The Use of Accessibility Indicators in Planning and Investment

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Accessibility Measures as Dashboard for Progress

GDP was contrived in a time of deep crisis....an answer to the great challenges of the 1930s.....we need an array of indicators to track things that make life worthwhile......the scarcest good of all “time”

Utopia for Realists pp122/123 Rutger Bregman 2017 (or 2014 in the Netherlands)
A Social Model of Accessibility

Hierarchies
Requirements

Measuring what is valued

Organising solutions

Incentives for policy goals

Individuals
Desires

Communities
Obligations

DHC 2006 – Access, Information and Flexibility. The Future of Retail Transport. British Council of Shopping Centres
Resolving Accessibility – Mapping Policy and Organising Delivery

Longstanding legislation and strong policy drivers

Organisational and delivery capability

Connected, enabled people and places

Indicators in theory and practice

- Efficiency
- Opportunity
- Competitiveness
- Sustainability
- Equity
- Viability

Local Authority Transport Plans in a National Policy Context

• Approach
  – Several hundred local indicators based on cost, time/scheduling, information/training, safety/security, physical/infrastructure, environment/quality (rarely followed through)

• Planning and Investment
  – Financial incentives through investment programmes (LTP, LSTF, access fund, smart)
  – Transport appraisal – social opportunity, equity/distribution, stated/acceptability, expressed/business case (used tactically)

Halden 2011 - The Use and Abuse of Accessibility Measures in UK Passenger Transport Planning.
http://dhc1.co.uk/content/useandabuseonline.pdf
National GB Indicators

• Trip purposes
  – Jobs, GP/health centres, hospitals (by service offered and number of patients), education (primary, secondary, further, higher), shop, post office, bank, leisure, park, pharmacy, legal services, pub, transport nodes (bus, rail, junctions)

• Opportunity measure
  – Number of opportunities within time thresholds appropriate for the trip purpose
  – Continuous measure with $\lambda$ calibrated using NTS

• Catchments by population
  – Segments - Car/non car available, educational attainment, poverty, employment status

$A_i = \sum_{j=1}^{j=J} O_j \exp(-\lambda \cdot c_{ij})$

$A_i = \sum_{j=1}^{j=J} P_j \exp(-\lambda \cdot c_{ij})$
National GB Indicators – Learning from Practice

• Sensitivity to change
  – Accessibility changes more rapidly due to people and places than transport

• Keep it simple
  – Why composite indicators of opportunities, utilities, total travel time, etc did not get far

• Investing in capabilities
  – Evidence linked with accountability - e.g. equity
  – Investors and funders - follow the money
Linking Measures of Access to a Delivery Objective

• All accessibility measures are imperfect and context specific
  – There are many variables that can be measured – and many that can be ignored – so accessibility analysis can produce almost any result by choosing what to measure and what to ignore
  – However most measures are informative and multiple measures can be used in combination
  – Some measures enable successful business models and these are the most useful ones in practice

DHC and University of Westminster 2005 – Developing and Piloting Accessibility Planning, DfT
DHC and Abley 2014 – Neighbourhood Accessibility Assessment. Land Transport New Zealand
Delivery Aims and Types of Indicator

- **Utilising opportunity** - Time, cost, safety, comfort, and quality of access to opportunities (jobs, education, leisure, etc)

- **Securing Equity** - Ratio of access to opportunity for social groups (incl. car/non car)

- **Enabling people and places** - Walk access to local facilities, local connections, skills etc.

- **System level connections** – Expanding scope, organising sharing (e.g. freight consolidation, shared DRT)

Growing the Access Economy

• Case studies in measuring what is valued and delivering successful business models
  – Value from abundance – not just scarcity - through case studies in access by walking
  – A stronger focus for government in wealth distribution through case studies in incentives for equitable access to opportunity
  – Where a social model of delivery is driven by enforcing regulatory requirements, organising communities, and enabling individuals – from case studies in auditing and enabling access

Halden 2014 - Shaping the Future – Case Studies in UK Accessibility Planning
What services can be reached by walking in 400, 800, 1600 and 3200 metres?

What does it cost to deliver no net detriment to access?

What is the ratio of car to non car access to essential services?

Disappointing outcomes from complex accessibility indicators

<table>
<thead>
<tr>
<th>Location</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>City centre</td>
<td>1.5</td>
</tr>
<tr>
<td>Town centre</td>
<td>2.5</td>
</tr>
<tr>
<td>Edge of town centre</td>
<td>3</td>
</tr>
<tr>
<td>Edge of town</td>
<td>4</td>
</tr>
<tr>
<td>Out of town</td>
<td>6</td>
</tr>
<tr>
<td>Rural/ remote</td>
<td>&gt;10</td>
</tr>
</tbody>
</table>

Table 2 (from DETR 1995)

<table>
<thead>
<tr>
<th>Generalised Minutes x10⁶</th>
<th>Committed</th>
<th>City Expansion</th>
<th>Green Belt</th>
<th>Landward Towns</th>
<th>New Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change from base development level</td>
<td>-1.46</td>
<td>-4.87</td>
<td>-5.22</td>
<td>-5.15</td>
<td>-5.04</td>
</tr>
</tbody>
</table>

Halden 2002 - Using accessibility measures to integrate land use and transport policy in Edinburgh and the Lothians. vol. 9, issue 4, 313-324
Access as an Indicator of a Sustainable Place

• Walk/Journey times to a basket of services
  – Sustainable Cities Index
    - FFTF
  – State of the Countryside

• Travel time/cost factored by frequency of trip
Who Pays for Accessible Services?

• The travel time and cost of access is valued when **accountabilities** of service providers are clear
  – Successful delivery for employability, pharmacies, hospitals/medical centres, legal services/courts, retail centres....

• Indicators in practice
  – Times, costs, distances, turnover, activity
  – Provider willingness to pay for access
  – Customers willingness to accept
Reframing the Personal, Social and Commercial Value of Access

- Resolving the value of accessibility through personal accounts
  - Everybody is an expert in their own access
  - Link personal preferences with social goals to make the most of capabilities
  - Alternative currencies to secure social benefits – “access points”
Expanding Successful Business Models

• Measure what is valued
• Identify who is responsible for incentives for success and penalties for failure
• Indicators and measures to date:
  – Largely cost and time for target people groups and categories of service provision
  – Social choices resolved by budget holder
  – Personal choices resolved through accounts
• Towards trust in accessibility indicators?
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