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Discovering relevant Dimensions and Indicators of Poverty for Bogor City, West Java, Indonesia

Participatory Approaches to Building Indices of Poverty

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Background

Indonesia Policy Challenges during COVID-19

- The government's economic recovery package aims to address rapidly worsening poverty and unemployment.
  - **Challenge 1: reaching those most affected by the pandemic.**
- The main policy instruments for channelling social protection packages are *existing programs* such as the Hopeful Families Program (PKH); the food assistance programs, Kartu Sembako and Bansos Sembako; and the village cash support program, BLT. In addition, the government has added the new pre-employment card, Kartu Prakerja, and is offering electricity bill discounts.
  - **Challenge 2: Scope is comprehensive, however, *not designed to respond to pandemic*.**

(Sparrow, Dartanto and Hartwig 2020)

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Multidimensional Poverty Measurement that effectively **targets the poor** and is **responsive to localized needs**

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- Two pieces of work:
  - The first done pre-pandemic in Indonesia.
  - The second done post-pandemic in London.

Listening to local voices in formulating measurements of multidimensional poverty.

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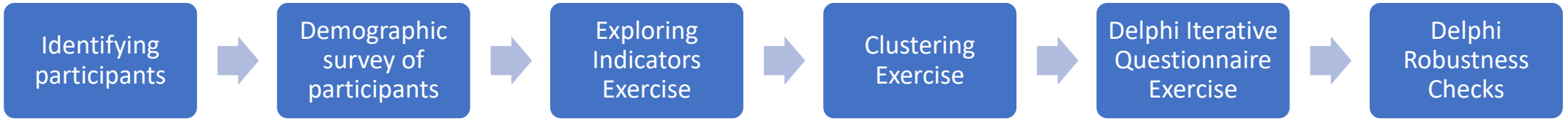
Study 1: Delphi Applications in Indonesia



Exploratory Exercise:

Poverty Definitions? Listing all possible indicators.

Clustering Questionnaire:

Pairwise Comparisons and Proximity scores.

Pre and Post Delphi Questionnaire (for Robustness tests):

Demographic characteristics of participants, subjective questionnaire measuring "expertise" on the topic explored (pre-Delphi), subjective questionnaire on "views on the Delphi process" (post-Delphi) (Schiebe et al. 2002).

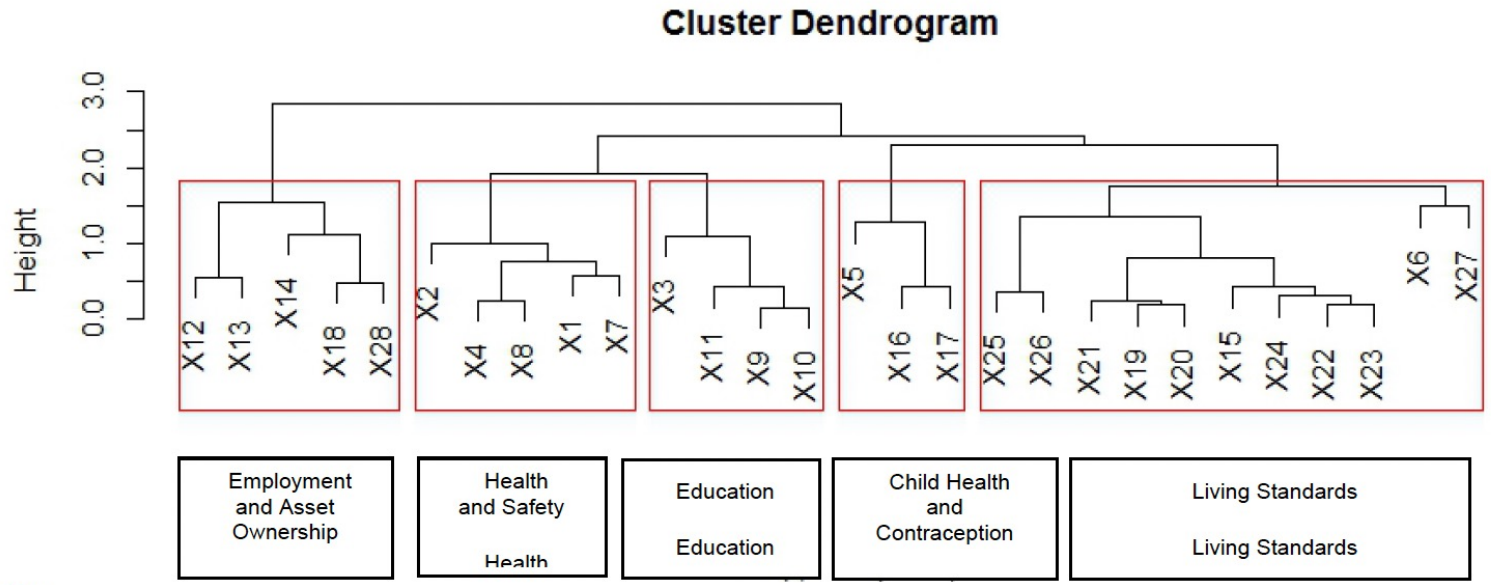
Main Delphi Questionnaire:

3 iterative rounds

Participants were asked to answer questions as 'representatives of their city's people'; ***which dimensions and indicators of poverty are essential for a household in their city to have in order to not live in poverty.***

Main Results: Clustering Indicators into Dimensions

Figure 4. 1 Bogor City Delphi Cluster Dendrogram[(a)(b)]



Note:

[(a)] X1-X28: Indicators of poverty:

X1: Safe Living Environment	X7: Immunization and Vaccinations	X13: Employment	X19: Roof	X25: Electricity
X2: Ability to Travel	X8: Children to be Breast Fed	X14: Credit	X20: Wall	X26: Cooking fuel
X3: Ownership of Birth Certificate	X9: Literacy	X15: Household Consumption	X21: Floor	X27: Gov. help
X4: Healthy life	X10: Children's education	X16: Child mortality	X22: Drinking water	X28:AssetOwnership
X5: Modern Health Facilities (for birth)	X11: Adult education	X17: Contraceptives	X23 Washing and Cooking Water	
X6: Traditional Health Facilities (for birth)	X12: Access to the internet	X18: House or Land Ownership	X24: Sanitation	

[(b)] The red boxes were generated by R to indicate the five dimensional clusters.

[(c)] These results are from Day 1 of the Delphi.

Source: Author's computations (Bogor City, 2016)

Determining Optimal "Expert" Weights

- Including participants' choice of range of weights into the computations of the index.
- Using: machine learning – gradient descent method.

Table 6. 2 Optimal Expert Weight vs Equal Nested Weights[a]

Dimension/Indicator	Delphi Lower Bound Weight	Optimal Expert Weight	Delphi Upper Bound Weight	Equal Nested Weights
Dimension 1: EDUCATION	**0.1**	**0.29**	**0.6**	**0.2**
Children's Education	0.1	0.1	0.3	0.05
Adult's Education	0.2	0.03	0.8	0.05
Literacy	0.2	0.15	0.6	0.05
Ownership of Birth Certificate	0.1	0.02	0.4	0.05
Dimension 2: EMPLOYMENT AND ASSETS	**0.1**	**0.18**	**0.5**	**0.2**
Employment	0.2	0.08	0.7	0.07
Ownership of Assets	0.1	0.06	0.7	0.07
Ownership of House and/or Land	0.1	0.04	0.5	0.07
Dimension 3: LIVING STANDARDS	**0.1**	**0.14**	**0.4**	**0.2**
Household Consumption Level	0.08	0.05	0.75	0.04
Sanitation	0.1	0.02	0.2	0.04
Drinking Water	0.05	0.02	0.25	0.04
Cooking and Washing Water	0.05	0.02	0.4	0.04
Government Help	0.05	0.03	0.55	0.04
Dimension 4: HEALTH AND SAFETY	**0.1**	**0.26**	**0.6**	**0.2**
Health	0.15	0.09	0.7	0.07
Immunisation	0.1	0.03	0.3	0.07
Safety	0.1	0.14	0.6	0.07
Dimension 5: CHILD HEALTH AND CONTRACEPTION	**0.05**	**0.12**	**0.4**	**0.2**
Birth attendant	0.25	0.07	0.7	0.07
Child mortality.	0.1	0.03	0.5	0.07
Contraception	0.2	0.03	0.6	0.07
Sum of dimension weight		1		1
Sum of indicator weight		1		1

Note: [a] The minimisation exercise proposed within sub-section 6.3.3 generated 'optimal expert weights' for each dimension and indicator within dimensions. Following that conducted in the Global and Adjusted MPIs, the *final* 'optimal expert weight' for an indicator was found through multiplying the 'optimal expert weight' found for the dimension, which encompasses said indicator, with the 'optimal weight' found for the indicator itself. In this way, as shown within this table, the sum of all eighteen 'optimal expert' indicator weights equalled one

Source: Author's computations

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Distributions of total deprivation (preliminary computations using Susenas 2013)

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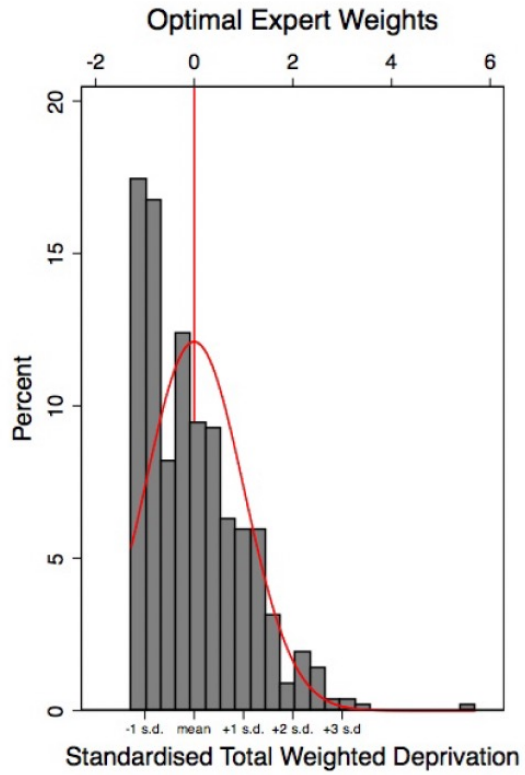
Figure 6. 3 Standardized distribution of household total weighted deprivation

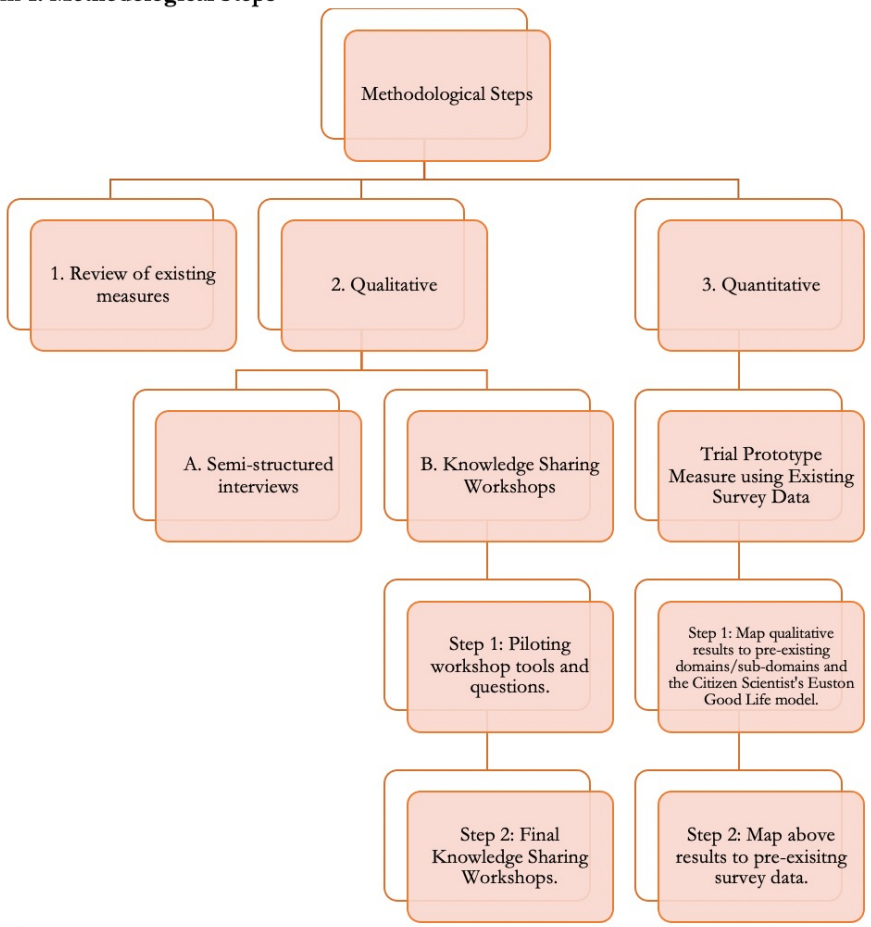


Source: Author's Computations

Second Project: “Measuring Inequality in Camden 2021”

Methodological Steps

Diagram 1. Methodological Steps



Source: Author’s summary

Camden

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Mixed method approach

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Camden

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Qualitative Knowledge Sharing Process

Knowledge Sharing Workshops

Table 1. Knowledge Sharing Workshops

Date	Duration (in minutes)	Aims of Session	Format
04-Nov-21	120	**Topics covered:** What do current statistics say about what is happening on the ground? Examining indicators of well-being, how can we interpret them? Do they accurately describe what is happening on the ground? **Brainstorming and collaborative discussion on** (40-100 minutes, with a 15-minute break in the middle): A review of results from semi-structured interviews on important aspects of a measure of inequality for Camden. Do current measures of inequality reflect the situation on the ground in Camden? What should we measure? Which domains of inequality are important? Which indicators of inequality are important (looking at existing data already available). Which indicators are still missing in existing surveys?	Online through MS Teams.
08-Nov-21	90	**Topics covered:** Same as above.	Online through MS Teams.
30-Nov-21	90	**Topics covered:** Same as above, plus a presentation and discussion on the analysis of results from previous workshops.	Online through MS Teams.
06-Dec-21	120	**Topics covered:** Same as above, plus a presentation and discussion on the analysis of results from previous workshops.	Online through MS Teams.
06-Dec-21	90	**Topics covered:** Same as above, plus a presentation and discussion on the analysis of results from previous workshops.	Online through MS Teams.
07-Dec-21	90	**Topics covered:** Same as above, plus a presentation and discussion on the analysis of results from previous workshops.	Online through MS Teams.
13-Dec-21	60	**Topics covered:** An analysis of results from previous workshops. A discussion on the prototype dashboard, its uses, challenges in its implementation and "next steps" to take to utilise the measure in concrete action.	Online through MS Teams.

Source: Author’s summary

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Second Project: “Measuring Inequality in Camden 2021”

Methodological Steps

FOR CAMDEN, FROM CAMDEN

Quantitative Prototype Dashboard

The Quantitative step of this project consisted of two steps.

- Mapping the key results from the Qualitative step above, to the “Euston Good Life” model,, then to available indicators within pre-existing survey data.
- The survey data used within this report is the Understanding Society UK Household Longitudinal Study, hereafter UKHLS.
- This dataset is used to build the prototype dashboard, before Census data and the “Euston Good Life” household survey data, becomes available in 2022.

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Other country experiences with participatory approaches

El Salvador MPI has 5 dimensions and 20 indicators:

Dimensions	Indicators
Education	Years of schooling
	School attendance
	Schooling lag
	Child care
Housing	Roofing materials
	Materiales for walls and floor
	Overcrowding
	Land ownership
Employment	Underemployment
	Unemployment
	Social security
	Child labor
Health, basic services and food security	Access to health services
	Drinking water
	Sanitation
	Food security
Habitat	Public spaces for leisure activities
	Crime incidence
	Physical Safety
	Environmental risks

How should the dimensions that best reflect what Salvadorian society considers to be the core aspects of poverty be chosen?

The United Nations Development Programme (UNDP) of El Salvador and the TECHO organisation, with the support of the Technical and Planning Secretariat (STPP in Spanish) of the Presidency, held a series of 23 focus groups in different areas of the country that asked people living in poverty what poverty meant.

An analysis of the focus groups' responses identified the key deprivations from the participants' perspective. Five dimensions and 20 indicators that are currently part of the multidimensional measurement of poverty were established.

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