

Process Indicator of Scale Metrics

towards a typology of scale study

TAYLOR M. OSHAN
LEVI JOHN WOLF

toshan@umd.edu
levi.john.wolf@bristol.ac.uk

PLURALIZING SCALE IN QG

A) GEOGRAPHIC VS. OBSERVATION SCALE

Does data arise within levels or are levels estimated?

B) VARIATION

Is process variation within a level or between levels?

C) SEEKING SCALE vs. EXPRESSING SCALE

Is there a "true" scale, or are scales meaningful ipso facto?

MODEL TYPOLOGIES

Name	Endog/Exog?	Level Variation?	Seeking/Expressing
K-comparison	Observation	Between	Expressing
Decomposition	Observation	Between	Both
Multilevel	Observation	Both	Expressing
Gaussian Process	Geographic	Within	Seeking
GWR	Geographic	Within	Seeking
ESF	Geographic	Within	Seeking

PROCESS SCALE

ONE PROCESS, MANY RELATIONSHIPS

Voting behavior depends both on income, individual ideological commitments, social networks, etc.

ONE PROCESS, MANY SCALES

These relationships relate individuals to social systems within communities, states, and nations.

THE INTERACTION OF MANY GEOGRAPHIC SCALES

MEASURING MULTIPLE SCALES

A PRISM OF ANALYSIS

*Models need to give multiple indicators of **geographic** scale in order to define **process** scale.*



RESEARCH AGENDA

INFERENCE ON INDICATOR

Are two scales different? Are we certain?

CONSTRUCT VALIDITY OF INDICATOR

Does it measure what we think we're measuring?

MEANING AND TRANSFERABILITY

Can different PRISMs be compared? Be replicated?

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ON ITS FACE & IN ITS USE

Scale debates in 90s & 00s about *use*

Ontology vs. epistemology (Jones, 1998)

“true” or “root” geographical level from which other patterns are generated?

Model Operationalization of scale

- Inference about specification of scale in analysis (levels vs no levels?)
- Do scale estimates mean the same thing across different models?

GA paper: doubling size changes one bw but not the other?

- How do common modeling/statistical issues affect the measurement of economic scale?