



**Tshwane University  
of Technology**

*We empower people*

# **EVIDENCE-BASED POLICY RESEARCH: the role of knowledge in policy**

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# Outline

- Introduction
- Definitions
- Unpacking knowledge
- Stage of development
- Conclusions
- Discussion and group work
- Plenary report back
- Synthesis discussion





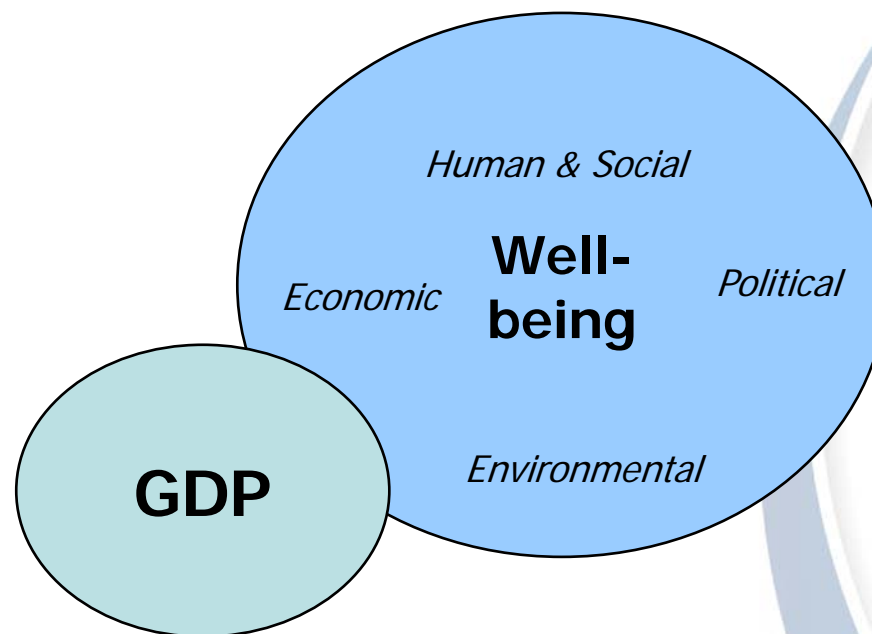
# The Big Picture

**Natural Capital**  
*(Endowments)*

**Produced Capital**  
*(Physical & Disembodied  
Technology)*

**Social Capital**  
*(Norms & networks  
facilitating inter- &  
intra-group cooperation)*

**Human Capital**  
*(Learning & Health)*



OECD (2001) Social Capital





# ? evidence-based policy research

- shaping policy from a scientific assessment of phenomena through testing hypothetical explanations of natural and social facts and systems
- Theory from facts...
- Key issues
  - Question, evidence, interpretation
  - Uncertainty & probability
  - Methodological rigour
  - Stakeholder sentiment





# What is Complexity?

- The interaction of many parts, giving rise to difficulties in linear or reductionist analysis due to the nonlinearity of circular causation and feedback effects
- The dynamics, interactions, emergence, adaptation, learning, and evolution of a system
- The degree to which the structure and behaviour of any Unit is difficult to understand, verify or predict due to its size, the scale of relationships between its components, and the amount of interactions required by its collaborating components to provide its capabilities





# What is Strategy?

- A long-term plan
- A vision for the future
- A series of planned and sequenced tasks to achieve a goal
- A fundamental framework through which an organisation can assert its continuity, while at the same time adapting to a changing environment
- *A strategy only exists when time has allowed a space to be proper and the actions within the space to be predictable*





# What is Capacity?

- ability to perform or produce
- maximum possible production
- power to learn or retain knowledge
- ability to understand the facts and significance of behaviour





# What is Capability?

- Being physically, intellectually and legally able
- Aptitudes that may be developed
- Maximum load that a machine, station or system can carry under specified conditions for a given interval without exceeding approved limits
- Context specific skill that can be broken down to its component behaviours







# What is Competency?

- Areas of personal capability that enable people to perform successfully in their jobs by completing task effectively
- Includes knowledge, attitudes, skills, organisation values, and personal values
- Usually acquired through talent, experience, or training
- comprises the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required





# Other Definitions...

- **Innovation**
  - The generation and exploitation of new ideas
- **Environment**
  - The totality of surrounding conditions
- **System of Innovation**
  - The totality of know-how in a firm, industry, cluster, nation, or region, including
    - *organisational routines*
    - *functional and dysfunctional institutional arrangements*
    - *co-ordination as the major challenge*





# Knowledge Generation

- Print, film, magnetic, and optical storage media produced about 5 exabytes of new information in 2002
- **630, 000, 000, 000 Books**

- [www.sims.berkeley.edu/research/projects/how-much-info/](http://www.sims.berkeley.edu/research/projects/how-much-info/)





# Knowledge Sourcing

- Resources
  - Learning from self doing
  - Learning from others doing
  - Good practices
  - Higher education institutions and other public good research agencies
  - Peer-to-Peer Reviews, Monitoring, Evaluations, and Learning





# Knowledge Economy 1

- Increasing role of knowledge as a factor of production and its impact on skills learning, organisation and innovation
- Increase in the codification of knowledge, which together with networks and the digitalisation of information, is leading to its increasing commodification
- Increasing codification of knowledge is leading to a shift in the balance of the stock of knowledge – leading to a relative shortage of tacit knowledge
- Codification is promoting a shift in the organisation and structure of production





# Knowledge Economy 2

- Information and communication technologies increasingly favour the diffusion of information over re-invention, reducing the investment required for a given quantum of knowledge
- The increasing rate of accumulation of knowledge stocks is positive for economic growth (raising the speed limit to growth)
- Knowledge is not necessarily exhausted in consumption
- Codification is producing a convergence, bridging different areas of competence reducing knowledge dispersion, and increasing the speed of turnover of the stock of knowledge





# Knowledge Economy 3

- The innovation system and its 'knowledge distribution power' are critically important
- The increased rate of codification and collection of information are leading to a shift in focus towards tacit ('handling') skills
- Learning is increasingly central for both people and organisations
- Learning involves both education and learning-by-doing, learning-by-using and learning-by-interacting





# Knowledge Economy 4

- Learning organisations are increasingly networked organisations
- Initiative, creativity, problem solving and openness to change are increasingly important skills
- The transition to a knowledge-based system may make market failure systemic
- A knowledge-based economy is so fundamentally different from the resource based system of the last century that conventional economic understanding must be re-examined







# New Tools for Old Systems

- Updating the economic & institutional regime
- Upgrading education & learning
- Building information infrastructure
- Raise the technological level of the economy:
  - Actively diffusing new technologies throughout the country
  - Improving the Research & Development system
  - Exploiting global knowledge

World Bank advice to China in *Preparing for the Knowledge Economy* (2002)





# Conclusion: questions

- Relationship between 'codified' knowledge about the system and expected trends and trajectories
- Knowledge availability
- Education and Human Resource Development
- Scenario's, modeling and simulations





# Conclusion: challenges

- components are interrelated, self-organising and dynamic whether biological, ecological, technical or social = system view
- Fact-based theories or theory-based facts
- disaggregate indicators and decompose aggregates
- Just say know!





# Conclusion: some lessons

- Multiply Perspectives
- Integrate Knowledge
- Nonlinear Thinking
- Determine Perspective
- Understand Context
- Visualise and Verbalise





# Conclusion...

- Potential knowledge-based transition in Governance and Management
  - Innovation-centered economic restructuring recognises 'learning' as key
  - Evidence-based policy research
- Building sustainable societies through incorporation of good practices derived from science and technology





# Group work

