

Human Development: Toward Measuring the True Wealth of Well-Being

Tadashi Hirai

Assistant Professor, Ramon Llull University, IQS School of Management

Abstract

This article examines the evolution and ongoing challenges of the human development approach in measuring prosperity for public policy. As a response to the limitations of conventional, solely economic-focused policies, the human development approach introduced by the United Nations Development Programme (UNDP) in 1990 has attempted to capture a wide range of dimensions relevant to changing social contexts, including education, health, income, the environment, and social norms. However, certain elements essential to understanding the true wealth of well-being remain missing. These are two forms of subjectivity: trust and life evaluation. Trust is crucial as the social context that supports individual agency, while value-based life evaluation serves as an indicator of the extent to which individuals are able to lead lives aligned with their own values. Accordingly, this article proposes three extensions of the traditional Human Development Index (HDI): a socially dependent HDI that incorporates institutional trust; a comprehensive HDI that integrates life evaluation by weighting achievements according to individual values; and a human development gap index that captures the divergence between the importance individuals assign to different life aspects and their actual level of achievement. Together, these indices enable a more holistic and substantive evaluation of human development.

Introduction

In public policy, the question of *what to measure* is critically important. While economic indicators, including income, continue to exert strong influence, they are insufficient for comprehensively capturing the realities of human life. Against this backdrop, the United Nations Development Programme (UNDP) proposed the human development approach in 1990, defining development as “a process of enlarging people’s choices” (UNDP 1990, 1). This approach emerged as an evolutionary concept in pursuit of true prosperity, challenging policy frameworks that were overly focused on economic growth. Initially centered on education,

health, and income, the scope of human development has expanded significantly in recent years to encompass areas such as the environment, science and technology, and social norms. The concept of human security, which addresses urgent needs, can also be understood as having developed within this context. In this way, the human development approach has continuously refined its focal concerns and measurement methods in response to changing social conditions.

In today’s world, where the conceptions of prosperity are becoming increasingly complex, the advancement of human development requires three essential perspectives: multidimensionality, sustainability, and subjectivity. Regarding multidimensionality, the annual *Human Development Reports* have featured themes that reflect the context of the times,

The views expressed in this report are those of the author(s) and do not necessarily represent the official positions of either JICA or the JICA Ogata Research Institute.

presenting not only the Human Development Index (HDI) but also a range of composite indices and supplementary indicators related to human development. Concerning sustainability, under the influence of the Sustainable Development Goals (SDGs), composite indices reflecting environmental challenges have been introduced. This development has accelerated an international shift toward policy evaluation that emphasizes consideration for future generations.

Amid these developments, however, consideration of subjectivity—which captures the inner aspects of how people perceive their own lives—remains insufficient. Although happiness surveys conducted by organizations like Gallup have been implemented in recent years, their use as policy indicators remains limited. This neglect of subjectivity overlooks people’s emotions and values, thereby amplifying distrust in institutions and experts and ultimately contributing to the rise of populism today.

This article examines the trajectory of pursuing the true wealth of well-being within the international community, while exploring the potential of subjectivity as a policy indicator from a human development perspective. Trust reflects the social context that enables individuals to expand their choices and pursue better lives, while life evaluation reflects the extent to which individuals achieve a life aligned with their own values. Given that human development places individual agency at its core, addressing subjectivity is unavoidable. By asking how people’s evaluations of their own lives can be meaningfully incorporated into public policy, this article seeks to contribute to the development of a more comprehensive indicator system for human development.

1. Historical Overview of International Development: Evolution of Concepts and Measurement¹

This section surveys the transformation of development

¹ This article draws on Hirai (2017), *The Creation of the Human Development Approach*. For a detailed discussion of the historical events and key figures underlying the evolution of development concepts, see Chapter 1 of this book.

concepts in the post-World War II period in order to explore the historical foundations of the human development approach. Although human development was formally introduced in 1990, its core ideas build upon earlier development concepts. Simultaneously, this section examines the composite indices that emerged alongside each development concept, clarifying the insights and the added value they brought to the HDI.

1.1. Alternative Approaches in International Development

Figure 1 illustrates the historical trajectory of international development. Whereas colonialism dominated development practices until World War II, postwar development policies were largely grounded in economic growth models. From the 1960s onward, however, criticism of these mainstream models intensified, leading to the gradual emergence of alternative approaches that emphasized quality of life and social structures. These developments constitute crucial historical background against which the human development approach ultimately emerged.

Social Development Approach

Major critiques of the overemphasis on economic growth models began to emerge as early as the mid-1950s, coinciding with a growing recognition of the limitations of viewing development solely through an economic lens.² Amid this shift, the social development approach was proposed in the 1960s. This approach argued that development should be understood not only in economic terms but also from a social perspective, emphasizing the expansion of social infrastructure such as hospitals, schools, parks, roads, and recreational facilities.

Efforts to operationalize this approach advanced primarily through the United Nations Research Institute for Social Development (UNRISD), leading to the creation of the Level of Living Index (LLI) and the State of Welfare Index (SWI). The LLI sought to measure the “flow of goods and services enjoyed within a given period,” including food, housing, education, health, leisure, and safety (Drewnowski and Scott 1966). The SWI, on the other hand, aimed to capture the

² “For several reasons ... no type of monetary index as a general international measure of levels of living could be recommended” (UN 1954, vi).

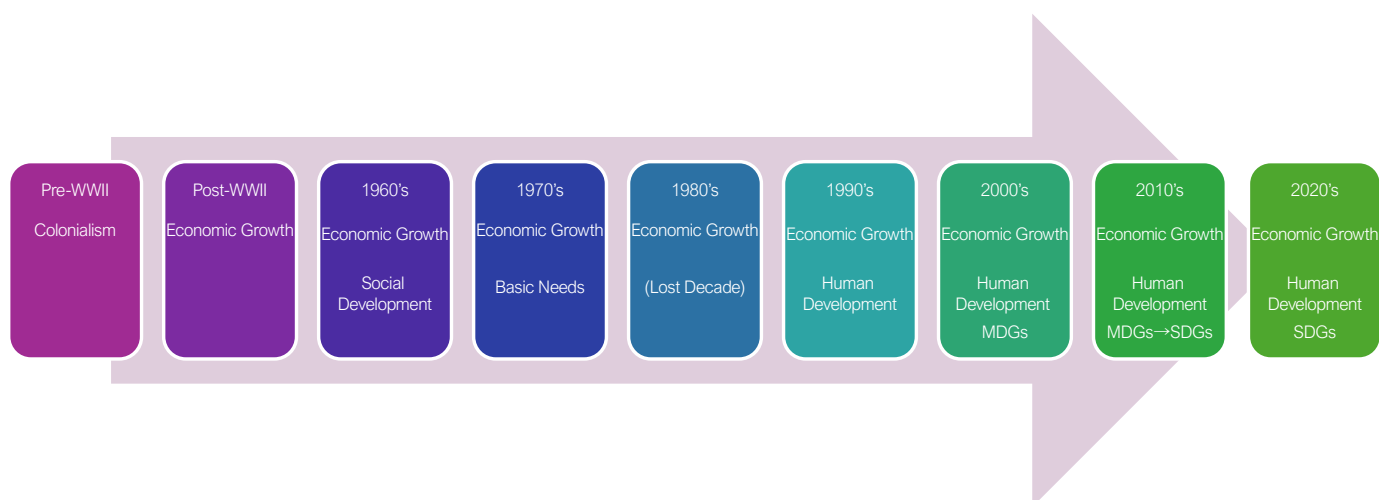


Figure 1 Historical Evolution of International Development Concepts

Source: Author

accumulation of individuals' conditions and characteristics derived from these flows (Drewnowski 1974). Underlying both indices was the principle that human prosperity should be assessed from both "flow" and "stock" perspectives.

Despite its theoretical significance, the social development approach failed to gain widespread international acceptance, largely due to the complexity of its measurement framework, particularly that of the SWI. Consequently, the approach gradually lost influence by the mid-1970s. Nevertheless, this effort can be seen as laying important groundwork for the subsequent human development approach, most notably by prompting a conceptual shift from development as economy to development as society.

Basic Needs Approach

In the 1970s, the International Labour Organization (ILO) introduced the basic needs approach (ILO 1977; Streeten et al. 1981). Unlike the social development approach, which emphasized infrastructure development, this approach focused on the direct fulfillment of human needs. It encompassed not only material necessities, such as food, shelter, education, and healthcare, but also more fundamental requirements, including freedom, participatory processes, and self-determination. In this sense, it was the first development approach to explicitly center on people's lived conditions, clearly

articulating a human-centered perspective on development.

Measurement efforts were advanced by the Overseas Development Council, culminating in the creation of the Physical Quality of Life Index (PQLI) (Sewell 1977). Drawing lessons from the limitations of overly complex indicators associated with the social development approach, the PQLI prioritized simplicity and data availability. By using three indicators—adult literacy, life expectancy, and infant mortality—it achieved coverage across a relatively large number of countries. However, although the index included developed countries, its structure and purpose were primarily oriented toward assessing the physical quality of life in developing contexts. As a result, the broader dimensions of freedom and participation originally envisioned within the basic needs approach were substantially attenuated at the measurement stage.

Furthermore, as debt crises and structural adjustment programs led by the World Bank and the International Monetary Fund (IMF) came to dominate the international development agenda in the 1980s, the basic needs approach was gradually displaced as a leading alternative approach. Nevertheless, its core principle—placing basic human needs at the center of development—served as a crucial foundation later inherited and expanded upon by the human development approach.

Table 1 Development Composite Index

	LLI	PQLI	HDI
Dimensions	8	2	3
Country coverage	20	150	130→193
Economic Indicators	-		GDP→GNI
Transformation	Linear		Linear/Diminishing Returns
Standardization	Goalposts by max & min values		
Weighting	Equal	Unequal	Equal
Aggregation	Arithmetic mean		Arithmetic mean → Geometric mean

Source: Author's compilation based on Drewnowski & Scott (1966), Sewell (1977), UNDP (1990, 2024)

Human Development Approach

In 1990, the UNDP introduced the human development approach. Human development is defined as a process of expanding people's choices, emphasizing not only the *building* of the capabilities needed for this expansion but also the importance of their actual *use*.³ Like the basic needs approach, human development adopts a people-centered perspective that focuses directly on individuals' lived experiences. To counter the *World Bank's World Development Report*, the UNDP has published the *Human Development Report* annually, examining a wide range of development issues through the lens of human development. From its inception, the approach has also recognized the importance of sustainability.⁴

Among the various composite indices developed within this approach, the HDI is the most prominent. The HDI consists of three dimensions: health (measured by life expectancy), education (measured by years of schooling), and standard of

living (measured by per capita national income). By comparing HDI rankings with income-based rankings, the index demonstrated that economic growth does not necessarily translate into improvements in human development, thereby highlighting the limitations of income as a proxy for living standards.

In addition to the HDI, several complementary indices have been introduced. These include the Multidimensional Poverty Index (MPI), which captures poverty conditions; the Inequality-adjusted HDI (IHDI), which accounts for domestic inequalities; and, since 2020, the Planetary Pressures-adjusted HDI (PHDI), which incorporates environmental costs. While the MPI and IHDI operate within the same three dimensions as the HDI—health, education, and standard of living—the PHDI extends the framework by introducing an explicit environmental dimension.

1.2. The Advantages of Human Development

Table 1 compares the three composite development indices discussed above. The Level of Living Index (LLI) attempted to measure a wide range of dimensions, but the United Nations' data collection capacity in the 1960s was insufficient to support broad coverage across countries at a global scale, resulting in a limited sample. By contrast, the Physical Quality of Life Index (PQLI) succeeded in significantly expanding country coverage by sharply reducing the number of indicators used. Nonetheless, as noted earlier, the PQLI

³ "Human development is a process of enlarging people's choices. ... Human development thus concerns more than the formation of human capabilities, such as improved health or knowledge. It also concerns the use of these capabilities, be it for work, leisure or political and cultural activities. And if the scales of human development fail to balance the formation and use of human capabilities, much human potential will be frustrated" (UNDP 1990, 1).

⁴ "Sustainable development strategies should meet the needs of the present generation without compromising the ability of future generations to meet their needs" (UNDP 1990, 7).

focused primarily on poverty-related conditions, showing little concern for the broader richness of human life. This narrow focus likely contributed to its failure to sustain long-term international support.

In contrast, the HDI's strategic incorporation of economic indicators constitutes one of its key strengths. Even as an alternative to economic growth models, it is unrealistic to entirely exclude economic aspects from the measurement of living standards. Moreover, the inclusion of economic indicators has been essential for engaging the interest of developed countries. This raises a central question: is it possible to construct a composite development index that incorporates economic elements necessary for living standards without allowing them to dominate the overall assessment?

In the HDI methodology, income is positioned as a simple indicator of the *utilization* of capabilities in domains beyond health and education—that is, a proxy for the expansion of choices grounded in individual agency.⁵ However, unlike health and education, income is not considered an end in itself but rather as a means to enrich human life. To reflect this conceptual distinction, the HDI applies linear transformations to health (life expectancy) and education (years of schooling), while employing a nonlinear transformation for standard of living (per capita national income) that accounts for diminishing returns. For life expectancy and schooling, a given increase yields a constant effect on the index regardless of the initial level (e.g., whether life expectancy increases from 60 to 61 years or from 80 to 81 years, the effect on the index value is comparable). By contrast, for income, the marginal contribution to the index diminishes as income rises (e.g., an increase from \$30,000 to \$31,000 has a greater impact than an increase from \$60,000 to \$61,000). This method of transforming income has been revised multiple times, primarily to adjust discount rates. Although economic indicators have appeared in other composite indices (e.g., Quality of Life Indicators (Liu 1976), Quality of Life Index (Naroll 1983)), they were often treated as one indicator among many, with limited prominence. Moreover, linear

transformations were frequently applied even when indicators differed fundamentally in nature, resulting in measurements that inadequately reflected their underlying meanings. In this regard, the HDI's treatment of income represents a significant methodological advance.

Development measurement inevitably involves tensions, as the diversity and complexity of development concepts tend to be simplified through quantification. Recognizing this constraint, the *Human Development Report* has made significant contributions by continuously refining HDI calculation methods while simultaneously addressing diverse themes through the human development framework. This adaptability constitutes another major advantage of the human development approach.

Indeed, the UNDP has leveraged its extensive network of country offices to produce reports tailored to specific national and regional contexts (Murphy 2006). These efforts have enabled engagement with domains that are difficult to quantify, incorporating dialogue with local stakeholders and the international community, while also advancing the development of new composite indices such as the PHDI. Such developments demonstrate that human development is not a static framework but one that evolves in response to empirical challenges and normative debates.

Such developments also resonate with the two practical orientations of the capability approach that underpin the philosophical background of human development. While Amartya Sen's "comparative version" emphasizes participation and responsiveness to context, Martha Nussbaum's "constitutional version" provides guidance for institutional design based on universal values (Sen 2009; Nussbaum 2011).⁶ Taking this difference into account, Nussbaum's constitutional version can be regarded as more suitable for the production of the global *Human Development Report* and

⁵ "Income and growth remain vital. To conclude otherwise is to ignore the importance of income in expanding people's freedoms" (UNDP 2010, 4).

⁶ More precisely, Sen argues that while what individuals consider valuable should be left to their own judgment, it is crucial that these evaluations be scrutinized in the public sphere. On the other hand, Nussbaum argues that a socially legitimate foundation—that is, social justice—must be established prior to individual value judgments. In other words, Sen takes the position of questioning the legitimacy of value judgments through a process of public deliberation while valuing individual judgment as the starting point. By contrast, Nussbaum believes universal norms and standards should be established first. This represents a clear difference between their positions.

the HDI, because evaluating progress in living conditions across roughly 200 countries at vastly different stages of development requires a set of universal norms. Indeed, Nussbaum herself acknowledges that her theory is consistent with the global *Human Development Report*.⁷ By contrast, Sen's comparative version is particularly effective in community-level civic engagement and grassroots projects (e.g., Drèze and Sen 1995; Alkire 2002). In other words, to apply the capability approach effectively in practice, it is necessary to make integrated use of both theories (Hirai, Comim, and Jolly 2021). In this way, the *Human Development Report* system, with its decentralized structure, institutionalizes both perspectives of the capability approach and possesses the flexibility to translate them into projects and policies, thereby distinguishing itself from conventional alternative approaches. This trajectory also connects to the contemporary localization of the SDGs.

Now, let us return to the three perspectives identified in the Introduction as essential for measuring prosperity. Multidimensionality is a shared characteristic of all development approaches that seek to move beyond economic growth models. Sustainability, while recognized from the outset within the human development framework, has only been quantified in recent years. Subjectivity, although highlighted within the basic needs approach through its emphasis on value judgments and participation, was placed at the conceptual core of human development. Nevertheless, despite efforts to incorporate subjectivity through reports at multiple levels, its systematic measurement remains insufficient and represents a key unresolved challenge. The remainder of this article is devoted to addressing this issue.

⁷ As Nussbaum notes, "I have left things deliberately somewhat open-ended at this point, in keeping with the procedures of the Human Development Report, believing that the best way to work toward a more precise determination at present is to focus on comparative information and to allow citizens to judge for themselves whether their policymakers have performed as well as they should have" (Nussbaum 1999, 42–43).

2. Challenges to Overcome⁸

As mentioned above, the human development approach seeks to expand people's choices. Achieving this goal requires not only the *development* of individual capabilities but also ensuring that these capabilities are actually *utilized* within society in ways that reflect each person's values. In this sense, agency is an indispensable element of human development. However, the HDI and existing composite indices largely concentrate on the development of capabilities and do not adequately capture how these capabilities are exercised or translated into lived experience.

This raises a critical question: is it possible to measure whether people are actively participating in the development process and whether public policies reflect individuals' diverse values? To address this issue, this article focuses on subjectivity, examining both its conceptual importance and its measurability, and explores ways to operationalize it through indexing. Trust reflects the social context that enables individuals to expand their choices and pursue better lives. Life evaluation, by contrast, captures whether individuals perceive themselves as actually living in accordance with their own values. In other words, trust functions as an indicator that indirectly reflects living conditions, whereas Value-based life evaluation serves as a direct measure of them.

2.1. The Importance of Trust

Trust constitutes a foundation for the expansion of people's choices. Expanding individual choice necessarily entails attention to the relationship between individuals and society, since people do not live in isolation. It is through

⁸ This article, particularly Sections 2.1–2.3, draws on Hirai (2020), "Impact of Trust on the Quality of Participation in Development: The Case of Ukraine." Sections 2.4–2.5 are based on Hirai, Comim, and Ikemoto (2016), "Happiness and Human Development: A Capability Perspective"; Hirai (2018), "For a Happy Human Development"; Hirai (2021), "Measuring Capabilities: Taking People's Values Seriously"; and Hirai (2024), "Adaptive Preferences versus Internalisation in Deprivation: Conceptual Comparison between the Capability Approach and Self-Determination Theory."

interaction with others and with social institutions that individuals are able to exercise a diverse range of choices. Furthermore, practices emphasized within the human development framework, such as public deliberation, participation, and collaboration, can function effectively only in the presence of trust. Trust thus represents an indispensable social context for human development.

Despite its importance, the role of trust has not been systematically incorporated into the human development literature. For example, although the *Human Development Report* presents a wide range of development indicators, it includes none that directly capture social context. While there is a strong rationale for maintaining the HDI in its current form for the purposes of international comparisons, the absence of such indicators likely reflects not only the methodological difficulty of addressing subjectivity but also a degree of institutional resistance within the UNDP to engage explicitly with social dimensions. Indeed, although the 2002 *Human Development Report* featured an essay on democracy, the 2010 *Report* introduced indicators on political and civil liberties, and the 2022 *Report* discussed solidarity in the context of human security, these initiatives remained largely isolated and were not integrated into the core measurement framework.

Empirical research has shown that trust is strongly associated with key components of human development. Trust is positively correlated with income, education, and health (both mental and physical), while it is negatively correlated with inequality, including not only income disparities but also broader forms of social instability such as unemployment, discrimination, and crime (Algan and Cahuc 2013; Eurofound 2012, 2018a, 2018b; Murtin et al. 2018; OECD 2011, 2017). In general, societies characterized by high levels of human development also tend to exhibit high levels of trust, whereas societies facing poverty are more likely to experience a vicious cycle marked by deficits in both. Nevertheless, trust and human development are not necessarily aligned. Societies with high HDI scores but low levels of trust can exist, as can societies with relatively low HDI scores but high levels of trust. In the former case, individuals' capabilities may not be fully exercised in everyday life, while in the latter, mutual cooperation may enable individuals to achieve a

richer quality of life than HDI values alone would suggest. From this perspective, trust functions as a crucial indicator of the social context that shapes the *utilization* of capabilities and the exercise of individual agency.

The importance of social context in human development is emphasized in the work of both Sen and Nussbaum, who discuss it through the lens of functional democracy (Sen 1995, 2009; Nussbaum 2013, 2017). In parallel, scholars such as Robert Putnam and Mark Warren argue that trust constitutes a foundational condition for the effective functioning of democratic systems.⁹ Trust is therefore indispensable for a model of human development that prioritizes democratic practice. Moreover, trust plays a crucial role not only in democratic functioning but also in what Sen terms “the establishment of effective freedom” (Sen 1992) and what Nussbaum describes as “the stabilization of development goals” (Nussbaum 2013). In this sense, trust (particularly institutional trust, as discussed below) captures not merely the formal existence of democratic institutions but their substantive conditions experienced by individuals. As such, it holds significant potential as an indicator of the *utilization* of capabilities and the exercise of agency in human development.

2.2. The Possibility of Measuring Trust

How, then, can trust—an element crucial for human development—be measured? According to the OECD, trust is broadly classified into “interpersonal trust” and “institutional trust.” Interpersonal trust is further divided into “limited trust,” referring to trust in family members and close friends, and “generalized trust,” which denotes trust in the wider public. Institutional trust, by contrast, typically refers to trust in political, judicial, and non-governmental institutions (OECD 2017).

Although interactions exist between interpersonal trust and institutional trust (Keele 2007), the direction of causality remains unclear: it is not evident whether interpersonal trust generates institutional trust or vice versa. From a policy

⁹ “Nowhere is the need to restore connectedness, trust, and civic engagement clearer than in the now often empty public forums of our democracy” (Putnam 2000, 250); “Trust is a generic social building block of collective action, and for this reason alone democracy cannot do without trust” (Warren 1999, pref.).

perspective, therefore, it is more realistic to begin by fostering institutional trust. The validity of this approach can be supported by three considerations.

First, institutional trust is more susceptible to factors beyond cultural background than interpersonal trust and is therefore more volatile (Eurofound 2018b). This volatility implies that institutional trust can be enhanced through improvements in institutional performance, particularly by clarifying institutional intentions. Second, institutional trust has a greater capacity to diffuse throughout society than interpersonal trust. For example, witnessing a police officer accept a bribe has been reported to significantly reduce not only trust in public officials but also levels of general interpersonal trust (Rothstein 2011). Conversely, when fair procedures are widely recognized within institutions, both institutional and interpersonal trust may be reinforced. Third, institutional trust is indispensable for pursuing long-term policy goals and structural reforms. While interpersonal trust is closely linked to institutional trust, reliance on interpersonal trust alone risks fostering social pathologies such as sectarianism, ethnocentrism, and even terrorism or organized crime (Putnam 2000). Moreover, in societies characterized by low levels of institutional trust, people tend to support political agendas that promise immediate benefits while neglecting more fundamental issues (Eurofound 2018b). In this sense, institutional trust is indispensable for sustaining functional public discourse.

The relationship between the HDI and trust further underscores this point. As shown in **Figure 2**, the HDI exhibits a moderate correlation with general trust ($p=0.5661^{***}$), but no significant correlation with institutional trust in either the political or judicial domains ($p=-0.1081, 0.2307^*$). This suggests that while the HDI captures aspects of general trust as part of the social context to some extent, it fails to adequately reflect institutional trust.

To further explore causality, we examine whether trust promotes human development or whether higher levels of human development foster trust. As shown in **Figure 3**, despite limitations in data availability, the relationship between recent HDI levels and trust levels measured in 1984 reveals a strong correlation between HDI and general trust ($p=0.8265^{***}$). However, no significant correlation is observed for

institutional trust in either the political or judicial domains ($p=0.1788, 0.3164$).

Similarly, when examining the relationship between recent trust levels and HDI values from 1990 (**Figure 4**), the HDI exhibits a moderate correlation with general trust ($p=0.4758^{***}$), while institutional trust again displays no significant correlation ($p=0.2723^{**}, 0.0870$).

Taken together, these findings suggest two key points. First, general trust, which is correlated with the HDI (**Figure 2**), can be interpreted as a factor that promotes the HDI (**Figures 3 and 4**). Second, institutional trust, which shows no significant correlation with the HDI (**Figure 2**), also exhibits no clear causal relationship with it (**Figures 3 and 4**). This reinforces the conclusion that the current HDI does not sufficiently reflect institutional trust.

In other words, while general trust is important insofar as it has the potential to promote the HDI, institutional trust, precisely because it is not reflected in the HDI, should be measured independently as a distinct and indispensable dimension of human development.

2.3. Socially Dependent Human Development Index

Achieving genuine human development—understood as the expansion of people's choices and the enhancement of their agency—requires an enabling social context. From this perspective, incorporating trust into the HDI is essential. In contrast to the existing HDI, which places strong emphasis on individual attributes, this article proposes a new index that explicitly integrates social conditions through trust: the Socially Dependent Human Development Index (SHDI).¹⁰

In the SHDI framework, institutional trust serves as an adjustment factor. Although it is independent of the core HDI dimensions (health, education, income), it reflects the social context that shapes how these capabilities are utilized—that is, individuals' capacity to exercise agency in accordance with their own values. For this reason, the SHDI adopts an adjustment mechanism analogous to that used in the Planetary

¹⁰ The socially dependent HDI is based on Sen's response to arguments advocating for collective capabilities: "individual capabilities that are socially dependent (like most individual capabilities are)" (Sen 2002, 85).

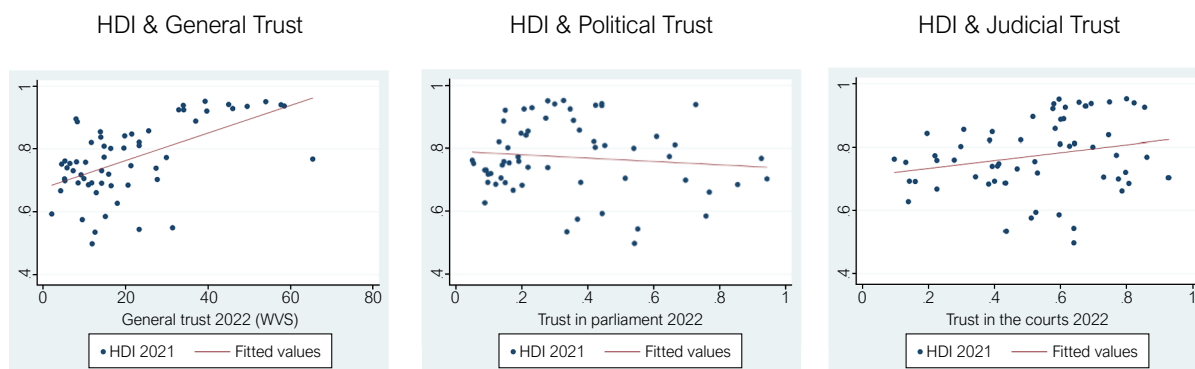


Figure 2 Correlation between HDI and Trust

Source: Author's calculation based on UNDP (2022) and World Values Survey (2022)

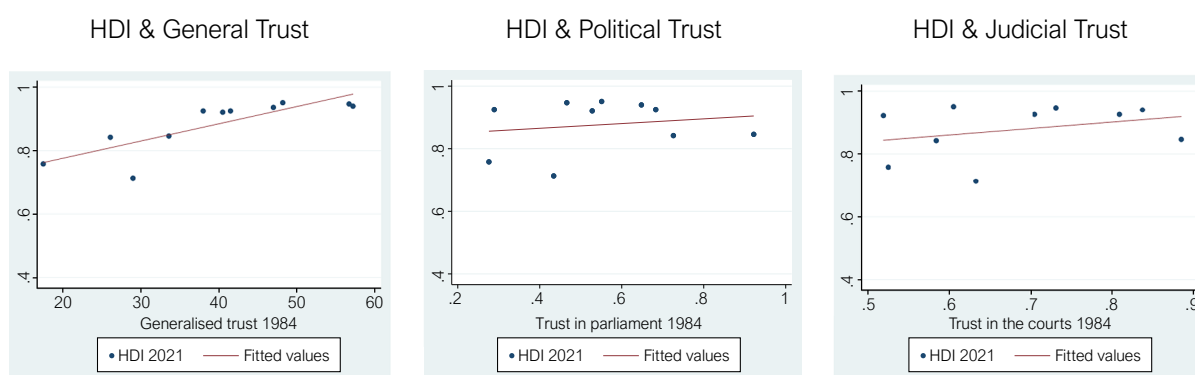


Figure 3 Correlation between HDI (2021) and Trust (1984)

Source: Author's calculation based on UNDP (2022) and World Values Survey (1984)

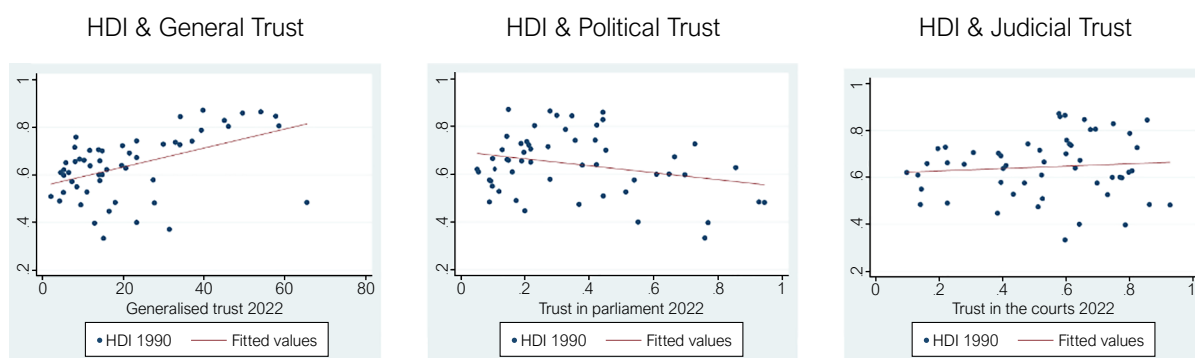


Figure 4 Correlation between HDI (1990) and Trust (2022)

Source: Author's calculation based on UNDP (1990) and World Values Survey (2022)

Pressures-adjusted HDI (PHDI), which was introduced in the *Human Development Report* to account for environmental constraints.

First, an institutional trust index is calculated. Since internationally comparable trust data are typically normalized

on a scale from 0 to 1, no additional standardization is required. Institutional trust is operationalized as the combined measure of political trust and judicial trust (assuming that both aspects are equally important for human development, the institutional trust index is therefore computed as their

arithmetic mean).

Second, the SHDI is defined by multiplying the HDI by the institutional trust index. When institutional trust attains its maximum value of 1, the SHDI equals the conventional HDI. As institutional trust declines, however, the SHDI decreases proportionally. In societies characterized by low levels of institutional trust, even relatively high HDI values may overstate the extent to which individuals can effectively expand their choices and exercise agency. In such cases, the SHDI adjusts downward accordingly. In effect, this mechanism introduces a penalty to the HDI that reflects constraints imposed by an unfavorable social context.

2.4. The Importance of Life Evaluation Measurement

James Griffin and Derek Parfit, moral philosophers at Oxford, argue that the evaluation of well-being requires both objective information and subjective information (self-evaluation) (Griffin 1986; Parfit 1984).

Life evaluation reflects how people actually experience their lives, revealing not only deficiencies in external resources but also difficulties in utilizing resources even when they are objectively available. Taking the HDI as an example, a longer duration of schooling does not necessarily imply that knowledge is effectively applied to improve one's life. Similarly, a long life expectancy does not constitute affluence if much of that life is spent in poor health or bedridden. Even high income provides limited substantive benefit if living costs are excessive or if individuals face constraints on how they can spend their resources. For these reasons, comprehensive and agency-oriented evaluations of living standards require subjective information alongside objective indicators.

Human development, in particular, is an approach grounded in people's value judgments and therefore demands explicit attention to subjective evaluations within the development process. Central to this perspective is the need to capture how individuals themselves assess their own living. Indeed, the Capability Approach places significant value on participatory development, public deliberation, and individual autonomy (Sen 1999; Nussbaum 2000).

Despite these theoretical commitments, subjectivity has not been adequately incorporated at the measurement stage.

As exemplified by the HDI, assessments of living conditions have relied predominantly on objective indicators, while subjective evaluations have largely been excluded. One key justification for this exclusion is the problem of adaptive preference formation, whereby individuals in disadvantaged circumstances tend to adjust their aspirations either (1) to what they perceive as realistically attainable or (2) to levels considered appropriate for people like themselves within society. Consequently, subjective assessments are often dismissed as too individual to be useful for policy-making (Stewart 2014). Indeed, this skepticism is evident in the overwhelming reliance on objective data across human development and SDG indicators, with nearly all 169 indicators based on objective measures, illustrating what may be described as an "allergy to subjectivity" in policy formulation.¹¹

Nevertheless, the complete exclusion of subjectivity is difficult to justify. Both Sen and Nussbaum acknowledge the risks associated with adaptive preference formation while simultaneously recognizing the "evidential role" (Sen 2008) and "motivational role" (Nussbaum 2008) of subjectivity and happiness. Similarly, the political philosopher John Rawls defines happiness as "the successful execution of a rational plan" (Rawls 1971). In this light, while uncritical acceptance of subjective evaluations may be problematic, completely ignoring them entails overlooking crucial information about lived experience. The prevailing dominance of objectivity, often justified by concerns over the interpersonal incomparability of utility, has therefore gone too far. Accurately assessing the richness of human life requires attention to both objective conditions and subjective experience.

Even when objective evaluations of living standards are high, it is difficult to describe life as truly rich if individuals do not feel subjectively fulfilled. Situations where capabilities are developed but not effectively utilized are entirely plausible. In

¹¹ Examples of the few subjective indicators in the SDGs include 5.6.1, "Percentage of women aged 15–49 who have full and informed control over, and decision-making authority in matters related to sexual and reproductive health care"; 16.1.4, "Percentage of population who feel safe walking alone in their neighborhood"; 16.6.2, "Percentage of people satisfied with the public service they last used"; and 16.7.2, "Percentage of people who consider the country's policy-making process to be inclusive and responsive."

particular, in the context of rising suicide rates and the growing sense of loss of purpose observed in many advanced economies, appropriately incorporating subjective information and self-assessment into public policy is a natural conclusion.

2.5. The Potential of Life Evaluation

How, then, can the crucial self-assessment of individuals' life circumstances be measured within the framework of human development? More specifically, is it possible to construct indicators of living standards that accurately reflect individual evaluations while mitigating the problem of adaptive preference formation?

The capability approach focuses on “the kind of lives they value—and have reason to value.”¹² When this idea is applied to the evaluation of well-being, two elements must be considered simultaneously: “the degree of achievement in each life domain” and “the importance that domain holds for the individual.” In other words, capturing a person's way of life requires attention not only to how much has been achieved but also to how meaningful that achievement is to the person concerned.

Within the field of human development, some research has incorporated life evaluation, albeit in a limited manner. Representative examples include studies that assess achievement in various dimensions based on Nussbaum's Capability List (Anand et al. 2009; Lorgelly et al. 2015) and studies that evaluate achievement across HDI-related dimensions (Comim and Amaral 2013). While these studies ask people to evaluate their levels of achievement, they do not account for the relative importance of each domain to the individual. The crucial question therefore remains: how can we identify which aspects of life are fundamentally meaningful to a given person?

Here, the distinction in positive psychology between “cognition” and “eudaimonia” offers valuable insights. The cognitive approach emphasizes the realization of values and goals that individuals themselves endorse, regardless of whether basic needs have been met. In contrast, the eudaimonic approach holds that “living well” presupposes the satisfaction

of basic needs, after which the pursuit of personally valued goals can be meaningfully evaluated. In this sense, the former relies primarily on individual value judgments, whereas the latter positions those judgments within a framework of universal values.

This distinction is closely related to the problem of adaptive preference formation. Under the cognitive approach, individual judgments may be accepted even when they are shaped by biases or social constraints. For example, individuals living in poverty may come to regard their circumstances and associated injustices as normal (Sen 1987). Moreover, adaptive preferences are not confined to the poor. Empirical research suggests that individuals who place excessive emphasis on monetary success may suffer adverse outcomes in broader life domains, such as personal relationships and genuine fulfillment (Kasser and Ryan 1993). In contrast, the eudaimonic approach, which is grounded in the fulfillment of basic human needs shared across societies, offers a means of constraining distorted value judgments and reducing the risk of erroneous self-evaluation.

The distinction between cognitive and eudaimonic approaches in positive psychology also corresponds closely to the two versions of the capability approach discussed earlier. Nussbaum's “constitutional version” aligns with the eudaimonic approach insofar as it presupposes universal values and specifies conditions for human dignity that precede individual evaluations. Sen's “comparative version,” by contrast, begins from individual values and evaluations but insists that these be scrutinized through public deliberation. While it may therefore appear closer to the cognitive approach, it differs by requiring an indispensable social evaluative process.

Accordingly, when assessing living conditions, a promising strategy is to first identify key life domains grounded in a eudaimonic framework of universal values and then incorporate individual life evaluation within those domains. This combined approach offers a viable means of integrating subjectivity into human development indicators while addressing the challenges posed by adaptive preference formation.

¹² “Attention is thus paid particularly to the expansion of the ‘capabilities’ of persons to lead the kind of lives they value—and have reason to value” (Sen 1999, 18).

2.6. Comprehensive Human Development Index and Human Development Gap Index¹³

Within the human development approach, capability refers to “what individuals are able to do and to be” in accordance with what they value and the reasons they have for valuing it. From this perspective, achievements in domains that individuals themselves do not consider important cannot be regarded as genuine improvements in living standards. Enriching human life, therefore, requires realizing those aspects of living and ways of life that individuals genuinely value.

Nussbaum argues that a capability list grounded in basic human needs is essential for human flourishing and applicable to all people, while also acknowledging that such a list should remain open to revision in response to changing social conditions (Nussbaum 2000). Sen, in contrast, criticizes pre-established lists derived from theorists on the grounds that they may lack sufficient social debate and public deliberation. Importantly, however, Sen does not reject the use of lists per se; rather, he allows their use provided that no single list is treated as an exclusive or definitive criterion (Sen 2005).

Against this theoretical background, one approach to measuring well-being is to weight achievements according to the importance that individuals assign to each life domain. For example, if an individual places the highest value on a particular aspect of life, achievement in that domain receives a 100 percent weight within the composite indicator. Conversely, if an aspect is considered less important, achievement in that domain is adjusted (discounted) proportionally. By incorporating individuals’ subjective valuations in this manner, it becomes possible to evaluate living standards more accurately. Building on this logic, this article introduces two composite indices that jointly utilize information on achievement and importance.¹⁴

Comprehensive Human Development Index

The capability level in a given aspect for an individual is calculated by weighting the individual’s achievement level by the importance (value) that the individual assigns to that capability. Next, the overall capability level for an individual is calculated by taking the average across all capability aspects each person possesses. Finally, the *overall capability level of the local population* is calculated as the average of the individual overall capability levels for all persons in the community.

Accordingly, this index first constructs a composite score at the individual level, reflecting each person’s value judgments as weights on achievement, and then aggregates these scores to derive the capability level of the population as a whole. This stepwise aggregation procedure is consistent with Seth (2009), who first aggregates across capability aspects at the individual level and subsequently aggregates across individuals, thereby producing indicators that are sensitive to distribution.

The purpose of this index is to measure capability levels in a manner that remains as faithful as possible to the capability concept, by adjusting achievement in each aspect according to the value/importance that individuals themselves attach to it. Enhancing the value of this index therefore requires not only improving achievement in aspects that individuals already regard as important but also raising the perceived importance of undervalued aspects while simultaneously improving their achievement levels. When all capability aspects are fully recognized as equally important, the index converges to the unadjusted achievement level.

Human Development Gap Index

Considering the disparity between the importance individuals assign to capabilities and their actual achievement, dissatisfaction with life arises when perceived importance exceeds achievement. In other words, dissatisfaction emerges when individuals regard a particular aspect of life as important but are unable to realize it to a sufficient degree. The individual gap for a single capability aspect is therefore calculated by subtracting achievement from importance (when achievement exceeds importance, this surplus is unlikely to detract from well-being and is thus excluded from the analysis). The

¹³ For empirical research using these two indices, see Hirai (2021).

¹⁴ In the SHDI introduced in Section 2.3., the adjustment value is independent of each component of the HDI. For this reason, the measurement method of the PHDI was applied. By contrast, the Comprehensive Human Development Index and the Human Development Gap Index proposed here employ a different measurement approach. This is because they use the value and importance individuals assign to each aspect of life as adjustment factors.

overall gap for a single capability aspect of the local population is calculated as the average of these individual gaps across all residents.

The aim of this index is to reduce the gap between achievement and importance, thereby preventing dissatisfaction that may undermine quality of life. Whereas the Comprehensive HDI seeks to maximize its value, the Human Development Gap Index is designed to be minimized. Furthermore, the very presence of such gaps calls for renewed attention to the concept of adaptive preferences.

As discussed above, the two composite indices introduced here, based on Nussbaum's framework, possess universality insofar as the aspects of living are predefined, while simultaneously incorporating mechanisms that reflect individual values and lived circumstances. At the same time, this methodology allows the predefined universal aspects to be replaced by those selected by local communities. In such cases, the approach remains consistent with Sen's emphasis on public reasoning and deliberation, thereby retaining normative legitimacy. Crucially, whether universal criteria or community-defined criteria are employed, identifying how much individuals value each aspect of life is indispensable for appropriately capturing diverse ways of living.

3. Conclusion

This article has examined the significance and challenges of the human development approach in measuring genuine prosperity and has proposed new indices that explicitly incorporate subjectivity. The HDI has made a crucial contribution by treating economic capacity as a means rather than an end, and, as demonstrated by the introduction of the PHDI, it has continued to evolve in response to changing global challenges. However, without adequate consideration of social context or individual values, even a high HDI score cannot be taken as evidence of the realization of true human development.

Admittedly, all measurement involves a degree of conceptual reduction, a tendency that is particularly pronounced in the case of human development, given the richness of the concept. This concern is powerfully articulated in the article

titled "Rescuing Human Development from the HDI" (Fukuda-Parr 2002). Nevertheless, quantification remains highly effective for policy purposes, as evidenced by the persistent tendency to equate human development with the HDI itself. Rather than accepting conceptual reduction as inevitable, it is therefore essential to continuously seek methods of measurement that approximate the underlying concept as closely as possible.

From this perspective, the paper has proposed three indices: the Socially Dependent Human Development Index, which incorporates trust as a measure of social context, the Comprehensive Human Development Index, which integrates individual value-based life evaluation, and the Human Development Gap Index, which captures the divergence between achievement and perceived importance. Given that data constraints have been significantly eased in recent years, incorporating such indices alongside the existing HDI is now entirely feasible.

Looking back at the evolution of the human development framework, environmental factors were also long neglected before eventually being institutionalized through the PHDI, following the emergence of sufficient political will. The same logic applies to subjectivity. What is now required is a comparable political commitment to integrate social context and individual values into the measurement of human development, thereby enabling a more accurate assessment of the true wealth of well-being.

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