

Transport Scotland Rail Evaluation Workshop – 21st November 2014

Note of Proceedings

Morning Session

Introductions

The event began with an overview of the current priorities for rail in Scotland by Steve McMahon (Head of Rail Strategy & Funding, TS). Steve highlighted how in October the Dutch company Abellio had been awarded the contract to run the ScotRail franchise from April 2015. The contract is single biggest Transport Scotland (TS) contract, and one of the largest Scottish Government contracts (£6bn turnover). A widespread consultation had been undertaken to inform the specification for the new franchise. He also mentioned how rail in Scotland had seen significant growth in patronage in recent years along with significant investment in new trains, tracks and stations. One of the most high profile investments is the new Borders railway which is currently being constructed and opens in the autumn of 2015. Steve highlighted how he welcomed the work being taken forward on rail evaluation. It was critical for understanding better the impact of recent rail investments not just because there will be close scrutiny of these investments but because it will help to inform future priorities for Scotland railways.

Karl Johnston (TS Economic Adviser) then gave an update on the rail evaluation work being undertaken by TS and provided some context to this work. He highlighted that although transport appraisal in Scotland and the UK is advanced with the existence of appraisal guidance such as STAG and WebTAG, the practice of conducting ex-post evaluations of transport projects is much less well established. This had been illustrated in an international evidence review which had been carried out to inform the TS rail evaluation guidance. Karl outlined how the review had shown that such evaluations on rail projects were typically carried out only one to two years after roll-out, resulting in patchy information on the impact of such schemes. The review had also identified how ex-post evaluations of rail have traditionally not considered the effects of agglomeration and other wider economic and social benefits as a result of rail improvements.

Karl also referred to the first TS rail evaluation workshop which was held in March 2013 to discuss how rail projects could be evaluated. Following this, draft rail evaluation guidance was produced by TS. To pilot the guidance and also to test whether the projects had achieved their original objectives three pilot studies of recent rail project were commissioned. As part of these evaluations, contractors were asked to provide recommendations on how the guidance could be improved. Following this introduction, presenters from the three consultancies (Gordon Blair of CH2M Hill, Ian Bruce of Systra, and Paul McCartney and Scott Leitham of Peter Brett Associates) responsible for the pilot study projects delivered short

presentations on the main findings from their evaluations and highlighted specific research challenges that resulted from their work.

Pilot study presentations

Airdrie to Bathgate Railway Line

Gordon Blair from CH2M Hill began by providing some background to the Airdrie Bathgate project before giving an overview of some of the findings from the Stage 1 evaluation of the project. The line was completed in 2011 at a cost of £300 million and saw the reinstatement and electrification of two sections of former rail line (from Drumgelloch, near Airdrie, to Bathgate; and from Bathgate to Haymarket East Junction). A second track, for the 2 km between Airdrie and Drumgelloch and for the 10 km between Bathgate and Newbridge junction, was also created. Three existing stations were upgraded, two stations were relocated, and three new stations were built. The line connected Airdrie, and stations to the west, to Edinburgh and Bathgate, and stations to the east, to Glasgow. The full service became operational in May 2011.

The evaluation was able to indicate benefits of the scheme that included: facilitating direct access to labour markets in Glasgow and Edinburgh from the local area; provision of improved means of transport for most disadvantaged members of society; contribution to an increase in numbers of rail passengers in Central Scotland; provision of a viable alternative to the M8 and creating an alternative to the Edinburgh – Glasgow main line, reducing congestion at peak times.

With regards to the objective of direct access to local labour markets, it was noted that the Airdrie to Bathgate line was predominantly used by local commuters. While journey times have generally increased for local commuters to Glasgow, the number and frequency of services increased, which improved access to the city. Gordon also noted the number of trips from west of Airdrie to Edinburgh and from east of Bathgate to Glasgow enabled by the new infrastructure.

In terms of providing improved means of transport for most disadvantaged members of society. The numbers of working age benefit claimants were found to have reduced slightly by 2011 in the council areas affected by the project. Furthermore, around 20% of passengers with an origin station between Airdrie and Bathgate did not have access to a vehicle, and may not have made the trip had the new rail service not been available.

There was a very clear indication that the project has positively affected the overall patronage of rail services in Scotland with the number of journeys not only increasing to stations on the Airdrie to Bathgate line but also to destinations further afield. The percentage of journeys to work using rail in North Lanarkshire and West Lothian in 2012 was also higher than it had been in previous years.

With regards to providing a viable alternative to the M8, the findings were less conclusive. It was found that traffic flows along the M8 corridor between Livingston and Newhouse were lower in 2011 and 2012, compared to previous years. This coincided with the opening of the Rail Link, yet the traffic has subsequently increased in 2013.

Finally, where the alternative to the Edinburgh – Glasgow main line was considered, it has been found that Rail Link offered quicker average journey times between Glasgow and Edinburgh in the AM peak, compared to the Shotts line and may provide an attractive alternative for passengers in the event of congestion on the main line.

Gordon also provided a brief overview of the challenges associated with undertaking a Stage 1 evaluation. He highlighted that impacts of a project are likely to materialise over a longer period of time especially that changes in travel behaviour do not become immediately apparent. The presentation also highlighted the importance of objectives being specific and measurable (for example, using the SMART approach which requires the objectives to be Specific, Measurable, Achievable, Realistic and Timebound). He also highlighted other recommendations to enhance the TS Rail Evaluation guidance. These included the development of an Evaluation Plan to be prepared at an early stage of each rail project which would identify the metrics required to carry out an evaluation. The guidance would also be enhanced by further advice on the approach for assessing how accurate predictions were, and whether the scheme was delivering value for money. It would also be enhanced by including advice on incorporating stakeholder feedback, reporting structure and dissemination of lessons learned.

Larkhall – Milngavie Railway Line

Ian Bruce from SYSTRA delivered a presentation on the findings from the Larkhall-Milngavie Railway Project. The project was completed in December 2005 at a capital cost of £35m. It involved the re-instatement of 4.7km of track from Hamilton to a new station at Larkhall with two additional stations at Merryton and Chatelherault in addition to a 1.6km extension of the Northern Suburban line from Maryhill to Anniesland with a new station at Kelvindale. Part of the project was also to enhance the service frequency on the Milngavie branch and Newton-Hamilton line from 2 to 4 trains per hour.

Ian highlighted the range of methodological approaches used to inform the outcome evaluation, which included a combination of primary and secondary research. An online user survey of 166 rail passengers looking at travel behaviour and demographics was delivered alongside an online business survey of 36 local businesses, looking specifically at the impact the project had on business performance, accessibility and access to the labour market. A number of secondary

data sources such as ORR figures, LENNON and Scottish Neighbourhood Statistics were also used.

The evaluation illustrated that most of the project objectives had been achieved: the reconnection of Larkhall to the rail network; the doubling of frequency of services between Milngavie and central Glasgow as well as between Hamilton and central Glasgow; removal of operational bottleneck on the North Suburban line; providing social inclusion benefits to residents and encouraging a modal shift towards public transport. There was little evidence to suggest that there has been sustained investment in the area but it has been indicated that evidence of such activity tends to become more apparent over a much longer period of time.

Where social inclusion benefits for residents were concerned, the project was found to enable access to a range of opportunities and facilities in the surrounding areas, in particular employment opportunities with 64% of respondents using the new stations for commuting purposes.

In terms of modal shift towards public transport, it was found that there has been an abstraction of trips from car, with the impact most pronounced in the Larkhall area where approximately 50% journeys made to or from the three re-opened stations would be made by car if it became impossible to travel by rail.

In addition to discussing the findings from the evaluation, Ian provided insights on recalculating the BCR for the project. Higher than anticipated passenger numbers combined with methodological changes in economic appraisal since the original appraisal was conducted resulted in a recalculated BCR that was significantly higher than the appraisal value and demonstrated that the project offered good value for money (2.97 compared to the original of 0.91). The methodological changes included the shift from a 30 year to 60 year appraisal period and changes to discount rate applied to future year costs and benefits from 6% to 3/3.5%.

Drawing upon learning from this evaluation, Ian outlined some recommendations for improving the guidance. This included conducting a process evaluation as soon as possible after project completion (ideally within six months), identifying a control group early on, and also establishing a baseline at the appraisal stage. Recommendations were also made on methods for conducting primary research (i.e. online surveys offered a number of benefits).

Laurencekirk Railway Station

The final pilot study presentation was delivered by Paul McCartney and Scott Leitham from Peter Brett Associates (the study was commissioned through their former employer, SYSTRA). Laurencekirk is a town of 2,800 in south Aberdeenshire about halfway between Aberdeen and Dundee, and on the east coast main line. Following a long running community campaign, the Laurencekirk Station reopened in May 2009, 42 years after it had closed in 1967.

The outcome evaluation of this project involved a range of methodological approaches including the collection of both primary and secondary data. An online station user survey was used to establish changes in travel behaviour and had a good response with over half the annual journeys from the station captured. The business survey investigated the wider economic benefits of the projects, while the secondary data analysis focused on establishing any wider impacts.

The evaluation found that the following project objectives have been met: the project had linked rural communities; increased use of public transport in the Laurencekirk area and had promoted a modal shift. It could not be conclusively proven that the project resulted in increased road safety in the area or that it led to wider social and economic benefits, although a small reduction in road traffic through mode shift to rail was established by the surveys.

With regards to linking rural communities, the evaluation found that journey times by public transport have been reduced and more journeys are being made as a result of the re-opening of the station. Passengers in the local area also reported greater use of public transport with over half of the journeys undertaken via Laurencekirk station being previously undertaken by car.

As above, for the modal shift objective, many users of the station car park would previously have undertaken their whole journey by car and would have continued to drive to their destination if the park and ride facility wasn't there. The second part of the presentation was devoted to baselining. Paul stressed the importance of establishing a comprehensive baseline as early as possible in order to facilitate a full understanding of the changes in behaviour arising from the project. Consideration needs to be given during the appraisal stage to the relevant data to be collected.

Drawing upon their experience of conducting this evaluation, the team made a number of recommendations for the next draft of the rail evaluation guidance. A key focus was on the need for baselining before schemes/ projects open and these included ensuring that data to assess pre-scheme case is available as some secondary data sources may not be sufficient to evaluate local schemes. Also individuals' recollections may not accurately reflect the 'pre' situation. STAG should also specify evaluation data requirements, and project objectives need to be SMARTer.

Discussion on Pilot Study Evaluation Findings

Following these presentations the floor was opened up to the delegates for questions and general discussion.

A question was raised as to whether or not the Government subsidy paid should be included in the present value of cost figures. It was noted that this should be excluded from costs.

The issue of when the best time to carry out an evaluation was discussed. It was noted that it was best to carry out evaluations within 5 years from the project completion, as people involved in the delivery of the projects moved on tended to forget the details after a longer period. It was suggested that all three of the pilot projects demonstrated that some of the impacts of can be highlighted early on in an evaluation.

The need for the project objectives at the start to be more specific and measurable (SMART) was raised as this will allow contractors to better understand the research requirements. This had been identified as an issue by all three contractors in their presentations. It was noted that due to sensitivities associated with working in a government setting, policy officials might not want to commit themselves to strictly defined targets and so it was sensible to maintain a degree of flexibility regarding how strictly defined the project objectives were.

A couple of the presentations had mentioned that the rail patronage had been higher than forecast and discussion moved to whether such comparisons were made against averages for the respective local areas or by setting them against the forecasts for the projects. It was suggested that both area and forecast comparisons were reported on in the evaluation of the Larkhall-Milngavie line. It was noted that mode switching generally increased away from car towards rail travel over longer journeys, which needs to be taken into account when preparing forecasts.

The question of whether valuations of time spent on trains were done correctly was then raised, It was suggested that multimodal models often underestimated the actual time spent using different modes of transport.

The discussion then moved on to the usefulness of passenger surveys for such evaluations. It was highlighted that from his experience paper surveys had poor response rates, while online surveys tended to deliver poor quality data. It was noted that in the case of Larkhall-Milngavie, the online survey had worked well for this project as it was a small station with relatively low numbers of passengers was involved. He added that this solution might not work for all types of projects.

An additional question about using survey data was also raised as to whether consideration had been given to how different modes of survey delivery differed in terms of providing a representative sample of the population in the study area. Pensioners were mentioned as a group that may have problems participating in online surveys such as that used for the Laurencekirk evaluation. It was suggested that for this project respondents had the option to phone the contractors if they did not have online access, in practice the vast majority of respondents (90-95%) chose to complete the questionnaire online.

Another discussion point was that while rail projects could bring economic benefits to the local areas, there was also danger that better transport links displaced the economic benefits by moving economic activity elsewhere. The issue is whether

these had been accounted for in evaluations of the three pilot projects. It was noted that in case of the Larkhall-Milngavie line specific information was sought on how much money was spent in the centre of Glasgow as a result of the line being completed.

With regards to Stage 1 evaluation, there was discussion around the extent to which the passenger surveys undertaken on the Airdrie to Bathgate line been able to indicate future impacts of the evaluated projects. It was noted that no questions looking at future impacts have been asked in the survey used for this project. It was further added that since this was a Stage 1 evaluation, it was probably too early to look at future impacts but it would be appropriate for this to be considered as part of Stage 2 work.

There was discussion around community views and whether the evidence gathered by the three projects could be used to ascertain how local people felt about the new rail links and how they were used by this group of travellers. It was noted that anecdotal evidence from the Scottish Borders suggested that the Borders rail link would mainly be used by local people to visit family and friends. The Borders Rail Link is a project that aims to construct a new 30 mile rail line connecting Tweedbank in the Scottish Borders with Edinburgh, the link is set to be delivered in the second half of 2015. It was commented that the Borders Rail Link was very different from the pilot projects due to a much larger scale, and that some similarities between the Borders project and Laurencekirk existed due to the rural location. He added that local people demonstrated strong local support for the station.

There was discussions about the lessons that could be drawn from the pilot studies for new projects in the early stage of delivery. It was suggested that that it was important to agree on the baseline measures as early as possible.

Finally, discussion moved to how best to deal with the inability to include the same respondents in the sample when establishing modal shift at different stages of the project. It was suggested that that going to the same respondents wasn't necessary. It was noted that it was good enough to get a representative sample of residents at different stages of the project to see how the mode of transport has shifted. Others suggested that using aggregate data such as LENNON figures should be sufficient for providing modal shift information.

Afternoon Session

Rail Evaluation elsewhere in the UK

Representatives from the DfT, TfL and Welsh Assembly Government gave an update on related work they were taking forward on evaluation.

The Department for Transport has completed the evaluation of HS1, explored four impacts (Transport User Benefits, Wider Economic Impacts, Regeneration Benefits and Government Assets/Shareholding). DfT is also that scoping and baselining is

currently taking place for the Thameslink project. The valuation of Community Rail Partnerships have been considered and analysis was carried out on the number of people volunteering for those partnerships and any differences in demand at stations. Work on the evaluation of rail franchising has been taken forward with Frontier Economics.

Transport for London have published an impact study for the East London rail extension project and found that journey times are easier to measure than economic benefits for example land value, house prices etc. A study measuring the impact of the second phase of the extension to Clapham Junction is underway.

The Welsh Assembly Government has recently included a section on evaluation in their local transport plans. An important issue is where money comes from for funding evaluations, EU funded projects require evaluations shortly after a project is completed. An evaluation framework is being set up for a current road project and this will inform future evaluations. A concern arose over gaining reliable data for measuring Wider Economic Benefits.

Discussion Groups

John Galilee (TS Principal Research Officer) gave a quick recap of the main recommendations from the morning presentation on how the rail evaluation guidance could be improved. At appraisal stage recommendations included setting SMART objectives, giving evaluation greater prominence in STAG and better recording of assumptions as well as ensuring that key documents are properly stored. At the study design stage recommendations included collecting baseline information ahead of project implementation, ensuring proportionality and looking at wider economic benefits. At the data collection stage, it was recommended that a standard survey template be created, local businesses should be engaged in the process and process evaluation should be undertaken early on. Finally, with regards to the analysis and reporting stage, it was recommended that standard STAG metric reporting template should be produced, more information on the level of analysis for Stage 1 evaluations should be provided and a dissemination strategy should be developed.

Delegates were then divided into three discussion groups to consider these recommendations further – one group focused on study design, another on data collection, and the third on data analysis and reporting. Each group was provided with a set of questions to discuss, and a note of their responses to the questions are given below. A representative from each of the three groups then gave a short presentation to the full group after the discussion.

Group 1: Study Design

Question 1: What issues should be highlighted in the guidance on defining and establishing a baseline?

There was a discussion on when a baseline should be established, with a consensus that it should ideally take place before a project is underway. However it was also highlighted that the exact timing of when to establish one depends on the project. Consideration also needs to be given to new developments (such as new houses, industrial units) that may commence as soon as the rail project is announced and which may not be considered by some baselining exercises.

Question 2: How prescriptive should the guidance be on the level of evaluation required in relation to the size of project being evaluated?

It was suggested that there would be standard minimum requirements on the level of evaluation required. This would mean the requirements would be suitable for smaller scale projects where the overall cost of the project is low. Generally, it was suggested that principals should be established in order to allow a common sense flexible approach when determining the extent of an evaluation.

Question 3: What advice should the guidance provide on when to carry out user surveys (i.e. pre or post implementation, 3-5 years after project completion)?

When considering when to carry out user surveys, it was noted that pre-project surveys could be used to establish the baseline however, if these were done during a period of upheaval people's perceptions could be skewed (i.e. surveying while Haymarket station was under construction). Timing is critical for panel surveys. Surveys must be carried out when the pre-project scenario is fresh in their mind; even five years could be too long and so at least one year after completion but no more than 2 or 3 years is suggested. An evaluation programme needs to be completed first before noting when survey information should be collected.

Question 4: Should Wider Economic Benefits (WEB) be considered for all rail evaluation projects. If not what advice should the guidance give on when to explore WEBs?

Wider Economic Benefits (WEBs) should be considered especially land-use effects. More than looking at households and businesses, the property market could be analysed. Included in this could be housing market turnover and changes in how property is advertised. To measure agglomeration effects, large quantities of data are needed. Development impacts are complicated as the planning permission is influenced by transport availability which makes it difficult to determine the counterfactual. A counterfactual example would be beneficial in the guidance. A question remains of how many indicators exist for WEBs and a warning on exaggerated WEBs in business cases. The impact of marketing on a rail project should also be considered.

Question 5: How can we best ensure that monitoring and evaluation is considered as part of the appraisal process? What should the guidance say in relation to this?

To ensure that monitoring and evaluation is part of the appraisal process it would be useful to know what is expected in 3-5 years when the evaluation takes place. Logic mapping of the inputs and outputs could be a useful tool. There's a trap of only pursuing a scheme if you can reach its objectives.

Group 2: Data collection

Question 1: Should there be investment in both pre and post implementation surveys? How important is this?

Investment in both pre- and post-evaluation surveys depends on the availability of other data sources for example LENNON and SMART ticketing data. However, this data is not always available and there may not be an alternative to surveys. Also there are discrepancies in the data as it often excludes journey origin and purpose.

Question 2: To what degree should there be investment in surveying “control areas” to better establish a baseline before the scheme opens?

Surveying control areas may not always be possible or necessary but data collection is a different scenario and should be done. There is often difficulty in adequately identifying suitable control areas; an area that is suitable at the beginning of a project may not be by the time of completion. Displacement is a possibility if the control area is too close to the project area, there could be over or under estimation of impact.

Question 3: How extensively and for what reasons should stakeholders be surveyed in evaluation in terms of their opinion on the impact of the project in question?

It was suggested that stakeholders can be surveyed to gauge their opinion of the impact of a project; for example Local Authorities may have a unique 'big picture' view. All information compiled is part of the overall evidence base, although there is the possibility of some information being biased if parties have a vested interest in a scheme. Disaggregated data and local data is useful but the latter is time consuming and expensive to gather.

Question 4: How should best practice guidance for survey design and use be developed (if at all)?

A best practice guide for survey design would have to be flexible with core questions as standard to allow meta analyses and comparison across projects. Opportunity to add more bespoke questions would be included.

Question 5: What role could Big Data play in evaluation?

There are concerns over the use of Big Data: negative media attention, ethical issues and whether the market is sufficiently developed for the datasets to be robust. In relation to providing a range of forecasts, evidence proves this could have been useful on the Larkhall Milngavie pilot study. As well as GDP forecasting, rail demand's relationship with GDP would be valuable to forecast also.

Group 3: Data analysis and reporting

Question 1: What are the key metrics to report? Should a toolkit setting out the metrics be provided in the Guidance?

Concerning metrics, a list of indicators would be useful for researchers and core and supplementary lists of metrics should be provided. A standardized approach may not capture all relevant metrics and therefore it was suggested that supplementary metrics could account for differences between projects. The expected difficulties in gaining access to data to measure the metrics was discussed. Specific data sources could include bus timetables and usage of Park and Ride facilities both before and after the project. A good starting point would be the Scottish Neighbourhood Statistics. Metrics of economic activity in the local area can be investigated by looking at the number of shops opening, the proportion of discount and charity shops.

Question 2: How can uncertainty in the findings from a rail evaluation best be reported?

With regards to reporting any uncertainty in the findings, it is important to recognise the difference between reporting negative effects and a lack of information from the evaluation on whether or not a project has been a success. The focus of evaluation should be more about building a narrative than reporting a wide range of statistics.

Question 3: Wider impacts - how important is it to analyse and report impacts beyond the objectives of the project? Could this help identify winners and losers?

Intervention logic mapping can be used to identify the wider impacts to report; factors such as house prices could be considered.

Question 4: How can the guidance give consideration to the reporting of other possible factors affecting outcomes – including negative impacts.

It is good practice to report on both positive and negative impacts. Negative consequences could include increased number of stops leading to longer journeys for passengers already served by a rail line). Net effects need some explanatory narrative alongside them, for example highlighting any economic shocks in the area or major events that have been held in the area over the period of the evaluation. The impact on other modes of transport (cycling) as well as parking could also be reported.

Question 5: To what extent is there a sufficient focus on distributional impacts of analysis and reporting (geographical, social etc.)?

Area based impacts can be assessed using area profiling data, including ACORN. Distributional impacts could identify winners and losers (both geographically and by income/deprivation group). Distributional analysis could also include the number of people benefitting in the areas/groups.

Question 6: Is there a requirement for more guidance on analysis and reporting of assessing effectiveness of environmental mitigation, and the role of smarter measures and sustainable travel measures

Advice on environmental measures would be welcome. The role of smarter measures such as travel planning in making a project a success through, for example, increasing patronage, should be reported.

Question 7: How can the guidance adequately advise on reporting of impacts relating to bus patronage? If no, what more should be included?

Reimbursement data could play an important role in reporting on impacts relating to bus patronage for those over aged 60.

Next Steps

The day concluded by highlighting the next steps in the development of the rail evaluation guidance. The learning from the event, along with the recommendations given by the three evaluation contractors would be used in redrafting the guidance. It is proposed that the updated guidance, along with the final report from the evaluations will be published on the TS website in Spring 2015. Karl also flagged up the possibility of organising another rail evaluation event possibly with another government department / agencies in the future.