

The Future Potential Index for OECD Countries (2022)

Zoltán Oszkár Szántó¹, Petra Aczél², Pál Bóday³, János Csák⁴, Chris Ball⁵, Khadija Farooqi⁶, Daniel Hogan⁷, Balázs Lajos Pelsőci⁸

Abstract

This paper presents a new, multidisciplinary concept applicable to social entities called “Future Potential” and introduces a methodology for measuring this concept empirically. Notably, in addition to outlining the concept, it presents a new global index, the “Future Potential Index” (hereinafter, FPI). Positioned at the intersection of philosophy, psychology, sociology, political theory, economics, and geopolitics, along with other fields of social sciences, Future Potential and its empirical metric, the index, should be of interest to both academics and policymakers alike.

The concept of Future Potential derives from an effort to capture the key elements of a social entity that determine its potential to continue and possibly flourish in the future. This requires first defining what the entity is, what it means to exist and flourish, and then how to measure it.

To address the very first step – defining a social entity – in a way that ensures consistency and facilitates comparability across different contexts, our work on defining Future Potentials and an FPI starts by establishing a fixed normative, analytical, and discursive framework. The explicit definition of such a framework is, to the best of our knowledge, unique to our work and, thus, to the FPI.

The question addressed by our work is whether there is a framework that is broad and consistent enough to permit both the definition and the measurement of a social entity such that we can monitor whether it is evolving over time in a direction that may be considered “good” or intentional or both. We show how to do this and then describe the development of the first index that actually does this using real-world data. More specifically, we present here our results for the OECD countries using 2022 data. While the concept and

¹ Dean and Professor at Corvinus Institute for Advanced Studies (CIAS), Corvinus University of Budapest and Scientific and Executive Director at Future Potentials Observatory (FPO), MOME Foundation, z.o.szanto@uni-corvinus.hu

² Vice-rector and Professor at Moholy-Nagy University of Art and Design and Member of the Executive Committee and Leader of the Future Potentials Project at FPO

³ Expert at FPO and Advisor to the President of the Hungarian Central Statistical Office

⁴ Strategic Advisor to the Management at FPO

⁵ Invited Research Fellow at CIAS and Director of the Central European Institute, Quinnipiac University, christopher.ball@quinnipiac.edu

⁶ Intern at FPO and Senior Research Analyst, Global Economics Research Team, Quinnipiac University, khadija.farooqi@quinnipiac.edu

⁷ Intern at FPO and Senior Research Analyst, Global Economics Research Team, Quinnipiac University, daniel.hogan@quinnipiac.edu

⁸ Doctoral Student at Doctoral School of Business and Management, Corvinus University of Budapest and Project Coordinator at CIAS

measurement thereof are described in this paper, we hope the initiative will form the basis for future research that utilizes the index and/or approach to address policy questions regarding the development of social entities and institutions perceived as integral parts of a broader society of value to humanity. Alternatively, it may be noted that this approach can be modified and applied to smaller-scale entities – something we discuss briefly below.

This paper proceeds as follows. We first present the normative framework, which is centered around the idea of "a good life in a unity of order," emphasizing a harmonious balance of peace, security, attachment, and care (Csák, 2018). We then explain how this architecture suggests key dimensions and metrics that can be measured as indicators of the various aspects of Future Potential. We then discuss how these have been compiled into an index and applied to a range of countries. We close by discussing the latest results as an example of this approach and include thoughts about future directions for the further application of the innovation.

Introduction

The Future Potentials Observatory (FPO) was established in 2023 to bring together scholars from diverse fields to research and keep track of future-oriented topics, including, but not limited to, the Future Potentials of various countries and other social entities from nations all the way down to cities and even private organizations. The FPO defines Future Potential as “the readiness of social entities (e.g., countries, cities, organizations, groups) in terms of their ability to preserve a good life for their members in a unity of order through the strategic management of future change” (Szántó, Aczél, Csák, Ball, 2019).

What is meant by “a good life in a unity of order” and what a nation or country may be expected to provide for its citizens in terms of a good life are questions that date back at least to Ancient Greece (Csák, 2018). In recent years, the generally applied approach has simply involved looking at a country’s GDP, assuming that GDP and welfare are closely related and that more GDP implies more human welfare. Today, that approach is being called into question from a range of intellectual perspectives, each generating its own branch of research around its specific area of critique. Kocsis (2020), for example, compared the FPI with eight other country-level indices.⁹ As the challenges to the traditional approach have grown, so has the volume of new measures aimed at more comprehensively capturing the notion of “better,” “welfare,” and a “good life” (Csák, 2018). Some examples include

⁹ Kocsis (2020) undertook the comparison against the Better Life Index (BLI), Change Readiness Index (CRI), Global Resilience Index (GRI), Human Development Index (HDI), Happy Planet Index (HPI), Inclusive Development Index (IDI), Sustainable Development Goals Index (SDG), World Happiness Index (WHI) from three different perspectives: nature, society, and economy.

happiness indices and measures incorporating environmental sustainability into their broader assessment.

The Human Flourishing Program at Harvard's Institute for Quantitative Social Science is yet another and different approach that has some loose conceptual similarities to our work (VanderWeele, 2017). This approach also recognizes the limitations of the traditional GDP-equals-welfare perspective and the importance of making explicit a general framework. The Human Flourishing program thus measures human flourishing "based around five central domains: happiness and life satisfaction, physical and mental health, meaning and purpose, character and virtue, and close social relationships"¹⁰ (VanderWeele, 2017).

While perhaps a distant conceptual relative to our work (since the framework does recognize the importance of virtue, for example), this initiative lacks a deeper normative framework. Thus, the presence of the latter makes our approach unique. Additionally, the former work merely applies a set of two questions per domain. The questionnaire can then be downloaded and used to survey people in an organization, for example, to determine if they are flourishing.¹¹ In addition, this work is static, being interested in measuring a snapshot in time, while our FPI is, by definition, interested in potential over time rather than cross-sectional measurements at a point in time.

Perspectives about "futuring" itself vary. Many associate futuring with future studies, while others associate it with sustainability, and yet others with competitiveness (Szántó, 2018; Kocsis, 2018; Monda, 2018). To clarify our usage, we focus on two concepts that are closely linked to futuring: future orientation and future-proofing (Aczél, 2018).

Future orientation refers to the degree to which an individual or a culture thinks about and plans for the future, capturing attitudes toward how the future is connected with the present and past. This concept also reflects the mindset through which the future is conceived and can vary significantly across cultures and disciplines. For instance, technologically oriented societies and disciplines may emphasize performance, completion, and achievement over time, measuring the future in terms of performance-related outcomes.

On the other hand, future-proofing is more prevalent in technological and architectural fields, where the emphasis is on ensuring that investments, whether in

¹⁰ While VanderWeele (2017) is the basis for this work, the latest research by this program is shared on the website: <https://hfh.fas.harvard.edu/measuring-flourishing>. The quote here was taken from the website to ensure the use of the latest version of their wording for the project.

¹¹ See VanderWeele 2017 for details and further exposition about their approach.

products or structures, remain viable and adaptable to future changes. This concept involves informed strategic formulation, aiming to create flexible and open-ended systems that can adapt to changing needs and withstand environmental or technological challenges. Unlike future orientation, which focuses on how far and in what manner an entity looks forward, future-proofing is concerned with the practical measures taken to secure the longevity and relevance of investments. Despite their differences, both concepts are integral to the broader practice of futuring, ensuring that social entities and investments are strategically positioned to thrive in an uncertain future.

Just as future orientation and future-proofing provide frameworks for strategic planning, both approaches offer specific and different perspectives, offering unique insights into overall well-being and national potential. Happiness literature attempts to address people's psychological well-being. Sustainability measurements focus on environmental well-being and long-term viability. Still other indices examine aspects of the political system, such as the rule of law, or focus on traditional economic indicators. The FPI aims to integrate diverse normative standards and strategic pillars to provide a holistic view of a nation's capabilities and prospects. It quantifies the degree of Future Potential by evaluating various normative standards and synthesizes a broad range of insights into a comprehensive framework for assessment that is tailored to each country.

Unlike other indices that function in isolation, the FPI attempts to bring their key insights under one roof and asks how this may be done for society as a whole. In order to do this, one first needs to identify a common social goal against which to measure the current position and, hence, develop a means of measuring progress over time. As an initial step, the concept of Future Potential returns to the classical perspective of “a good life in a unity of order” as the broad notion of welfare in a society. The study of human development is an interdisciplinary endeavor ultimately driven by implicit and explicit moral and metaphysical considerations. Historically, reflections on a worthwhile life, the image of man, and the human condition have been formulated from philosophical, religious, scientific, and artistic perspectives. Philosophy ultimately deals with issues such as “how one ought to live [well]; what course of life is best; [and what is] the right conduct of life,” and the nature and proper operation of the unity of order that enables a good human life (Csák, 2018).

From the religious perspective, transcendental principles provide the fundamental framework for comprehension and interaction and have been an integral and valued aspect of the identity of civilizations, permeating every sphere of life throughout history. Nevertheless, Western civilization has been an exception, as it seems to have

undermined its own religious and transcendental foundations, particularly over the last 300 years.

The modern scientific perspective is a detached, strictly rational, methodological approach intended to free humankind from the limitations defined by Nature and to change the world. Modern science claims neutrality with regard to ultimate values. Thus, when science faces ultimate choices between values, the risk of reducing persons to physiological processes arises, with all the potential unintended consequences. Historically, the arts have also been a unique guide for human comprehension through endeavors that inspire man's aesthetic sense and emotions.

Philosophical, religious, scientific, and artistic perspectives of comprehension cross-fertilize and prevail upon each other over time, as exemplified historically by Christianity assimilating elements of ancient Greek philosophy, the arts invigorating worldviews during the Renaissance, and the natural sciences overtaking philosophy, religion, and the arts altogether during modernity. Despite such 'contests,' we argue that sophisticated philosophical, religious, scientific, and artistic reflection is necessary for any entity that aspires to comprehensive self-consciousness and identity.

"Future Potential" is a new multidisciplinary perspective that builds on the findings of the fields mentioned above to map out the characteristics that enable entities to preserve their way of life. Correspondingly, we assume that there exist ways of being/living through which human persons can fulfill their material, intellectual, spiritual, and psychological needs and, in general, flourish better than others and are thus worth preserving and reproducing (Haldane, 2009). In this paper, we elaborate on the constitutive qualities of this worthwhile, or, in other words, "good life" in a unity of order as a conceptual framework or standard (Strauss, 1953), according to which the changes in the FPI scores may be interpreted. Such analysis may help social entities to systematically reason about alternative courses of action for shaping their futures. Using this conception as the normative metric and basis for evaluation is one of the aspects that makes the Future Potential approach unique.

Once the appropriate normative objective is established, the Future Potential concept can draw with intent from a range of social science approaches to bring together relevant insights and metrics. Finally, Future Potential determines the appropriate means of measuring the progress of an actual social entity toward its stated goal. Operationally, this is achieved through the new FPI.

The Future Potential concept is a refined term based on the prior notion of "Social Futuring" presented in the *Foundations of the Social Futuring Index* (Szántó et al., 2020). In that paper, Social Futuring was defined as "a measure of a social entity's creative

intent and potential to comprehend the ever-evolving world, its ability to get things done, to preserve and reproduce its way of life, and to control its destiny in general” (Szántó, Aczél, Csák, Ball, 2019; see also Szántó and Mueller, 2023). This provided a holistic overview of the process of measuring a social entity’s ability to strategically plan for and sustain itself in the future while attempting to maintain the broad goal of sustaining a good life for constituent members.

Both concepts align, emphasizing the importance of maintaining a good life and unity of order for members of such entities through organized and intentional efforts. The Future Potential concept builds upon the original idea by integrating and emphasizing the readiness to preserve a given quality of life by managing future changes. This both reflects and enhances social futuring’s focus on a social entity’s creative intent and potential to navigate an evolving world. Moreover, both perspectives stress the ability to take decisive action, preserve cultural and social continuity, and exert control over one’s destiny. Thus, Future Potential’s emphasis on strategic management and structure complements the criteria employed in the earlier social futuring notion of intent, capability, and future-oriented adaptability, creating a more comprehensive approach to evaluating social resilience and foresight.

Defining the Concept of Future Potential

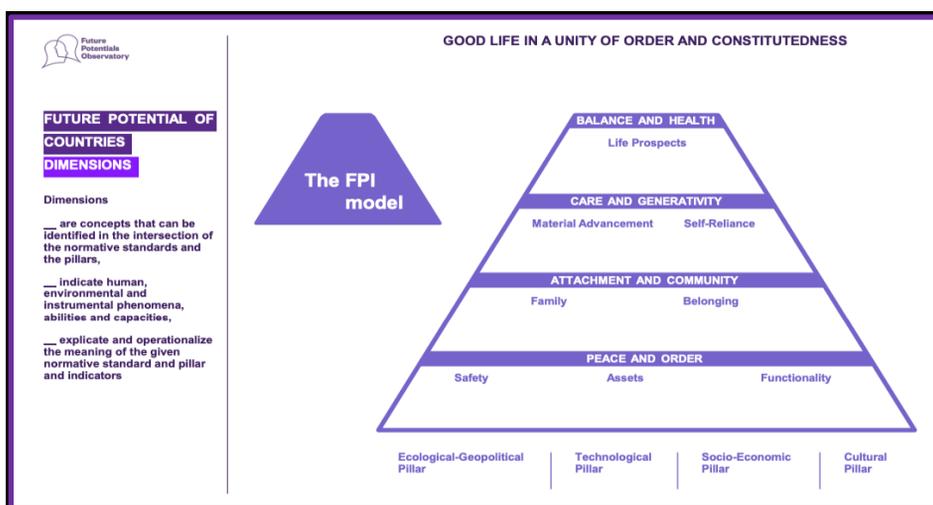
Future Potential is defined as the ability of social entities, such as countries, cities, organizations, and groups, to strategically manage future changes to maintain a good quality of life for their members within a harmonious order. These are the very features of an arbitrarily chosen social entity that express its potential, ability, and competence – namely, (1) to interpret, envisage, influence, and generate future changes, and (2) to prepare for their strategic treatment – that is, to await challenges that stem from any changes (be they limits/opportunities or threats) in a state of full preparedness. One may encounter expressions like "future-proofness," "future-orientedness," "resilience," and "adaptation" in the semantic surroundings of Future Potential (Szántó, 2018).

The necessary conditions for a social entity’s Future Potential are that the given entity is self-conscious and constitutes itself, permanently operates in a functional way, and organizes actions that influence its functioning and environment in the future. The sufficient conditions of social futuring are that a given social entity is able to facilitate/create changes or prepare itself to manipulate, exploit, or manage the risks of future changes.

The Methodology of the Compilation of the Future Potential Index

The FPI expresses countries' degree of Future Potential, grounding its logic and composition on multidisciplinary conceptual foundations. Normative standards such as Balance and Health, Care and Generativity, Attachment and Community, and Peace and Order form the conceptual framework that defines a “good life” within nations. These standards intersect with pillars encompassing ecological-geopolitical, technological, socio-economic, and cultural aspects, which necessitate strategic management to navigate future changes.

Figure 1: FPI normative standards, pillars, and dimensions



Source: Szántó, Aczél, Bóday & Harsányi (2023)

Figure 1 shows the hierarchy of normative standards. The four layers and subsequent dimensions are those needed to achieve a good life in a unity of order and constitutedness.

The foundational layer upon which the entire entity's structure is built is that of Peace and Order. An entity cannot function without a meaningful degree of peace – free from constant threat and disruption – as well as basic order within society. The Future Potential of an organization cannot be measured if it does not exist in the present.

Attachment and Community are included in the second most important normative layer for a social entity to meaningfully exist. The reasoning here is that to exist as an entity, the entity itself must want to exist, thus necessitating attachment to something larger than itself. Community forms a bond between individuals and

ideally drives action that sustains the country, allowing it to have a measurable future.

The third layer is formed by the concepts of Care and Generativity. These are intended to capture the level of future-proofing of any one organization. The previous two layers help establish and sustain the nation, but to remain sovereign and stable for the future, the former requirements must be met.

The topmost layer, Balance and Health, serves as a measure of the quality of life. A nation could most certainly meet all three requirements by ruling with an iron fist, for example, but a poor quality of life does not meet the standard of a good life of unity. Thus, this top layer serves as a way to distinguish countries that are performing well in a holistic manner from those only performing well, say, economically or in some other single dimension.

Dimensions emerging from this intersection encompass human, environmental, and instrumental phenomena, explicating the capacities that operationalize these normative standards and pillars, evaluated across 22 selected indicators. From a theoretical framework of sixteen potential dimensions (four normative standards multiplied by four pillars), essential aspects such as Life Prospects, Material Advancement, Self-Reliance, Family, Belonging, Safety, Assets, and Functionality were identified for measurement. These are later defined in more detail, as they are a crucial part of the index.

The FPI serves as a crucial tool for quantifying and expressing the overall Future Potential of countries and is constructed upon sound multidisciplinary conceptual foundations to ensure its logical and comprehensive composition.

The Future Potential of countries is defined through normative standards that define the framework for a good life, including Balance and Health, Care and Generativity, Attachment and Community, and Peace and Order. These normative standards intersect with Ecological-Geopolitical, Technological, Socio-Economic, and Cultural pillars, necessitating strategic management to address future changes. Dimensions identified from this intersection are human, environmental, and instrumental phenomena, operationalized through 22 indicators that measure abilities and capacities. From the theoretically possible sixteen dimensions, essential ones such as Life Prospects, Material Advancement, Self-Reliance, Family, Belonging, Safety, Assets, and Functionality were chosen. The FPI quantifies the degree of a country's Future Potential, structured upon multidisciplinary conceptual foundations.

The FPI is a composite index of sub-indexes comprising a hierarchical indicator system based on the holistic Future Potentials conceptual framework. Simply put,

the FPI is a weighted average of carefully selected indicators that best capture the elements of Future Potential.

The FPI comprises 22 indicators selected with the help of an expert panel. Each indicator is transformed into a combined indicator by incorporating its latest value and change over time. During the process, outliers are handled and all elements are normalized on a scale of 0 to 100. The combined indicators are weighted and aggregated according to the structure of the FPI framework.

A hierarchical structure was selected to best grasp the concept of the indicator. This structure allows for the creation of sub-indicators at different levels to examine the contexts of the conceptual framework. In general, such hierarchical structures are the most suitable choice for presenting complex, multi-dimensional phenomena.

To connect the normative standards with the pillars defined in the wider framework, definitions were prepared to describe the phenomena of each of the nine essential paired intersections of the aspects, based on which the appropriate indicators could later be selected.

Selection of Variables

The FPI is, in some ways, the next evolution of the original indicator set employed by the Social Futuring Index (SFI). Eight indicators have remained unchanged, five were slightly changed to express a different aspect of the measured phenomenon, and nine new indicators were selected. A panel comprised of members with expertise in various academic disciplines and statistics examined the potential indicators of SFI and compiled the final set of indicators that best suit the written definitions.

The indicator selection process involved the basic requirements that indicators had to

- * be measurable/available,
- * have a time series,
- * be accessible from official, publicly available sources,
- * have at least OECD-country coverage,
- * have no or limited overlap with other indicators and
- * have a measurable and meaningful range.

Several workshops were held to finalize and fine-tune the indicator set to avoid overlaps and maintain a balance between the elements of the framework. In the end, all indicators were designed to capture both the latest value of the given indicator and its change over time. More details about the compilation of the indicators can be found under the “Normalization” section below.

For each indicator, the most recent data that was available was used. In most cases, this involved data from 2020 to 2022. For each indicator, the direction (positive or negative) of the evaluation was determined based on the concept of Future Potential. This was an essential step, primarily for the purpose of normalization.

Imputation

As with nearly all datasets, there are cases with missing values. Such missing observations accounted for only about 2% of our total observations and, therefore, had little bearing on the final rankings. The selection of indicators was partially based on an attempt to obtain maximum country coverage. When observations were missing, or there were clear anomalies – for example, radically different data to other countries for that observation and seemingly inconsistent with reasonable boundaries – the observations were imputed using other reliable sources or, in rare cases, supplemented with the value of a similar country. Again, with less than 2% of total observations either missing or clearly erroneous, none of the rankings were sensitive to imputation in these cases.

Normalization and Compilation of Indicators

Normalization is required prior to any data aggregation, as the indicators in a data set often have different measurement units or orders of magnitude. After filtering outliers with an interquartile range, the min-max method was chosen because it best met the needs of a hierarchical model. There were no negative numbers and no problems handling 0; therefore, additivity was retained.

All indicators are designed to capture both the latest value of the given indicator and its change over time. This results in a combined value that also captures dynamic performance.

Change over time is measured by absolute rather than relative change. This reduces the effect of small value changes (e.g., a change in a value from 1 to 2 is 100% more, while from 50 to 51, it is only 2% more).

The basic data for each indicator is the latest available value (filtered of outliers and normalized) and its absolute change (also filtered of outliers and normalized) compared to 2010 (in general).

The 'final' normalized indicator for each indicator is calculated as the sum of these two factors, which are then re-normalized (to a value between 0 and 100) for ease of interpretation. The two factors are equally weighted, so the range of the normalized values is 100 for both factors.

Establishing the Index

The study of resilience, future orientation, and future-proofing contributes new insights into how cultures differ and which parameters affect a group's ability to engage with the world around it over time. The FPI aims to do the same while being grounded on a normative framework. However, as a project, it is not merely an intellectual endeavor. The Future Potential initiative defined the practical goal of developing the FPI, a composite measure of countries comprising several dimensions and indicators associated with four pillars with pre-defined normative standards.

Pillars

Figure 2 presents the outlines of the FPI, which are summarized here. According to this logic, the index's concept is based on four pillars: Ecological-Geopolitical, Technological, Socio-Economic, and Cultural.

The *Ecological-Geopolitical* pillar captures aspects of a social entity's assets, such as its basic Assets (energy, water, land, etc.), without which it would not have the resources to maintain itself. Moreover, it includes elements that aid in measuring levels of Safety, Assets, and standards of living to capture various aspects of Belonging to the social entity and the resources required to develop Future Potential.

The *Technological* pillar includes aspects such as a social entity's ability to connect, innovate, and function generally. Basic functioning requires fundamental resources like clean water, while innovation requires a legal framework for patents and intellectual property. Finally, the ability to network and connect can be measured in physical terms, such as roads, or digitally, such as internet access and ICT use.

The *Socio-Economic* pillar includes classical economic areas like capital, labor, various forms of expenditure, and indicators of unemployment, schooling, and

GDP/capita. Socially, the core unit considered appropriate for a stable, socially cohesive society that has Future Potential is the Family, so the FPI includes measures such as fertility, the number of single-parent households, couples with children, work-life balance, ageing and inequality.

Finally, the *Cultural pillar* – in many ways, the single dimension that makes the FPI unique since its normative basis is one of the key aspects of Future Potential, includes measures such as religiosity and adherence to tradition.

Dimensions and Indicators

The dimensions are concepts that can be identified at the intersection of the normative standards and pillars. From the sixteen possible dimensions (four normative standards multiplied by four pillars), the eight that were chosen were Life Prospects, Material Advancement, Self-Reliance, Family, Belonging, Safety, Assets, and Functionality. These indicate the human, environmental, and instrumental phenomena, abilities, and capacities that operationalize the meaning of the given normative standard and pillars. The following is a list containing every dimension and the related indicators, with their respective weight, used to quantify the dimension within the whole index. Please refer to Chart 2 for an illustration.

Life Prospects: This is the sole dimension of the Balance and Health normative standard. It captures the forward-looking aspects of the standard of living, gauging how good life will be in the future. The dimension is formed at the intersection of the Cultural and Ecological/Geopolitical pillars with the respective normative standard. It lies at the top of the pyramid, as it exists only if all other defined dimensions are present. Indicators: life expectancy (3.3%), alcohol use disorder (3.3%), anti-depressant usage (3.3%).

Material Advancement: Half of the dimensions in Care and Generativity are comprised of Material Advancement. Advances in an organization's technological and economic sectors are key to maintaining activity and care within the organization. This dimension is 'only' crucial for any entity in relation to keeping up with societies that are evolving and having a measurable future, but it is not a prerequisite for existence as a society. Indicators: average wages (3.3%), labor productivity (3.3%), Gini coefficient (3.3%).

Self-Reliance: The other half of Care and Generativity is located at the intersection with the Socio-Economic pillar. An organization or nation's ability to sustain itself in sectors associated with food and energy is vital to its ability to function as a

sovereign entity. Indicators: employment rate (3.3%), old age dependency (3.3%), and population with tertiary education (3.3%).

Family: The normative standard of Attachment and Community is partially comprised of 'Family,' which is at the intersection of both this standard and the Culture and Socio-Economic pillars. To properly plan for the future, a population must be sustainable; steady growth measured by Family size can provide insight here. However, Family is equally important to individual wellbeing and thus plays a role in measuring future success. Indicators: single person households (7.5%), fertility rate (7.5%).

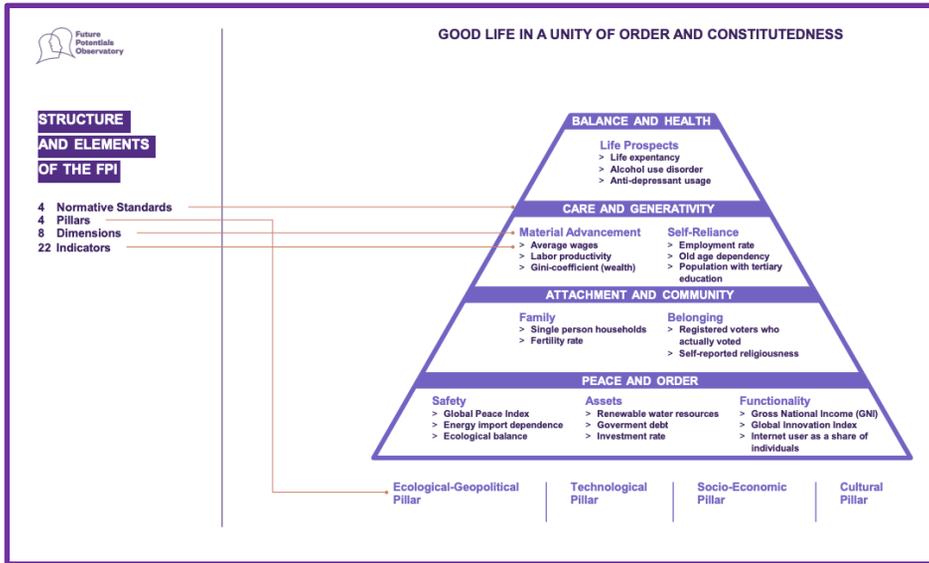
Belonging: While Family is a necessity, personal attachments to groups and individuals outside of one's own household can indicate a higher level of cooperation among an organization and may be a measure of overall well-being. This dimension is associated with the Culture and Socio-Economic pillars due to their significant presence in determining how and with whom any one individual may interact. Indicators: registered voters who actually voted (7.5%), self-reported religiousness (7.5%).

Safety: The foundation of Peace and Order is partially based on the Safety of individuals. Ecological conditions and geopolitics influence this dimension greatly due to their ability to affect every individual. To ensure there is a community to belong to, residents must feel that they are safe from local, foreign, and ecological threats. Indicators: global peace index (4.4%), energy import dependence (4.4%), ecological balance (4.4%)

Assets: To develop Peace and Order both ecologically and geopolitically, the government and society must have enough Assets to address problems/threats. From domestic production to having cash on hand, Assets are key in the establishment of an organization capable of measuring its Future Potential. Indicators: renewable water sources (4.4%), government debt (4.4%), investment debt (4.4%).

Functionality: The last vital dimension that underpins the existence of a society is Functionality. Indicators: gross national income (4.4%), global innovation index (4.4%), internet users as a share of individuals (4.4%).

Figure 2: FPI indicators



Source: Szántó, Aczél, Bóday & Harsányi (2023)

Main results

In the first iteration of the index in 2022, Iceland led the OCED nations in the FPI with a score of 64.4 out of 100. Greece rounded out the group with a score of 36, slightly more than half of Iceland’s score. A difference of almost thirty points is not insignificant; there are a few areas where this difference does not occur within the country profiles within the FPI.

Starting with the foundational normative standard of Peace and Order, Iceland outranks Greece in every dimension. The smallest gap between these two nations was 37 points in Safety. In the dimensions of Assets and Functionality, the scores were 70.1 and 47.2, respectively. While the difference between the two countries’ Peace and Order scores is the largest in the index, this highlights the robustness of the index. Greece has a near-average score for Balance and Health, which helped narrow its score to within 30 points of Iceland, despite the 50+ point gap in the Peace and Order score, a dimension that accounts for 40% of the total index score.

Figure 3: Overall FPI ranking of OECD countries (2022)



Source: Szántó, Aczél, Bóday & Harsányi (2023)

According to the FPI, Iceland is the country best suited to face the future (scoring four points more than the nation with the second-highest score, Israel). Iceland ranked highest on the dimensions of Material Advancement (68.1), Safety (82.3), Assets (82.8), and Functionality (75.1). However, Iceland performed poorly in Balance and Health, ranking 33rd out of all OECD countries. It is on the dimensions of Life Prospects and Family where last-placed Greece outperforms Iceland, ranking 22nd and 28th, respectively, out of all the OECD countries.

It is important to note here that Denmark and Germany are the only two countries in the top ten performing nations that do not place in the bottom quarter of the rankings for any of the normative standards. This is in sharp contrast to the countries that ranked between 11 and 19 in the index, of which five did not rank in the bottom quarter for any normative standards. Four of those five nations ranked in the top 10 for at least one normative standards.

These statistics highlight the significant variability across nations, making calculating Future Potential difficult. The common trend among the top ten nations is a strong foundation. High scores across the normative standards of Peace and Order, attachment, and community suggest the establishment of a more stable nation, leading to a higher score.

An example of a nation lacking such a foundation would be Japan, an aging, indebted society that ranks 35th on the FPI. Despite ranking second in Life Prospects with a score of 88.9 and 9th in Self-Reliance, it lacks the fundamentals of a stable society, ranking 34th in Peace and Order and 38th in Attachment and

Community. It must address its slowing economy, growing debt, and aging population to become better positioned to address future problems. Without addressing these issues, Japan may be caught flatfooted as it lacks Assets and Safety.

The Role of Sustainability Within the Future Potential Index

The concepts of environmental sustainability and measuring Future Potential are difficult to distinguish at first sight, and both are clearly future-oriented (Kocsis, 2018). On a deeper level, it becomes evident that both fields paradoxically cannot exist without one another. It is not possible to measure a society's Future Potential if it is not functioning in a sustainable manner. However, it is equally impossible to classify a society as sustainable if it is incapable of ensuring the basic features that permit the measurement of its Future Potential.

Thus, any index that measures a certain degree of sustainability will also measure the level of a society's Future Potential. Conversely, any index that measures the Future Potential of a society will inherently capture how environmentally sustainable that society is. The relationship between these two features helps highlight the uniqueness of the FPI.

The United Nations maintains an index that measures each country's progress in achieving the sustainable development goals (SDGs). (The SDGs are a series of goals defined by the UN as a roadmap for creating a future that address inequality, climate change, and any other potential issue that could hinder development). The index is comprised of 84 indicators that measure the 17 different goals and each subsection of these goals.

Ranging from economic growth to poverty alleviation to achieving net zero carbon emissions, the SDGs have similar goals to the FPI, making the two a good pair for comparison in terms of how they rank OECD nations.

Comparing the FPI Against the Sustainability Development Goals Index (SDGI)

The FPI, as established, emphasizes the necessity of peace and community for achieving a good life in a unity of order. Yet, this is not the only way a nation's success or readiness for the future may be measured. Numerous other indices, from the Happiness Report to the Human Development Index, have attempted to do this. However, the SDGI takes one of the most holistic approaches, as it is centered around sustainable development, thus making it a good index to compare against

the FPI. By comparing the indexes, it is possible to highlight the uniqueness of the FPI and how the methodology is applied. Israel and the United Kingdom are prime examples that highlight the differences well.

In the FPI, Israel was ranked second overall among all OECD countries but in the bottom five by the SDGI. Based on how Israel ranks over the next few years, the importance of measuring the Peace and Order normative standard and Material Advancement will be significant. War, while not considered in these reports, is unsustainable, but being able to defend oneself properly in/against war and amass strong allies is pivotal to ensuring a nation remains sovereign. While the region may not be safe today, Israel is liable to survive and recover due to the country's high pre-war FPI score.

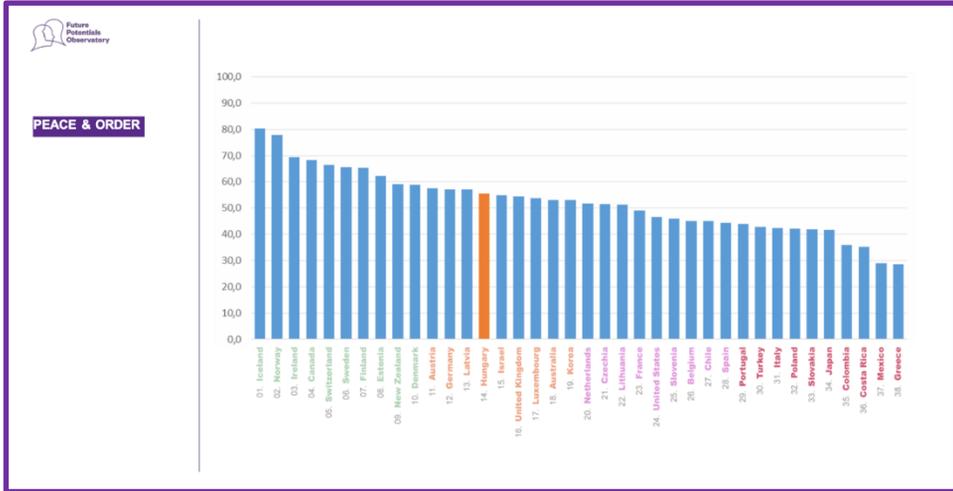
As measured by the FPI Life Prospects, the United Kingdom (UK) has some of the worst Life Prospects in the OECD, and the nation lacks the necessary Belonging and key Assets. While the FPI contains only twenty-two indicators, all of them are of value. However, the SDGI has seventeen dimensions, each with its own indicators. So, while the UK is projected to fall short of its goals in the areas of good health and well-being, it is still ranked in the top ten of the OECD nations in terms of the SDGs. Hedging against certain indicators always has its benefits, preventing nations from wild swings in their index score.

The two 'case studies' that compare the FPI to another major index show the dynamism of the FPI. There are enough indicators and, importantly, variations in the type of indicators that make up the index to avoid violent swings in measurement. Great Britain is downgraded for its permanent shortcomings with some key elements needed to achieve a good life in an order of unity. On the other hand, throughout the war, Israel's situation was coherent with the FPI findings from previous years; a well-prepared country can successfully handle a major problem due to its future-proofing measures. These results are currently the most concrete evidence that the FPI has established a meaningful way of measuring how future-proofed a country is and how we can learn from the successes of other nations.

Figure 3 shows the overall FPI rankings of OECD countries. Overall, northern European nations dominate the top 10 list, taking four of the five top spots in the Index. This is seen with other indexes, too, as Nordic nations are typically ranked highly. However, we start to see some deviation in the lower half of the top 10. In other indexes, such as the Human Development Index (HDI), Turkey ranks below the nations of France, Italy, Japan, and Greece, but in the FPI, we see Turkey ranked well above this latter group, in seventh place from all OECD countries. The

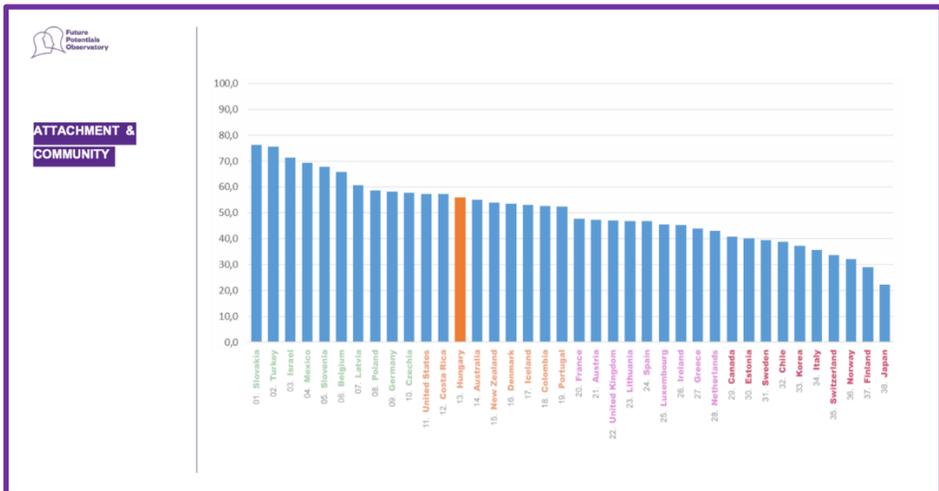
forementioned group of nations places 23rd, 32nd, 35th, and 38th, respectively, in the overall FPI rankings of OECD countries.

Figure 4: OECD country ranking according to Peace and Order normative standard (2022)



Source: Szántó, Aczél, Bóday & Harsányi (2023)

Figure 5: OECD country ranking according to Attachment and Community normative standard (2022)



Source: Szántó, Aczél, Bóday & Harsányi (2023)

According to the normative standard of Peace and Order, Iceland remains at the top. Accounting for 40% of a nation's total FPI score, this normative standard has

the most weight of all four normative standards. Despite the security the United States enjoys due to its large military, the FPI ranks it in 24th place. With a government debt of more than 100% of GDP and an increasing deficit, there is a lack of major fiscal responsibility in the States, resulting in a lower score. Other notable movements include Israel in 15th place (2nd overall) and Estonia in 8th for Peace and Order (17th overall).

The normative standard of Attachment and Community captures the more personal elements of nations, something that can be hard to quantify. The top quartile here is dominated by Central European nations, with Slovakia in 1st (9th overall), Slovenia in 5th (14th overall), and Czechia in 10th (18th overall) place. This highlights one of the FPI's strengths – countries like Iceland and Denmark (3rd overall) fall to 17th and 16th place when scored on this normative standard. Being able to capture these details helps enhance the robustness of the index.

Figure 6: OECD country ranking according to Care and Generativity normative standard (2022)

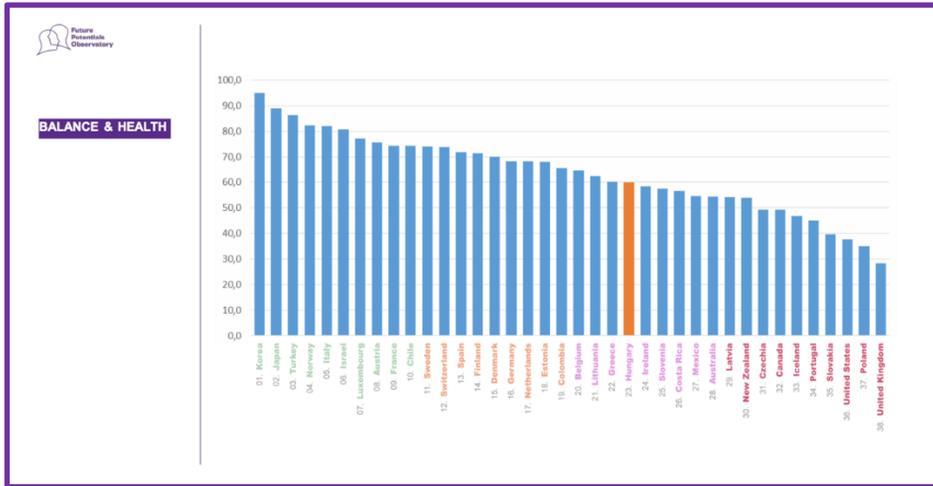


Source: Szántó, Aczél, Bóday & Harsányi (2023)

With the normative standard of Care and Generativity, there are some significant changes in the rankings of the OECD nations. Poland's ranking increases the most relative to the overall scores. The nation jumps from 28th overall to 7th on this standard. However, the largest change in ranking occurs with Israel, which drops from 2nd overall to 29th on this normative standard. Having a wide range of standards and indicators allows the FPI to capture these massive changes in performance while still providing a fair and holistic evaluation of each nation. Other

notable changes are Japan gaining 19 spots and Ireland dropping 19 spots (in terms of the relation of the overall FPI ranking to the ranking for Care and Generativity).

Figure 7: OECD country ranking according to Balance and Health normative standard (2022)



Source: Szántó, Aczél, Bóday & Harsányi (2023)

The final normative standard, Balance and Health, is attributed 10% of the combined weight of all the standards. With this measurement, there are drastically different rankings. Japan gains 33 spots (from 35th overall to 2nd) for this normative standard. The top spot is held by the only other eastern-Asian nation, South Korea. The scores (ranking) for Iceland and Latvia decline the most for this normative standard, dropping 32 and 23 places, respectively. This is the weakest score for Iceland, but the country’s performance is well-rounded enough to ensure it the top spot despite performing poorly on certain indicators.

Conclusions

This paper has presented the newly created FPI. The index is based on the Future Potentials concept and the effort to operationalize the concept into a metric with some value and potential utility to researchers and policymakers alike. The first index was created for OECD countries using 2022 data and demonstrates the viability of the concept and index.

The concept we have applied is unique in that it creates a substantive normative framework that guides the determination of the architecture on which an entity, its Future Potential, and our measures are based. We then provide details about each

layer of the architecture in the context of the framework and how they are transformed into data-based metrics.

We show that the overall index is different from other indices and is robust because of its multi-layered (horizontal) plus multi-pillared (vertical) approach, creating a structure that incorporates weights for various categories, all of which indicate Future Potential. This allows researchers to explore inter-country differences and intra-country ones across various categories that are deemed important for determining a nation's Future Potential.

Policymakers in these countries can likewise use this index and sub-category rankings to determine where the policy focus is most appropriate going forward. Again, the FPI concept and index are different because we do not intend to help policymakers maximize a single objective like GDP or "happiness," however defined today. Rather, the FPI may help policymakers focus on what they can do to improve their nation's outcomes today, and how they can sustain and improve the Future Potential of their nation in terms of the aspects they value themselves.

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Appendix 1 – Indicators associated with the Future Potential Index

1. Global Peace Index

(direction: negative, normative standard: Peace & Order, dimension: Safety)

Definition: The Global Peace Index is a composite index calculated using 23 qualitative and quantitative indicators and measures the state of peace across three domains: a) the level of Societal Safety and Security, b) the extent of Ongoing Domestic and International Conflict, c) the degree of Militarization.

Unit of Measure: Index (1 to 5)

Source of Data: Vision of Humanity, <https://www.visionofhumanity.org/public-release-data/>

2. Energy Import Dependency

(direction: negative, normative standard: Peace & Order, dimension: Safety)

Definition: Energy import dependency is estimated as energy use minus production, both measured in oil equivalents and divided by final energy consumption.

Unit of Measure: Percent of energy use

Source of Data: UN, <https://unstats.un.org/unsd/energystats/dataPortal/>

3. Ecological Balance

(direction: positive, normative standard: Peace & Order, dimension: Safety)

Definition: The ecological balance is the difference between a population’s ecological footprint and a country’s biocapacity. If a country's demand exceeds its biocapacity, it has an ecological deficit. If a country's biocapacity exceeds its ecological footprint, it has an ecological reserve.

Unit of Measure: Global hectare

Source of Data: Global Footprint Network, <http://data.footprintnetwork.org/#/exploreData>

4. Renewable Water Resources

(direction: positive, normative standard: Peace & Order, dimension: Assets)

Definition: "Total annual actual renewable water resources per inhabitant

[Total renewable water resources per capita] = [Total renewable water resources] * 1000000 / [Total population]".

Unit of Measure: Cubic meter/inhabitant

Source of Data: FAO, https://tableau.apps.fao.org/views/ReviewDashboard-v1/country_dashboard?%3Aembed=y&%3AisGuestRedirectFromVizportal=y

5. ***Government Debt***

(direction: negative, normative standard: Peace & Order, dimension: Assets)

Definition: General government debt-to-GDP ratio measures the gross debt of the general government as a percentage of GDP.

Unit of Measure: Percent of GDP

Source of Data: IMF, https://www.imf.org/external/datamapper/GG_DEBT_GDP@GDD/hun

6. ***Investment Rate***

(direction: positive, normative standard: Peace & Order, dimension: Assets)

Definition: The investment rate is defined as gross investment (gross fixed capital formation) divided by GDP.

Unit of Measure: Percent of GDP

Source of Data: OECD, <https://stats.oecd.org/index.aspx?lang=en#>

7. ***Gross National Income (GNI)***

(direction: positive, normative standard: Peace & Order, dimension: Functionality)

Definition: Gross National Income (GNI) is an indicator derived from GDP that takes into account primary income received from abroad and paid abroad. Unlike gross domestic product, it does not include the income associated with foreign ownership generated by foreign capital operating in the country or the income of foreign workers in a country, but it does include the income earned abroad by investors and workers in a country and the sum of the balance of subsidies received and taxes paid from abroad.

Unit of Measure: USD (current price and PPP)

Source of Data: OECD, <https://data.oecd.org/natincome/gross-national-income.htm>

8. ***Global Innovation Index***

(direction: positive, normative standard: Peace & Order, dimension: Functionality)

Definition: The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facet of innovation.

Unit of Measure: Score (0 to 100)

Source of Data: Global Innovation Index, <https://www.globalinnovationindex.org/analysis-indicator>

9. ***Internet Users as a Share of Individuals***

(direction: positive, normative standard: Peace & Order, dimension: Functionality)

Definition: Internet users as a share of individuals measures Internet uptake by the adult population who have used the Internet over the past three months prior to being surveyed.

Unit of Measure: Percent of individuals aged 16-74

Source of Data: Going Digital, <https://goingdigital.oecd.org/indicator/20>

10. ***Share of Single-Person Households***

(direction: negative, normative standard: Attachment & Community, dimension: Family)

Definition: Share of single-person households among all households.

Unit of Measure: Percent of all households

Source of Data: Eurostat, https://ec.europa.eu/eurostat/databrowser/view/ilc_lvph02/default/table?lang=en

11. ***Fertility Rate***

(direction: positive, normative standard: Attachment & Community, dimension: Family)

Definition: The total fertility rate is defined as the total number of children that would be born to each woman if she were to live to the end of her childbearing years and give birth to children in alignment with the prevailing age-specific fertility rates.

Unit of Measure: Number of children

Source of Data: OECD,

[#](https://stats.oecd.org/viewhtml.aspx?datasetcode=HEALTH_DEMR&lang=en)

12. *Registered Voters Who Actually Voted*

(direction: positive, normative standard: Attachment & Community, dimension: Belonging)

Definition: The total number of votes cast (valid or invalid) divided by the number of names on the voter register, expressed as a percentage.

Parliamentary Elections: The parliamentary elections displayed in the voter turnout database are elections to the national legislative body of a country or territory. If the legislative body has two chambers, only the second (lower) chamber is included. If elections are carried out in two rounds (using the two-round system, TRS), only the second election round is included.

Unit of Measure: Percent

Source of Data: International Idea, <https://www.idea.int/data-tools/world-view/40?st=par#rep>

13. *Self-reported Religiousness*

(direction: positive, normative standard: Attachment & Community, dimension: Belonging)

Definition: The share of those who reply that they are religious to the question. “Are you (1) A religious person, (2) Not a religious person, or (3) A convinced atheist?”

Unit of Measure: Percent

Source of Data: World Values Survey,

<https://www.worldvaluessurvey.org/WVSONline.jsp> ; <https://ess-search.nsd.no/CDW/ConceptVariables>

14. Average Wages

(direction: positive, normative standard: Care & Generativity, dimension: Material Advancement)

Definition: Average annual wages per full-time and full-year equivalent employee in the total economy. Average annual wages per full-time equivalent dependent employee are obtained by dividing the national-accounts-based total wage bill by the average number of employees in the total economy, which is then multiplied by the ratio of average usual weekly hours per full-time employee to average usually weekly hours for all employees.

Unit of Measure: USD (constant prices 2021 and PPPs)

Source of Data: OECD,

https://stats.oecd.org/viewhtml.aspx?datasetcode=AV_AN_WAGE&lang=en#

15. Labor Productivity

(direction: positive, normative standard: Care & Generativity, dimension: Material Advancement)

Definition: GDP per hour worked is a measure of labor productivity. This measures how efficiently labor input is combined with other factors of production and used in the production process. Labor input is defined as the total hours worked by all persons engaged in production. Labor productivity only partially reflects the productivity of labor in terms of the personal capacities of workers or the intensity of their efforts. The ratio between the output measure and the labor input depends to a large degree on the presence and/or use of other inputs (e.g., capital, intermediate inputs, technical, organizational, and efficiency change, economies of scale). This indicator is measured in USD (constant prices 2010 and PPPs) and indices.

Unit of Measure: USD (constant prices 2010 and PPPs)

Source of Data: OECD, <https://data.oecd.org/lprdty/gdp-per-hour-worked.htm#indicator-chart>

16. Gini-coefficient (Wealth)

(direction: negative, normative standard: Care & Generativity, dimension: Material Advancement)

Definition: The Gini coefficient is a measure of the inequality of the wealth distribution in a population. Higher values indicate a higher level of inequality.

Unit of Measure: 0-100

Source of Data: Credit Suisse, <https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html>

17. ***Employment Rate***

(direction: positive, normative standard: Care & Generativity, dimension: Self-Reliance)

Definition: Employment rates measure the extent to which available labor resources (people available to work) are being used. They are calculated as the ratio of the employed to the working-age population.

Unit of Measure: Percent of working-age population,

Source of Data: OECD, <https://data.oecd.org/emp/employment-rate.htm>

18. ***Old Age Dependency***

(direction: negative, normative standard: Care & Generativity, dimension: Self-Reliance)

Definition: The ratio of dependents older than 64 to the working-age population (15-64).

Unit of Measure: Percent of working-age population

Source of Data: WB, <https://data.worldbank.org/indicator/SP.POP.DPND.OL>

19. ***Population with Tertiary Education***

(direction: positive, normative standard: Care & Generativity, dimension: Self-Reliance)

Definition: Population with tertiary education is defined as those having completed the highest level of education. This includes both theoretical programs leading to advanced research or high-skill professions such as medicine and other vocational programs leading to the labor market. The measure is the percentage of the same-age population. As globalization and technology continue to reshape the needs of labor markets worldwide, the demand for individuals with a broader knowledge base and more specialized skills continues to rise.

Unit of Measure: 25–64-year-olds, % in same age group

Source of Data: OECD, <https://data.oecd.org/eduatt/adult-education-level.htm#indicator-chart>

20. ***Life Expectancy***

(direction: positive, normative standard: Balance & Health, dimension: Life Prospects)

Definition: Life expectancy at birth is defined as how long, on average, a newborn can expect to live, if current death rates do not change.

Unit of Measure: Years

Source of Data: OECD, <https://data.oecd.org/healthstat/life-expectancy-at-birth.htm#indicator-chart>

21. ***Alcohol Use Disorder***

(direction: negative, normative standard: Balance & Health, dimension: Life Prospects)

Definition: Alcohol dependence is defined by the International Classification of Diseases as the presence of three or more indicators of dependence for at least a month within the previous year. To allow comparisons between countries and over time, this metric is age-standardized.

Unit of Measure: Percent

Source of Data: Our world in data, <https://ourworldindata.org/grapher/share-with-alcohol-use-disorders?time=2019>

22. ***Anti-depressant Usage***

(direction: negative, normative standard: Balance & Health, dimension: Life Prospects)

Definition: Antidepressant drug consumption in DDD. Defined daily dose (DDD) is the assumed average maintenance dose per day for a drug used for its main indication in adults.

Unit of measure: Defined daily dosage (DDD) per 1,000 people per day

Source of data: OECD, https://stats.oecd.org/viewhtml.aspx?datasetcode=HEALTH_PHMC

Appendix 2 – Weighting and Aggregation

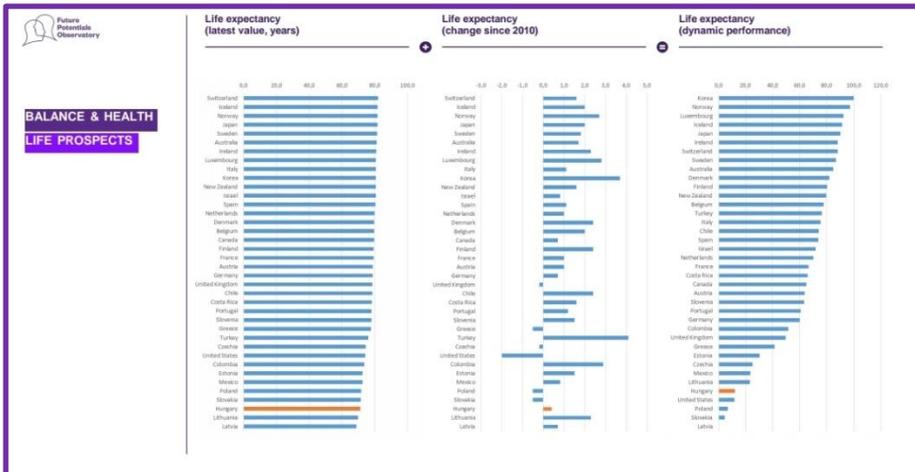
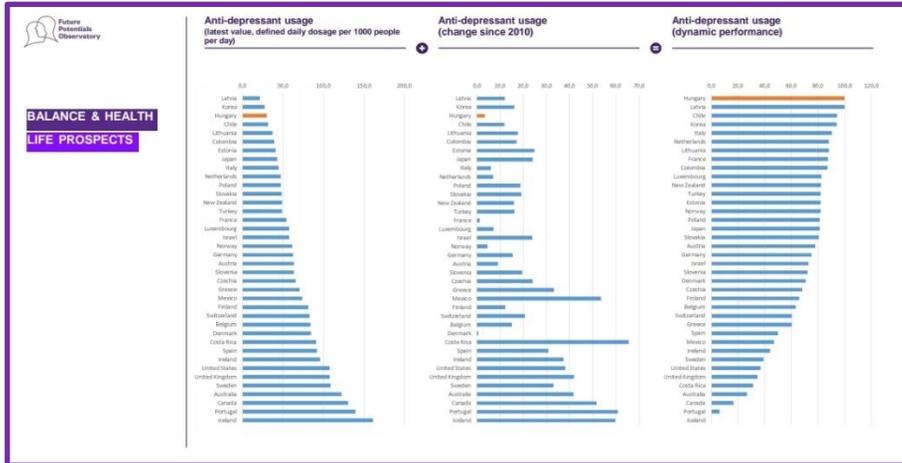
Weights were defined on the basis of the conceptual framework and considering the importance of the normative standards. All indicators within each dimension were equally weighted.

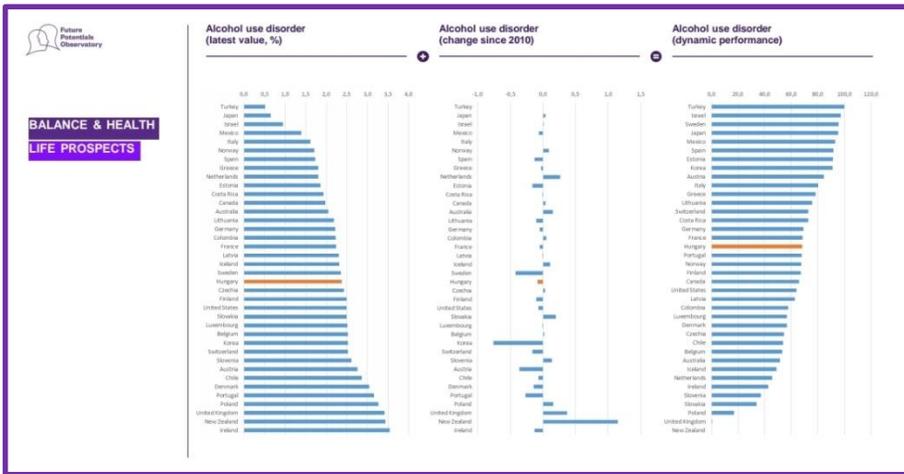
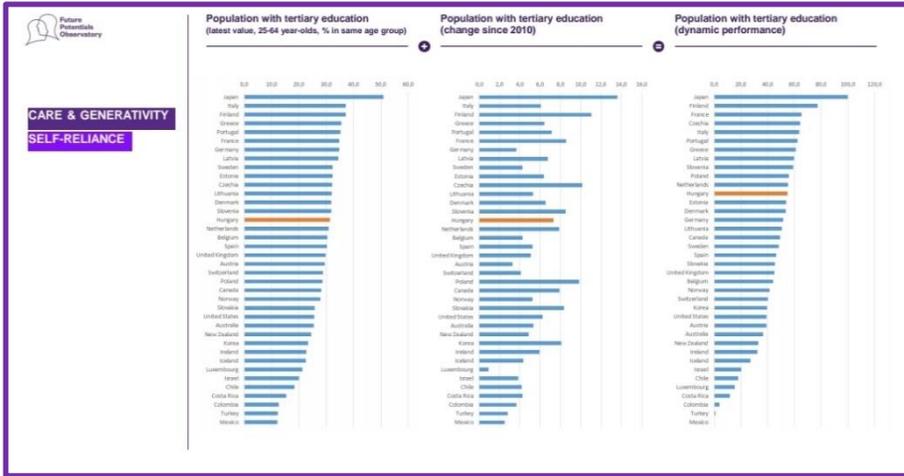
Normative Standards	Weight according to Normative Standards	Dimensions	Weight according to Dimensions	Number of Indicators within the Dimension	Weight according to Indicators
Peace & Order	40	Safety	13.3	3 Indicators	4.4
		Assets	13.3	3 Indicators	4.4
		Functionality	13.3	3 Indicators	4.4
Attachment & Community	30	Family	15	2 Indicators	7.5
		Belonging	15	2 Indicators	7.5
Care & Generativity	20	Material Advancement	10	3 Indicators	3.3
		Self-Reliance	10	3 Indicators	3.3
Balance & Health	10	Balance and Generativity	10	3 Indicators	3.3

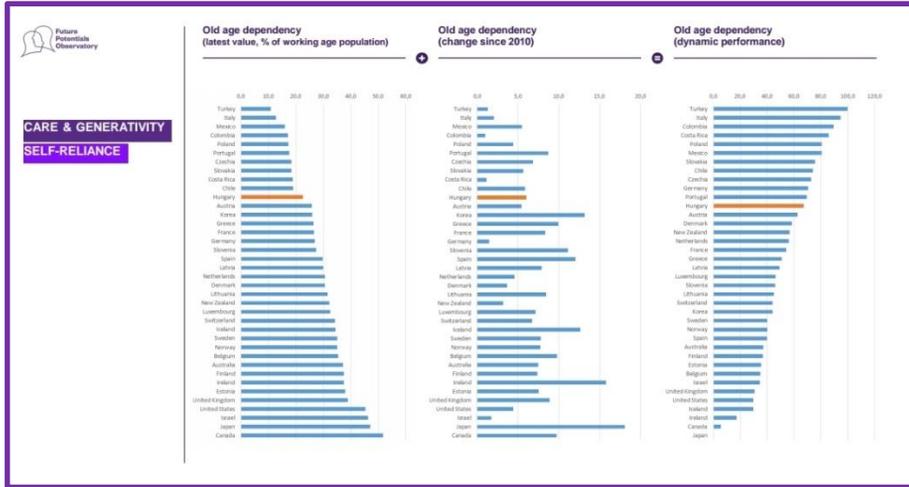
Aggregation was based on weights and normalized indicator values. Based on this, sub-indicators can also be defined (at the dimension and normative standard level). All composite indicators should be interpreted on a scale ranging from 0 to 100.

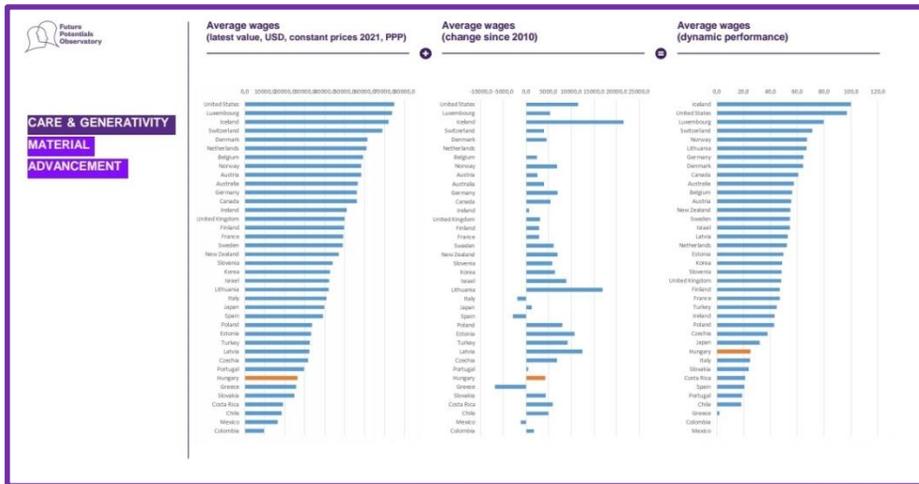
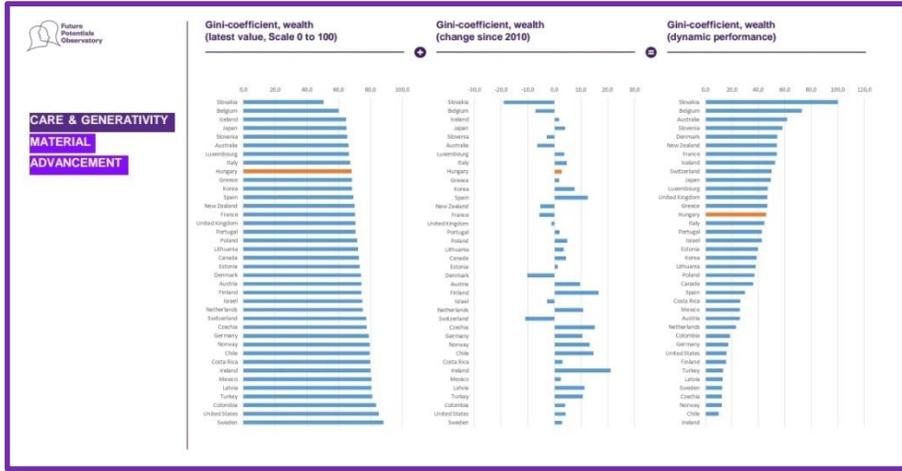
Also, the composite indicator at any given level can be built from the sub-indicators that comprise it. This greatly facilitates the analysis of the effect of the indicator composition.

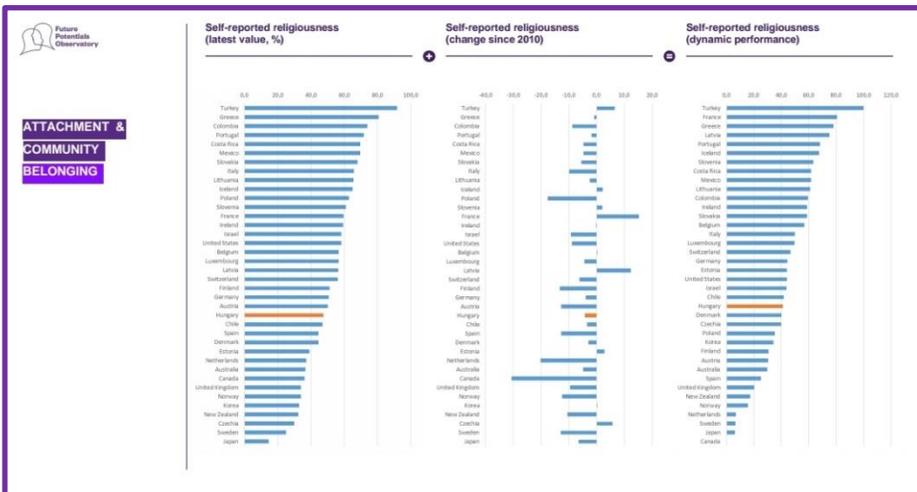
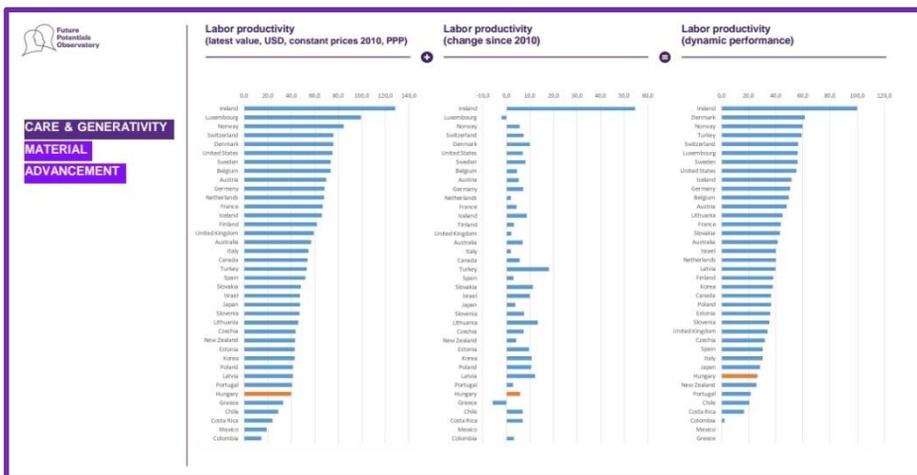
Appendix 3 – Ranking of OECD countries according to indicators

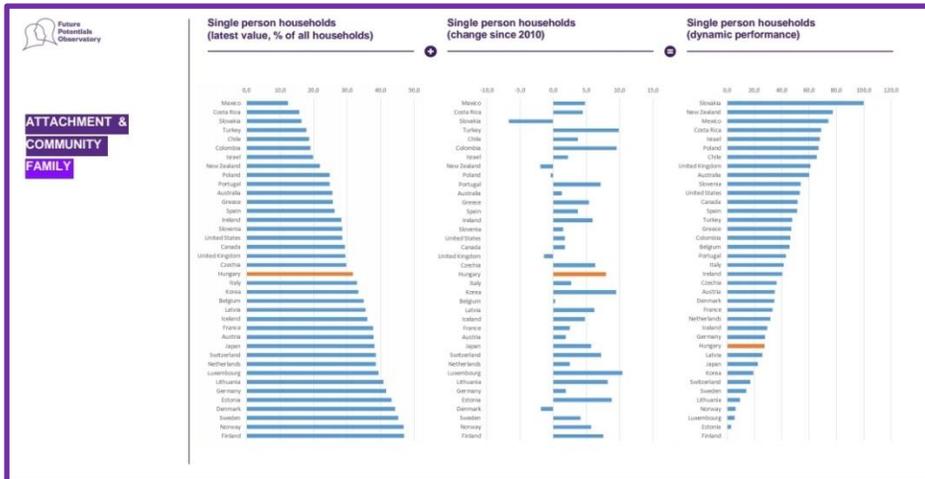
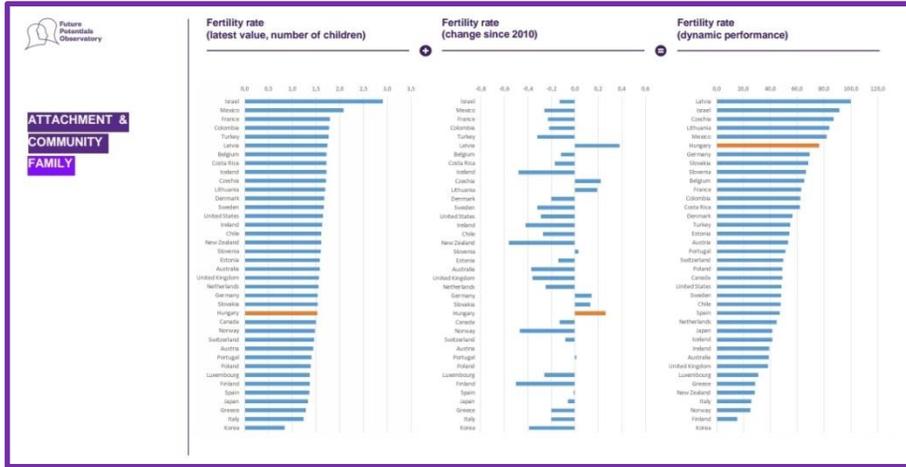












The Future Potential Index for OECD Countries

