

ICE consultation response – Transport appraisal and modelling strategy: informing future investment decisions

ICE is pleased to respond to the Department for Transport's consultation *Transport appraisal and modelling strategy: informing future investment decisions*.

This consultation coincides with ICE's exploration of the inclusive cities agenda through ICE Thinks, our thought leadership programme. This has comprised a conference in February this year, *'What is the city but the people? the role of the engineer in creating inclusive cities'*, which brought together engineers, industry leaders, parliamentarians, urban designers, students, academics, disability groups, artists and dancers to examine what makes a city truly inclusive.

ICE's subsequent paper,¹ argued that value for money and the traditional use of cost-benefit analysis should not undermine the fundamental ideal of creating a better, more sustainable society with infrastructure that is fit for purpose, for all. The importance of thinking inclusively to improve outcomes for the users of infrastructure cannot be understated. Inclusivity is not a buzzword; it has a real impact on real lives.

As such, this response focuses on the consultation's theme of People and Place: capturing the range of impacts relevant to transport policy.

About ICE

Established in 1818 and with over 95,000 members worldwide, ICE is a leading source of expertise in infrastructure and engineering policy and is widely seen as the independent voice of infrastructure. ICE provides advice to all political parties and works with industry to ensure that civil engineering and construction remain major contributors to the UK economy.

Key Recommendations

Transport infrastructure, in particular, plays a significant role in shaping people's everyday lives and contributes to the range of productive opportunities that are available to them.

If the main objective of the Industrial Strategy is to improve living standards and increase productivity, and the Department's appraisal and modelling techniques are to support this objective, ICE believes that the strategy should:

- Account for the reality and diversity of everyday lives, as shaped by factors such as age, race, gender, physical/psychological ability and socio-economic background, giving equal consideration to direct users and indirectly affected groups.
- Broaden the concept of productivity beyond paid employment and traditional measures of economic output.
- Fully consider a range of direct and indirect outcomes, including the likelihood and potential impact of each scenario.

The reality and diversity of everyday lives

Ultimately, the success of investment decisions and transport schemes should be assessed by their practical, everyday utility. The sector currently places too much emphasis on the economic case, and this reliance on quantification has the potential to stifle good projects. While the quantification of costs and benefits may appear

¹ [ICE, \(2018\) What is the city but the people? The role of the engineer in creating inclusive cities](#)

objective, investment decisions can never be truly neutral, and any attempt to do so often ignores the diversity of society.

Fundamentally, different people use and experience transport in different ways. For example, it is well-known that people with disabilities travel less and for purposes that are different to those who do not have an impairment. However, the type or extent of an individual's disability is often more important in explaining their travel behaviour than the general characteristic of being disabled alone.²

Inaccessibility has personal costs on disabled people's day-to-day expenditure. For example, 'the cost of taxis in lieu of inaccessible local public transport systems' can mean that "once disability-related costs are taken into account the numbers of households with a disabled occupant assessed as living in poverty jumps from 23 per cent to between 40 per cent and 60 per cent."³

Many women also use transport differently to men, combining paid work with family duties, fragmenting where and when they travel.⁴ A survey undertaken in Vienna during the 1990's showed that men's typical route was short and straightforward: often to and from work. Women's journeys tended to be more complex and varied, usually including multiple trips a day on the metro as well as on foot: dropping off children at school, going to the doctor, getting groceries, visiting an older family member, and then back to school for the pick-up.⁵

Men undertake nearly three times as many journeys by bicycle as women. Design choices, such as a shortage of safer protected lanes separated from the main road, can suppress the numbers of women who cycle; Transport for London's head of surface delivery planning suggested in 2015 that the overriding reason women cycle less than men is a fear for their safety.⁶

Diverse, lived experiences, if captured, could be a great source of knowledge to all those responsible for shaping the built environment, and instead of being reactive, planning and investment decisions should ask, in what kind of places we want to live.

When we look at plans and drawings at a 10,000:1 scale, it is easy to lose sight of this detail, and the individual people whose lives we are shaping. The same can be said when considering the net present value of an entire scheme.

Web Transport analysis guidance (WebTAG)⁷ currently favours the improvement of travel patterns of business users and commuters, regarding their time as more valuable than others. In turn, this emphasises the need to make journeys faster, as opposed to giving people different travel options or increasing the frequency of services to allow for more flexibility. There is a risk that schemes whose primary benefits are these Level 3 (e.g. improved frequency of services), or non-monetisable impacts, are disregarded on this basis of their initial benefit cost ratio and value for money classification.

² Clery E, Kiss Z, Taylor E, Gill V. *Disabled People's Travel Behaviour And Attitudes To Travel*. London: Department for Transport; 2017. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/647703/disabled-peoples-travel-behaviour-and-attitudes-to-travel.pdf. Accessed October 1, 2018.

³ Wood C, Grant E. *Counting The Cost*. London: Demos; 2010. https://www.demos.co.uk/files/Counting_the_Cost_-_web.pdf?1292598960. Accessed October 1, 2018.

⁴ Sassen S. Built Gendering. *Harvard Design Magazine*. 2015;(41). <http://www.harvarddesignmagazine.org/issues/41/built-gendering>. Accessed October 1, 2018.

⁵ Fleming A, Tranovich A. Why aren't we designing cities that work for women, not just men?. *The Guardian*. <https://www.theguardian.com/global-development-professionals-network/2016/oct/13/why-arent-we-designing-cities-that-work-for-women-not-just-men>. Published 2016. Accessed October 1, 2018.

⁶ Slavin T. 'If there aren't as many women cycling as men ... you need better infrastructure'. *The Guardian*. <https://www.theguardian.com/cities/2015/jul/09/women-cycling-infrastructure-cyclists-killed-female>. Published 2015. Accessed October 2, 2018.

⁷ Gov.UK Guidance, Transport Analysis guidance: WebTAG <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>

To explain, a scheme that presents an overall benefit could, in reality, be making a minimal improvement to a large number of people, bearing in mind that a two-minute journey time saving on a 45-minute commute is almost negligible to the individual. That same scheme, whilst presenting a positive net present value for that reason could simultaneously be making some people vastly worse off, and in fact increase inequalities between travel options, or fail to consider the opportunity cost of alternatives which might have a net social value.

While the consultation discusses the monetisation of a broader range of social impacts and customer experiences, quantification may not necessarily be the most appropriate way to capture these benefits and may even be misleading or inaccurate. "A major problem in the planning of large infrastructure projects is the high level of misinformation about costs and benefits that decision-makers face in deciding whether to build and the high risks such misinformation generates."⁸

It is recognised that the operationalisation of public interests is challenging but capturing the nuance of different user needs calls for a higher degree of sensitivity. This approach may require a more site and group-specific methodology, which would need to be informed by a greater awareness of user needs concerning different life realities, as well as cultural and social backgrounds. For example, this could include the use of group-specific: requirement profiles; objectives; test questions and quality indicators. As a cross-sectoral issue, inclusive transport investment also highlights the importance of fostering interfaces between governmental departments and each level of planning and investment.

Digital services such as Citymapper and Google Maps have re-imagined the ways that we plan our travel. They can provide the public with live updates, straight to an app, regarding delays on the network, and offer a multitude of different route options based on comfort, accessibility, minimisation of changes, or even the avoidance of rain.

An analysis of WiFi connection data on London Underground revealed useful insights into how people criss-cross the city using the Tube. "The pilot revealed many results that could not have been detected from ticketing data or paper-based surveys. For example, the analysis showed that customers travelling between King's Cross St Pancras and Waterloo take at least 18 different routes, with around 40% of customers observed not taking one of the two most popular routes."⁹ Many passengers choose not to take the most direct route, and instead plan journeys which suit them, whether that is based on travel time, crowding or walking distance.

This flexibility is made possible by redundancies in travel networks, which could be purposefully engineered to provide more inclusive travel options and to connect existing parts of the network better. The public's use of these apps provides new possibilities to understand and influence people's decision-making processes.

Appraisal tools should be updated to account for modern travel trends and fully exploit the potential of these technologies. These tools could also help to effectively prioritise transport investment to improve services and address regular congestion points, ensuring the maximum benefits to customers.⁹

The Concept of productivity

Responsibilities as carers, by both men and women, are not recognised economically, even though unpaid carers provide social care worth £57 billion, and the unremunerated work of women, in particular, is estimated to equate to around 20-30% of a city's GDP.¹⁰ This monetisable contribution to society is not accounted for in either WebTAG unit A2.1 - Wider Economic Impacts, nor A4.1 - Social Impact Appraisal.

⁸ Flyvbjerg B. Policy and Planning for Large-Infrastructure Projects: Problems, Causes, Cures. *Environment and Planning B: Planning and Design*. 2007;34(4):578-597. doi:10.1068/b32111

⁹ Transport for London. *Pilot Shows How Wifi Data Can Improve Tube Journeys.*; 2017. <https://tfl.gov.uk/info-for/media/press-releases/2017/september/pilot-shows-how-wifi-data-can-improve-tube-journe>. Accessed October 2, 2018.

¹⁰ Sassen S, Pieterse E. Cities and Social Progress. In: IPSP, ed. *Rethinking Society For The 21st Century: Report Of The International Panel On Social Progress*. Cambridge: Cambridge University Press; 2018.

Radial transport networks primarily serve central business districts and more traditional white-collar jobs, satisfying Level 2 and 3 wider economic impacts. However, for people combining paid work with family duties, travelling multiple and inconvenient distances to access shops, schools, health services, and jobs, all entail a significant appropriation of their productive time.¹⁰ Failure to factor this type of travel behaviour as part of transport investment decisions means that the productive contributions of unpaid labour are not sufficiently considered for their wider economic impact.

As discussed, if the primary objectives of the Industrial Strategy are to improve living standards and increase productivity, future investment decisions must broaden the concept of productivity beyond paid employment, and work to optimise the productivity of informal and unremunerated carers similarly.

Transport investment concerning decisions between compact or diffused cities and transport networks, or the impact of new, urban spatial fragmentation, must address specific identity-based exclusions and mobility patterns of the marginalised through “time-use” surveys and time-budget analyses.¹⁰ Investment decisions that are more sensitive to the needs of those who have responsibilities as a carer will positively impact the lives of many working-age women, but also of a growing number of men, since the division of housework and family tasks between the sexes is becoming more common, especially among younger males.¹¹

The likelihood and potential impacts of different scenarios

Physical infrastructure and transport networks clearly define the built environment and have far-reaching impacts into the broader urban realm. Transport infrastructure enables, or, in some instances, requires land-use change, which in turn can have a broader impact on surrounding communities.

While the wider socio-economic benefits are included in an evaluation of schemes, the delivery of these developments are usually dependent on external, private investment, and in reality, this is beyond the remit and control of the transport scheme promoter. Sometimes the promised socio-economic benefits are not realised until long after the completion of the transport scheme, even though these idealised outcomes were used to support the initial justification of the project.

While it is recognised that the delivery of full-scale urban regeneration takes a significant amount of time and resources, it is also noted that during this interim period some schemes appear to negatively impact the same problems that they intended to solve, such as community severance, dead-space in the urban realm and hotspots for antisocial behaviour. Worse again, there is also the potential for forecasts to prove incorrect. Benefits may be diminished or a transport scheme might have little to no catalytic effect on development.

One example is the international station on High Speed One at Ebbsfleet, which was promoted in part as a catalyst for the Ebbsfleet Development Area, including a garden city with a population of 65,000. As of 2016, just 65 of the planned 15,000 homes had been built. To date the development is still largely unrealised, with Sam Jacob, an architect and critic, describing the vision as “fractured and incoherent”, with the renowned Richard Rogers labelling it as unsustainable.¹²

While future benefits are discounted, appraisals over a 60-year period may be misleading. This is especially true when considering that technology and social expectations are changing faster than ever. A scheme may become obsolete or be re-engineered entirely within this 60-year time frame. A cross-sectional study by Transport for London showed that changes to travel behaviour are particularly dynamic, underlining the

¹¹ Municipal Department 18 (MA 18) – Urban Development and Planning. *Gender Mainstreaming In Urban Planning And Urban Development*. Vienna: Urban Development Vienna; 2016. <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008358.pdf>. Accessed October 2, 2018.

¹² Booth R. Vision of Ebbsfleet garden city for 65,000 struggles to take root. *The Guardian*.

<https://www.theguardian.com/artanddesign/2016/jan/04/ebbsfleet-garden-city-richard-rogers-critics>. Published 2016. Accessed October 2, 2018.

importance of looking beyond aggregate-level trends and instead seeking to understand, explain and influence the causative factors.¹³

There is more that could be done to improve the evaluation and appropriation of the distributional impact of schemes. This approach could comprise more robust analyses of a range of different outcomes, including a thorough consideration of the probability of each scenario, as opposed to just the one idealised outcome.

This approach could include probability-based analysis weighing up various possible situations and consequences and the relative likelihood of each, for example. This might be facilitated by the supply chain that could propose a suitable evaluation method on a scheme-by-scheme basis. Given the range in scale and diversity of transport schemes, this is likely to be more effective and offer more value than a “one-size-fits-all” approach, such as mandating a single methodology for all schemes.

Contributors

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¹³ Transport for London. *Long-Term Trends In Travel Behaviour*. London: Transport for London; 2014. <http://content.tfl.gov.uk/long-term-trends-in-travel-behaviour-cross-sectional-cohort-analysis.pdf>. Accessed October 4, 2018.