

# A countermeasure to GDP veneration: Social Progress Indicator

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## Abstract

A Social Progress Indicator is a survey instrument, which combined with objective data, can evaluate the impact and quality of state services. The areas of state intervention envisaged include child and long-term care services, education, environment, health, housing, public transport, state pension system and security of the citizen. It is vitally important that the economic performance of the Irish state ‘trickles down’ to its citizens by way of the high quality provision of state services, and a Social Progress Indicator can be tailored to achieve that outcome.

In this discussion paper, we present the main arguments that a Social Progress Indicator can provide a valuable and novel supplementary measurement of national well-being for Ireland, and that Ireland has an opportunity to act as a global leader in this context. We also provide, at an executive level, guidelines in regard to a methodology to construct a Social Progress Indicator for Ireland.

The principal arguments for a Social Progress Indicator are as follows. First, the inadequacy of conventional measurements of national performance e.g. national income, as a proxy for the state’s impact on the quality of life of its citizens. Second, the scope, via a Social Progress Indicator, for the improvement of quality of life of a state’s citizens, as measured by international standardized rankings e.g. European Quality of Life Survey. Third, the absence of a customer satisfaction criterion, for scientific and timely feedback, in relation to the provision and improvement of state services. Finally, the scope for applications of Social Progress Indicator, in regard to motivating state actors, across state departments, can serve to further motivate the establishment of a Social Progress Indicator.

The question of how to measure the quality of delivery of state services is complex and challenging. Relying, in part at least, on people’s own judgment is a convenient shortcut and potentially provides a natural way to aggregate various, and potentially diverse, experiences. In a world of misleading anecdotal evidence (i.e. ‘fake’ news) and media marketed opinion pieces in regard to the quality of state services, a rigorously constructed Social Progress Indicator can play a critically important and informative role. In this vein, we provide executive level recommendations on the data science of representative sampling, sub-index aggregation, and we include a justification for a pilot study and the management of user expectations. We also highlight how a machine learning approach, in the form of textual analytics, can play an important role in aggregating feedback from the citizens of the state.

We provide the first evaluation of arguments for a Social Progress Indicator, as a metric to capture the quality of state services in Ireland, with a view to enhancing national well-being.

*Keywords:* National well-being, Laissez-faire economics, Social Progress Indicator, Social inclusion, Fake news, Data science

*JEL Classification:* H4, I1, I3

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“The care of human life and happiness, and not their destruction, is the first and only object of good government.”

Thomas Jefferson, 1809

## 1. Introduction

The principal duty of government to enhance ‘human life and happiness’, as evoked by Thomas Jefferson, is not at all controversial. Yet, how can one measure the performance of a state in respect to this principal duty? Measurement of the impact of government policy on the quality of life of citizens is crucial. If measurements of governmental impact are flawed, the quality of state decisions will be compromised. How can we know if government policy is attaining this high objective, to enhance human life and happiness, or realizing the alternative?

A globally pertinent and enduring response to the problem of the evaluation of government policy is that of the measurement of national income. From this perspective, the Irish state has, in recent years, out-performed its peers. The Irish economy is approximately at full employment with moderate inflation and has experienced strong increases in real economic growth.<sup>1</sup> The measurement of national in-

come to account for the well-being of a country’s citizens is, insightful, necessary even, but, as a stand alone measure of national well-being, is ultimately defective. A conjecture of ‘trickle down’ economics (e.g. via taxation by the state and its expenditure) as an adequate channel for the re-distribution of resources to ensure national well-being (Keynes, 2010; Watkins, 2014) is untenable in the Irish context.

Despite its macro level achievements, Ireland suffers a spate of dire social problems. The economic performance of the state has not found its way to those most in need. For instance, the EuroHealth Consumer Index 2016 highlights long hospital specialist waiting lists in Ireland, and that the Irish population exhibits the highest proportion in Europe (greater than 40%) with duplicate healthcare insurance.<sup>2</sup> From another fundamental vantage point, there is a dearth of social housing units in Ireland<sup>3</sup>, long local authorities housing lists and inadequate emergency accommodation. In short, there is a homelessness crisis in Ireland.<sup>4</sup> Such societal travesties are, it is not diffi-

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*//ec.europa.eu/eurostat/documents/2995521/9826893/2\_06062019\_AP\_EN.pdf/7fb9b039\_72ee\_4441\_987d\_450c185450fc* (Accessed June 6, 2019). In respect to employment figures, the CSO has indicated, in November, 2019, that the seasonally adjusted number of people who were unemployed stood at 117,800, a record low for the state.

<sup>2</sup>See p 15 of this report *https://healthpowerhouse.com/media/EHCI\_2016/EHCI\_2016\_report.pdf* for a summary evaluation of the Irish health care system.

<sup>3</sup>As indicated by a housing expert, Professor PJ Drudy, of Trinity College Dublin, - to the *TheJournal.ie* October 9th, 2019

<sup>4</sup>A Dept. Housing, Planning Local Government, Homeless Report. *https://www.housing.gov.ie/housing/homelessness/homeless\_report\_december\_2018* (accessed 17 June 2019) shows that this crisis became even more severe in 2018, with 9,753 persons recorded as homeless in that year. A Saint Vincent de Paul report ‘Growing up in the cold’ indicates that 140,000 children in Ireland have sub standard accommodation. This is a clear failing, on the part of the state, in regard to achieving social inclusion. See *https://www.svp.ie/getattachment/2cb10388-e3ca-41ef-*

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<sup>1</sup>Eurostat has reported that Ireland has, across a range of national income growth measurements, the fastest growing economy in the European Union *https* :

cult to argue, morally irreconcilable with Ireland as a prosperous nation state. Such travesties mandate the state to do better to attain its objectives of enhancing ‘human life and happiness’.

A Social Progress Indicator (henceforth, SPI) can, we propose, supplement national income to markedly improve our measurement of a nation’s well-being. For the first time internationally, and in a systematic manner, the articulated experiences of those individuals who use state services, in the decision-making process pertaining to the improvement and operation of state services, can be reported.<sup>5</sup> The impressions of end-users can be complemented by objective data concerning state performance in each sector.<sup>6</sup> As a result, an SPI can constitute a clear and transparent mechanism to account for this important aspect of the nation’s well-being. It draws its moral energy from the forceful logic of counterbalancing national income with SPI where the latter scientifically measures the so called ‘trickle down’ effect, at the interface of state services with citizens.

This discussion paper presents the principal arguments that a Social Progress Indicator can provide a novel and valuable measurement of national well-being for Ireland, and that Ireland has an opportunity to act as a global leader in this regard. Leadership in the international sphere is feasible as an SPI is unprecedented around the world, and Ireland, as

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9911 – a17f252ce09c/Growing – up – in – the – Cold.aspx Accessed December 11th 2019.

<sup>5</sup>Sub-components which might, taken together, comprise an SPI can include state services provided in areas of: child and long-term care services, education, environment, health, housing, public transport, state pension system and security of the citizen.

<sup>6</sup>By way of examples: waiting lists at acute hospitals for specific procedures, number of families without homes, measures of fraction of population below the poverty line, verbal and reasoning tests scores of children in standardized international tests etc. Outcome-based performance indicators should complement the measures based on service user perceptions (Watson, 2011).

a highly developed economy with full employment, is exceptionally well positioned to benefit from such an indicator (Friedman, 2006). This discussion paper also presents, at an executive level, the data science of sub-index aggregation and sampling which pertain to the construction of a successful Social Progress Indicator.

In synopsis, our principal arguments for a new SPI include: (1) conventional measurements of national economic performance as indicators of national well-being are defective, (2) it is tailored to address the latter defects, and to enable Ireland to better achieve its quality of life enhancement objectives (3) the glaring absence of a customer satisfaction criterion in relation to the provision of state services and, finally, (4) the range of potential applications, across state departments, of an SPI.

### *1.1. Defects in conventional economic output measures of national performance*

A core motivation for our proposal of an SPI for Ireland is found in recommendations in France’s Fitoussi Commissioned report.<sup>7</sup> That report proposes the collection of data on the measurement of economic performance *and* social progress. Such data enables the measurement of a nation’s progress in the field of ‘societal well being’, and in conjunction with traditional economic performance statistics (Stiglitz *et al.*, 2009, 2017). To state the concern concisely: a conjecture that an economic growth dividend will ‘trickle down’ in an equitable and adequate fashion, throughout society, is unwarranted.

A skewed distribution of national income, in Ireland, across its citizens (i.e. income inequality), is mitigated by state interventions - taxes and transfers.

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<sup>7</sup>See also, for instance, comparable recommendations in Sachs *et al.* (2018)

Hence, the weakness of GDP as a measure of national well being is directly offset by the provision of state services. A critical importance of SPI arises to render a more equitable distribution of national income - through improved quality of provision of state services, across income percentiles in Ireland. Most advanced industrial countries now have a preference to not focus solely on national income but also improve mental health of their populations and reduce polluting emissions, among other social objectives. An SPI goes one important step further. It adds material new granular and scientifically comprised content to the perennial debate in regard to the quality of the provision of state services. This can directly mitigate shortcomings in GDP as measure of national well-being.

This work is, in addition, motivated by Chetty (2015) in regard to the behavioural economic importance of new policy tools to better predict the effect of government policies, and Kahneman *et al.* (2004b) in regards to the importance of ‘ratings of experience’ in the development of insightful national well-being accounts. Furthermore, Duflo (2017) recommends to economists to act as ‘plumbers’ and to better attend to the details of policy making.

### *1.2. SPI and Quality of Life measures of a state’s citizens*

A closely related work is that of the Eurofound’s European Quality of Life Survey, which is carried out every four years. It is a landmark sequence of surveys concerning the quality of life of the citizens of Europe. The proposed SPI is tailored specifically to enable an improvement in the performance of Ireland in regard to the objectives of the Eurofound’s European Quality of Life Survey, by means of improving the quality of state services.

Using the Gallup World poll, the United Nations

Sustainable Development Solutions Network produces annually, another closely related piece of work, a World Happiness Report. It focuses on the surveyed ‘happiness’ and changes in the level of happiness of the populations of countries around the world.

Indeed, the UN’s World Happiness report 2019, as does the Eurofound’s European Quality of Life Survey, underlines the importance of government quality, and in particular, the quality of delivery of state services, in affecting life satisfaction of citizens around the world. This serves to highlight the central importance of the delivery of state services, in regard to the quality of life of a state’s citizens.

The proposed SPI, in contrast to these latter reports, can be observed at a comparatively high frequency, and, critically, it can be tailored to scientifically provide the perspectives of the end users of state services, at a granular level, in respect to the experienced quality of those services. As a result of these distinctions, the new proposed SPI can provide valuable information in regard to where state services are satisfying requirements and where they are not doing so. It can provide feedback by way of near real time data to the on-the-ground providers of state services and to policy makers alike. It can, hence, serve to improve in a reliable and rigorous way the experience and quality of life of the citizens of the Irish state. To conclude, an SPI can enable Ireland to better achieve its sustainable development goals.

### *1.3. How pragmatic is SPI? A ‘customer’ satisfaction criterion*

To meet customer needs and heighten customer loyalty, corporations systematically seek timely feedback from customers about the products and services consumed. This is conducted both by conventional interviews and surveys (De Leeuw *et al.*, 2012; Malhotra *et al.*, 2013; Groves *et al.*, n.d.) and by using

machine learning technologies to elicit content and sentiment of customer feedback (Gamon, 2004; Liu and Zhang, 2012; Agarwal and Mittal, 2016).

In a similar vein, it is compelling that the state in its provision of services can likewise benefit from systematically eliciting such reactions from end users concerning the quality of services provided. This can serve to ascertain if government policy is attaining its principal duty to enhance ‘human life and happiness’.

#### *1.4. What’s the benefit of an SPI? Applications across state departments*

Civil and public servants, at the department of Finance, Social Protection, Health and Defence etc, for instance, can use the proposed SPI to usefully complement their evaluations of policy responses and, with limited resources, measure the effectiveness of policy interventions. The state and trade unions can use SPI as one important and insightful measurement of the performance of employees of the state, with a view to designing incentives and compensation packages, across state services.

To persuade skeptical state actors of the utility of an SPI, and make SPI a centrepiece of state performance metrics might be further achieved in several ways: adopt a pilot programme to develop an appropriate technology to construct an SPI; establish that an SPI can discern the quality of state services, show how such an indicator can mitigate media influence on end-user perceptions and complement the outcomes with supplementary observable and objective information.

This discussion paper is organized as follows. The next section presents an evaluation of measurements of national well-being, including national output and United Nations social development goals, with reference to the Irish context. It also, thus, serves to high-

light scope for an SPI to improve the quality of delivery of state services in Ireland. Section 3 presents high-level methodological concerns which pertain to the construction of an SPI survey instrument. Section 4 presents the remaining pragmatic and implementation oriented points of concern, which may arise, in regard to launching a successful SPI. Section 5 concludes.

## **2. How does a Social Progress Indicator complement extant measures of national well-being? A case for a Social Progress Indicator.**

A long standing ‘solution’ to the difficulty of measuring the performance of state activity, to influence the quality of life of the state’s citizens, is that of gross domestic product. It aggregates the market values of goods and services produced in an economy over time to capture economic performance. Gross domestic product, or one of its variants<sup>8</sup>, is an invaluable measurement of production within an economy, reflecting, in a broad sense, a nation’s level of employment and, in particular, economic activity. Such measurement of national economic output is, as a result, a point of principal focus for financial and banking regulators, international development organizations and national governments globally.

### *2.1. Limitations of national economic output measurements*

A moral case for a gross domestic product focus in public policy is most persuasive, when living stan-

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<sup>8</sup>Pertinent to the Irish context, this list is now extended to include modified gross national income (GNI\*). Gross national income was established in July 2017 by the Irish Central Statistics Office with a view to removing globalisation affects, specifically those related to multinational corporations, from Irish national income measurements. It strips out the profits of domiciled companies, and better accounts for the relocation of intellectual property and aircraft leasing assets, though does not yet account for contract manufacturing.

dards are low (Friedman, 2006). At that point the benefits of growth in gross domestic product are pronounced: greater life expectancy, fewer diseases, less infant mortality and malnutrition. For vast populations growing the overall economy is the best route out of poverty and improving wellbeing. In today's advanced industrialized economies, such as that of Ireland, with high per capita income, most of these upside incentives have, however, all but disappeared.<sup>9</sup><sup>10</sup>

Gross domestic product neglects, more specifically, to account for changes in income inequality, and, in particular, environmental (e.g. air pollution, traffic) and social inclusion (affordable rents and housing, health, leisure time and security) factors (Van den Bergh, 2009; Munda, 2015). The measurement of gross domestic product to account for the well-being of a country's citizens is, hence, ultimately defective.<sup>11</sup>

The benefits which do arise from economic growth, even in advanced industrial economies, do not, in the same vein, naturally flow across society: The fallacy of 'trickle down' or laissez-faire economics as providing an adequate channel for the re-distribution of resources to ensure national well-being (Keynes, 2010; Watkins, 2014) is, arguably, self-evident in the Irish context.

While Ireland is now at approximately full employment and maximum potential national output, nonetheless, it suffers a spate of dire social problems. Dr

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<sup>9</sup>Source: <https://www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD>. Accessed 02/08/19.

<sup>10</sup>Benjamin M. Friedman makes this point and highlights that while Americans have an average income more than twice that of Koreans or Portuguese, they are 'no healthier..., [and] live no longer'.

<sup>11</sup>Even the manual that countries use to develop their national accounting systems - the United Nations' System of National Accounts update for 2008 - highlights why gross domestic product is an inadequate measure of social well-being (Clark *et al.*, 2017).

Seán Healy, director of Social Justice Ireland has indicated that 'Despite being one of the richest countries in the world, with one of the fastest-growing economies, Ireland today has 780,000 people living in poverty. A quarter of a million of these are children, and over 100,000 of them have a job,'. In addition, he indicates that 'There are over 700,000 people on waiting lists for healthcare; over 500,000 homes without broadband. Over 11,000 people are homeless, with close to 110,000 households in need of social housing.'

France's Fitoussi Commissioned report on the Measurement of Economic Performance and Social Progress, co-led by Nobel-prize-winning economists Joseph Stiglitz and Amartya Sen, argued that the promotion of a nation's well-being needs to be an explicit aim of government. Data should be collected, they argue, to ensure that we can measure progress in the fields of 'societal well-being, as well as measures of economic, environmental and social sustainability', in conjunction with traditional economic performance metrics (Stiglitz *et al.*, 2009, 2017).<sup>12</sup>

Due to such aspirations, New Zealand has adopted an official wellbeing target in its economic planning (with five priorities: mental health; incomes of island minorities; carbon emissions; child poverty; and productivity). Indeed, most advanced industrial countries now have a preference to not focus solely on gross domestic product but also improve mental health of their populations and reduce polluting emissions, among other social objectives.<sup>13</sup>

Gross domestic product has, thus, been widely

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<sup>12</sup>In the same vein, the mission statement of the Organisation for Economic Co-operation and Development (OECD) includes emphasis, for a commitment "To promote policies that will improve the economic *and social* well-being of people around the world".

<sup>13</sup>In the United States, for instance, such a pluralistic measurement, of national well-being, is provided in Christopher Hoenig's State of the USA: <https://>

held an inadequate measure of sustainable societal well-being over time, from social, economic and environmental perspectives. Such shortcomings leave gross domestic product inadequate to act as a yardstick for societal well-being, and to usefully evaluate governmental policies accordingly. This argument is especially persuasive in a developed first world economy, like that of Ireland. As a result, this discussion paper aims to shift the emphasis of the government of Ireland from measuring economic production in Ireland to measuring people's well-being, and using that measurement to inform the provision of state services.

## 2.2. *How should one measure societal well-being?*

### *United Nations sustainable development goals*

As opposed to assuming that economic growth will 'trickle down' and produce desired outcomes, the United Nations sustainable development goals (SDGs) focus directly on social and environmental objectives. These sustainable development goals include 17 areas of special interest; most notably for purposes of this discussion paper: poverty, health, education, equality, jobs, innovation and infrastructure and peace and justice. The SDGs are, hence, for the most part, influenced by government policy and its implementation i.e. the quality of delivery of state services.

The Gallup World poll, as availed of in the United Nations world happiness reports, provides country-by-country measurements of societal well-being; so-called happiness indices. These data arise from broad stroke questions asking respondents to subjectively evaluate their quality of life. They are insufficiently precise to tailor the specifics of government intervention to the benefit of society. Nonetheless, they do serve to highlight SDGs where a country can be

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[//www.stateoftheusa.org/about/staff-and-leadership/](http://www.stateoftheusa.org/about/staff-and-leadership/), accessed 02/08/2019

shown to under perform or concede its ranking globally.

Of critical interest, to this discussion paper, studies highlighted on p.40 of the UN's World Happiness report 2019 underline the importance of government quality, and in particular, the quality of delivery of state services, in affecting life satisfaction of citizens around the world. This serves to highlight the central importance of the delivery of state services in regard to the quality of life of a state's citizens. It is government policy and its implementation in pursuit of these SDGs which can act a persuasive point of focus, as opposed to a sole focus on GDP and its variants, in establishing the merit or otherwise of governmental interventions.

The importance of government policy, and delivery of this policy, to societal well-being cannot be overstated. The UN World Happiness report 2019 places a major emphasis on the impact of the role of the state in influencing country level broad life satisfaction ratings, and reports compelling empirical evidence which substantiates this claim.

## 2.3. *What is known to date in regard to Ireland and its achievement of social inclusion and UN sustainable development goals?*

In a December 2011 Economic and Social Research Institute (ESRI) report, Dorothy Watson asks what lessons can be drawn from public perceptions of service quality of state delivered services in Ireland. The specific data examined is originated largely in the European Quality of Life Survey (2007)<sup>14</sup> in relation to five public services in Ireland (health, education, public transport, care services for older adults

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<sup>14</sup>Updates version of these data to 2016 is available since 2018 at (<https://www.eurofound.europa.eu/surveys/european-quality-of-life-surveys/european-quality-of-life-survey-2016/questionnaire/>, accessed 31/7/2019)

and the state pension). The findings suggest that while perceptions varied markedly across services (e.g. health versus education), in the main, the perception of the quality of public services tends to be low in Ireland, relative to other European countries. And this is especially the case when respondents were economically vulnerable. This latter finding suggests that state services are perceived as inadequate by those who are most reliant on them. The implications of the results for public sector reform are discussed. One recommendation, of the 2011 ESRI report, with which this discussion paper resonates is that of conducting surveys to provide important evidence for public sector reform.

In a 2019 Social Justice Ireland (SJI) report, Charles Clarke and Catherine Kavanagh highlight the high GDP growth rates and high GDP per capita experienced in Ireland, and the concurrent inadequacy of social protection and social supports which should characterize an inclusive society. Economic growth has clearly not ‘trickled down’ to achieve desirable social outcomes.

The authors, of the 2019 SJI report, point to the United Nations sustainable development goals (SDGs) as ‘revolutionary’, as rejecting the ‘paradigm of one way causality of economic growth leading to everything else’, and as a fit-for-purpose set of replacement objectives instead of the to date near exclusive focus on GDP. Among the policy considerations raised in the report, the authors highlight Irish government policy incoherence with SDG requirements. For instance, while Ireland’s infrastructure is transformed to prioritize job creation by transnational corporations, social services (health, education, care of older people) are markedly below SDG requirements. The authors provide a compelling recommendation to switch, in Ireland, to a SDG focus and away from the current national preoccupation with GDP.

In this discussion paper, we propose a survey instrument, an SPI, to provide timely new evidence concerning the quality of delivery of state services in Ireland. This evidence is tailored to facilitate endeavours to improve the quality of delivery of state services in Ireland, in line with UN sustainable development goals. As a result, this discussion paper builds on prior work in the aforementioned reports, to enhance the national well-being of the people of Ireland.

#### 2.4. Social Progress Indicator

We turn to the absence in Ireland, and indeed around the world, of a precise survey instrument to regularly and routinely evaluate the impact and quality of state interventions, to the benefit of its citizens.

The question of how to measure the quality of delivery of state services is complex and challenging. Research has shown, however, that it is feasible to collect meaningful data on subjective well being, to complement data on objective well being. Relying, in part at least, on people’s own judgments is a convenient shortcut and potentially provides a natural way to aggregate various, and potentially diverse, experiences in a way that reflects people’s own preferences (Stiglitz *et al.*, 2017).

an SPI can serve to elicit accurate, objective and independent survey responses of the citizens of Ireland concerning the quality of services provided by state actors (e.g. in areas of affordable rents and housing, education, health<sup>15</sup> and security). It can

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<sup>15</sup>It is encouraging to note the National Patient Experience Survey established in 2017 by the Irish Health Information and Quality Society. The aim of this survey is to understand the experience of patients, in 40 public acute care hospitals, and use this feedback to inform the future development, planning, design and delivery of improved patient-centred care. Source: <https://www.hiqa.ie/areas-we-work/health-information/data-collections/national-patient-experience-survey>. Hence, such a survey instrument

serve to test whether and, if so, how, greater societal wealth is meeting the needs of a society's citizens, and, in addition, how this important relationship is developing over time.

In a world of misleading anecdotal evidence (i.e. 'fake' news) and media marketed opinion pieces in regard to the quality of state services, a rigorously constructed SPI can play a critically important role. It can add material new content to the perennial societal debate in regard to the quality of the provision of state services.

In this discussion paper, we, hence, propose a case for the construction of such a Social Progress Indicator (SPI) for Ireland and to provide guidelines in regard to a methodology to construct an Irish SPI.

This section 2 has served to highlight a gap in available measures of national well-being in Ireland, and, indeed, internationally. An evaluation, with a specific focus on the Irish context, of alternative measures of national well-being has been presented. This gap can be significantly addressed with an SPI, and, as such, the identified gap motivates construction of such an SPI.

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can potentially constitute an invaluable component index in an SPI.

### 3. Methodological guidelines in regard to the construction of an SPI

A concise<sup>16</sup>, reliable<sup>17</sup>. and valid<sup>18</sup> survey instrument is required to elicit the opinions of a sample of respondents (i.e. from a target population of end users of state services) in respect to the quality of a state service provided (De Leeuw *et al.*, 2012; Groves *et al.*, n.d.). It can serve to generate comparable and reliable data on the quality of state services across Ireland, from the perspective of end-users. In particular, the recommended sampling frame is that set of individuals who have recently availed of a service of the state. In this way, successive and independent, but representative samples, can be examined in order to infer the effects of changes in the delivery of state services and to better inform such changes.

A professional intermediary, such as the Central Statistics Office or RedCLive, can devise questions, design, prepare and conduct the surveys and produce an SPI, measure response rates and follow-up. This report will not, for instance, provide specific questions that can be included in a survey instrument. This discussion paper, notwithstanding, does highlight executive level methodological concerns which

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<sup>16</sup>Conciseness of the survey instrument refers to its clarity and brevity, which can have a marked impact on response rates. The survey instrument should not, in itself, deter persons from answering the questions raised.

<sup>17</sup>Reliability, in this context, refers to a consistency in results over a short duration of time, where there was no change in the service provided. Relative scores of respondents should be comparable over time in test-retest scenarios. Coherence of the survey instrument, as measured with a Cronbach's alpha (Tavakol and Dennick, 2011), can also be used as a measurement of survey instrument reliability, with certain restrictions (Taber, 2018). It refers to whether tests and scales that have been constructed or adopted for research projects are fit for purpose (e.g. Cronbach's alpha).

<sup>18</sup>Validity refers to the extent a construct that is envisaged, i.e. the perceived quality, by end-users, of a service of the state, to be measured is actually measured. Concurrent and construct facets of validity should be considered.

should be addressed in a quality survey instrument. This is with a view to minimizing survey errors and selection bias, and to achieving a concise, reliable and valid survey instrument. In addition, an objective of the recommended methodology is to align the new SPI survey instrument with the Eurofound's European Quality of Life Survey (Ahrendt *et al.*, 2017), and the quality criteria of the European Statistical System as developed by Eurostat.<sup>19</sup>

It is recommended, in the first instance, that a single self-report scale score, for the experienced quality of state services, is recorded. Alongside this expeditious measurement, where feasible, more insightful questions, pertaining to the target research question of the quality of state services provided, and information about the demographic strata of the respondent can be beneficially raised.

The aim is to establish a broad statistical system that captures as many of the relevant aspects of the quality of state services as possible. Such a system should not just measure average levels of perceived well-being due to the receipt of a state service, within a given community, and how that changes over time, but also document the diversity of peoples' experiences and the linkages across various dimensions of peoples' lives.

The presented methodology will provide high level recommendations and referenced guidance in regard to key issues related to SPI construction:

1. *Data science of sub-index aggregation: sub-index weights:* A list of SPI sub-indices: health, education, public transport, childcare services, long-term care services, social housing, state pension system and security of the citizen *etc.*

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<sup>19</sup>That methodology, from which this recommendation is principally informed, has been incrementally improved over time based on lessons learnt and new developments which reflect the state-of-the-art in survey methodology.

can be aggregated to comprise a total SPI. While sub indices should also be made reported individually, it is envisaged that an aggregate equally weighted index will be reported to supplement national income measurements. The temporal stability of weights is critically important, and if an alteration of weights occurs then it should be transparent and reported with a view to allowing time series analyses. The issue of aggregation across types of state services, while important, is subordinate to that of establishing a broad and representative statistical system.

2. *Sample size:* Sample size is determined by the desired degree of precision and the statistical power required, in respect to the conducted survey questions raised. It is conditional on access to respondents where there is demographic stratification information available. A useful point of departure in regard to the question of sample size can be to set it in line with Eurofound's European Quality of Life Survey 2016, such that the target sample size for each SPI sub-index can be 1,000.
3. *Data science of representative sampling:* Representative samples of respondents, i.e. users of state services, are key to the quality of inference achieved. Ideally, from a statistical inference perspective, the demographic traits of all end-users (e.g. ethnicity, socioeconomic status, age, region and degree of urbanisation) can be beneficially recorded, and the relative incidence of each trait recorded. This set of observations can act as a quasi population, in respect to which representative samples can be informed and constructed.

To produce a sample representative of a tar-

get population of interest to the researcher, a multi-stage, stratified sampling, or a random sample can be selected in each category of state service. Stratified random sampling involves dividing the population into sub-populations (strata) from which random or deliberately representative samples are drawn. Revelation by respondents of demographic traits is necessary with a view to establishing a representative sample.

The above executive level guidelines in regard to the construction of an SPI can assist in terms of rendering this instrument consistent with the European Quality of Life Survey. In addition to these recommendations, this discussion paper raises two supplementary approaches which can ultimately also prove beneficial, a hedonic Day Reconstruction Method and a machine learning approach to elicit content and sentiment from respondents in interview scenarios.

1. *Data science of Hedonic Day Reconstruction Method:* Hedonic experiences can be measured by a report that is made by each person either in real time or shortly after an event, with a state service, has occurred. A Day Reconstruction Method, as discussed in Kahneman *et al.* (2004a) to elicit hedonic experiences of individuals with state services, can be usefully conducted on a representative sample. Such a tailored survey instrument can better inform the state in regard to its provision of services.
2. *Data science of a Machine Learning approach:* Machine learning can be adopted to automatically elicit the viewpoint and sentiment of a respondent in regard to the quality of a state service provided, even in the very noisy domain of end user feedback data (Gamon, 2004; Liu and Zhang, 2012; Agarwal and Mittal, 2016).

For instance, electronic data in the form of elicited surveys, unsolicited comments, suggestions and criticism in online review sites, blogs, forums, and social networking sites, can be analyzed in this way. Even where there are classification problems for a human annotator, large feature vectors (i.e. across a large range of questions) in combination with feature reduction, can be trained via linear support vector machines to achieve high classification accuracy on data. In particular, this machine learning approach can give constructive insight concerning what is the feedback about, i.e. content, and whether it is positive or negative i.e. attitude of the respondent.

#### **4. Principal remaining challenges in regard to meaningful SPI construction.**

The outlined methodology in Section 3 aims to produce a quality survey instrument which exhibits certain desirable statistical properties (i.e. concision, reliability and validity). Achievement of said properties is a necessary but likely an insufficient step in the launch of a successful SPI. In addition, state actors must be persuaded that an SPI can provide valuable new information to inform public service reform, and better meet the needs of the electorate. To persuade skeptical state actors of the utility of an SPI, and make SPI a centrepiece of state performance metrics might be further achieved in several ways:

1. *Offset once-off media influences:* SPI survey can be conducted at regular calendar intervals throughout each year, with a view to smoothing out spikes in media portrayals of the state service concerned - a potential framing effect which should be mitigated. This is critically important irrespective of the veracity or other-

wise (i.e. fake news) of the media portrayal of the service provided.

2. *Surveys capable of discerning quality of state services:* One point of concern is that the perceptions of respondents should be principally based on the quality of services delivered as opposed to other framing issues and background of individual factors (Kahneman *et al.*, 1999). This work suggests that subjective well-being is amenable to systematic quantification. The World Happiness Report 2018 shows, for instance, as evidence of achievement of this aim, that immigrants and locally born surveyed show almost exactly the same level of quality of life satisfaction, even for immigrants coming from source countries with life evaluations less than half as high as in the destination country (Sachs *et al.*, 2018). This serves to show, by way of compelling anecdotal and empirical evidence, that the quality of state services can be usefully captured by survey instruments.
3. *A pilot study:* a pilot, small-scale single state service SPI can be launched, in the first instance, with a view to modifying the proposed implementation procedure and survey questions, to better achieve an accurate and reliable measurement of the perception of respondents of the quality of state services. This pretesting is a necessary step in respect to achieving a concise, reliable and valid survey instrument.
4. *Management of survey user expectations:* A process of systematically managing service user expectations can prove invaluable to effective service delivery. Prior surveys can yield evidence such that new end-users can be forewarned in regard to transient difficulties in the provision of services. This conjecture can be tested, and the expectations management pro-

cess improved, in the pilot phase of an SPI.

5. *Objective outcome measurements:* Outcome-based performance indicators should complement the measures based on service user perceptions (Watson, 2011). For instance, medical and cost outcomes in health care (Peasgood *et al.*, 2019), academic achievement and completion in education<sup>20</sup>, productivity and job satisfaction in the workplace (Krekel *et al.*, 2019) and reduced crime and incarceration rates in justice and a range of specific indicators of the quality of city life.<sup>21</sup>

## 5. Conclusion and Recommendations.

Due to the private nature of personal experience and the difficulties associated with interpersonal comparisons, economists have traditionally avoided subjective measurements of societal well being. They have opted, instead, to use measures of national income to account for well-being. In more recent years, however, there has been a proliferation of subjective indicators of happiness and life satisfaction (Frey and Stutzer, 2002; Cartwright, 2018), to complement the more traditional work on direct measurements of national output. The importance of this line of research work has been highlighted in key publications, including France's Fitoussi commissioned report on the Measurement of Economic Performance and Social Progress, relates directly to the measurement of national well-being (Stiglitz *et al.*, 2009, 2017).

The objective of this discussion paper is to sketch and argue the case, in Ireland, to measure societal well-being, due to its linkage with the quality of state services. The proposal is to use a survey instrument,

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<sup>20</sup><https://s3.amazonaws.com/ghwbpr-2019/UAE/GH19ch4.pdf>

<sup>21</sup><https://s3.amazonaws.com/ghwbpr-2019/UAE/GH19ch7.pdf>

a Social Progress Indicator, complemented by objective state performance data. In this way, for the first time internationally, the articulated experiences of individuals who use state services, can be systematically incorporated in the decision-making process pertaining to the improvement and operation of those state services. This is with a view to enhancing the quality of life of the people of Ireland. Such a survey instrument, conducted routinely on representative samples, can provide timely and invaluable new evidence concerning how to improve the quality of state services for the people of Ireland.

A grass root SPI for the Irish people and by the Irish people, can effectively enable, in a systematic and impactful way, the monitoring of the quality of Ireland's state services. It is not prompted by the European Union nor is it part of any international commitment, it is rather Ireland taking a leadership role to address our clear problems. It is the voice of the Irish people measured scientifically and regularly and is very different to GDP. It complements national income statistics and should be reported alongside such statistics as a matter of course. It should prove the measure, that all of us, irrespective of political persuasion or socioeconomic background, look forward to reading, like the scoreboard egging on taxpayers and the workers in the public sector who are incentivized to play a better game each year. It should be lauded as a key mechanism for pulling Ireland up by its own socks to match our 'wealth'.

## References

- Agarwal, Basant, Mittal, Namita. (2016). Machine learning approach for sentiment analysis. *Pages 21–45 of: Prominent feature extraction for sentiment analysis*. Springer.
- Ahrendt, Daphne, Anderson, Robert, Dubois, Hans, Jungblut, Jean-Marie, Leončikas, Tadas, Pöntinen, Laura, Sandor, Eszter. (2017). *European Quality of Life Survey 2016: Quality of Life, Quality of Public Services, and Quality of Society: Overview Report*. Publications Office of the European Union.
- Cartwright, Edward. (2018). *Behavioral economics*. Routledge.
- Chetty, Raj. (2015). Behavioral economics and public policy: A pragmatic perspective. *American Economic Review*, **105**(5), 1–33.
- Clark, Charles, Kavanagh, Catherine, Lenihan, Niamh. (2017). *Measuring Progress: Economy, Society and Environment in Ireland*. Social Justice Ireland Dublin.
- De Leeuw, Edith D, Hox, Joop, Dillman, Don. (2012). *International handbook of survey methodology*. Routledge.
- Duflo, Esther. (2017). Richard T. Ely Lecture: The Economist as Plumber. *American Economic Review*, **107**(5), 1–26.
- Frey, Bruno S, Stutzer, Alois. (2002). What can economists learn from happiness research? *Journal of Economic literature*, **40**(2), 402–435.
- Friedman, Benjamin M. (2006). The moral consequences of economic growth. *Society*, **43**(2), 15–22.
- Gamon, Michael. (2004). Sentiment classification on customer feedback data: noisy data, large feature vectors, and the role of linguistic analysis. *Page 841 of: Proceedings of the 20th international conference on Computational Linguistics*. Association for Computational Linguistics.
- Groves, Robert M, Fowler, Floyd J, Couper, Mick P, Lepkowski, James M, Singer, Eleanor, Tourangeau, Roger. *Survey methodology. 2009. Hoboken*.
- Kahneman, Daniel, Diener, Edward, Schwarz, Norbert. (1999). *Well-being: Foundations of hedonic psychology*. Russell Sage Foundation.
- Kahneman, Daniel, Krueger, Alan B, Schkade, David A, Schwarz, Norbert, Stone, Arthur A. (2004a). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, **306**(5702), 1776–1780.
- Kahneman, Daniel, Krueger, Alan B, Schkade, David, Schwarz, Norbert, Stone, Arthur. (2004b). Toward national well-being accounts. *American Economic Review*, **94**(2), 429–434.
- Keynes, John Maynard. (2010). The end of laissez-faire. *Pages 272–294 of: Essays in persuasion*. Springer.
- Krekel, Christian, Ward, George, De Neve, Jan-Emmanuel. (2019). Employee well-being, productivity, and firm performance: Evidence and case studies. *Global Happiness and Well-Being Policy Report*.
- Liu, Bing, Zhang, Lei. (2012). A survey of opinion mining and sentiment analysis. *Pages 415–463 of: Mining text data*. Springer.
- Malhotra, Naresh K, Birks, David F, Wills, Peter. (2013). *Essentials of marketing research*. Pearson Harlow.
- Munda, Giuseppe. (2015). Beyond GDP: An overview of measurement issues in redefining “wealth”. *Journal of Economic Surveys*, **29**(3), 403–422.
- Peasgood, Tessa, Foster, Derek, Dolan, Paul. (2019). Priority setting in healthcare through the lens of happiness. *Global Happiness and Well-Being Policy Report*.
- Sachs, Jeffrey D, Layard, Richard, Helliwell, John F, et al. (2018). *World Happiness Report 2018*. Tech. rept.
- Stiglitz, Joseph, Sen, Amartya K, Fitoussi, Jean-Paul. (2009). The measurement of economic performance and social progress revisited: reflections and overview.
- Stiglitz, Joseph E, Sen, Amartya, Fitoussi, J-P. (2017). Report by the commission on the measurement of economic performance and social progress.
- Taber, Keith S. (2018). The use of Cronbach’s alpha when developing and reporting research instruments in science education. *Research in Science Education*, **48**(6), 1273–1296.
- Tavakol, Mohsen, Dennick, Reg. (2011). Making sense of Cronbach’s alpha. *International journal of medical education*, **2**, 53.
- Van den Bergh, Jeroen CJM. (2009). The GDP paradox. *Journal of Economic Psychology*, **30**(2), 117–135.
- Watkins, John P. (2014). Quantitative easing as a means of reducing unemployment: a new version of trickle-down economics. *Journal of Economic Issues*, **48**(2), 431–440.