus use https://www.gov.uk/government/publications/the-effects-of-smarter-choice-programmes-in-the-sustainable-travel-towns-full-report	Across the three towns the 'Whole town' effect of personal travel planning was to increase trips by around 5-15%
I-Travel York PTP and other measures	PTP scheme providing personalised travel planning and other sources of travel information such as a journey planning website. Alongside this there have been improvements to the bus network such as RTI and minor bus priority schemes.	JMP i-Travel monitoring report	11% rise in bus patronage between 2013 and 2015
At Stop and real time information			
Countdown at stop RTI (London)	Implementation of RTI at bus stops using the 'Countdown' system	KonSULT evidence base http://www.konsult.leeds.ac.uk/pg/47/	1% increase in patronage
Leicester RTI and other route improvements	A range of improvements to the bus network including the implementation comprehensive Intelligent Transport Systems on buses, stops and traffic signals. This encompassed: - RTI at stops - Bus priority junctions - Bus stop improvements - 125 new buses	Department for Transport Traffic Advisory Leaflet ITS 13/03 http://www.ukroads.org/webfiles/its13-03.pdf	Improved routes have seen an average 28% increase in passengers 90% of users consider RTI screens useful or very useful