

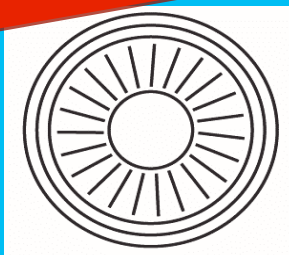


GNH Indices

Work in Progress



The Centre for Bhutan Studies



June 2008

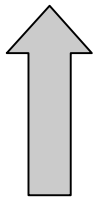
- GNH Origin
- Domains of GNH
- GNH and Policy
- GNH Index

- GNH concept dates back to early 1970s
- Collective happiness as the goal of governance (elevate beyond egocentric happiness maximization)
- GNH addresses holistic needs (physical, emotional, spiritual, social, economic) and range of capital/wealth (ecological, social, HR, cultural, etc.)
- Constitution describes the state and government responsible for collective happiness
- GNH indicators as link between concepts of GNH and its application to policies and programs formulation

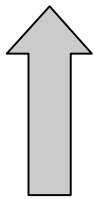
GNH Domains

1. Psychological Well-being
2. Cultural Diversity and Resilience
3. Education
4. Health
5. Time Use and Balance
6. Good Governance
7. Community Vitality
8. Ecological Diversity and Resilience
9. Living Standards

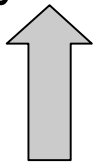
National Index



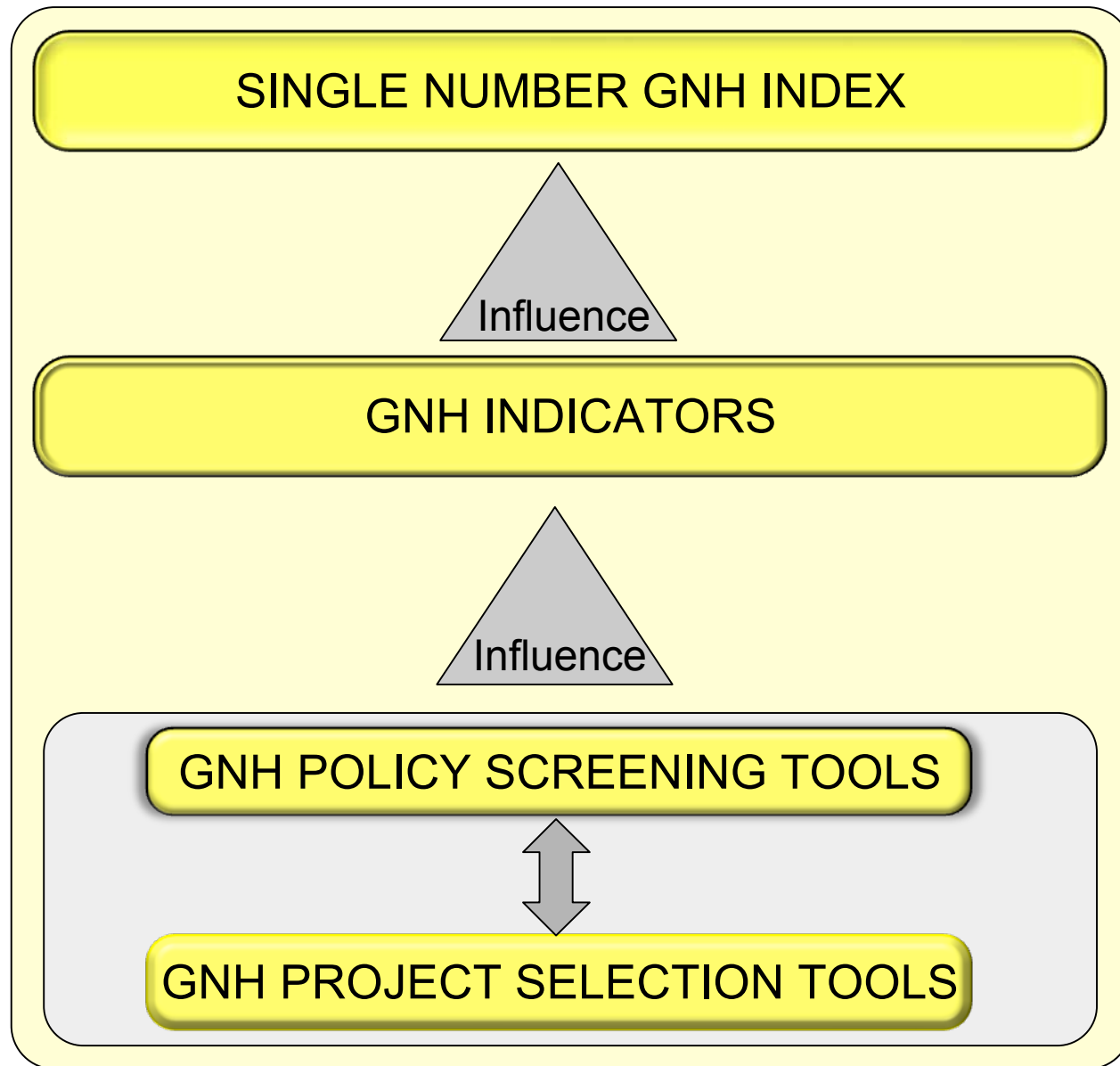
Progress
Measurement

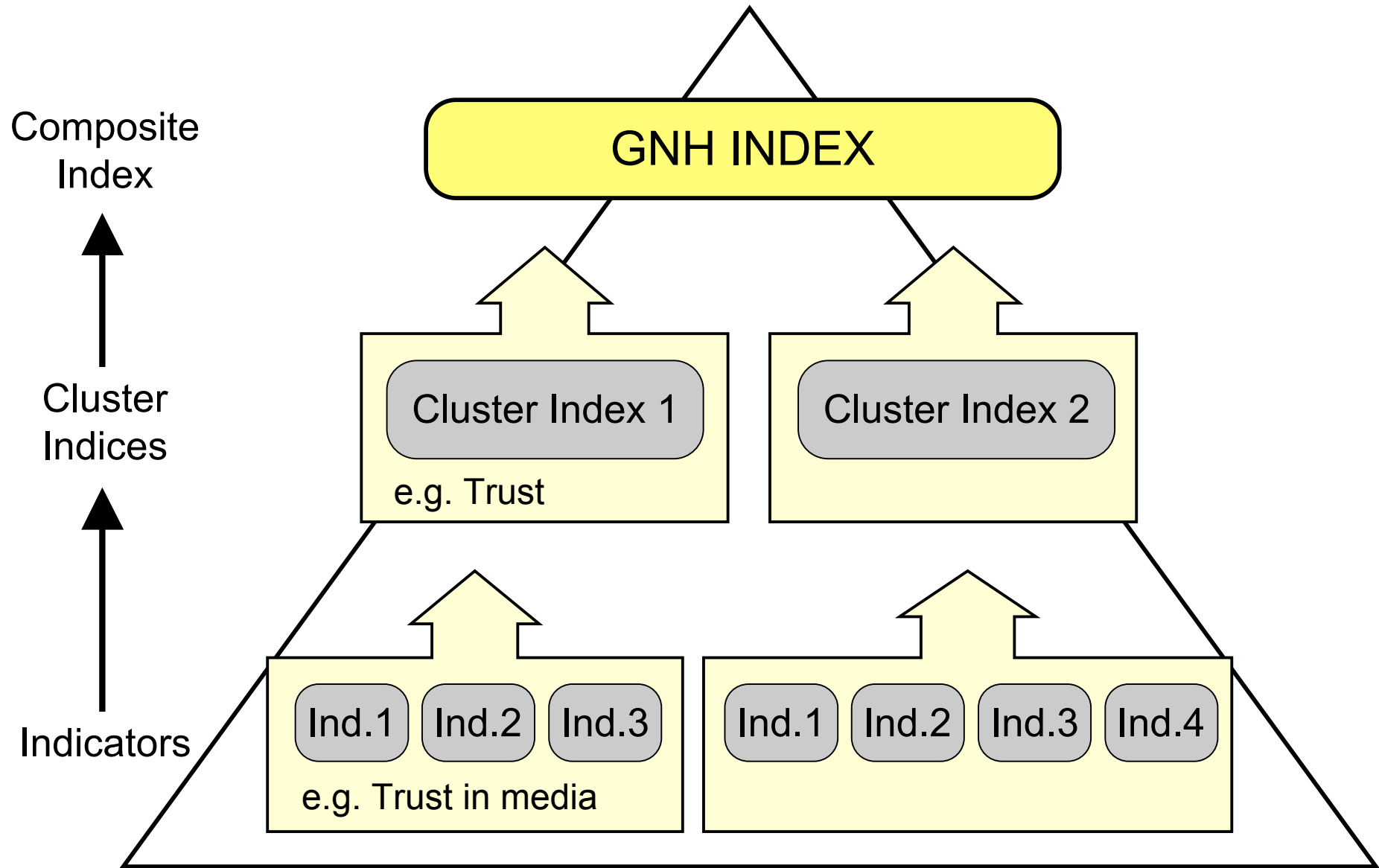


Policy Making

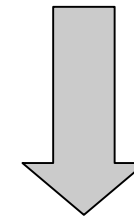
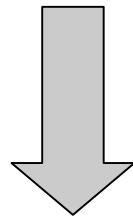


Project
Formulation





Methods of selecting, normalising, and weighting indicators for the GNH Index



Selection criteria per indicator:

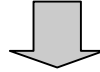
- Gives meaningful information about the development of Bhutan
- Can be summarized in a single number
- Can influence and be influenced by policy making

Specifications of GNH Index:

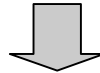
- No. of indicators: 40
- No. of cluster indices: 12
- Normalisation method: Re-scaling (0-1) or z-score
- Weighting method: Equal or sliding



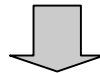
Stock and flow variables



Mostly ordinal data in ranges



Re-scaled or transformed into 0 to 1 values



- ➔ $x' = \text{Basic index} = (x - x_{\min}) / (x_{\max} - x_{\min})$
- ➔ $x = \text{Basic index adjusted for distribution} = (x - x_{\min}) / (x_{\max} - x_{\min}) \cdot (1 - k)$
- ➔ $x_c = \text{Intermediate index aggregated at the cluster level} = x_1 + x_2 + \dots + x_n = \Sigma x / n$
Arithmetic mean based on principle of equal weight of x

Alternatively,

- ➔ $x_{c1} = w_1 x_{c1} + w_2 x_{c2} + \dots + w_n x_{cn} = w_c \cdot x_c / n$

Weighted mean, where weights are based on some system of preference.

Aggregation requires unweighted or weighted cluster indicators.

(Drewnowski, J. (1974). *On Measuring and Planning the Quality of Life*. The Hague: Mouton & Co



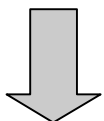
Survey question:

Do you practice meditation

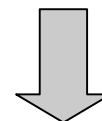
①

Daily	Weekly	Occasionally	Not at all
1	2	3	4
6.6%	1.1%	7.2%	85.1%

} Codes used for data storage

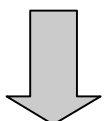


**Re-scaling codes from 0 to 1
(with 1 as most positive value)**

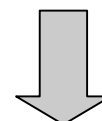


②

Daily	Weekly	Occasionally	Not at all
1	0.66	0.33	0



**Calculate re-scaled mean as
comparable indicator value**



③

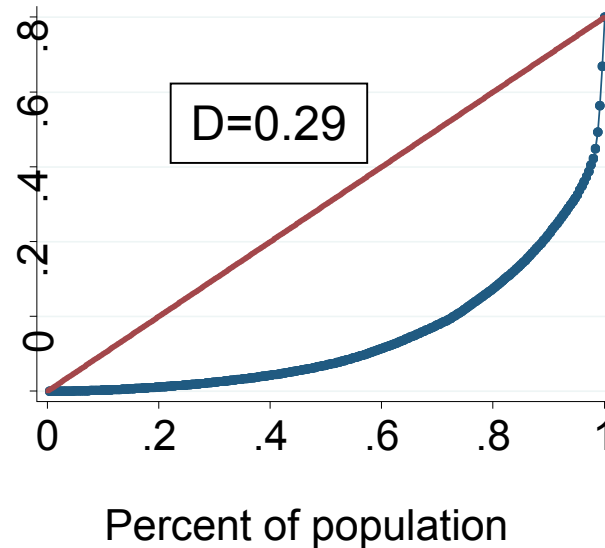
$1 \cdot 0.066$	$+ 0.66 \cdot 0.011$	$+ 0.33 \cdot 0.072$	$+ 0 \cdot 0.851$	$=$	Rescaled mean
					0.10

Distribution coefficient

Policymakers can increase the GNH index score by more equally distributing any service (i.e. income) as measured by any single indicator in a cluster index.

Example: Inequality of income distribution

Percent of total
sum of income





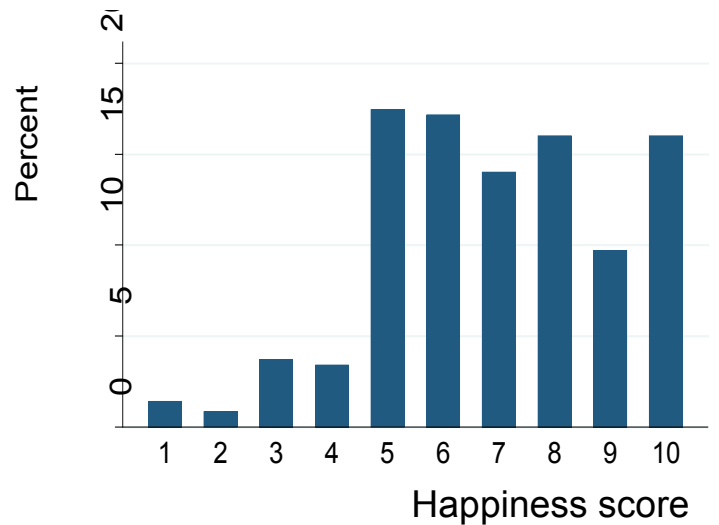
CLUSTER INDICES





Subjective happiness

Subjective happiness (scale 1-10)



Cluster Index **Subjective happiness** = $\begin{matrix} \text{Rescaled} \\ \text{mean} \end{matrix} \times \begin{matrix} \text{Distribution} \\ \text{coefficient} \end{matrix} = \mathbf{0.53}$



Cluster Index	Indicators	Rescaled mean	Distribution coefficient	Indicator score
Happiness	Happiness	0.66	0.80	0.53
Mental Health	GHQ	0.70	0.89	0.62
Emotional Balance	Compassion	0.63	0.76	0.48
	Calmness	0.55	0.72	0.40
	Frustration	0.67	0.79	0.53
	Selfishness	0.86	0.87	0.75
				0.54
Spirituality	Self-reported	0.84	0.88	0.74
	Prayers	0.67	0.71	0.48
	Meditation	0.10	0.11	0.01
	Karma	0.80	0.84	0.67
	Killing	0.89	0.90	0.80
				0.54
Culture	Importance of tradition	0.90	0.91	0.82
	Participation in local festival	0.34	0.69	0.23
	Local religious sites	0.37	0.86	0.32
	Zorig Chusum	0.09	0.42	0.04
				0.35



Cluster Index	Indicators	Rescaled mean	Distribution coefficient	Indicator score
Human Rights	Freedom from discrimination	0.57	0.60	0.34
	Freedom of speech	0.67	0.67	0.45
	Right to form association	0.72	0.77	0.55
	Equal pay for equal work	0.81	0.82	0.66
				0.56
Trust	Trust in central ministries	0.96	0.96	0.92
	Trust in courts	0.88	0.88	0.77
	Trust in media	0.95	0.95	0.90
	Trust in neighbours	0.61	0.68	0.41
				0.75
Social Support	Family relationship index	0.90	0.93	0.84
	Proximity of relatives	0.44	0.55	0.24
	Help available in time of need	0.73	0.79	0.58
				0.55
Education	Applicability of education	0.91	0.91	0.83
	Adult literacy			0.54
	Combined enrolment			0.63
				0.67

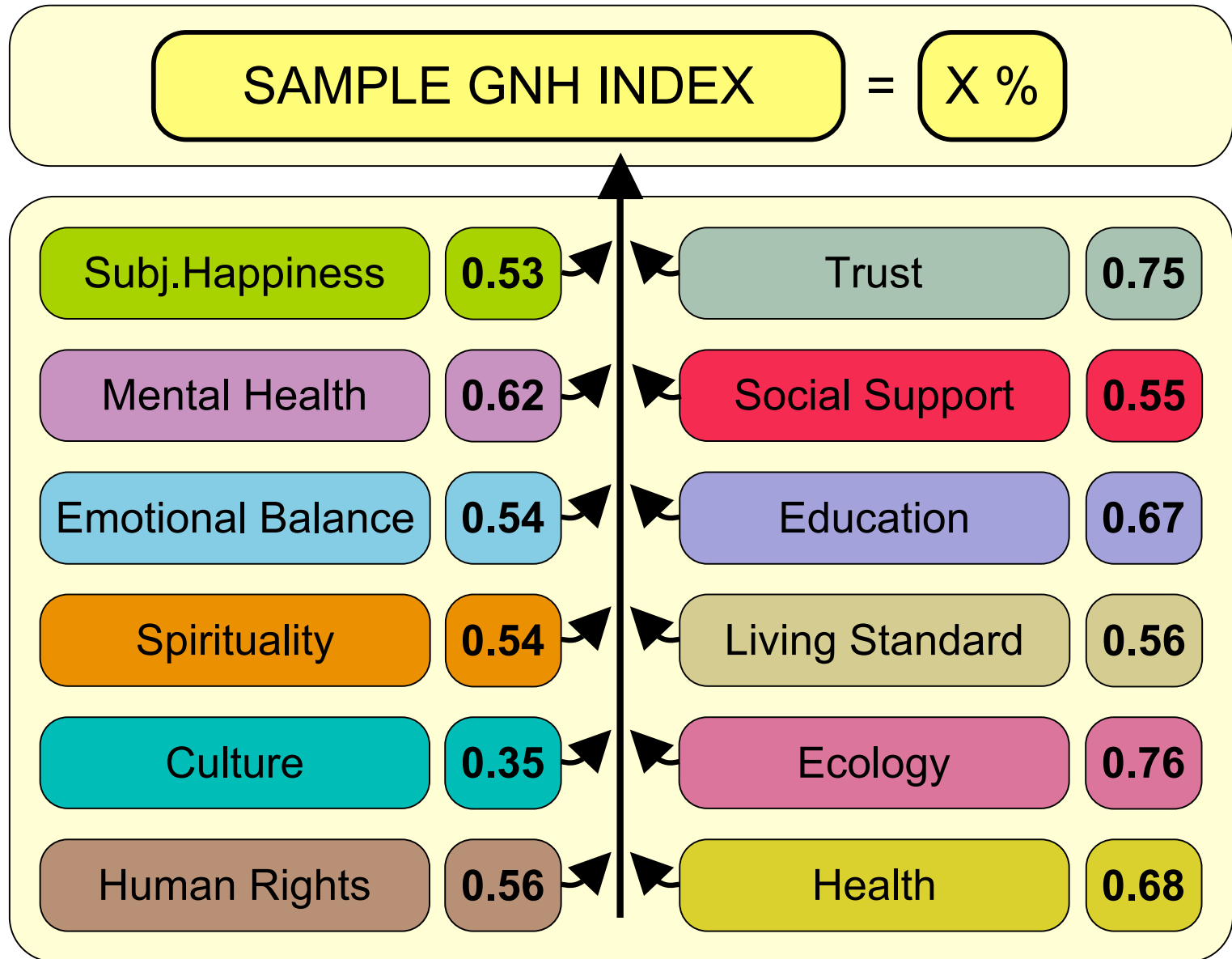


Cluster Index	Indicators	Rescaled mean	Distribution coefficient	Indicator score
Living Standard	Income			0.50
	Income sufficiency	0.46	0.72	0.33
	Debt ratio	0.97	0.97	0.94
	Room ratio	0.83	0.92	0.76
	Housing quality	0.47	0.56	0.26
				0.56
Ecology	Perceived local air quality	0.93	0.93	0.86
	Perceived local water quality	0.89	0.89	0.79
	Perceived local land degradation	0.78	0.78	0.61
				0.76
Health	Life expectancy	0.69	N/A	0.69
	Healthy days	0.83	0.84	0.70
	Body Mass Index	0.79	0.81	0.64
				0.68

Composite
Index

SAMPLE GNH INDEX = X %

Cluster
Indices



Setting an alternative framework of development for govt. and people

- **Providing indicators to sectors to guide development**
- **Allocating resources in accordance with targets and GNH screening tools**
- **Measuring the level of happiness and well-being of Bhutan and any sub-groups within Bhutan at a given point in time**
- **Measuring progress through time**
- **Measuring progress for cross country comparisons**