HOW CAN DATA LITERACY CONTRIBUTE TO EVIDENCE-INFORMED POLICY MAKING?

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Structure of presentation

→ <u>Initial thoughts</u>:

→ *On evidence-informed policy-making*

→ <u>Setting the scene</u>:

→ *Data use in evidence-informed policy-making*

→ <u>Statistical and data literacy in policy-making</u>:

→ *Skills, context, and multidimensionality*

Initial thoughts - Characteristics of EIPM

- **Rational and scientifically rigorous approach to policy-making**

  - Evidence shall <u>inform policy-making</u> process <u>without affecting objectives</u> of policies

  - Rational assessment of available evidence to <u>justify & support policy options</u>

- **Different types of evidence used**

  - <u>Abstract, factual, practical and subjective</u> knowledge

    - data, modelling, evaluation, assessment, cost-benefit analysis, qualitative insights, behavioural insights, judgement, experience

    - Assumption: Evidence from more rigorous scientific designs better informs policy decisions ('evidence hierarchy')

- **Utility dimensions of scientific evidence in policy-making:** *"Good evidence for policy"*

  - <u>Credibility</u> (adequacy of evidence and arguments supported by it)

  - <u>Salience</u> (issue relevance and assessment of decision-makers' needs)

  - <u>Legitimacy</u> (respecting stakeholders' divergent values and beliefs)

Initial thoughts - Challenges of EIPM

- **Systemic and procedural complexity**

  - Unpreparedness of PA to engage with various types of evidence, data and academic research
    (*Missing literacies*)

  - Policy-makers cannot/will not consider all available data/evidence
    (*Uncertainties through cognitive shortcuts & interests impact data use - i.e., bounded rationality, biases*)

  - Gap between policy-makers and evidence/research community in policy-making processes
    (*'Speak the same language', different logics, missing interaction*)

  - Potential to be procedurally anti-democratic & dangers of politicisation of evidence
    (*Technocratic nature & political dimension can fuel trends of mis-/ disinformation, 'alternative facts' | Lack of academic consensus and causal evidence*)

⇒ **Characteristics & challenges of EIPM impact data use – Data use impacts EIPM:**

  - Data use has knowledge and governance effects.

  - Data take over different functions and data use has different motivations.

  - Therefore, statistical and data literacy in policy-making needs to be multidimensional.

Data use in EIPM – Some 'Basics'

– Supports policy **design, planning,** and **implementation**, but…

– Goes **beyond descriptive and diagnostic function** of statistics and data;

– Makes **complex 'real world' phenomena tangible**, e.g., sustainability, equity;

– Translates **approximations to reality** required for decision-making into **questions of measurement**

- – *How much do we need (to earn per day) to sustain ourselves?*
- – *How save is the air we breathe?*
- – *What constitutes good health?*
- – *How educated are we?*
- – *How criminal are societies?*
- – *What quantity and quality of resources can be used?*
- – *What constitutes progress of societies?*

– In this way, visible & invisible **numbers impact politics.**

Data use on EIPM – General effects

– **Normatively and politically frames** 'objectified' social realities;

– **Defines problems** and **evaluates impact** of policies;

– Creates **data-based logics of governance** and **data-driven politics**;

– **Justifies** political decisions;

– Turns measuring into "**way of doing politics**" (Malito et al. 2018) and **"vector of acting by knowing"** (Bhuta et al. 2018).

– Therefore, data have become **resources** and **instruments of collective political action** (Umbach 2020, 2022) and their use has **motivations and functions beyond** providing **factual evidence**.

Knowledge effects of data use in EIPM

- Part of the **knowledge production process**.

- Creates a **metrological attitude** towards macro-social realities.

- **Naturalises quantified objects**.

  - **Interest- & value-laden process** of defining societies.

- **Opportunity structures** for normative framing of policy content.

- New **transnational knowledge systems** and communities.

- Influence multidimensional **judgements**.

- Yet, knowledge is **highly contextual** and based on use.

Governance effects of data use in EIPM

- Part of the political process and **political process itself**;

- **Data narratives** become important for policies and processes;

- **Instruments of governance** that serve various purposes;

    - New formal and informal **regulatory practice**;

    - **Advocacy tools** for 'activism through numbers';

    - Flag plants and for **branding** purposes;

- Represents **political power resource**;

- Data for Politics/Policy ➕ | Politics of/Policy for Data ▬

The politics of data use in EIPM

"Statistics and all forms of quantification in general .. change the world through their very existence, their circulation and their theoretical usage in science, politics or journalism."
(Alain Desrosières 2015:333-4)

- **Normativity** of data use reflects **motivations, interests, values and perceptions** of 'the real'.

- Choice of data impacts how societies **define socio-political norms** and frame **meaning, action and deviation**.

- Data use establishes multiple **relations of power and dominance**.

- Data are therefore **power resources** in politics and **can be 'weaponised'**.

- Data are **subject to contestation, politicisation and misuse** which nurture post-truth, post-fact populism, exacerbate scepticism & change-averse attitudes.

- Data use **must** hence **adhere** to **ethical principles** of **legitimacy, transparency and accountability**.

Data use in EIPM in a nutshell:
Motivations, Functions, Literacies

Main literacy domains

Behaviour	*values, interests, preferences, perceptions*
Ethics	*normative, moral reflections*
Politics	*decision-making, policy cycle, systemic conditions*
Science	*research, technology, knowledge brokerage*
Statistics	*numerical, analytical, methodological*
Strategy	*plans, objectives, goals*
Tactics	*practicality, efficiency*

Motivation	Functions
Actor preferences	'Data as evidence'
Contextualisation	'Data in evidence arenas'
Deliberation	'Arguing through data'
Description & Diagnosis	'Observing through data', 'Scrutiny by data', 'Controlling with data'
Dominant political knowledge	'Framing through data', 'Proving through data'
Governance & Normative framing	'Collective political action by using data', 'Governing by data', 'Governance for data', 'Stipulating by data'
Information content & limitations	'Understanding data'
Interest-formation, Preference-building	'Community-building through data', 'Advocacy through data'
Knowledge construction	'Knowing through data'
Leadership, Strategic planning	'Steering by data', 'Ruling by data'
Negotiations	'(Ab)Using data'', 'Instrumentalising data'
Priority selection	'Agenda-setting by data'
Quantification as political process	'Data for policy', 'Policy from data'

Statistical and data literacy for EIPM: Multidimensionality of skills and capabilities

– **Skills to…**

Narrow understanding

  – read, understand, analyse, communicate with data

  – collect, create, search for data

– **Capabilities related to…**

  – understand quality of data

  – understand limitations of data

Broader understanding

  – argue with data

  – identify biases in data interpretation and use

  – understand data and its value in context

  – identify implications of data use

  – understand data-driven decision-making

  – understand politics and ethics of data use

– **Missing multidimensionality can lead to…**

  – 'real world' consequences

  – flawed risk assessment

  – false expectations related to policy interventions and impact

  – distorted policy design

  – socio-ecol-econ damages

  – contestation / politicisation

  – loss of trust in politics

  – ecc.

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Multidimensional statistical and data literacy for EIPM

Remember when defining statistical and data literacy for EIPM

– Data use can be <u>descriptive and diagnostic, but also normative</u>.

– Data <u>manifest reality</u>, define and normalise what is perceived as 'normal'.

– Data use is <u>not neutral or merely technical, but political.</u>

– Access to data <u>empowers actors</u> and statistics become a <u>power resource</u>.

– Use of statistics and data is <u>framing and supporting collective political action</u>.

Data use in EIPM
– has different **functions** and **contexts**
– impacts **knowledge**, **governance** and **politics**
– requires '**multidimensional literacy**'

'Interconnectedness of literacy domains'

– **Statistical** & data literacy
– **Information** & **science** literacy
– **Political** & **behavioural** literacy
– **Ethics** literacy

Benefits of defining statistical and data literacy for EIPM in a multidimensional way

- **Skills, context & interconnected literacies** matter for statistical & data literacy in policy-making

  - Skills: Relevant 'methodological-technical' skills for data use from a context perspective.

  - Context: Function and role of data use in policy-making in the given context.

  - Literacies: Statistical literacy in relation to other literacies required for given context.

    → Master/apply 'technical' skills

    → Inform data analysis by insight from other relevant literacies.

    → Translate statistical information into sound and meaningful knowledge for policy-making.

Technical skills	• Sound analysis for evidence-informed policy-making in given context.
	• 'Methodological-technical' data analysis skills to master the data function required.
	• Support transparency and ethics of data use in policy-making.
Context	• Understanding motivations, functions and politics of data use in question.
	• Analysis of potential knowledge translation requirements and the potential impact of data use.
Literacies	• Awareness of interrelation between data, analysis, decision-making & other dimensions.
	• Attention to 'interconnectedness of literacy domains' & meta-skills for data use in question.
	• Make data speak 'properly' and highlight limitations of data at hand.