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ORIGINAL RESEARCH ARTICLE

Bridging the Gap between the Sustainable Development Goals and Happiness Metrics

Leire Iriarte[1] · Laura Musikanski[2]

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Abstract

International institutions, national governments and communities are promoting and measuring happiness in various ways. However, as of the writing of this article, there is not an agreed upon happiness index that institutions, governments, and communities use to gather and compare data. On the other hand, the Sustainable Development Goals (SDGs), which have a set of indicators commonly shared by institutions, governments, and communities, do not explicitly consider happiness even though SDG Goal 3: Good Health and Well-being references well-being. In this article, we construct an Aggregated Happiness Index (AHI) based on five indices in use and applied at different governance levels. Based on common domains and indicators from these indices, the AHI is composed of twelve domains, thirty-one indicators and distinguishes between objective and subjective indicators. The AHI domains and indicators are benchmarked against the SDGs goals and indicators respectively using a grading schema based on a traffic light. Our analysis reveals that at the domain level the SDGs cover 66.7% of the AHI, however the coverage at indicator level drops to 48.6%. The SDGs indicators cover 61.1% of the AHI objective indicators and 17.9% of the AHI subjective indicators. Major gaps are found in the domains of community & social support, subjective well-being and time balance. We found a lack of subjective metrics in other domains, including economic standard of living and health. We discuss the opportunities and drawbacks of approaching SDGs and happiness metrics separately or synergistically. Given the potential benefits of integrating both approaches, we propose the framework we term *SDGs for Happiness* composed of 18 indicators of which 61.1% are subjective that should be considered in addition to the SDG indicators to measure happiness within the SDGs.

Keywords Sustainable development goals · SDGs · Happiness indicators · Quality-of-life-indicators · Comparisons between the SDGs and happiness indicators

✉ Leire Iriarte
hola@elbuenvivir.org

Extended author information available on the last page of the article

Introduction

Shortly after the turn of the millennium, a call emerged from nations and international institutions to use wider measures of well-being, also called *happiness*, *quality-of-life* or *Beyond GDP* indicators in lieu or in addition to gross domestic product (Stiglitz et al. 2009). Some of these initiatives are the call from the United Nations (UN) General Assembly (2011) on member states to adopt happiness and well-being in terms of measurements and goals (p. 9); the issue of the *World Happiness Report* since 2012 (see World Happiness Report); the *Global Happiness Policy Report* first published in 2018 *(*Global Happiness Council 2018); and the *Better Life Index* developed by the Organisation for Economic Co-operation and Development (OECD) issued in 2011. Countries are using indicators of happiness and well-being, including subjective well-being (SWB) indicators, to gather data (Durand et al. 2018; Musikanski and Polley 2016; O'Donnell et al. 2014), and communities across the globe are measuring happiness and using the data to guide interventions (Musikanski et al. 2017). Bhutan and the United Arab Emirates are forming policy specifically aimed at increasing the happiness of their populations (Centre for Bhutan Studies and GNH 2018; Musikanski 2014; Musikanski 2018).

The countries, communities and institutions measuring happiness are using indicators and methods that vary at different degrees, and to date, there is not agreement among nations to use a set of indicators or an index as there was with the Bretton Woods conference where an agreement among nations was made to use gross national product as the indicator to measure and guide progress (Brettonwoods Project 2005). SWB indicators are currently the dominant means used to measure happiness (Boniwell 2017). SWB indicators are survey based, gathering data from questionnaires, polls, or other forms of surveys. They are considered a valid means of assessing people's happiness (Frey and Luechinger 2007; Diener and Pavot 1993). While some researchers and policy makers differentiate between the terms *happiness, well-being*, *quality-of-life,* and *Beyond GDP*, others use the terms synonymously (Adler et al. 2017; Whitby, Seaford, Berry, and BRAINPOoL Consortium Partners 2014). Research findings have shown that while aspect of happiness vary across cultures (Uchida and Oishi 2016), some aspects are common across all cultures (Diener et al. 2017). The OECD (2013) identifies three ways to measure happiness (pp. 29–32):

- Life evaluation: a reflective assessment of life satisfaction and the circumstances of life.
- Affect: a person's feelings or emotion states, typically measured with reference to a particular point in time.
- Eudaimonia: a sense of meaning and purpose in life, also called flourishing.

In 2015, the UN released the SDGs for use as a blueprint to promote sustainable development globally. The UN SDGs are composed of 17 goals, 169 targets and 232 indicators (United Nations Statistics Division 2017). Together, the goals, targets, and indicators make up the SDG framework, also called *Agenda 2030*. The SDG framework has been adopted by all UN Member Nations, and, as recognized in paragraph 55 of the United Nations General Assembly (2015) Resolution *Transforming Our World: the 2030 Agenda for Sustainable Development,* targets are defined as aspirational and global, with each government setting its own national targets guided by the global goals

and taking into account national circumstances. The SDGs include a goal that uses the term *well-being*, for SDG Goal 3: Good Health and Well-being but there are not specific indicators to address SWB. Moreover, the SDGs by and large do not include subjective indicators.

To date, the interactions between the SDGs and the happiness indices have been analyzed at a general level. In 2017, the OECD conducted a comparison of the OECD well-being framework, the *Better Life Index* (BLI), and Agenda 2030 and they found that the domains within the BLI are covered by SDGs with the exception of the SWB and social connections (OECD 2017a). However, broader interactions from the happiness indices at the indicator level have not been studied. Therefore, this paper takes the following approaches:

- We build an Aggregated Happiness Index (AHI) considering various happiness indices already in use.
- We benchmark the AHI domains and indicators with the SDGs goals and indicators to understand the overlaps and the gaps.
- We discuss the opportunities and drawbacks of using the SDG framework and happiness framework separately or synergistically and we suggest how SDG indicators and happiness metrics can be used in conjunction.

Methodology

Happiness Indices Exploration and Determination of an AHI

Happiness indices are defined for the purposes of this article as collections of indicators that measure a spectrum of happiness domains. Five happiness indices were selected to compose an AHI taking into account the following criteria: (1) the scope of what is measured, (2) the use of the indices by government or other international agencies, and (3) the availability of data collected. The five happiness indices used for the AHI are:

- World Happiness Report (WHR) for 2018. (Helliwell et al. 2018, pp. 16–17).
- OECD's How's Life? 2017 (OECD-HLR) (Organization for Economic Cooperation and Development, 2017b, pp. 200–202).
- European Union's Eurostat Quality-of-Life Indicators (EU-QLI) (European Union Eurostat n.d.).
- Bhutan's Gross National Happiness Index (B-GNH) (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016, p. 57).
- United Kingdom's Office of National Statistics Measurements of National Well-being (UK-MNWB) (United Kingdom Office for National Statistics 2018).

For the purposes of this article, domains are general categories into which indicators fit. Other terms used for domains in the literature are *dimensions*, *circumstances of life*, *aspects*, and *areas*. The term *indicator* is used to describe a single measurement for the purposes of this article. Other terms for indicator are *metric*, *measurement,* and *measure*. We used the term *index* to describe an aggregate or composite measurement which is composed of domains and respective indicators. In forming the AHI, the

indicators within each happiness index were determined to be either objective or subjective. Indicators measuring observable phenomena, such as charitable donations or frequency of volunteering, were classified as objective while indicators measuring opinions, feelings, or other phenomena that cannot be observed, such as satisfaction with one's life or other dimensions of life, were classified as subjective.

In forming the AHI, domains were identified based on the frequency of use by the indices and the broadness of the term. For example, the domain called *Where we live* for the UK-MNWB index was classified into the broader appellation of *housing conditions*. When a domain for a happiness index overlapped more than one AHI domains, the domain for the happiness index was used for both categories. For example, the domain of community vitality for the B-GNH index included indicators that fit into the AHI domains of community & social support as well as safety, and hence was used for both. The WHR was the only index without domains, and hence it was not used to identify domains. The indicators within the five indices used for the AHI were allocated to common domains. When we found composite indicators, we separated them into single indicators. For example, the indicator in the B-GNH index that combines giving time and money was separated into single indicators: one for volunteering time, the other for giving money. The AHI is composed of indicators that occur in at least two different indices.

Benchmarking Intersections between the SDGs and the AHI

Table 1 presents a schema for identifying qualitative intersections between the AHI indicators and the SDG indicators. The schema is based on a traffic light system that first assess the intersections in colors for a qualitative assessment and then the intersections are converted into a quantitative assessment and assigning a score between zero and three: zero for red, one for orange, two for yellow, and three for green.

A Green intersection denotes that the SDG indicators measure the same or very similar concept in the same way (subjective or objective) as the AHI indicators. We call this a covered intersection. For example, a green light is given to the intersection between SDG indicator 1.4.1 access to basic services for householders and the AHI indicator household quality. A color of yellow denotes that the concepts measured by the AHI are partially covered by the SDGs. For example, the AHI indicator for social trust, which includes concepts of trust in business and government and perceptions of corruption, received a qualification of yellow for SDG indicator 16.7.2 which measures people's sense that governmental decisions are inclusive and responsive to various population demographics. Orange denotes that the concepts within the AHI are poorly covered by the SDGs. For example, the intersection between SDG indicator 3.4.2 mortality rate from suicides and the AHI indicator mental health was considered poorly covered, as while suicide is considered by the World Health Organization (2018) to be caused by mental disorders and inability to deal with life stresses, it is not a direct indicator of mental health in the authors' judgement. A color of red denotes that the concepts measured by the AHI are not covered within the SDGs.

The benchmark is based on a comparison between the AHI domains and indicators and the SDG goals and indicators based on author's judgements. In some cases, SDGs fit into more than one AHI domain, and so were allocated into more than one domain.

Table 1 Methodological approach for benchmarking the intersections between AHI and SDGs

Intersection	Description of the intersection	Qualitative assessment	Quantitative assessment
Covered	The concepts addressed by the AHI domain or indicator are fully measured by the SDGs indicators using objective indicators where objective indicators are used or subjective indicators where subjective indicators are used.	Green	3
Partially covered	The concepts addressed by the AHI domain or indicator are partially measured by the SDGs indicators using objective indicators where objective indicators are used or subjective indicators where subjective indicators are used.	Yellow	2
Poorly covered	The concepts addressed by the AHI domain or indicator are poorly or partially measured by the SDGs indicators using objective indicators where objective indicators are used or subjective indicators where subjective indicators are used.	Orange	1
Not covered	The concepts addressed by the AHI domain or indicator are not measured by the SDGs indicators using objective indicators where objective indicators are used or subjective indicators where subjective indicators are used.	Red	0

For example, SDG Goal 1: No Poverty was fit into the AHI domains of both economic standard of living and housing conditions. When more than three SDG indicators interacted with an AHI indicator, this was stated with an "X". Only direct intersections between the SDGs and the AHI were considered. When an SDG or indicator may benefit from an increased outcome of other indicators, the collateral impact was not taken into the account, as the extent to which changes in one indicator can impact a goal measured by other indicators is outside the scope of this study.

The intersections between AHI domains and indicators and SDG goals and indicators were assigned first a qualitative value (color coded), and then a quantitative value was given in order to assess the aggregated coverage at the domain level. When one AHI indicator was covered by several SDG indicators, the higher coverage rating was considered. For example, if the SDGs included three indicators to measure the same concept or similar concepts measured by an AHI indicator, and one SDG indicator was rated green while the other two rated yellow, a green light was allocated, and a quantitative assessment of three for that SDG indicator was assigned. Quantitative AHI domain coverage for each domain was calculated based on the aggregate mean of all the indicators within each domain. The overall coverage of the AHI by the SDGs was calculated as the mean of all domain coverage.

Results and Discussion

Building an AHI: What Do Happiness Indices Consider?

Table 2 presents the 12 happiness domains identified based on the analysis of the four happiness indices that have domains and their original naming in the respective indices. All of the domains identified for the AHI are held in common by the four happiness indices with the exceptions of the domain of culture, which only the B-GNH index and the UK-MNWB index include, and the domain of work, which is not included in B-GNH index but included in the other indices, although the B-GHN index includes an indicator for the creation of jobs by government in the domain of governance.

Table 3 summarizes the number of indicators by domain present in each index. The number of indicators for each of the five happiness indices ranged from eight in the WHR to 41 in the UK-MNWB. In general, indices with greater geographical coverage used fewer indicators. With the exception of the WHR where 50% of the eight indicators of the index fall into the SWB dimension, the other indices have a more even distribution of the number of indicators within domains. All the other indices have indicators in all the AHI dimensions with the exceptions of culture that is not considered within the OECD-HLR and the EU-QLI and work for B-GNH that is considered in terms of jobs (see Table 4). The proportion of indicators for the other indices than the WHR within each of the 12 AHI domains varies between 2.94% (for housing conditions and safety in the B-GNH index) and 19.51% (for economic standard of living in the UK-MNWB). An assumption was made that the indicators within the B-GNH index that measure family life and relationships with neighbors fall into the category of community & social support. Making this assumption, every happiness index has an indicator for social support.

The compilation of the indicators within the five happiness indices is presented in Table 4. From the five indices analyzed, a total of 71 happiness indicators were identified and 31 were presented in at least two indices so they were considered in the AHI. Community & social support, Economic standard of living, Health and SWB are the AHI domains with the highest number of indicators (four each) while Culture is the only dimension with one indicator. The conceptual framework of the AHI considering when the indicators are subjective or objective is presented in Table 5. All the domains present objective and subjective indicators with the exceptions of Culture, Education, and Environment which only contain objective indicators. In total, the AHI is composed by 58.1% of objective indicators (18 indicators), and 41.9% subjective indicators (13 indicators).

Benchmark between the AHI and the SDGs

Table 6 presents the intersection between the AHI domains and the SDG goals. Fourteen of the SDG goals are categorized into eight of the AHI domains. Three SDG goals do not fit into any AHI domain: (1) Goal 5: Gender Equality, (2) Goal 9: Industry, Innovation and Infrastructure, and (3) Goal 12: Responsible Consumption and Production. Eight AHI domains have a direct association SDG goals, while four do not: (1) Community & social support, (2) Culture, (3) SWB, and (4) Time balance.

Table 2 Happiness domains for the four happiness indices used in the AHI

Aggregated Happiness Index Domains	Selected Happiness Indices			
	OECD-HLR	EU-QLI	B-GNH	UK-MNWB
Community & social support	Social Connections	Social Relations	Community Vitality	Our Relationships; Where We Live
Culture			Cultural Diversity and Resilience	What We Do
Economic standard of living	Income and Wealth; Jobs and Earnings	Material Living Conditions	Living Standard	Personal Finance
Education	Education and Skills	Education	Education	Education and Skills
Environment	Environmental Quality	Environment	Ecological Diversity and Resilience	The Natural Environment
Governance	Civic Engagement and Governance	Governance	Good Governance	Governance
Health	Health Status	Health	Health	Health
Housing conditions	Housing	Housing Conditions	Living Standard	Where We Live
Safety	Personal Security	Safety	Community Vitality	Where We Live
Subjective well-being	Subjective Well-Being	Overall Life Satisfaction	Psychological Well-Being	Personal Well-Being
Time balance	Work-Life Balance	Time Use	Time Use and Balance	What We Do
Work	Jobs and Earnings; Work-Life Balance	Employment		What We Do; Personal Finance

Source: Authors compilation based on: OECD How's Life (OECD 2017b, pp. 200–202); European Union's Eurostat Quality of Life Indicators (European Union Eurostat n.d.); Bhutan's Gross National Happiness Index (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016, p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics 2018)

Table 3 Number of Indicators Included in Domains by Happiness Indices

Happiness Domains	WHR		OECD-HLR		EU-QLI		B-GNH		UK-MNWB	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Community & social support	1	12.5	1	4.0	2	10.5	3	8.8	4	9.8
Culture	0	0	0	0.0	0	0.0	4	11.8	1	2.4
Economic standard of living	1	12.5	3	12.0	2	10.5	2	5.9	8	19.5
Education	0	0	3	12.0	2	10.5	4	11.8	3	7.3
Environment	0	0	2	8.0	2	10.5	4	11.8	5	12.2
Governance	1	12.5	2	8.0	2	10.5	4	11.8	3	7.3
Health	1	12.5	2	8.0	2	10.5	4	11.8	5	12.2
Housing conditions	0	0	3	12.0	2	10.5	1	2.9	2	4.9
Safety	0	0	2	8.0	2	10.5	1	2.9	2	4.9
Subjective well-being	4	50	1	4.0	1	5.3	5	14.7	4	9.8
Time balance	0	0	2	8.0	2	10.5	2	5.9	2	4.9
Work	0	0	4	16.0	2	10.5	0	0.0	2	4.9
Total (number)	8		25		19		34		41	

Source: Authors compilation based on: WHR (Helliwell, Huang, Wang & Shiplett, 2018); OECD How's Life (OECD, 2017b, pp. 200-202); European Union's Eurostat Quality of Life Indicators (European Union Eurostat, n.d.); Bhutan's Gross National Happiness Index (Ura et al., 2012, p. 42; Centre for Bhutan Studies & GNH Research 2016, p. 57), and [d]: United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics, 2018)

*Due to dividing the composite indicator for volunteering into two indicators, one for donating money and the other for volunteering time, bringing the total indicators for B-GNH index up from 33 to 34

Table 4 Frequency analysis of happiness indicators for five happiness indices (in brackets the indices in which the indicators are found)

Happiness domains	Total number of indicators	Frequency of indicators occurring at least twice	Present in 5 indices	Present in 4 indices	Present in 3 indices	Present in 2 indices
Community & social support	5	4	Support network (WHR; OECD-HLR; EU-QLI; B-GNH; UK-MNWB)			Satisfaction with personal relationships (EU-QLI; UK-MNWB) Volunteering (B-GNH; UK-MNWB) Community (relationships and feelings of belonging) (B-GNH; UK-MNWB)
Culture	4	1				Socio-cultural engagement and participation (B-GNH; UK-MNWB)
Economic standard of living	8	4		Income per household (OECD-HLR; EU-QLI; B-GNH; UK-MNWB)	Household wealth (OECD-HLR; B-GNH; UK-MNWB) Income per capita (WHR; OECD-HLR; UK-MNWB)	Satisfaction with finances (EU-QLI; UK-MNWB)
Education	8	2			Skills (human capital), including literacy (OECD-HLR; B-GNH; UK-MNWB) Educational attainment (OECD-HLR; EU-QLI; B-GNH)	
Environment	9	2		Environment (pollution, including noise and waste from households)		Protected areas and wildlife (B-GNH; UK-MNWB)

Table 4 (continued)

Happiness domains	Total number of indicators	Frequency of indicators occurring at least twice	Present in 5 indices	Present in 4 indices	Present in 3 indices	Present in 2 indices
				(OECD-HLR; EU-QLI; B-GNH; UK-MNWB)		
Governance	7	2			Social trust (confidence in business and government and perceptions of corruption) (WHR; EU-QLI; UK-MNWB)	
					Civic engagement (voter turn-out, participation) (OECD-HLR; B-GNH; UK-MNWB)	
Health	6	4		Life expectancy (WHR; OECD-HLR; EU-QLI; UK-MNWB)		Mental health (B-GNH; UK-MNWB)
				Self-reported health (OECD-HLR; EU-QLI; B-GNH; UK-MNWB)		Disability (B-GNH; UK-MNWB)
Housing conditions	6	2				Housing quality (OECD-HLR; B-GNH)
						Satisfaction with housing (EU-QLI; UK-MNWB)
Safety	2	2		Crime (crime rates) (OECD-HLR; EU-QLI; B-GNH; UK-MNWB)	Feeling safe walking alone at night (OECD-HLR; EU-QLI; UK-MNWB)	
Subjective well-being	7	4		Life satisfaction (OECD-HLR; EU-QLI; B-GNH; UK-MNWB)		Positive affect (B-GNH; UK-MNWB)

Table 4 (continued)

Happiness domains	Total number of indicators	Frequency of indicators occurring at least twice	Present in 5 indices	Present in 4 indices	Present in 3 indices	Present in 2 indices
						Negative affect (B-GNH; UK-MNWB)
						Generosity (WHR; B-GNH)
Time Balance	4	2		Work-life balance (leisure time) (OECD-HLR; EU-QLI; B-GNH; UK-MNWB)		Working hours (OECD-HLR; EU-QLI)
Work	5	2			Jobs (employment rate) (OECD-HLR; EU-QLI; UK-MNWB)	Job satisfaction (EU-QLI; UK-MNWB)
Total (number)	71	31	1	7	8	15

Source: Authors compilation based on indicators from the World Happiness Report (WHR) for 2018 (Helliwell et al. 2018, pp. 16–17), OECD How's Life (OECD-HLR) (OECD 2017b, pp. 200–202), European Union's Eurostat Quality of Life Indicators (EU-QLI) (European Union Eurostat n.d.), Bhutan's Gross National Happiness Index (B-GNH) (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016, Part 1. p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (UK-MNWB) (United Kingdom Office for National Statistics 2018)

Table 5 Conceptual framework of the Aggregated Happiness Index

Domains	Indicators	Objective (O) or Subjective (S)
Community & social support	Community (feelings of belonging)	S
	Satisfaction with personal relationships	S
	Support network	S
	Volunteering	O
Culture	Socio-cultural engagement and participation	O
Economic standard of living	Household wealth	O
	Income per household	O
	Income per capita	O
	Satisfaction with finances	S
Education	Education levels	O
	Skills (literacy, vocational training)	O
Environment	Environment (pollution)	O
	Protected areas and wildlife	O
Governance	Civic engagement (voter turnout and participation in government)	O
	Social trust (confidence and trust in business and government, perceptions of corruption)	S
Health	Disability	O
	Life expectancy	O
	Mental health	O
	Self-reported health	S
Housing conditions	Housing quality	O
	Satisfaction with housing	S
Safety	Feeling safe walking alone at night	S
	Crime rate	O
Subjective well-being	Generosity	O
	Life satisfaction	S
	Negative affect	S
	Positive affect	S
Time Balance	Working hours	O
	Work-life balance	S
Work	Job satisfaction	S
	Jobs (employment rate)	O

Source: Authors compilation based on indicators from the World Happiness Report for 2018 (Helliwell et al. 2018, pp. 16–17), OECD How's Life (OECD 2017b, pp. 200–202), European Union's Eurostat Quality of Life Indicators (European Union Eurostat n.d.), Bhutan's Gross National Happiness Index (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016. p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics 2018)

Table 7 presents a benchmark at the indicator level between the AHI and the SDG using the traffic light schema. In the AHI domains of (1) Community & social support and (2) SWB there are no interactions at the indicator level. However, for the domains

Table 6 Aggregate Happiness Index domains and the SDGs

Aggregated Happiness Index Domains	Sustainable Development Goals
Community & social support	
Culture	
Economic standard of living	• Goal 1: No Poverty
	• Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
	• Goal 10: Reduce inequality within and among countries
Education	• Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Environment	• Goal 13: Take urgent action to combat climate change and its impacts
	• Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
	• Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Governance	• Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
	• Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development
Health	• Goal 3: Ensure healthy lives and promote well-being for all at all ages
Housing conditions	• Goal 1: No Poverty
	• Goal 6: Ensure availability and sustainable management of water and sanitation for all
	• Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for al
	• Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
Safety	• Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Subjective well-being	
Time balance	
Work	• Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Source: Authors compilation based on indicators from the World Happiness Report for 2018 (Helliwell et al. 2018, pp. 16–17), OECD How's Life (OECD 2017b, pp. 200–202), European Union's Eurostat Quality of Life Indicators (European Union Eurostat n.d.), Bhutan's Gross National Happiness Index (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016. p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics 2018) and the UN SDG Goals (United Nations Statistics Division 2017)

of Culture and Time balance, where there are not interactions at the domain level, there are poor interactions at the indicator level. Apart from the indicators within these domains, there are five AHI indicators where interactions are not found: (1)

Table 7 Connections between Aggregated Happiness Index indicators and SDGs indicators

Happiness Aggregated Index		SDG																
Domain	**Indicator**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Community & social support	Community (feelings of belonging)																	
	Satisfaction with personal relationships																	
	Support network																	
	Volunteering																	
Culture	Socio-cultural engagement and participation											4.3.1/ 4.7.1/ 11.4.1						
Economic standard of living	Household wealth	1.4.1		3.8.2							10.1.1/ 10.2.1							
	Income (per house)	X							8.5.1		10.1.1/ 10.2.1							
	Income (per individual)	X	2.3.2						8.5.1									
	Satisfaction with finances																	
Education	Education levels				4.1.1/ 4.3.1													
	Skills, including literacy or "human capital"				4.6.1/ 4.7.1													
Environment	Environment (pollution, including noise and waste from households)											11.4.1/ 11.6.1	12.3.1		X	X		
	Protected areas and wildlife														14.5.1	15.1.2/ 15.4.1		
Governance	Civic Engagement (voter turn-out, participation)											11.3.2						
	Social trust (confidence in businesses and government, perceptions of corruption)																16.7.2	
Health	Disability	1.3.1			4.5.1				8.5.1/ 8.5.2		10.2.1	11.2.1 /11.7.1					16.7.1	
	Life expectancy																	
	Mental health			3.4.2 /4.2.1														
	Self-reported health																	
Housing conditions	Housing quality	1.4.1		3.9.1			6.1.1/ 6.2.1	7.1.1/ 7.1.2				11.1.1						
	Satisfaction with housing																	
Safety	Feeling safe walking alone at night																16.1.4	
	Victimization, homicide rate and crimes																16.1.1/ 16.a.1	
Subjective well-being	Generosity																	
	Life satisfaction																	
	Negative affect																	
	Positive affect																	
Time balance	Working hours																	
	Work-life balance			5.4.1														
Work	Job satisfaction								8.8.1/ 8.8.2									
	Jobs (employment rates)								8.3.1/ 8.5.2									

Source: Authors compilation based on indicators from the World Happiness Report for 2018 (Helliwell et al. 2018, pp. 16–17), OECD How's Life (OECD 2017b, pp. 200–202), European Union's Eurostat Quality of Life Indicators (European Union Eurostat n.d.), Bhutan's Gross National Happiness Index (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016. p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics 2018) and the UN SDG Goals (United Nations Statistics Division 2017)

Satisfaction with finances, (2) Life expectancy, (3) Self-reported health, (4) Satisfaction with housing and (5) Working hours. For seven AHI indicators several interactions with different SDG indicators are found. The mean coverage for each AHI domain by SDG at the indicator level is presented in Table 8. The domains of Community & social support and SWB are not covered by the SDGs, while coverage ranges between 16.7% and 100% for the rest of domains. Overall the aggregated coverage of the AHI by the SDG indicators at the indicator level is

Table 8 Coverage by the SDGs of the aggregated happiness index indicators by domains in terms of subjective and objective indicators

Happiness Domain	Objective Indicators	Subjective indicators
Community & Social support		Community relationships and feeling of belonging
		Satisfaction with personal relationships
	Volunteering	Support network
Culture	Socio-cultural engagement and participation	
Economic Standard of living	Income (per house)	Satisfaction with finances
	Income (per individual)	
	Household wealth	
Education	Education levels	
	Skills, including literacy or "human capital"	
Environment	Environment (pollution, including noise and waste from households)	
	Protected areas and wildlife	
Governance	Civic Engagement (vote turn-out and active citizenship "voice and accountability")	Social trust, including confidence in the honesty of business and government (or perceptions of corruption)
Health	Disability	Self-reported Health
	Life Expectancy	
	Mental health	
Housing conditions	Housing Quality	Satisfaction with housing
Safety	Victimization, homicide rate and crimes	Feeling safe walking alone at night
Subjective well-being		Life satisfaction (or well-being)
		Negative affect or emotions
	Generosity (donations)	Positive affect or emotions
Time Balance	Working hours	Work-life balance (including leisure time)
Work	Jobs (including unemployment rate and employment rate)	Job satisfaction

Source: Authors compilation based on indicators from the World Happiness Report for 2018 (Helliwell et al. 2018, pp. 16–17), OECD How's Life (OECD 2017b, pp. 200–202), European Union's Eurostat Quality of Life Indicators (European Union Eurostat n.d.), Bhutan's Gross National Happiness Index (Ura et al. 2012, p. 42; Centre for Bhutan Studies and GNH Research 2016. p. 57), and United Kingdom Office of National Statistics Measurements of National Well-being (United Kingdom Office for National Statistics 2018) and the UN SDG Goals (United Nations Statistics Division 2017)

48.6%. When looking at the coverage of the objective and subjective indicators SDG indicators cover 61.1% of the AHI objective indicators and 17.9% of the AHI subjective indicators.

How to Integrate the SDGs and Happiness Metrics

The SDG indicators measure a broad range of topics with objective indicators. A few topics are measured with subjective indicators such as feeling safe walking alone in the night and proportion of population who believe decision-making is inclusive and responsive. The AHI indicators cover many of the same topics as the SDGs but including objective and subjective measurements. The benefits of using subjective indicators alongside objective indicators has been outlined by various researchers including Diener and Suh (1997) and Boniwell (2017). In 2015, the UN acknowledged the importance of assessing subjective experience and included the concept of well-being into Agenda 2030 (Sustainable Development Solutions Network 2015). However, SWB indicators were not finally included among the SDG indicators.

It is beyond the scope of this article to discuss to what extent the achievement of the SDGs will promote happier societies. Given the lack of coverage by the SDGs of relevant aspects of the happiness metrics (see Section 3.2), there are no way to know to what extent progress towards the SDGs will impact people's happiness using the SDG indicator framework as it stands to date. Including happiness indicators, in particular subjective metrics, into the SDG indicator framework could allow for a means to assess the impact on happiness of progress towards the SDGs. Without integrating happiness metrics into the SDG framework, a paradox could result in which there is a significant progress towards the SDGs and people are not happier or potentially rendered less happy. This kind of paradox where the perceptions are not correlated with objective indicators has been already observed in different contexts. The World Happiness Report (2018) for 2018 stated that "Life satisfaction in Latin America is substantially higher than would be predicted based on income, corruption, and other standard variables, including having someone to count on" (p.9). In Indonesia, one of the poorest areas has the highest score for positive affect (World Government Summit 2018, minutes 12:42–13:05).

SDGs and happiness metrics can be used separately or synergistically. We posit that using SDG and happiness metrics separately could result in deteriorations to human and capital resources, confusion and a needless prioritization of one framework over the another. Given the efforts already mobilized towards the SDG in many countries, communities and contexts, we posit that it would be efficient and effective to integrate happiness indicators within the SDGs indicator framework. This approach has been also suggested by other authors such as Stiglitz et al. (2009) who recommended that happiness indices, termed by them, *measures of well-being*, should be used in a context of sustainability. Some of the opportunities of integrating happiness considerations within the SDGs are:

- Ensuring a holistic approach to sustainable development. To date, sustainable development is defined in an aspirational way and the linkages to human happiness and well-being are not clear. Incorporating happiness indicators into the SDG indicator framework results in what we term *SDGs for happiness.* This approach is consistent with the philosophy of Aristotle who believed that happiness is the ultimate purpose of human existence.
- Aiding policy makers and their efforts to develop inclusive and holistic policies that address multiple needs and priorities synergistically (Diener et al. 2009;

Unanue 2017; Durand et al. 2018) at various governance levels through integration of subjective and objective data.
– Engaging and including people at the individual level as happiness indices have a strong subjective component thereby directly provide people a means to participate through the gathering of data. Thus, happiness indicators used alongside SDG indicators can provide a means for inclusiveness (Nunes et al. 2016).
– Providing important data to governments, researchers and the private sector that can be used to understand dimensions of populations, establish priorities. and assess the impact of decisions and interventions.
– Exploring a means to balance competing goals as people's perceptions are taken into account.

Indonesia is integrating the SDGs and happiness frameworks at a national level. In 2018, the Minister Brodjonegoro of National Development Planning of Indonesia spoke about his nation's efforts at the Global Dialogue for Happiness (World Government Summit 2018). The goal in Indonesia is to "transform SDG into happiness" (World Government Summit 2018, minutes 5:46–5:52). The National Development Planning of Indonesia has developed a happiness index to use in conjunction with SDG indicators already employed by the agency. Indonesia's happiness index includes indicators for the three domains of satisfaction with life and the conditions of life, affect and flourishing (eudaimonia). It includes indicators for affect including depression, happiness and worry; for satisfaction with life and relationships; and for sense of independence, self-acceptance, and self-development. It also includes indicators for education and skills, employment, environmental conditions, environmental control, family harmony, free time available, health, household income, housing conditions and facilities, and security (World Government Summit 2018, minutes 9:45–11:42).

As identified in Table 8, there are happiness indicator gaps within the SDG framework. If the SDGs are extended to measure and promote happiness, the efforts to collect data for the SDGs could extend to the collection of data for the domains and indicators that are poorly or not considered within the SDGs. We propose a conceptual framework we term the *SDGs for Happiness* by which the SDG indicators framework would be complemented with the following happiness indicators:

Community & Social Support:

- Volunteering
- Community relationships and feeling of belonging
- Satisfaction with personal relationships
- Support network

Culture:

- Socio-cultural engagement and participation

Economic Standard of living:

- Satisfaction with finances

Governance:

- Civic Engagement (vote turn-out and other aspects of civic engagement)

Health:

- Life expectancy
- Mental health
- Self-reported health

Housing conditions:

- Satisfaction with housing

Subjective well-being:

- Generosity (donations)
- Life satisfaction
- Negative affect or emotions
- Positive affect or emotions

Time Balance:

- Working hours
- Work-life balance (including leisure time)

Work:

- Job satisfaction

In total, we have identified 18 indicators of which seven are objective and 11 subjective. This set of complementary happiness indicators to the SDGs in order that the SDGs work for happiness offers a means for communities, cities and countries to better understand the conceptual connection between the SDGs and happiness indices. However, our analysis is limited to a theoretical level. In use, the framework would need to be adapted to fit the context and circumstances of the area. Therefore, further research may be needed to develop an overarching set of goals and indicators that guide the integration of happiness measures at different governance levels depending on the contexts and circumstances.

Conclusion

This study aimed to better understand the intersections between happiness indices and the SDG framework. As there is not a universal set of happiness metrics, we developed what we called *AHI* based on five happiness indices. The AHI is composed of 12 domains and 31 indicators. The twelve domains are: (1) Community & social support, (2) Culture, (3) Economic standard of living, (4) Education, (5) Environment, (6)

Governance, (7) Health, (8) Housing conditions, (9) Safety, (10) SWB, (11) Time balance, and (12) Work. The AHI was composed of 58.1% objective indicators and 41.9% subjective indicators. The AHI benchmarking against the SDG goals revealed that 66.6% of the AHI domains are covered by the SDG goals. However, the benchmarking at the indicator level showed that 48.6% of the AHI indicators are covered by the SDG. The coverage of the subjective indicators was 17.9% and the objective indicators 61.1%.

We provided reasons why happiness measures should be integrated within the SDGs and identified the 18 indicators corresponding to nine happiness domains that could be integrated into the SDG indicator framework to formulate what we call *SDGs for Happiness*. This is nascent concept and Indonesia is the only country we know that is using happiness indicators in conjunction with the SDGs. The AHI provides a conceptual framework that communities, cities and regions can adapt for their sustainability indicators and fit to their particular circumstances and needs.

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Compliance with Ethical Standards

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References

Adler, A., Boniwell, I., Gibson, E., Metz, T., Seligman, M., Uchida, Y., et al. (2017). Chapter 2: definitions of terms. *Happiness: transforming the development landscape*. Thimphu, Bhutan: The Centre for Bhutan Studies & GNH. Retrieved from http://www.bhutanstudies.org.bt/publicationFiles/OccasionalPublications/Transforming%20Happiness/Happiness-transform_Final_with-cover.pdf. Accessed 1 Jan 2019

Boniwell, I. (2017). Chapter 1: introduction. *Happiness: transforming the development Landscape*. Thimphu, Bhutan: The Centre for Bhutan Studies & GNH. Retrieved from http://www.bhutanstudies.org.bt/publicationFiles/OccasionalPublications/Transforming%20Happiness/Happiness-transform_Final_with-cover.pdf. Accessed 1 Jan 2019

Brettonwoods Project. (2005). What are the Bretton Woods institutions? Retrieved from https://www.brettonwoodsproject.org/2005/08/art-320747/. Accessed 1 Jan 2019

Centre for Bhutan Studies & GNH (2018). *2015 GNH survey reports*. Retrieved from https://www.grossnationalhappiness.com. Accessed 1 Jan 2019

Centre for Bhutan Studies & GNH Research (2016). *A compass towards a just and harmonious society*. Thimphu, Bhutan: The Centre for Bhutan Studies & GNH Retrieved from https://www.bhutanstudies.org.bt/a-compass-towards-a-just-and-harmonious-society-2015-gnh-survey-report/. Accessed 1 Jan 2019

Diener, E., & Pavot, W. (1993). The affective and cognitive context of self-reported measures of subjective well-being. *Social Indicators Research, 28*(1), 1–20. https://doi.org/10.1007/BF01086714.

Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research, 40*(1–2), 189–216. https://doi.org/10.1023/A:1006859511756.

Diener, E., Lucas, R., Schimmack, U., & Helliwell, J. (2009). *Well-being for public policy*. New York: Oxford University Press.

Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology/ Psychologie Canadienne, 58*(2), 87–104. https://doi.org/10.1037/cap0000063.

Durand, M., Balestra, C., Exton, C., Marguerit, D., Mira d'Ercole, M., Monje-Jelfs, J., et al. (2018). Countries' experiences with well-being and happiness metrics. Chapter 8 Global Happiness council (Eds.) *Global Happiness Policy Report.* New York: Sustainable Development Solutions Network.

European Union Eurostat. (n.d.). Quality of life. Retrieved from https://ec.europa.eu/eurostat/cache/infographs/qol/index_en.html. Accessed 1 Jan 2019

Frey, B., & Luechinger, S. (2007). *Concepts of happiness and their measurement*. Hessen: Metropolis Verlag.

Global Happiness Council. (2018). *Global happiness policy report*. New York: Sustainable Development Solutions Network.

Helliwell, J., Huang, H., Wang, S., & Shiplett, H. (2018). International migration and world happiness. In J. Helliwell, R. Layard, & J. Sachs (Eds.), *World happiness report 2018*. New York: United Nations Sustainable Development Solutions Network.

Musikanski, L. (2014). Happiness in public policy. *Journal of Social Change, 6*, 55–85. https://doi.org/10.5590/JOSC.2014.06.1.0.

Musikanski, L. (2018). Why a Muslim nation may save the world or the rising middle power of happiness. *The Solutions Journal, 9*(3) Retrieved from https://www.thesolutionsjournal.com/article/muslim-nation-may-save-world-rising-middle-power-happiness/. Accessed 1 Jan 2019

Musikanski, L., & Polley, C. (2016). Life, liberty, and pursuit of happiness: Measuring what matters. *Journal of Social Change, 7*, 48–72. https://doi.org/10.5590/JOSC.2016.08.1.05.

Musikanski, L., Polley, C., Cloutier, S., Berejnoi, E., & Colbert, E. (2017). Happiness in communities: How neighborhoods, cities and states use subjective well-being metrics. *Journal for Social Change, 9*(1), 32–54. https://doi.org/10.5590/JOSC.2017.09.1.03.

Nunes, A., Lee, K., & O'Riordan, T. (2016). The importance of an integrating framework for achieving the sustainable development goals: The example of health and well-being. *BMJ Global Health, 1*(3), e000068. https://doi.org/10.1136/bmjgh-2016-000068.

O'Donnell, G., Deaton, A., Durand, A., Halpern, D., & Layard, R. (2014). *Well-being and policy.* London, UK: Legatum Institute. Retrieved from https://li.com/docs/default-source/commission-on-wellbeing-and-policy/commission-on-wellbeing-andpolicy-report—march-2014-pdf.pdf. Accessed 1 Jan 2019

Organization for Economic Cooperation and Development (OECD). (2013). *OECD guidelines on measuring subjective well-being*. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2017a). *Measuring distance to the SDG targets*. Paris: OECD Publishing Retrieved from http://www.oecd.org/sdd/OECD-Measuring-Distance-to-SDG-Targets.pdf. Accessed 1 Jan 2019

Organization for Economic Cooperation and Development (OECD). (2017b). *How's life?* (p. 2017). Paris: OECD Publishing.

Stiglitz, J., Sen, A., & Fitoussi, J. (2009). *Report by the commission on the measurement of economic performance and social progress*. Retrieved from https://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report. Accessed 1 Jan 2019

Sustainable Development Solutions Network (2015). A global initiative for the United Nations. Framework for the Sustainable Development Goals: landing a data revolution for the SDGs. Report to the Secretary-General of the United Nations by the Leadership Council of the Sustainable Development Network, June 12 th, 2015; Annex 1: Beyond GDP – new measures for development; Well-being a cross-cutting issue: 69.

Uchida, Y., & Oishi, S. (2016). The happiness of individuals and the collective. *Japanese Psychological Research, 58*(1), 125–141. https://doi.org/10.1111/jpr.12103.

Unanue, W. (2017). Subjective well-being measures to inform public policies. *Transforming the Development Landscape* Thimpu, Bhutan: The Centre for Bhutan Studies & GNH Happiness:

United Kingdom Office for National Statistics. (2018), Measures of national well-being dashboard. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuresofnationalwellbeingdashboard/2018-04-25. Accessed 1 Jan 2019

United Nations General Assembly (2011). Happiness: Towards a holistic approach to development (Resolution 65/309). 64th session: 109th plenary meeting. Retrieved from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/65/309. Accessed 1 Jan 2019

United Nations General Assembly (2015). Resolution adopted by the General Assembly on 25 September 2015. 70/1. Transforming our world: the 2030 Agenda for Sustainable Development. A/RES/70/1. Retrieved from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E. Accessed 1 Jan 2019

United Nations Statistics Division. (2017). SDG indicators. Retrieved from https://unstats.un.org/sdgs/indicators/indicators-list/. Accessed 1 Jan 2019

Ura, K., Alkire, S., Zangmo, T., & Wangdi, K. (2012). *A short guide to gross national happiness index*. Thimpu: Center for Bhutan Studies.

Whitby, A., Seaford, C., Berry, C., & BRAINPOoL Consortium Partners. (2014). BRAINPOoL Project final report: Beyond GDP: From measurement to politics and policy. BRAINPOoL Deliverable 5.2, A collaborative programme funded by the European Union's Seventh Programme for research, technological development and demonstration under Grant Agreement No. 283024. World Future Council.

World Government Summit. (2018). Discovering Indonesia's happiness pyramid – H.E. Bambang Brodjonegoro. Retrieved from https://www.youtube.com/watch?v=trCG6UViYq4. Accessed 1 Jan 2019

World Happiness Report. (2018). World Happiness Report 2018 http://worldhappiness.report/.

World Health Organization. (2018). Suicide. Retrieved from http://www.who.int/en/news-room/fact-sheets/detail/suicide. Accessed 1 Jan 2019

Affiliations

Leire Iriarte[1] · **Laura Musikanski**[2]

[1] El Buen Vivir, C/ Larrabide 21, Pamplona, Navarra, Spain

[2] Happiness Alliance, 4200 Aurora Ave N., Seattle, WA 98103, USA