

Methodology and government statistics

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The context within which methodology delivers

An engaging sense of the big picture

- Official statisticians provides many of the statistics that have to be always trusted because of the important uses they are put to - Policies, programmes, communities and commerce *can confidently be timely and decisive in all spheres*
- The role of the Government Statistician extends beyond measurement, to advice and comment on the limits to measurability
- Evolution and revolution - We are in a period of massive transition in how we work, in statistics, and almost all parts of government – how far are we through that process (Transition from HMS Victory to HMS Warrior)
- How important is comparison with other countries? (Napoleon quote)
- Capacity to adapt to new needs - Quetelet - *"The statistician keeps his fingers on the pulse of humanity, and gives the necessary warning when things are not as they should be"*

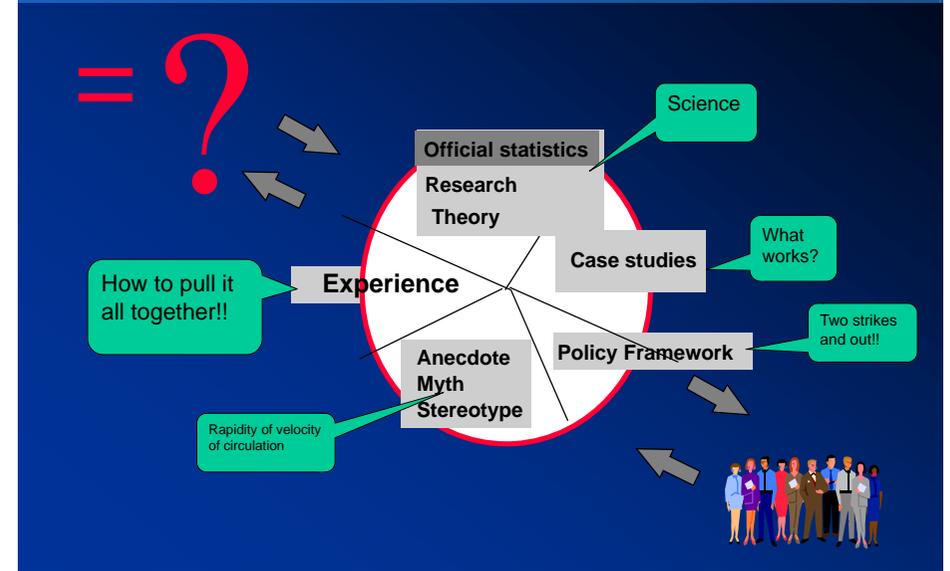
Hard questions for our times

1. What statistics to produce, and how far to fit with past measures? (manage obsolescence)
2. How far do we need to anticipate information needs of policy makers? (policy revisited after ?? years, international experiences and collaboration, understand big shifts) [Wealth survey, CPI changes, Income dynamics, productivity]
3. How do the uses of new methods and sources evolve as new opportunities arise? (new technology revolution) real time,
4. How do we manage official statistics as a system (coherence by design, economies of scale or scope, (strengthen the recognition of our capacity as investors)
5. How do we manage to be trusted in judgements and decisions, by policy makers, politicians and the public, yet be of the state. (emerging ferocity of the media, and loss of media standards) performance targets, changing role of state and statistics, declining trust in all governments, loss of public service culture, disaster management (Moser any figure that is interesting.....) regulatory emphasis and risk management
6. Can we continue to keep official statistics as special to all communities, and explain why (nation building, independent, political consensus to retain integrity, indigenous people trust, professional competence) respondent load
7. How do we extend international, national, and local user involvement in direction and access, and form of results, and retain independence

Shifting context of public policy post 1970's

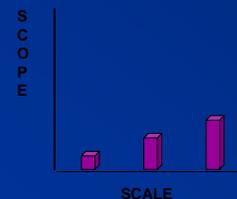
Policy domain	Shift in emphasis
Social	Change from universal programmes, to programmes targeted at specific communities defined by geography, ethnicity or economic situation. Considerable growth in non-traditional family forms. Open labour markets broaden change in work patterns and rewards.
Economic	Policy emphasis more on managing expectations for inflation, than on income stability and industrial development. National economy less able to be delineated, through established structures. Trends in value added difficult to compare as service economy dominates.
Population	Ethnic diversity and changing nature of immigration alongside low fertility and living much longer. Cohort effects influence population trends complicate forecasts.
Government	Looser delineation of government, extended role of private sector, consumer oriented performance expectations of government, deregulation of activity, Stiglitz – Sen report
Environment	Global warming, biotechnology, bio-security and environmental protection
Globalisation	Unbounded economic participation and shifts in competitiveness ongoing, new economic organisation, high population mobility
Information technology	Information focused business organisation, real time operations, integration of information to create new business, reduction in "tyranny of distance"

The place of official statistics in understanding



Evolutions in statistical thinking

Measurement strengthens political argument - 19th century



Structured measurement of attributes of all members of selected populations, events or places

Mass computation

Ingenuity in graphical presentation

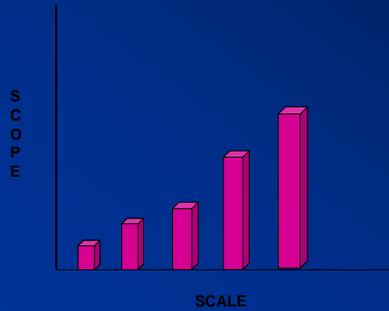
Derivation of summary statistics, indexes, life expectancy

Hypothesis confirmation usual basis for setting up counts

Origins of statistical measurement

Relatively high use of labour

Statistical methods extend measurement - 20th century



Business, households and persons surveyed, through applications of sample survey methods

Scientific basis for measuring reliability, based on randomisation (Rowntree, Fisher)

Comparison extended through standards and common classifications, and common frames.

Geography limited in UK public surveys

Common public commitment to results

Measurement integrated with process 1990s and beyond

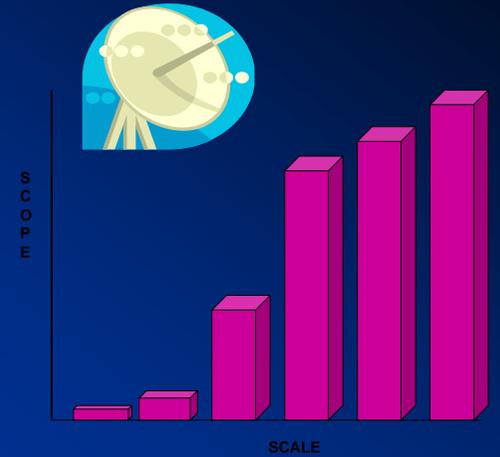
Mass monitoring of transactions, events and attributes

Politics of information access, ownership and use

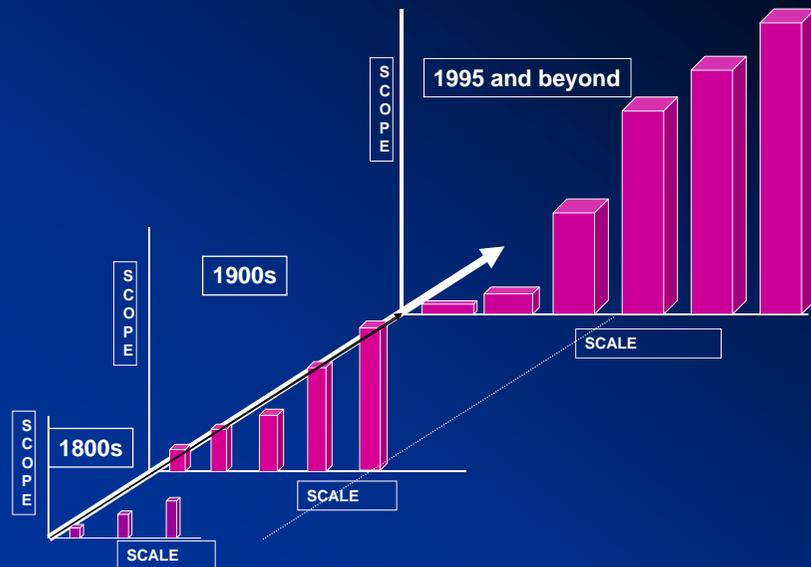
Government operations and policy reshaped around integration of person level information

Statistical uses well separated from operational applications

Registers and identifiers now central to public information



Transformations in information management



Managing the obsolescence of statistical processes

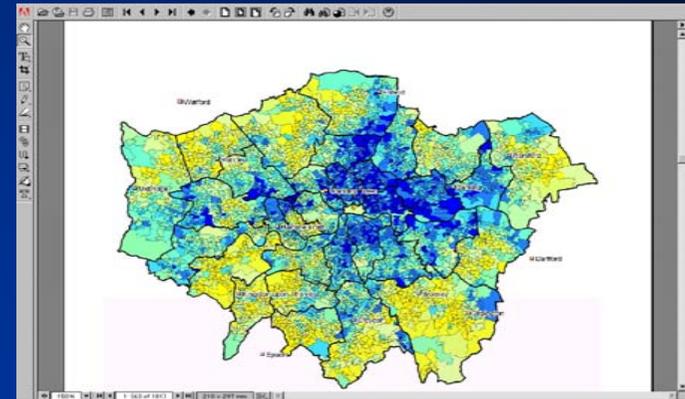


19th Century statistical processes

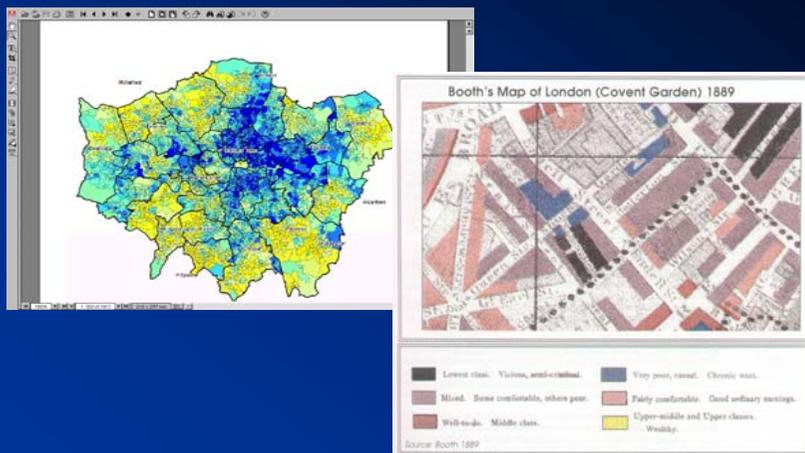


Moving forward using web technology

Neighbourhood Statistics – Index of Deprivation, London

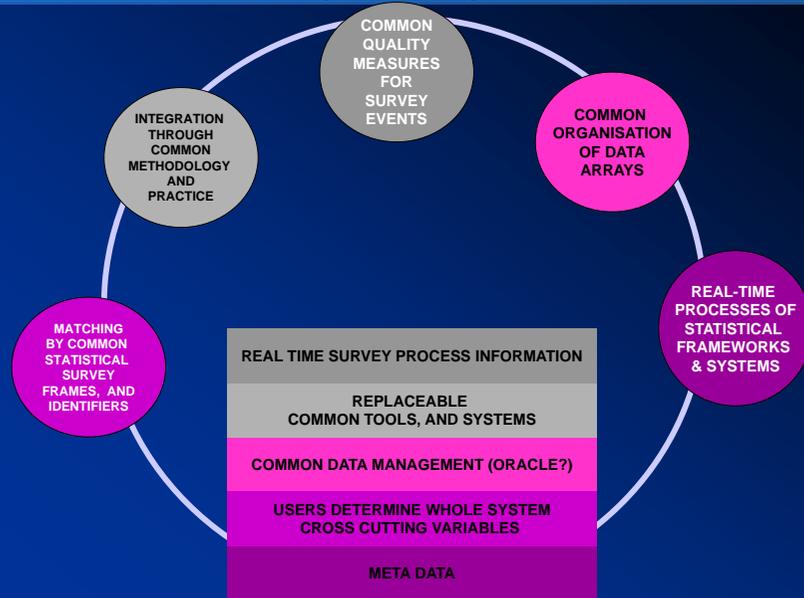


19th Century to 2004 and beyond



A cohesive overview

Vital integrating elements



Methodology adding value

Methodology adds value

- Range and quality of methodology skills
- Depth of experience in applications
- Repository of statistical experience in survey design
- Increases business choices by raising contribution of methodology to balancing of needs of policy, concepts, methods, practice
- Provide for source based data integration

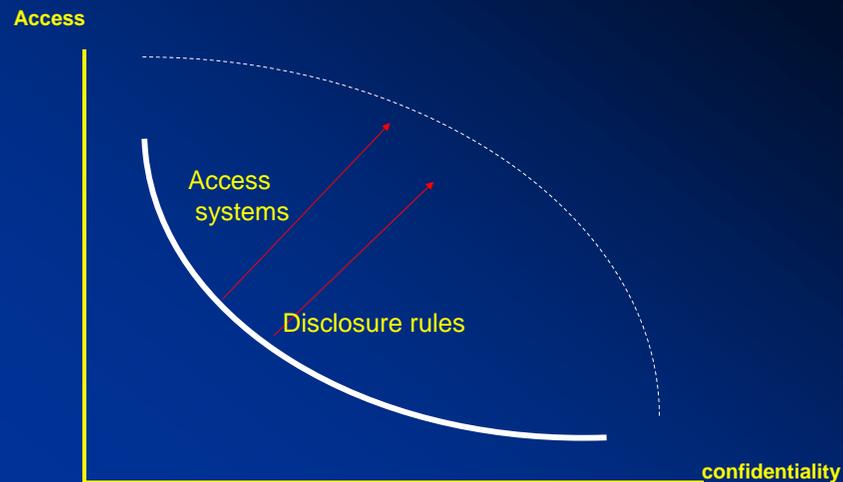
Policy, concepts, methods and practice

Statistical choices usually balance of four factors

- Access versus confidentiality (disclosure, access systems)
- Publication versus quality (quality measures, estimation methods)
- Relevance versus impartiality (process improvement)
- Analysis versus Timeliness (Analytical skills, tools)
- Timeliness versus quality (quality measures, estimation, process improvement)
- Comparability versus continuity (integration of methods and systems)
- Place of statistics (analytical strength – electricity, tax, demography, time series)

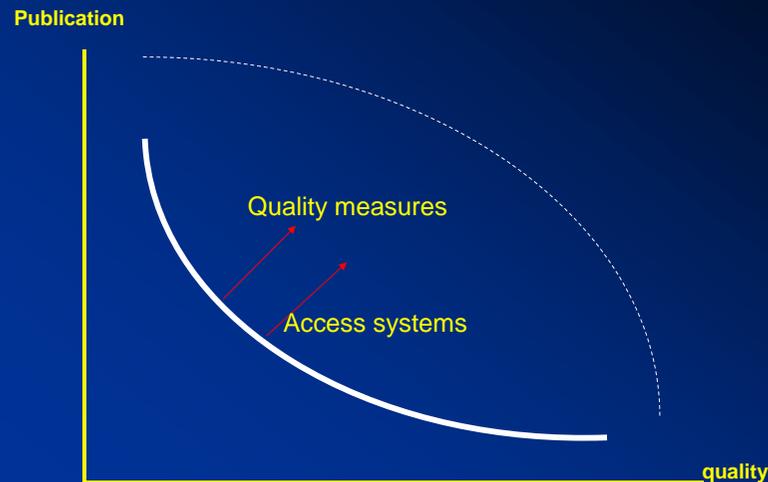
Shifting the decision boundary

- Access versus confidentiality



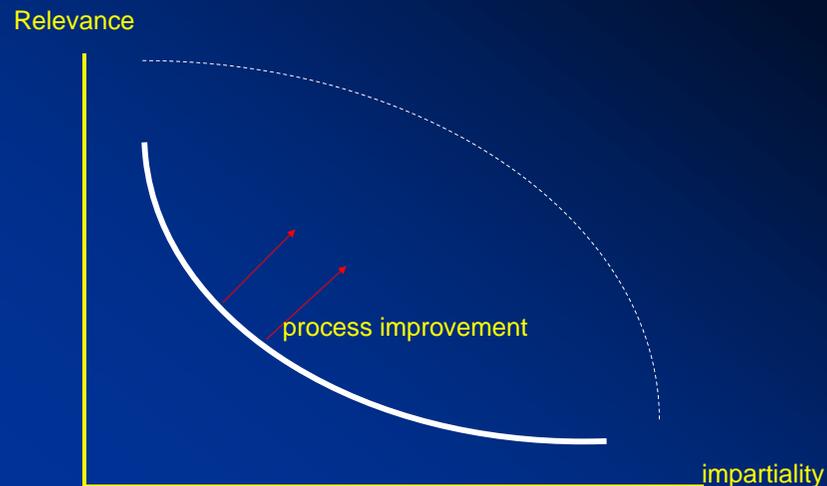
Shifting the decision boundary

- Publication versus quality



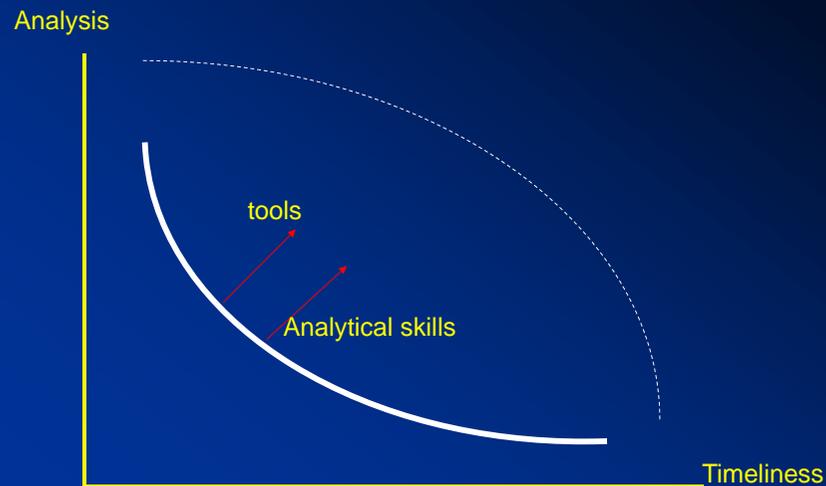
Shifting the decision boundary

- Relevance versus impartiality



Shifting the decision boundary

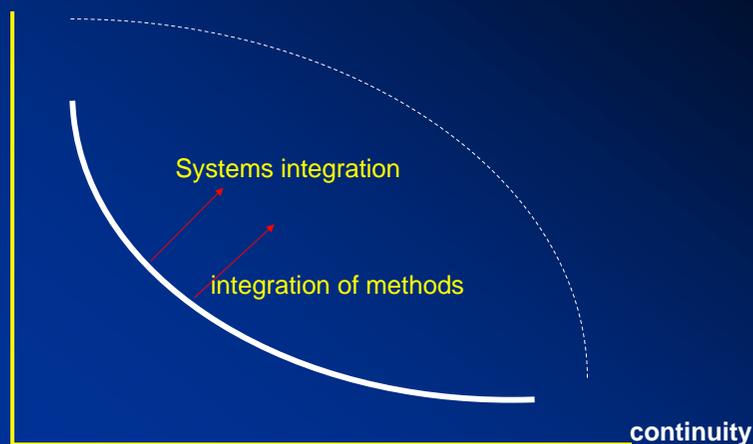
- Analysis versus Timeliness



Shifting the decision boundary

- Comparability versus continuity

Comparability



Quality management and user involvement

Focus now of an official statistical system

1. Significance of international comparability
2. Importance of international frameworks
3. Need to share developments and operations in complex areas (hedonic indexes, complex classifications)
4. Increased use and authority of policy and academic research and models.
5. Economies of scale from IT
6. Cross national measurement processes in financial, goods and person flows, as interest in imbalances increases in importance (ICP)
7. The greater role of statistical methods and analyses that involve micro-data studies using information obtained from several sources

Measuring success in methodology

1. Public accessibility of all prepared statistics (NSI becomes public internet broadcaster)
2. Systematised processes limit need and costs of expert gate-keeping (reduce "valet" services)
3. Immediate access to available information
4. Sufficient quality measures to limit wrong use
5. User managed access to all services
6. User managed analysis and estimation
7. Anticipatability of revisions to series
8. Responsiveness of surveys to priority issues
9. Coherence across user systems (new emphasis on balances and residuals)
10. Macro-micro data integration
11. Geographic referencing standards common across key small area statistics
12. National statistics adopt key international standards

Quality management dependent on user engagement

- Major strategic change rarely successfully put in place
- Failures provide major information source
- Failures directly link performance to uses

Quality culture enables innovation to build on operational failures from operations

Learning from system failures

1. Unanticipated revisions
2. Delay in applying benchmark series revisions to rebased series
3. User enquiries cannot be answered
4. Users find errors
5. Users get inconsistent answers on different occasions
6. Derived measures use sources inconsistently
7. Users find inconsistencies across series that require revisions
8. Users fail to receive statistics as ordered
9. Instability and inconsistency from results of related series, from different sources
10. Known scheduled policy applications delayed for statistical faults

Monitor how users add value to services

Learning when users do "OUR JOB"

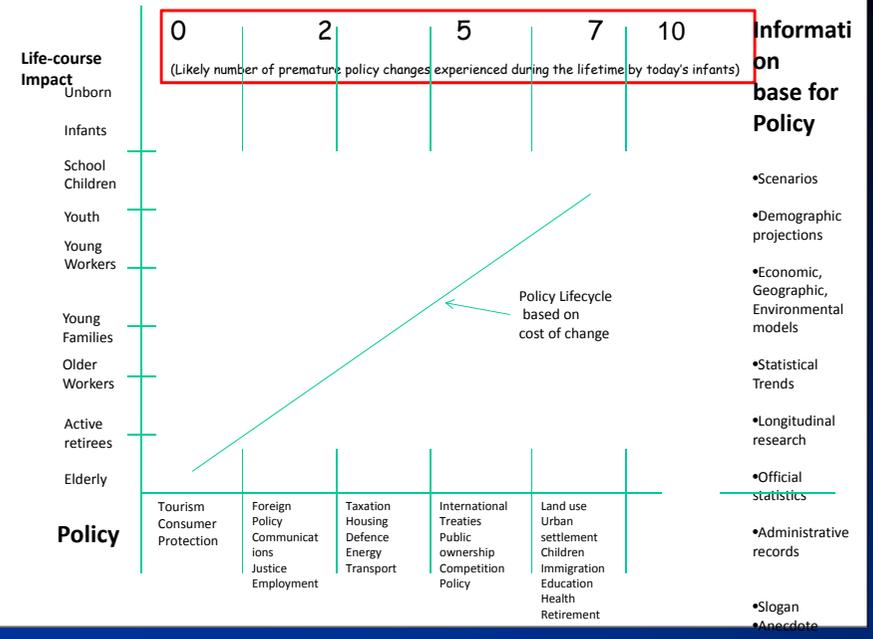
1. Users place statistical results into standard databases
2. Users add meta data to series
3. Users add to coherence with related series
4. Users add explanations of series volatility
5. Users always check unusual results

Monitor avoidable limitations to quality

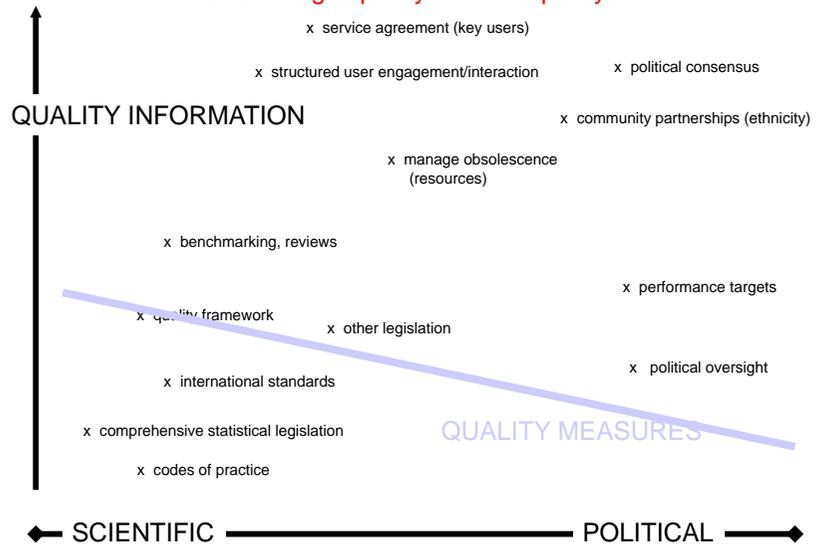
Learning about user judgements of quality

1. Inadequate range of quality measures
2. Anticipatable revisions delayed
3. Insufficient length of statistical series
4. Regional comprehensiveness and comparability
5. Inconsistent results across related series, from different sources
6. Inexplicable delays in getting results

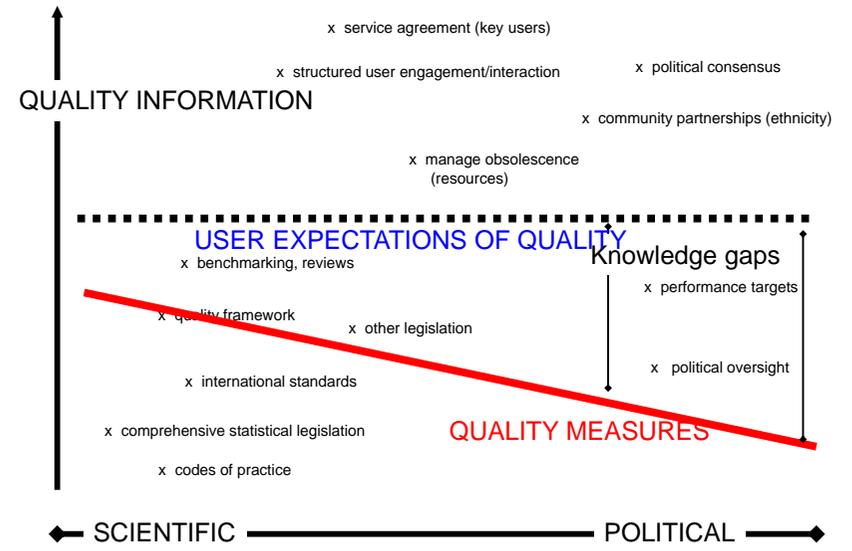
Politics and statistics



The diminishing capacity to make quality assessments



The gap between capacity to measure quality and expectations

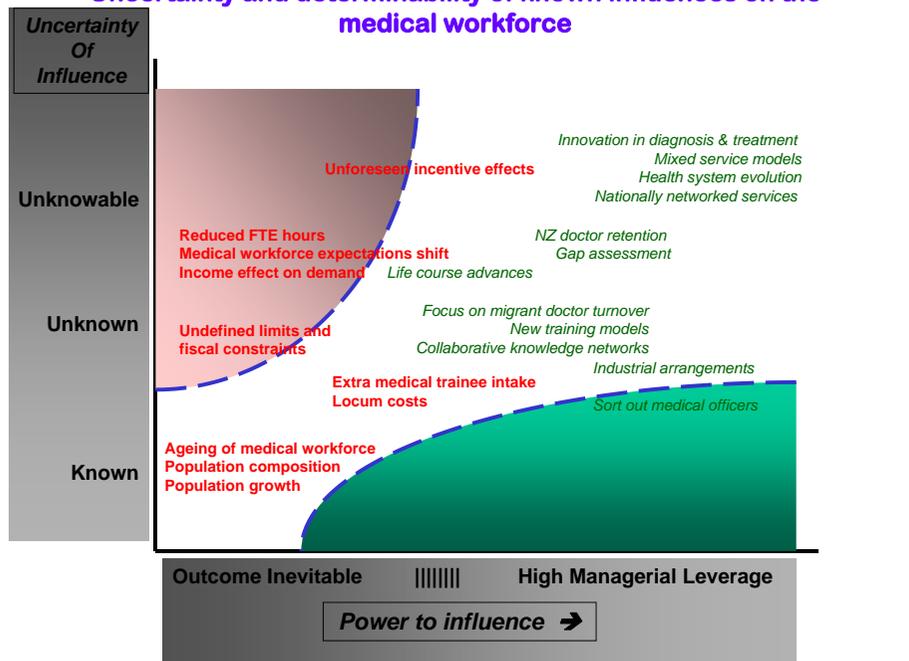


The place of science in policy making

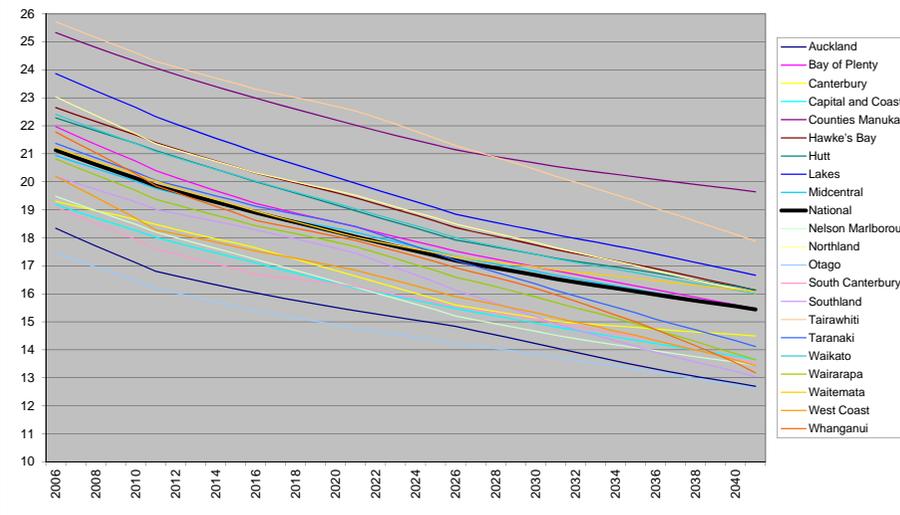
The basis of understanding	Knowledge and society	Political action	Process of decision-making
<p>THEORETICAL FRAMEWORKS, DATA</p> <p>SCIENTIFIC INSTITUTIONS</p> <ul style="list-style-type: none"> Strength of Institutional Setting of Research <p>TRUSTWORTHINESS</p>	<p>THE SCIENTIFIC MIND</p> <p>Accumulation of research behind knowledge, risk and ir...</p>	<p>THE POLICY MIND</p> <p>Policy analysis and evaluation</p>	<p>Reviewer centric methods</p> <p>Systems based methods</p> <p>Researcher based methods</p>
<p>TRUST</p>		<p>THE POLITICAL MIND</p> <p>Political orientation, history and cohesion</p>	<p>Public interest</p> <p>Political coalitions</p> <p>Political challenge and accountability</p> <p>What works</p>
<p>Asymmetry of attitudes about time, location and sector</p> <p>Personification of assessment of immediate costs</p> <p>Scientific authority and voice behind evaluations. (Fluoridation, MMR)</p>	<p>THE PUBLIC MIND</p> <p>Public sentiment and choice</p>		

A statistical look at the future

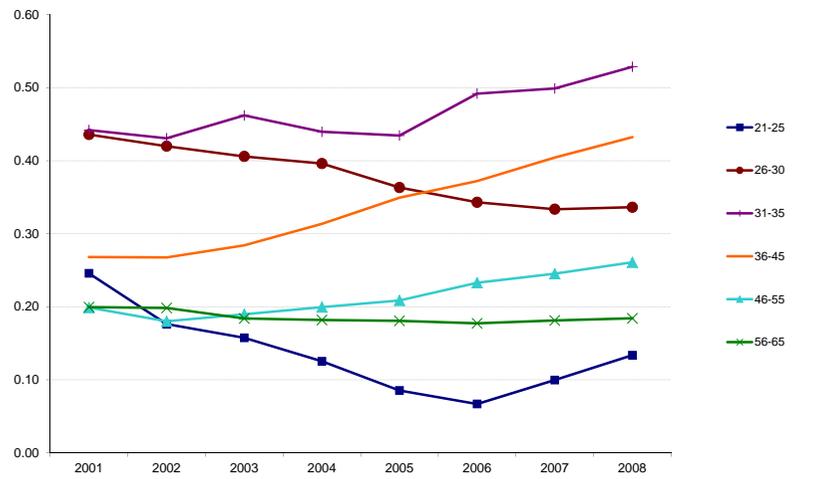
Uncertainty and determinability of known influences on the medical workforce



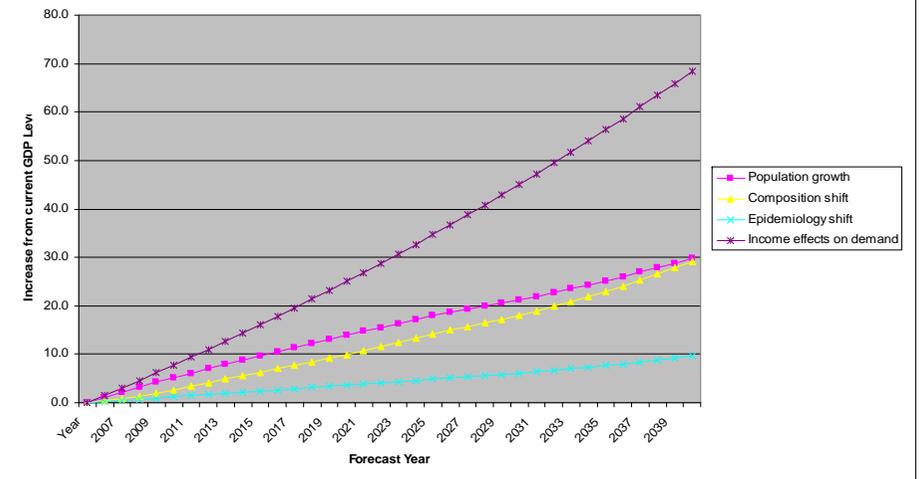
Share of Health Board Population Under 15 years



Ratio of overseas trained to NZ trained nurses



Contributions to Health growing as share of GDP



Creating new demands

