

Using Well-being for Better Public Policy

by

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Abstract

Social thinkers around the world are developing measures of human well-being that are meant to serve as guides for public policy. This paper explores the challenges and opportunities this work presents by describing a workable concept of well-being and analyzing how it relates to key characteristics of a democratic public-policy process. This analysis produces guidelines as to how well-being knowledge might be used to improve public policy – and also how it should not. These guidelines are then applied to evaluate six existing well-being indices, highlighting where they have been successful and where they have fallen short. Based on these lessons, I make several recommendations about how to utilize well-being knowledge to improve public policy.

Keywords: well-being; happiness; public policy

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Executive Summary

Well-being research has advanced to the point that governments and other public-policy-oriented institutions have begun to make use of its findings. In particular, statistical measures of the state of well-being are now being designed and used, with the implicit objective of encouraging public policies based on a better understanding of human need and social progress.

However, the challenges involved with using well-being knowledge as a tool to guide public policy are not well understood. The public-policy process in a democracy is a complex dynamic founded on entrenched principles and subject to important limitations that are too often overlooked in the academic well-being literature. The goal of this paper is to examine how well-being knowledge might address these issues in a way that can support the creation of better public policy.

This paper is directed at policy makers who wish to gain a better understanding of how well-being knowledge might affect the policy process and which well-being indicators hold the most promise. This paper also seeks to provide designers of well-being indicators with practical guidelines on how to design an indicator that respects the requirements of a democratic public-policy process.

This paper is designed to address several key research questions:

- Why should policy makers care about well-being?
- What is well-being?
- What concepts of well-being are most important for policy makers?
- What aspects of well-being are most appropriate for policy intervention?
- How can knowledge of well-being affect the policy process?
- What tools are needed to allow well-being knowledge to improve public policy?

These questions are approached in two ways. The first is a theoretical approach based on the well-being literature, and the second is a methodical review of existing well-being measures. The theoretical portion of the paper (Chapters 2 to 5) addresses all of the

questions listed above. This discussion produces a list of criteria which describe the characteristics of an effective public-policy-oriented indicator of societal well-being.

The second part of the paper (beginning in Chapter 6) involves a critical review of six existing well-being indices using these criteria. This review identifies the indices' key strengths, weaknesses and trade-offs, highlighting the most successful and unsuccessful design elements. The paper concludes with several recommendations based on these lessons, including which indices do the best job, according to the criteria set forward, and how they might be further improved.

Findings

The theoretical portion of this paper describes three major frameworks that help describe the relationship between well-being and public policy.

A concept of well-being: The concept of well-being used in this paper is an integrated model that includes both drivers of well-being and outcomes. The model has four important components: personality, prosperity, functioning and happiness (discussed in Chapter 3).

The lifecycle of a well-being measure: Well-being measures should not be considered static instruments but rather tools that evolve due to changes in knowledge and political realities. The lifecycle proposed includes five important stages: Research, Indicator Selection, Communication, Policy Intervention and Verification (discussed in Chapter 5).

The effect of well-being on public policy: Finally, a conceptual framework is presented that describes how effectively communicated knowledge of well-being might affect the policy process. Well-being knowledge is expected to have an effect at four levels: the priorities level (where the general public is the audience), the ideas level (where policy elites are the audience), the process level (which involves policy practitioners) and the decision level (concerning political decision makers). This model is discussed in Chapter 5.

These three frameworks help identify a series of **criteria**, which are argued to be important characteristics of an effective well-being measure meant to influence public policy:

- **Completeness:** The index includes a full selection of measures of policy-relevant drivers of well-being, as well as a measure of subjective well-being (described as a well-being outcome).
- **Clarity:** The index can be easily understood by its intended audiences (primarily the general public).
- **Comparability:** The index can be used to make comparisons across time and across jurisdictions.
- **Neutrality:** The index both is and appears to be politically neutral, with a design based on best evidence and not on political ideology.
- **Transparency:** The index is constructed based on a clear, transparent methodology.
- **Depth:** The index contains sufficient information to allow for detailed analysis, particularly in terms of distribution of resources that contribute to well-being across groups and the sustainability of these resources over time.
- **Validity:** The measures included are appropriate indicators of the state of each life domain that contributes to well-being, measuring unambiguous outcomes rather than drivers.
- **Robustness:** The data used are of high quality, provide high coverage of the target population, and are recurrent and methodologically sound.

These criteria are referenced throughout this paper as “Guidelines.” Passages that support the selection of these criteria are accompanied by Guideline boxes that specify which criteria are derived from those discussions.

The critical review presented in this paper demonstrates the strengths, weaknesses and trade-offs associated with various index designs. The final chapter presents nine recommendations based on findings from my theoretical arguments and critical review. Those recommendations are:

- **Public policy is a discussion of drivers**

If a well-being indicator is to be effective at guiding policy decisions, the indicator must identify reliable drivers of general well-being.

- **Respect democracy: speak to the public**

Expert advice, such as well-being knowledge, should not be expected to influence public policy by targeting decision makers alone. Rather, the public should be the primary audience for this knowledge, and policy implications should flow through democratic processes.

- **Don't try to recreate the GDP**

A measure of well-being is vastly different from other kinds of societal measures in that it is intrinsically multidimensional, being based on performance in multiple life domains. The design characteristics of other societal measures, such as per-capita GDP, are not the most appropriate ways to measure this concept.

- **Keep things simple: avoid aggregation**

Any attempt to boil general well-being down to a single numerical figure comes at a price. Designers of well-being measures should strive to use as little aggregation as possible.

- **Comparability is key: the more the better**

A major purpose of a well-being measure directed at the general public is to provide clear, useful and politically neutral narratives that give meaning to the data.

Comparisons over time and across jurisdictions are the most appropriate narrative device available.

- **Balance clarity and complexity through innovative designs**

An effective measure of well-being serves two principal audiences: the general public, which uses narratives to produce policy priorities, and policy elites who use evidence to produce policy ideas. Using innovative designs, a well-being index should provide the former audience with clarity and the latter with depth.

- **Stay policy-relevant: focus on capabilities and prosperity**

A well-being indicator whose purpose is to guide public-policy decisions must describe life domains that are policy relevant. Domains that should be included have two important characteristics: they focus on people's capabilities and on their prosperity, a term that describes resources people can access that exist outside their own minds.

- **Be neutral: advocacy is the next person's job**

In order for a well-being indicator to gain and maintain credibility within democratic deliberation, it must remain politically neutral. Its design should be based on findings from research, and neither the indicator itself nor those who produce it should make specific policy recommendations. The goal of the indicator is to improve the ability of others to make and consider policy recommendations.

- **Use the criteria presented here for future analysis**

The critical review of existing well-being indicators presented in this paper is incomplete. It focuses on broad design concepts, particularly at the domain level, but does not fully analyze the measures level. A measures-level analysis is recommended, using the criteria presented in this paper.

1. Introduction

Contemplating the essence of a good life is certainly nothing new; the task has occupied philosophers for thousands of years. But well-being thinkers around the world today are trying to elevate ideas about the quality of human life to an ambitious new level. Today's thinkers are not only trying to understand well-being, but also to measure it, and to go even beyond measuring. The goal today is to put this knowledge to work.

What makes today's field of well-being study distinct is this motivation to put the knowledge to use in a far-reaching, ambitious fashion. The goal is to enable ideas of well-being to influence how we act collectively by making these ideas an integral part of our social systems. The thinkers driving this undertaking are designing, building and testing a series of tools designed to shift both public consciousness and public action. The objective is to help societies redefine success.

The goal of this paper is to examine the usefulness of these well-being tools, specifically in terms of improving public policy. The task of perfectly defining the good human life will likely continue indefinitely, and our measures of well-being will therefore remain imperfect, as will the tools we derive from them. Thankfully, the objective of this paper is not perfection, but usefulness: to better understand whether well-being knowledge can improve public policies and how current efforts to do so might be made more effective.

1.1. Purpose of paper

This paper is primarily intended for public-policy practitioners, thinkers and advocates who want to learn more about the growing field of well-being research. The objective is to help these readers better understand the relationship between well-being itself, the well-being tools being developed today and the public-policy process these tools are designed to influence. The findings should help this audience judge whether well-being knowledge can be useful in their own work.

The secondary audience is those pursuing well-being research or designing well-being tools. For these thinkers, the aim of this paper is to provide a full conceptual framework describing how well-being relates to public policy, a dimension of well-being research too often overlooked. This paper will hopefully help steer minds toward the important real-world challenges surrounding public policy that ought to concern well-being thinkers.

With these objectives in mind, readers should expect these discussions of well-being to be at a fairly high level. This paper addresses many broad theoretical concepts relating to well-being and public policy and must neglect many important technical matters. For instance, in reviewing existing well-being indices, there is much to say about their broad categories of measures. Not tackled are the technical merits of the specific statistical measures used in constructing indices. Likewise, a full account of the vast, energetic academic discourse that continues regarding the relationships among different drivers of well-being is beyond the scope of this paper, although a summary is provided of those relationships that are widely accepted.

1.2. Structure

This paper is designed to address several key research questions:

- Why should policy makers care about well-being?
- What is well-being?
- What concepts of well-being are most important for policy makers?
- What aspects of well-being are most appropriate for policy intervention?
- How can knowledge of well-being affect the policy process?
- What tools are needed to allow well-being knowledge to improve public policy?

These questions are approached in two ways. The first is a theoretical approach based on the well-being literature, and the second is a methodical review of existing well-being measures. The theoretical portion of the paper (Chapters 2 to 5) addresses all of the questions listed above. This discussion produces a list of criteria which describe the characteristics of an effective public-policy-oriented indicator of societal well-being.

The second part of the paper (beginning in Chapter 6) involves a critical review of six existing well-being indices using these criteria. This review identifies the indices' key strengths, weaknesses and trade-offs, highlighting the most successful and unsuccessful design elements. The paper concludes with several recommendations based on these lessons, including which indices do the best job, according to the criteria set forward, and how they might be further improved.

2. The case for well-being

Arguing why well-being matters to public policy can rapidly become an overly simplistic exercise. Just start by thinking of all the things public policy *ought* to do, and then start playing the childlike game of repeatedly asking “but why?” You can start with “protecting private property,” “enforcing the law” or “protecting the population from harm.” It doesn’t matter. Wherever you begin, you eventually arrive at the same answer: because these things enhance well-being. Well-being, according to this game, is the ultimate goal of public policy. This perspective enjoys broad support among well-being researchers (see, for instance, Fleche et al., 2012, par. 1; Dolan & White, 2007, p. 71).

Of course, this game does not tell us much. As long as well-being is treated as a high-level concept, both vague and perfect, it is difficult to challenge its position as the ultimate goal of public policy. However, when well-being is defined more specifically – when it is measured and given bounds – imperfections appear that raise questions regarding its applicability to public policy.

And so it is important to distinguish between the high-level concept of True Well-Being and the specific well-being indicators we have access to, which may contain critical imperfections. This distinction allows us to take for granted the idea that True Well-Being is the ultimate goal of public policy, accepting this as a self-evident truth. Even with this assumption, there remains ample room to question the usefulness of available well-being indicators. Are these proxies accurate enough, reliable enough, informative enough to be used for some productive purpose? And what is that purpose in practical terms?

This chapter does not address the more abstract argument about whether True Well-Being ought to be thought of as the ultimate purpose of public policy and focuses rather on arguments about why well-being measures ought to be designed and used. This chapter begins with a discussion about the deficiencies of the GDP, although this is argued to be a problematic justification for the use of well-being measures. Some

additional justifications that are more closely focused on the policy process itself are proposed.

2.1. Arguments for the use of well-being measures

As discussed, many social thinkers have argued that the ultimate objective of public policy ought to be to enhance general well-being. Additionally, an argument has been building over decades that our understanding of well-being and our ability to measure it have advanced to the point that these indicators can serve as useful guides to public policy.

Stiglitz and associates argue that well-being measures are necessary because society's actions are often a reflection of the measurements it uses, and that if the measures are flawed, poor decisions may result (2009, p. 7). The well-being thinkers at Eurostat come to a similar conclusion in terms of the role of well-being indicators to guide choices: that their role is to provide Europe's decisions makers with "a tool for both policy analysis and communication – enabling policy makers to follow-up, and act upon the drivers that potentially enhance well-being for European citizens" (Eurostat, 2010, Section 1).

2.1.1. *The limitation of GDP*

One of the most frequent arguments for the use of well-being measurements focuses on the limitations of the GDP. The GDP has several characteristics that make it a poor indicator of general well-being (Stiglitz et al., 2009, for instance, includes a full discussion of the issue). These points often focus on the fact that GDP counts as positive many economic activities that in fact reduce well-being, such as traffic congestion, and fails to account for many positive activities, such as volunteer work. On a more technical side, GDP is not capable of capturing important forms of value in the economy, such as quality improvements of services, complex goods and publicly delivered goods and services (Stiglitz et al., 2009, p. 11).

Arguments that rely on the shortcomings of GDP have a more fundamental problem: the assumption that GDP is, in fact, used as a well-being measure to guide public policy. While many authors claim GDP should not be used in this way (see, for instance,

Talberth et al., 2006, p. 1), no one has yet made a convincing argument that anyone is in fact doing so, which suggests a straw-man argument. That said, there is value in discussing of the limitations of the GDP. By identifying the elements of well-being that GDP does not address, these arguments support the idea that well-being measures would be valuable and emphasize the fact that we lack them.

2.1.2. *Benefits to public policy*

Detailing the shortcomings of the GDP is therefore not a sufficient argument for why society needs measures of well-being. What's missing is a more fundamental argument about *why* these measures are worthwhile in the first place. This paper focuses on contemplating these benefits in terms of the impact they might have on the public-policy process. Four important potential effects are worth considering: enhanced accountability, the shifting of policy priorities, the generation of new policy ideas and challenges to notions of the role of government.

Frey and Stutzer (2012, p. 10) argue that the existence of well-being measures may cause the general public to hold decision makers to account if they do not improve well-being in the same way that they are held to account for other aspects of social performance for which good measures exist, such as unemployment and inflation. These accountability feedback processes already occur in today's democracies and are easy enough to see in such important well-being domains as health and education. Tools that provide better measures of important well-being domains and communicate them effectively could enhance the exercise of political accountability.

But holding political leaders accountable is only one of many methods whereby the general public influences public policy. A more fundamental promise of well-being measurement is the potential to make the public aware of previously overlooked policy areas that are found to contribute strongly to well-being. Provided the general public cares about improvements in societal well-being, it is logical to expect that this can result in a shift in policy priorities. If our measures show, for instance, that our country meets the international average in every well-being domain except for one, where we fall dismally behind, this knowledge could attract public attention toward that issue.

And were well-being knowledge to influence policy priorities, it might also encourage new ideas for policy intervention. As policy ideas are frequently based on notions of causality (intervention A is expected to result in behaviour B), new evidence about the how various life domains affect well-being could well be a fount of ideas for new kinds of policy interventions.

In the long term, a better understanding of what enhances well-being could contribute to a reconsideration of the proper role of government. Well-being research could show that governments are not able to generate large improvements in well-being by pursuing their traditional roles, perhaps because previous successes have resulted in diminished marginal returns. For example, recent research findings show that citizens of developed nations are gaining only small well-being returns from increases in income (see, for instance, Fleche et al., 2012, par. 36; Helliwell, 2002, p. 16). If well-being research finds that the best way to increase overall well-being is, say, to strengthen personal social relations, it is reasonable to begin imagining a potential role here for policy intervention.

2.1.3. *Further questions*

The preceding discussion illustrates, in broad terms, how one can consider the potential benefits of using well-being knowledge. While this argument is often based on the core idea that True Well-Being is the ultimate goal of public policy and that current societal measures fail to address this fact, these discussions are only moderately helpful. Instead, it is more productive to imagine the specific benefits that can realistically arise from the use of currently available measures of well-being in a specific sphere. As shown in this chapter, several such potential benefits specific to the sphere of public policy arise, at least at a broad, conceptual level.

However, many questions remain: How exactly do we define well-being? What measures are currently available? Which, if any, are appropriate in terms of guiding public policy? Where in the public-policy process should these measures be used or not used? How and how not? What effects should be expected?

3. Conceptualizing well-being

The previous chapter outlined a broad justification for why knowledge of well-being ought to be used to improve public policy. In order to arrive at a more precise understanding of the problem, it is important to consider what we mean by “well-being” in more detail – by no means a simple task. Well-being, as a concept, can appear too vague a notion to be useful for anything, and with good reason. Surely each individual has a right to define, what for them, is a good life, and this subjectivity makes well-being inherently difficult to use.

Yet after decades of work by researchers in various fields to define and measure well-being, the results show a high level of consensus. Empirical findings regarding the drivers of well-being more often than not fit well within common-sense notions of what contributes to a good life. This suggests that the concepts of well-being that have come out of academic research may well be usable proxies of True Well-Being and, as such, are useful guides for generating better public policies.

This chapter briefly summarizes how well-being scholars have defined well-being and the approaches they have taken to measure it. Finally, a concept of well-being used for the remainder of this paper is proposed.

3.1. A background in well-being research

3.1.1. *An overview of academic research*

Psychologists are responsible for much of what we know about human well-being, based on research spanning many decades. It is beyond the scope of this paper to review all

this work in detail. Instead, this summary relies on literature reviews by other well-being researchers to provide a fair background on what has been accomplished in this field.¹

Many researchers are reluctant to define well-being precisely. Diener and associates state, “We define [subjective well-being] as a general area of scientific inquiry rather than a single specific construct” (1999, p. 277). With this generality in the literature, there is often little consistency among terms such as “well-being,” “happiness,” “utility” and “life satisfaction.” Although precise definitions of these terms are elusive, the literature does provide specific ways of considering well-being. One of the most important distinctions is between eudemonia, which describes well-being achieved through actions, and hedonia, which focuses on emotional experience.

The eudemonic approach focuses on the drivers of well-being, particularly people’s ability to satisfy their preferences and achieve their goals. This may involve a person’s internal psychological resources (such their belief systems and coping mechanisms) as well as external, circumstantial factors (such as income, education, family status) (Diener et al., 1999).

The main drawback of this approach is its reliance on an assumption that people will succeed in making decisions that result in their own happiness. To measure their actual experience of well-being requires a hedonic approach, which relies on various ways to measure well-being outcomes, that is, people’s actual emotional states (D’Acci, 2011, p. 52-53).

These concepts are measured using many different techniques; however, the dominant tool for well-being research is the subjective-happiness or life-satisfaction question, where a respondent indicates their self-evaluated well-being on a scale. Much of the research in psychology is devoted to determining the factors that explain this subjective well-being. Over time, the validity of these kinds of measures has been confirmed in several ways (see, for instance, Diener et al., 1999, p. 277; Diener et al., 1995, p. 861; Dolan & White, 2007, p. 74):

¹ For this summary, I rely heavily on the literature review of Diener, Suh, Lucas and Smith (1999), which focuses on the shifts in well-being research in psychology since the late 1960s.

- The results show adequate statistical properties.
- They show good internal consistency.
- They show stable, reliable patterns, even over many years.
- They show appropriate sensitivity to changes in respondents' life circumstances.
- Objective variables can predict subjective well-being across countries.
- They show convergence with other measures of well-being, such as daily mood reports, informant reports, spouse reports and personal recall of positive and negative affect.

Based on these findings, the credibility of self-reported well-being data has been widely established. As Fleche et al. determine, "The high level of academic interest in measures of subjective wellbeing over the past decade combined with increasing availability of better datasets have resolved many of the concerns that a sceptical mind might raise about the validity of subjective wellbeing" (Fleche et al., 2012, par. 5).

Using these measures, researchers have worked to determine the causes of high subjective well-being. Early work focused on the demographic characteristics associated with happiness, trying to identify such things as the age, marital status and education level of a typical happy person. Disappointed with how little of the variation in subjective well-being these factors seemed to explain, psychologists have instead become more interested in the psychological traits associated with high levels of life satisfaction, such as self-esteem, belief systems, optimism and coping strategies (Diener et al., 1999, p. 276).

The existence of broad-based, longstanding data on subjective well-being, validated through decades of use, has allowed researchers from other fields to explore the drivers of well-being. This has been a particularly valuable resource for economists, for whom subjective well-being is enticingly similar to the economic notion of utility, the entity that people are thought to gain from trading with each other.

The vast amount of data available on subjective well-being has allowed economists, like psychologists, to perform regression analyses to statistically determine the factors that explain well-being. In economics, this work has focused on the external (rather than the psychological) roots of subjective well-being. There is now substantial evidence that

subjective well-being is a product of both internal, psychological characteristics and external factors.

3.1.2. *Drivers of well-being*

Based on these techniques, well-being researchers have identified a series of well-being drivers: domains of life that consistently predict changes in subjective well-being. A vast amount of ongoing academic work seeks to improve our understanding of these drivers and their relationships with well-being, and it is beyond the scope of this project to review this work in full. However, in order to understand the implications of this research for public policy, it is worthwhile to examine the well-being drivers that are regularly identified as the most influential.² (For a more detailed review of these drivers, see Appendix A.)

As discussed, psychologists have long been interested in the role of psychological characteristics in individuals' subjective well-being. Important factors include self-esteem, belief systems, optimism, coping mechanisms, and even the use of positive illusions and self-deception (Diener et al., 1999, pp. 276-280). One of the primary psychological factors is the notion of personal relativity, as this cuts across all other drivers of well-being. The relativity discussion addresses the question of whether people's reported levels of subjective well-being reflect absolute conditions in their lives or relative states. This is a critical discussion because if subjective well-being is mainly caused by relative factors, this would seriously limit the possibility of influencing general well-being through policy intervention. These concerns are captured in the concepts of aspiration and adaptation.

This discussion has arisen, in part, as an explanation to the Easterlin Paradox. A 1974 study by Richard Easterlin showed that despite strong economic growth among certain developed nations, overall levels of self-reported happiness remained stagnant (Easterlin, 1974). Adaptation theory suggests that while a change in income (or some other external circumstance) can affect people's well-being for a short time, they

² This review of the research is largely based on existing literature reviews and other broad-level summaries of the drivers of well-being, particularly D'Acci, 2011; Diener et al., 1999; Dolan and White, 2007; Dolan et al., 2008; Helliwell, 2002; and Stiglitz et al., 2009.

eventually adapt to the new environment and revert back to a baseline happiness level (D'Acci, 2011, p. 50). Aspiration theory holds that an individual's well-being is relative to the well-being of the people to whom he compares himself, meaning that there will be little change in general well-being if everyone in a society is made better off (D'Acci, 2011, p. 50). Empirical research suggests that people's definition of a "sufficient" level of income does indeed rise as their income rises (Dolan and White, 2007, p. 73).

Researchers have shown that adaptation and aspiration are important factors in explaining subjective well-being; however, evidence suggests that they do not completely explain all changes. Despite people's tendencies to adapt to new circumstances, for instance, research has shown that people are not on a so-called hedonic treadmill, where no external changes can alter a person's baseline well-being. People in poor countries, for instance, consistently report lower levels of subjective well-being than people in rich countries, even in cases where the poverty they experience has existed for millennia (Diener et al., 1999, p. 285). Likewise, studies have shown that people's levels of subjective well-being do not fully adapt to some changes in life circumstances, such as achieving friendships, becoming unemployed or becoming divorced, suggesting that people's capacity to adapt to changing circumstances is not absolute (Dolan and White, 2007, p. 73).

This research suggests that differences in external circumstances matter in terms of well-being, and identifying these external drivers has been a major focus of well-being researchers. Some of the most important external well-being drivers consistently identified by researchers are income, employment, health, education, marital status, personal social connection, trust and social cohesion, environment, personal freedom and good governance, and personal security.

Much academic work has been done, and continues, to explain how each of these domains affects subjective well-being. For instance, significant evidence supports a non-linear relationship between income and subjective well-being, with increases in income having substantial positive effects for those who lack basic needs and greatly diminished effects for those with relatively high incomes (Diener et al., 1999, p. 288; Fleche et al., 2012, par. 36; D'Acci, 2011; Helliwell, 2002, p. 16).

An important issue concerning the drivers of well-being is that aggregate measures of a domain will often not provide a full description of its relationship with well-being. The equitable distribution of the well-being good may have a significant effect as well, as might the long-term sustainability of that good (Stiglitz et al., 2009, p. 12). For instance, the effect of income inequality on subjective well-being is much debated among researchers (Diener et al., 1995, p. 853).

GUIDELINES* *Completeness: The indicator is built using a comprehensive list of driver domains identified through well-being research.*

Depth: The indicator's measures allow for an analysis of both the distribution and the sustainability of the resources associated with well-being.

* These "Guideline" boxes are provided throughout the paper to highlight key concepts. These concepts are revisited in Chapter 6 to support the selection of a list of criteria that are used to evaluate well-being indicators.

3.1.3. Current measures of well-being for policy

The desire to move well-being knowledge beyond the realm of research and into the world of public policy is supported by two key elements. First, that there is substantial agreement among researchers concerning key drivers of well-being and, secondly, that these generally confirm with non-controversial, common-sense notions of what people value in life: family, health, income, freedom, good government, and so on. With a high level of confidence in their results, researchers have become determined to put that knowledge to work in the world, particularly in terms of guiding public policy. As stated by Stiglitz et al.: "The new measures now have the potential to move beyond research to standard statistical practice" (2009, p. 41).

Important developments include:

- Bhutan's index of Gross National Happiness, which began development in 1971
- The Sen, Stiglitz and Fitoussi commission, at the request of French president Nicolas Sarkozy in 2008, to explore alternative measures of social progress
- The European Commission's 2007 GDP and Beyond conference
- The launch of the U.K.'s Measuring National Well-Being Programme in 2010

- The launch of the OECD's Better Life Index in 2011
- The creation of well-being measures produced by governments and NGOs in several other countries³

Despite the fact that many different organizations – national, regional, academic and non-government – are working concurrently on a similar problem, a single widely accepted well-being measure has yet to emerge. While the life domains belonging in a well-being index has widespread agreement⁴, substantial differences exist regarding which specific data sources to use, how they ought to be organized and how that data ought to be aggregated and presented. The question of aggregation has emerged as a particularly tough problem. As most measures of well-being are highly multi-dimensional – pulling together different kinds of data measured in different units – diverse approaches to normalizing, weighting and combining the data differentiates many otherwise-similar measures.

This paper includes a critical review of six well-being measures, which illustrates the benefits and challenges associated with different methodological approaches.

3.2. Approaches to measuring well-being

Three major approaches to measuring well-being have emerged, each stemming from an important theoretical concept of well-being. These are: the preference-satisfaction approach, the subjective-well-being approach and the objective-list approach (Dolan and White, 2007). The choice of approach to take when measuring well-being will have a profound effect on one's final product. A discussion of the advantages and disadvantages of each is therefore critical for a better understanding of how well-being measures might be useful for improving public policy. Each approach is discussed in turn in this section, followed by a description of the concept of well-being that serves as a guide for the rest of the paper.

³ See Appendix C for an expanded list of well-being and other social-progress indicators.

⁴ See Appendix B for a comparisons of the life domains chosen by various well-being measures.

3.2.1. *The preference-satisfaction approach*

The preference-satisfaction approach is an important part of traditional economic theory. It holds that the more people are able to satisfy their own desires, the greater will be their overall utility, a concept almost indistinguishable in economic analysis from well-being. Well-being, therefore, is best achieved when people have both the resources and freedom to act as they wish (Thompson and Marks, 2009, p. 9).

The advantage of the preference-satisfaction approach is that it avoids the difficult question of how to measure the well-being that results from decisions, focusing instead on observable activities. According to this framework, it makes sense to use general economic measures, such as the GDP, as a proxy for well-being, with the understanding that financial resources play a dominant role in allowing people to satisfy their preferences (Dolan and White, 2007, p. 75).

The difficulty with the preference-satisfaction approach is that it essentially assumes away any substantive concept of well-being, taking it for granted as the results of people's decisions. It relies on critical assumptions that people's choices are an accurate reflection of what makes them better off and that choice in itself is always positive (Thompson and Marks, 2009, p. 10). However, there are many reasons to doubt these assumptions.

Certain preferences do not improve general well-being because they are either misguided or anti-social. In order to justify the well-being achievements of choice, theorists often have to assume idealized preferences or perfectly informed decision making, assumptions that are frequently implausible. Also, growing evidence suggests that people have cognitive barriers in predicting the well-being they will enjoy from their decisions, particularly in terms of how long positive emotions will last and how well they will be able to adapt to changing circumstances (Dolan and White, 2007, p. 76; D'Acci, 2011, p. 52).

It is also problematic to assume that people simply have given preferences, rather than preferences that are constructed over time through social interactions, changing as people's external circumstances change (Hirata, 2005, p. 10; Dolan and White, 2007, p. 76). Furthermore, a person's preferences need to be distinguished from their available

choices. Arguments constructed solely based on people's preferences risk overlooking the effects of limited options and the trade-offs these situations impose on individuals.

With its focus on people's own decisions, the preference-satisfaction approach has some similarities to the objective-list approach, which is discussed below. However, the usefulness of preference satisfaction for public policy is limited in that it does not suggest well-being measures beyond wealth, which, as shown in the above section "Drivers of Well-Being," is only one of several predictors of well-being identified through empirical research. Therefore, the concept of well-being used in this paper does not rely heavily on preference satisfaction, largely for reasons of limited usefulness. Instead the focus is on the subjective-well-being approach and the objective-list approach, which are referred to as "outcome" and "driver" approaches, respectively.

3.2.2. Outcomes: *The subjective-well-being approach*

The subjective-well-being approach addresses a key issue that is missing in preference satisfaction: the well-being people actually experience. Because of this focus on resulting well-being, these approaches are referred to as "outcome" approaches. As briefly discussed in the background section above, well-being outcomes can come in a variety of forms, such as pleasant and unpleasant affect or a more general evaluation of a person's own quality of life (Diener et al., 1999, p. 277; Stiglitz et al., 2009, p. 43).

One of the great advantages of the outcome approach is that subjective well-being, properly measured, is a clear, unambiguous research target with a high level of face validity (Dolan and White, 2007, p. 72; Ryan et al., 2008, p. 139). If, as proponents suggest, self-reported well-being measures are reliable proxies of people's actual well-being (the conceptual True Well-Being), then it obviates the need for assumptions about what causes well-being; it can be measured more or less directly.

The major disadvantage with an outcome approach lies not with its reliability but rather its narrowness. Even if outcome measures provide an accurate picture of overall well-being, one has to go back to the crucial question of usefulness: what can a policy-maker or citizen or activist do with that information?

Public policies that focus solely on maximizing people's subjective well-being could be fraught with problems, as discussed by Frey and Stutzer (2012, p. 12). People have different subjective responses to different circumstances, and such policies could end up favouring those who are least able to adapt to negative circumstances, with little regard to objective severity. A highly sensitive person might receive great compensation for a minor problem while a psychologically resilient person in substantial distress receives little. And if so, people could have an incentive to exaggerate their reported negative emotional experiences. As emotions are internal experiences, such reports cannot be easily challenged.

Another limitation is that many people might maximize their own subjective well-being through unhealthy or anti-social behaviour (Ryan et al., 2008, p. 141). While this may have little impact on an academic measurement exercise, it could have a profound effect on the design of well-being-focused public policies, which cannot be morally neutral. As Ryan and associates state, "Whether one is making comparative health assessments or actually creating social and economic policies, the kind of good life we are targeting makes a difference" (2008, p. 142).

The essential problem with relying on outcome measures is that, while effective in identifying states of well-being, they don't suggest what we can do about them. Outcomes by themselves are not enough to help us form public policies to improve well-being. That said, measures of subjective well-being do play another important function: they allow the identification of well-being drivers through empirical research.

3.2.3. *Drivers: The objective-list approach*

Well-being research, as discussed, has gone beyond the measurement of subjective well-being to focus on the factors that predict it. Research on well-being drivers opens up practical opportunities to influence people's well-being. Lists of well-being drivers are based on the notion that people have fundamental needs, conditions they must meet in order to gain well-being (Thompson and Marks, 2009, p. 9). Measures built around tracking drivers are referred to as "objective-list" measures (although, in practice, these lists often make use of subjective indicators, so they are referred to as driver measures in this paper).

There are clear similarities between the driver approach and the preference-satisfaction approach, in that both identify conditions wherein well-being can be assumed. What sets the driver approach apart is its detail – its focus on multiple life domains identified through well-being research. A driver approach is highly attractive to policy makers as it identifies practical levers with which to improve people’s well-being. After all, “If one aims to develop interventions one has to know what the target is” (Ryan et al., 2008, p. 141).

An inescapable risk with driver measures is the subjective judgement required in selecting a definitive list of factors that produce well-being. Any well-being measure following the driver approach will be, essentially, a set of “prescriptions and proscriptions” of what comprises a good life (Ryan et al., 2008, p. 140). Certain well-being thinkers point to the general consensus that exists about which life domains matter most in terms of well-being to indicate that this is a largely solved problem (see, for instance, Stiglitz et al., 2009, p. 43).

But this is only a partial defense. Even if we can agree on a set of dominant well-being drivers, we’re still left with the challenge of determining their relative importance. Such weighting problems have become a significant obstacle for current well-being indices. Driver approaches, therefore, cannot escape the danger of becoming overly prescriptive, telling people what they want in life rather than responding to their own judgements (Dolan and White, 2007, p. 74). The more these kinds of decisions are made by designers rather than people themselves, the more a driver approach to measuring well-being risks losing its validity.

GUIDELINE *Validity: Index design decisions are based on findings from research and not subjective choices from designers. However, design elements that incorporate subjective values from the public are valid.*

3.3. An integrated concept of well-being

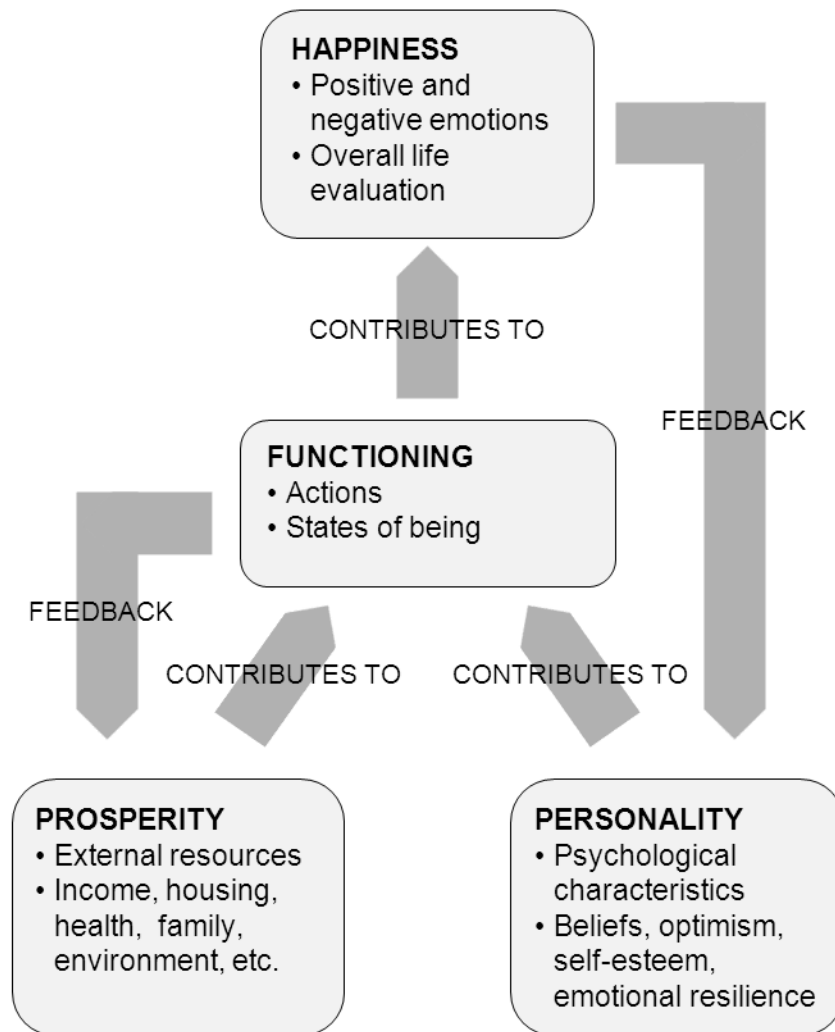
As this discussion shows, each approach to measuring well-being has advantages and disadvantages, particularly in terms of focusing on drivers or outcomes, which poses a challenge for those wishing to use well-being to improve public policy. It is fortunate

then, that there is no real need to choose between these approaches. While the well-being literature can sometimes convey the impression that well-being must be measured either one way or the other, this is a false choice. Our concept of well-being can easily include both, as shown below.

3.3.1. *The New Economics Foundation's integrated model of well-being*

The concept of well-being that guides this paper is an integrated framework that includes both well-being drivers and outcomes, specifically the framework proposed by the New Economics Foundation (Thompson and Marks, 2008). This framework includes four categories, all of which – taken together – describe the broad dynamic of well-being. Those categories are: psychological resources, external conditions, good functioning and subjective well-being, which describes both affect balance and overall life evaluation. To make this framework a bit more accessible, these categories have been renamed in this paper, respectively, as personality, prosperity, functioning and happiness. In this framework, personality and prosperity describe the drivers of well-being, happiness describes well-being outcomes, and functioning describes all actions and states between the two.

Figure 1. An integrated model of well-being



Source: This is an adapted reproduction of a figure that appears in Thompson & Marks, 2008

Personality: This category describes the relatively stable, unchanging aspects of a person's psychological traits and mental capacity, including their beliefs, values, coping systems, optimism, etc. The broad range of psychological resources identified as drivers of well-being earlier in this chapter fit into this category.

Prosperity: This category describes all the conditions and resources that affect a person's capabilities in life that exist outside a person's mind. This includes material resources such as income and housing, social conditions such as inter-personal connections and supports, physiological conditions such as nutrition and health, and environmental conditions such as the availability of natural resources.

Functioning: This term, which is used in Amartya Sen's capabilities approach, describes a person's actions and states of being. A person's capabilities are, in essence, the range of functionings they are able to access (Sen, 1993, p. 30).

Happiness: This category describes a wide range of well-being outcomes, be it moment-to-moment emotional states or a long-term evaluation of one's quality of life.

Thompson and Marks describe a causal flow through this framework, with a person using their personality and prosperity resources to achieve different forms of functioning, which results in a personal subjective experience, described by happiness. However, repercussions can flow down through the framework as well. Certain successful actions under the functioning category, such as becoming employed, will filter back into a person's prosperity, say, in the form of regular income. The positive emotional experience arising from this event, which falls under happiness, can result in newfound self-confidence, which we would categorize as a new psychological resource in the personality category.⁵

This framework is a useful tool for several reasons. First, it allows us to arrive at a relatively concrete definition of well-being: a dynamic including the resources that provide a person with capabilities as well as the outcomes people experience from life events. This is particularly important in terms of a problem that is addressed in the next chapter: namely, identifying the areas of the well-being dynamic that are amenable to policy intervention.

⁵ See Thompson and Marks, 2008, for a more detailed discussion of the model.

GUIDELINES *Completeness: The indicator is built using a comprehensive list of driver domains identified through well-being research.*

Completeness: The indicator includes an outcome measure (subjective well-being measure).

4. Considering the public-policy process

Chapter 3 ended with an integrated concept of well-being, illustrated as a dynamic that includes both well-being drivers and outcomes. However, for a full understanding of the role well-being knowledge might play, it is critical to examine the sphere in which we expect it to be used, which in this case is the public-policy process. This chapter develops a useful concept of the policy process context for well-being knowledge.

This goal is a challenge expressed in some, but hardly most, of the current writing on well-being. The well-being thinkers at Eurostat, for instance, emphasize the need for any measure they produce to address “policy-relevant indicator(s) for the EU” (Eurostat, 2012). Thompson and Marks (2008) and Schubert (2012) also emphasize the need to address the utility of well-being in terms of public policy. While these thinkers problematize the issue of relating well-being to public policy, many fail to do so.

This chapter begins with a brief critique of how certain concepts in the well-being literature fail to adequately address the realities of the public-policy process. Following this is a description of certain key concepts that help define the public-policy process and discussions about how well-being knowledge applies to each of these concepts.

4.1. Failing to account for the policy process: three critiques

At the outset of this paper, it is argued that current work to incorporate well-being knowledge into our social systems is a substantially different undertaking than the classical philosophical exercise of defining the “good life.” What makes it different is the scale of practical application of well-being knowledge, the most important application being toward public policy. This makes the failure to address public-policy issues in well-being literature particularly problematic. This section addresses three common conceptual errors made in associating well-being with public policy: assuming a

preoccupation with GDP, the benevolent dictator problem and the expectation of measurable causality.

4.1.1. Critique 1: Assuming a preoccupation with GDP

Discussions of why well-being knowledge ought to be used in public policy often begin with a critique of the GDP, with a focus on how this measure fails to account for general well-being. As mentioned in Chapter 2, this discussion has some value in emphasizing things we might want to know about society that GDP doesn't tell us and also in emphasizing that we currently lack measures of those things. However, there is a common claim that the GDP *is* commonly used as a de-facto well-being measure, which encourages policy makers to try to maximize it. This effort, according to the argument, fails to enhance well-being because of the flaws inherent in the GDP (Talberth et al, 2006, is one example where this argument is made).

Certain critics of well-being measures point out the invalidity of assuming that policy makers are preoccupied with maximizing the GDP. They cite numerous other influences that guide policy making within the democratic process and that the resulting range of public policies in just about any country cannot credibly be viewed as attempts to maximize GDP (for example, Johns and Ormerod, 2012). This counter-argument has substantial merit. The GDP was not designed to be a well-being measure and it should not be used as one. Additionally, scant evidence suggests that it actually *is* used as one. Certainly, the GDP has an influence on public policy, and changes in the GDP might well support certain kinds of policy changes. However, to overstate the impact of this one measure is to ignore the complex nature of the policy process, which includes many other effective drivers.

4.1.2. Critique 2: The benevolent dictator problem

The benevolent dictator problem describes the erroneous assumption that the existence of good data will directly result in the implementation of good public policy. As explained by Frey and Stutzer:

We argue that happiness research itself does not offer an approach to public policy. In our view, the fascinating results of this new research area has led to the

adoption of a simplistic understanding of public policy. Citizens as ultimate decision-makers are disregarded, and governments are seen as benevolent maximizers of social welfare captured in terms of measures of subjective well-being. (Frey and Stutzer, 2012, p. 16)

Whereas the preoccupation-with-GDP problem overemphasizes a fault in the policy process, the benevolent-dictator problem oversimplifies solutions. It may be attractive to well-being researchers to think that their hard-won findings will immediately affect policy decision making, but this overlooks the many democratic processes that contribute to policy making in a democracy. And as suggested by Frey and Stutzer, to do so implies a form of unattractive elitism: that policies are made based on a one-way transmission of expert research to political decision makers with little or no role for the general public⁶.

4.1.3. Critique 3: The expectation of measurable causality

Expectations of measurable causality occur when researchers suggest that changes in well-being can be directly associated with changes in public policies. This problem is similar to the benevolent-dictator problem in that it oversimplifies policy solutions based on well-being knowledge. This is a common problem when researchers propose ways in which measures of subjective well-being alone (that is, well-being outcomes) might be used for public-policy purposes. The best public policies to pursue, according to this argument, will be made clear by tracking the changes in well-being resulting from different policy decisions.

However, it is doubtful that the effect of a specific policy change on something as broad as subjective well-being will be measurable on a reliable basis, especially in terms of society-wide well-being measures. Consider, for instance, the GDP. It may well be that certain policy changes cause the GDP to change to some degree, but our ability to draw causal conclusions between the two is very limited. Both the GDP and subjective well-being represent highly complex dynamics, responding to a multitude of influences of which public policies only amount to a small fraction. The expectation of being able to draw these kinds of causal links is problematic, outside of a few plausible circumstances.

⁶ This problem can be seen in Diener and Seligman, 2009, a paper that presents research findings and policy recommendations but does not acknowledge the role of the general public in the public-policy process.

For instance, subjective well-being measurements over a long time frame might be able to pick up the effects of large-scale policy changes. The effects of policy changes might also be detectable in small-scale, controlled environments. However, the conditions where causality can be accurately measures are likely too rare for this kind of analysis to be broadly useful.⁷

This is one reason why the vast majority of well-being measures proposed today for the purpose of guiding public policy are not outcome measures but driver measures, which rely on pre-identifying the drivers of well-being rather than on discovering post-measurement causalities.

4.2. Guiding public-policy concepts

The dominant theme of all three of these critiques is that the public-policy process is not simple, and treating it as simple undermines one's ability to design effective interventions based on well-being measures. Therefore, it is critical to establish an understanding of the public-policy process and then consider what it suggests in terms of appropriate, useful and effective applications of well-being knowledge.

A legacy of scholarship regarding the policy process has provided us with important theories that can guide our decisions about how best to use knowledge of well-being. We might choose among many such theories, and as Frey and Stutzer state, the policy approach chosen will affect the research questions we pose, the kinds of well-being knowledge we seek and the audiences we aim to serve (Frey and Stutzer, 2012, p. 2). How we understand the public-policy process will allow us to address the problems that arise when concepts such as well-being measurements are applied to real-world policy situations.

For instance, one of the key elements of a public-policy process is, of course, politics, and considering the use of well-being measures in a context of ongoing political

⁷ One example of this kind of thinking can be found in Dolan and White (2007), which suggests that measures of subjective well-being alone can be used to guide public policies. The authors do not substantially address the difficulties inherent in trying to establish clear causal connections between complex concepts such as subjective well-being and public policy.

competition raises several important issues. These include concerns over political manipulation, state paternalism and the accepted role of the state in liberal democracies.

As discussed by Frey and Stutzer, the use of well-being knowledge in a public-policy context must recognize the potential for political manipulation (Frey and Stutzer, 2012, p. 7). If measures of well-being are effective at influencing public priorities, as suggested in this paper, it follows that there will be strong political motivation to control those measures. A reliable measure of well-being, therefore, must be methodologically transparent so as to prevent political manipulation (Frey and Stutzer, 2012, p. 13).

Another concern is that the use of well-being measures will lead to greater levels of state paternalism, based on the belief that decision makers do not trust people to choose what makes them happy. The result is statements such as this: “The translation of the [happiness] economic ideas into political practice seems specifically oriented towards no purpose other than providing further excuses for interference in the lives of individuals by the political class” (Phillip Booth in Johns and Ormerod, 2012, p. 8).

Such statements are likely based on overblown fears, but they demonstrate that our conception of the proper role of government matters in terms of how it ought to use well-being. A classical liberal interpretation of that role holds that its prime objective is liberty, not well-being. Accordingly, government has no role in the life choices of individuals and ought to concern itself solely with protecting their rights and property, even if people make choices that reduce their own well-being (Thompson and Marks, 2008, p. 2). However, broad popular support exists for an expanded notion of government, with a wide range of roles, such as environmental protection and the maintenance of social-support systems. This expanded notion of the role of government is based on the idea that governments can help resolve collective-action problems that cannot be practically addressed through other sectors of society (Thompson and Marks, 2008, p. 15).

These issues illustrate the need for a nuanced understanding of the policy process, the mechanisms that influence it and the role of government the process supports. The following subsections describe key concepts used in this paper to address these issues and guide decisions about how to apply knowledge of well-being, specifically deliberative democracy, the role of competing narratives and the capabilities approach.

4.2.1. *Deliberative democracy*

One of this paper's key assumptions about the use of well-being knowledge to improve public policy is that this will occur in a democracy. This basic premise has some important implications. A democracy is, in essence, a form of government that reflects the will of the people. A well-being tool that affects the public-policy process but does not consider the will of the people, then, is arguably an illegitimate tool for a democracy (Hirata, 2005, p. 2).

A valid use of well-being knowledge, then, must take into account democratic fundamentals, and furthermore *strengthen* them if its use is to be considered socially beneficial. It seems quite plausible that well-being measures can make such a contribution, particularly if we consider the characteristics of the "deliberative democracy" framework.

The deliberative-democracy theory emphasizes that public decisions are (or *ought* to be) reached through public deliberation and justification. A key element of this concept is that people's preferences are not simply fixed; rather they evolve through a deliberative process where individuals are sensitive to the preferences of others (Hirata, 2005, p. 3).

In this scenario, well-being knowledge does not replace people's individual preferences but rather enhances them. The role of such measures is therefore not to be a prescriptive set of priorities dictated by experts but rather educational contributions to aid the public in setting policy goals. And as contributions, they can be accepted or rejected as individuals see fit. When offered properly, expert recommendations do not circumvent public discourse but rather support it, contributing evidence, ideas and other intellectual fuel. The key condition expert advice must meet to support public discourse is that it be publicly contestable, that it not be directed only at decision makers as though the public has no right or reason to challenge its findings (Hirata, 2005, p. 7).

As Hirata writes: "Such a view reflects a view of citizens as happiness functions and of policy makers as social engineers that have to fulfill some independent objectives. It fails to address the reasons the citizenry may or may not have to make the recommended cause their own" (Hirata, 2005, p.8).

4.2.2. *Competing narratives*

The deliberative-democracy concept suggests how expert knowledge, such as measures of well-being, is able to enhance the public discourse without becoming unattractively paternalistic. However, understanding what kinds of well-being measures and tools will be the most effective at accomplishing this task requires a better understanding of how this deliberation works.

For this, Deborah Stone's concept of the "polis" and the role of competing narratives is a useful guide, fitting well within our broader concept of a deliberative democracy. According to Stone, the polis is the realm of political discourse wherein various actors engage, compete and collaborate to arrive at decisions for public action. Unlike the rational markets imagined in orthodox economic theory, the polis is seen as an immeasurable, paradoxical realm ruled by metaphor rather than observable fact (Stone, 1988).

Despite this limitation, post-positivist theorists such as Stone argue there is much that can be understood about such non-market realms. For instance, whereas behaviour in a market is based on information, Stone emphasizes that behaviour in the polis is based in interpreted information. And these interpretations are not created by chance; rather, they are constructed strategically using narratives and metaphors.

This theory suggests that interpreted information – or meaning – is conveyed most effectively through the use of narrative techniques: storytelling, in other words. The question, then, is whether well-being knowledge can be conveyed using effective narrative techniques, and what those techniques might be. The communication role of a well-being indicator emerges as an important issue for, among others, planners at Eurostat, who state that, "The increased accountability of policy making coupled with the increased education levels of citizens call upon clear communication policy actions and outcomes" (Eurostat, 2010, Section 6.4.2). Communication strategies proposed include balancing complexity with ease of understanding, selecting indicators that can be clearly understood by the public and clearly labelling data.

Based on a reading of existing well-being indicators, the narrative technique of choice appears to be comparison. Every well-being measure currently in use makes some form

of comparison to put its output into context, to give it meaning. Comparisons are generally either longitudinal in nature, comparing the well-being performance of a single nation to performances over time, or jurisdictional, comparing different countries to each other in a single point in time.

These comparisons are used extensively in the communication that surrounds current measures of well-being, and it is not difficult to see the meaning-making Stone's theory leads us to expect. Whether a country ranks first in terms of global well-being or last, whether it is out- or underperforming its neighbours or whether general well-being is climbing, declining or remaining stagnant transform statistics into meaningful stories.

The fact that well-being indicators employ story-telling techniques does not, however, necessarily suggest that they are promoting a particular ideological or political narrative. Theoretically, well-being indicators can act with similar ideals to those of journalists, which – at least in principle – avoid political bias and present information in a fair fashion, all the while employing powerful narrative techniques. Similarly, an indicator of well-being also can – at least ideally – provide important information in a politically neutral voice that contributes to healthy democratic deliberation, that is, one that empowers citizens to better rule themselves.

4.2.3. *The capabilities approach*

The preceding two sections address the beneficial role a measure of well-being might play within a deliberative democracy and the techniques that are likely to help it succeed. The final guiding policy concept discussed in this paper deals with a more fundamental issue: what is the proper role of government in enhancing general well-being? This discussion relies heavily on the capabilities approach by Amartya Sen.

It is reasonable to argue that public policies ought to be directed at improving general well-being. These policy interventions, it can also be argued, ought to be guided by evidence from well-being research and should respect democratic deliberation as described above. But these arguments only get us so far. For instance, well-being evidence shows that belief in God and enjoying regular sexual intercourse are measurable drivers of subjective well-being. Should we propose, then, that public policy

be used to convert non-believers and match up sexual partners? Common sense says no; there are other limitations to what we consider acceptable policy intervention.

Many well-being writers have confronted the problem of how to limit the scope of government intrusion, recognizing that it is generally not acceptable for governments to make personal decisions on behalf of individuals. Instead, governments should focus on the conditions in which people make decisions – in other words, their capabilities (see, for instance, Stiglitz et al., 2009, p. 15; OECD, 2011, p. 20). This approach is supported by findings showing that autonomy is, in itself, an important driver of well-being (Diener et al., 1995, p. 863).

The capabilities approach considers an individual's well-being in terms of their ability to perform actions and achieve states that enhance their well-being. These actions and states of being are collectively known as "functionings," and the range of functionings available to an individual at any time defines their capabilities. Sen proposes that the capabilities people enjoy should be a central concern for public policy (Sen, 1993, p. 30). For one, a person's capabilities can be greatly enhanced by public policies, and the expansion of these capabilities is an important part of what we understand as freedom, a key social value for democracies in particular. Well-being achieved by enhancing people's capabilities, therefore, avoids the paternalism problems imagined by well-being critics. As Sen writes, "There is a very real sense in which the freedom to live the way one would like is enhanced by public policy that transforms epidemiological and social environments" (Sen, 1993, p. 44).

Sen emphasizes that access to both internal resources, such as self-respect, and external resources, such as food and shelter, contribute to increasing a person's capabilities (Sen, 1993, p. 31). The integrated concept of well-being discussed in Chapter 3 reflects these concepts by specifying a person's external and internal resources as well as their functionings.

The capabilities approach therefore provides us with an important guide for how public policy can best be used to enhance well-being in the context of a democracy. For instance, if well-being research shows that belief in God is a driver of well-being, a capabilities approach to public-policy intervention suggests that an appropriate action by

government would be to guarantee the *ability* to believe in God, which enhances people's capabilities, rather than orchestrating forced conversions, which restricts them. This approach illustrates that there is a broad role for government intervention in terms of enhancing well-being that does not limit the liberty of citizens, but rather expands it.

4.3. Applying policy theory to well-being

At this point, we have seen an integrated concept of well-being as well as three guiding concepts of public policy: deliberative democracy, the role of competing narratives and the capabilities approach. This section begins the task of applying these concepts jointly to yield practical guidelines for applying well-being knowledge to public policy.

4.3.1. Applying the capabilities approach

The integrated concept of well-being discussed in Chapter 3 takes into account a variety of personal and external resources as well as subjective experiences. What the capabilities approach suggests is that policy interventions might not be appropriate in each of these stages. For instance, it is difficult to see how public policies could directly impact the happiness component of the well-being dynamic in a way that promotes individual capabilities. And if public policy were to directly influence people's Functionings – which would amount to the state making decisions on behalf of individuals – this would, in effect, eliminate people's capabilities.

The capabilities approach, therefore, leads us to focus on the resources side of the model, specifically the personality and prosperity components. And even then, the question of government intervention in our personality, our more-or-less consistent psychological traits and resources, is problematic. People would be rightfully concerned about a government that wanted to meddle with their psychological traits, aside from a select few accepted interventions, such as school teachers helping young children to learn generosity, mutual respect and self-esteem; the provision of state-sponsored psychological counselling for those who seek it; or in certain cases where people's negative traits pose safety risks to others.

This suggests that the most appropriate role for public policy intervention to enhance well-being is in the prosperity category, focusing on issues such as personal income, housing, education, health care, community health, good governance, the environment and other similar external resources that contribute to people's capabilities. And as it happens, these are precisely the areas upon which existing measures of well-being focus. Although most designers of well-being indicators do not describe the relationship between well-being and public policy to the extent seen in this paper, it seems they have arrived at similar conclusions that the most policy-relevant well-being domains are found in the prosperity category.

Eurostat staff come to this conclusion. They note that all the elements of the model are important components of well-being, "However, government and EU policy has the most opportunity to influence well-being through the external conditions and functioning and capabilities" (Eurostat, 2010).

GUIDELINES *Neutrality: In order to respect the role of individual responsibility in a democracy, the index includes domains and measures that describe people's capabilities rather than their specific choices.*

Completeness: Those well-being drivers that describe a person's prosperity, i.e. their external resources, are generally the most policy relevant.

4.3.2. Applying deliberative democracy and competing narratives

The discussions about deliberative democracy and competing narratives do not address the content of a well-being indicator so much as its form and purpose. These theories suggest that a well-being measure made for the purpose of guiding public policy ought to be designed with the general public as a primary target audience. Well-being indicators must therefore be clear to non-technical audiences. This does not apply simply to the indicator's final output, but to every process used to generate that output, including normalization and aggregation.

To make an impact upon its audience, the indicator must also be able to communicate well-being knowledge using effective narrative techniques. Comparability both over time

and across jurisdictions is a potentially powerful narrative device that is already widely used among existing indexes.

In order to further respect the decision-making role of the general public within a democracy, it is important that a well-being indicator be politically neutral. To accomplish this, the design of the indicator should be based on the best research available rather than political preferences, and a clear methodology should be publically available as a guard against political manipulation. Furthermore, those responsible for designing and maintaining a well-being index should refrain from offering policy advice. It is their role to enhance public deliberation, not to impose solutions.

GUIDELINES *Clarity: The indicator treats the public as a primary target audience. Its content is understandable and clear to members of the general public.*

Comparability: The indicator provides comparisons of well-being performances over time and across jurisdictions.

Neutrality: The indicator is politically neutral in its design, using domains and measures based on well-being theory.

Neutrality: Neither the indicator itself, nor those responsible for designing, maintaining and distributing the indicator make specific policy recommendations.

Transparency: The indicator is built using a transparent, accessible methodology.

4.3.3. Other applications for well-being knowledge

This paper focuses primarily on broad, national well-being indicators meant for public consumption. But it is important to recognize that the usefulness of well-being knowledge does not end with this kind of product. While this analysis of the role of well-being knowledge considers the broad context of a deliberative democracy, there are other potential roles that warrant attention, although this paper does not aim to discuss them in depth.

Well-being researchers have suggested that many of their findings can be useful for specific forms of data analysis that supports much public policy. For instance, the widely used analytical technique of cost-benefit analysis is frequently limited by the ability to place dollar values on non-market goods, such as environmental protection or culturally important goods. Several well-being scholars suggest that measures of subjective well-being could be used to help estimate these values and provide a consistent unit of measure for comparing vastly different goods (see, for instance, Dolan et al., 2008, p. 78; Frey and Stutzer, 2012, p. 7-8).⁸

This is but one example of how well-being knowledge might be used at something other than the broad deliberative stage of public-policy making. This example shows that well-being knowledge can also be applied at the analytical stages of policy making, where different policy options are researched and analyzed by professionals.

⁸ Adler and Posner, 2008, is an excellent example of how well-being knowledge is challenging longstanding concepts for particular disciplines, such as – in this case – cost-benefit analysis.

5. Incorporating well-being and public-policy concepts

The previous two chapters presented concepts of the well-being dynamic and the public-policy process. This chapter involves two exercises that illustrate how these two concepts can be used together to help answer the fundamental question underlying this paper: How can measures of well-being improve public policy?

To do so, two simple models are presented that make use of concepts discussed in the previous two chapters. The first describes the lifecycle of a potential well-being measure, and the second describes how the existence of well-being knowledge in a democracy might affect the public-policy process.

5.1. Modelling the lifecycle of a well-being measure

The following is an illustration of the lifecycle of a policy-oriented well-being indicator, beginning with its design and ending with its evaluation. This illustration is presented as a thought experiment that shows how a well-being indicator *might* work over time in a way that addresses many of the issues relating to the concepts of both well-being and the public policy discussed so far.

Figure 2. *The lifecycle of a well-being indicator*

STAGE 1 Research	Empirical well-being research is used to discover the explanatory variables of subjective well-being, generating robust findings about what life domains can be considered drivers of general well-being.
STAGE 2 Selection	Recognizing that not all drivers of well-being are appropriate areas for government intervention, a selection of policy-relevant drivers is chosen with a focus on those that enhance people's capabilities. An outcome measure, in the form of a measure of people's subjective well-being, is also included.
STAGE 3 Communication	An easily understandable well-being indicator that includes reliable measures of the selected well-being drivers is introduced, utilizing comparisons to add meaning to its findings. This indicator is made available for public consumption, discussion and critique.
STAGE 4 Policy intervention	The well-being indicator <i>does not</i> include proposals for specific policy changes, nor do those responsible for designing and distributing it. However, the public deliberation it facilitates encourages people to reconsider their policy priorities and allows advocates to generate new policy ideas. The combination of new policy priorities and new policy ideas has the potential to influence policy change through existing democratic processes.
STAGE 5 Verification	The validity of the domains and measures used can be evaluated over time based on their correlation with the subjective-well-being measure. If the driver and outcome measures are correlated, Stages 3 through 5 can continue at regular intervals. However, a lack of correlation suggests a need to return to Stage 1.

This life-cycle model is a first attempt at illustrating how having a concept of both the well-being dynamic and the public-policy process can guide decisions about using well-being knowledge to improve public policies. Importantly, this model illustrates how both driver measures and outcome measures have roles to play. While policy discussions will be focused on well-being drivers, it is important to recognize that any selection of well-being drivers faces validity problems due to risks of inaccuracy. Using an outcome measure, such as a standard subjective-well-being question, gives the indicator

designers a frame of reference, which can be used to help decide whether their selection of drivers is adequately capturing change in well-being.

GUIDELINES *Completeness: The indicator is built using a comprehensive list of driver domains identified through well-being research.*

Completeness: The indicator includes an outcome measure (subjective well-being measure).

5.2. Modelling the effects of well-being knowledge on the policy process

The following model is presented to illustrate more fully the potential effect of well-being indicators on the policy process. The motivation behind constructing this model is to address the lack of such a discussion in the well-being literature. While many writers emphasize that well-being knowledge can improve public policy, many succumb to the benevolent-dictator problem discussed in Chapter 4, where the mere existence of good well-being data is thought to directly improve public policy. The associated danger is that well-being indicators are designed without consideration of the complexities of the public-policy process and fail to deliver the beneficial effects the designers seek.

This illustration is presented to extract useful lessons that can guide the design of a well-being indicator. The model specifies certain levels of the policy process, describing different audiences who might use well-being knowledge in different ways for a range of outcomes. For each level, I identify the targeted audience for the well-being indicator, the tools this audience needs in order to make use of the well-being knowledge and the expected outcome of their actions.

This model is presented first as a discussion of the roles and actions of four levels of the policy process. Following this is a diagram that illustrates the relationships between these levels and a well-being indicator.

Figure 3.1. *The effects of well-being knowledge on the public-policy process – A description of four relevant levels*

PRIORITIES LEVEL

Audience	General public
Tools needed	Narratives
Outcomes	Expressions of policy priorities
Discussion	The Priorities Level of this model reflects the deliberative-democracy framework discussed in Chapter 4, where members of the general public participate in a dialogue to exchange views about and adjust their preferences for public action. To respect this process, a well-being indicator should not bypass this deliberation but rather enrich it by providing participants the best possible well-being knowledge, which each individual can use to help form their own preferences or to better deliberate with others. To be effective, a well-being indicator must make use of narrative techniques that give the data meaning and make it accessible to members of the general public.

For example, a well-being indicator might track performance in a range of policy-relevant domains and present a comparison of how different countries perform. Citizens might learn that there is one domain where they compare particularly poorly relative to similar nations. As a result, more and more citizens may become convinced that this is a pressing policy problem and exert public pressure for a government intervention.

IDEAS LEVEL

Audience	Elites
Tools needed	Evidence
Outcomes	Ideas for policy intervention
Discussion	The Ideas Level describes the actions of people in elite positions in the deliberative-democracy setting. This audience has the resources to produce specific policy ideas that will be widely considered by the general public and/or decision makers. These elites might include academics, journalists, industry groups or social activists. While this audience might be affected by the narratives used in communicating a well-being indicator, they are more likely to use the raw data of the indicator and construct their own strategic narratives.

Because of this, elites are expected to have a greater need for evidence, a more detailed account of the performance of various well-being domains. Clarity is therefore less important than the depth, validity and robustness of the data. The output at the Ideas Level is a range of policy ideas that incorporate evidence from the well-being indicator. These ideas are likely to be communicated to decision makers or to the general public in the form of narratives that have their own effect on the Priorities Level.

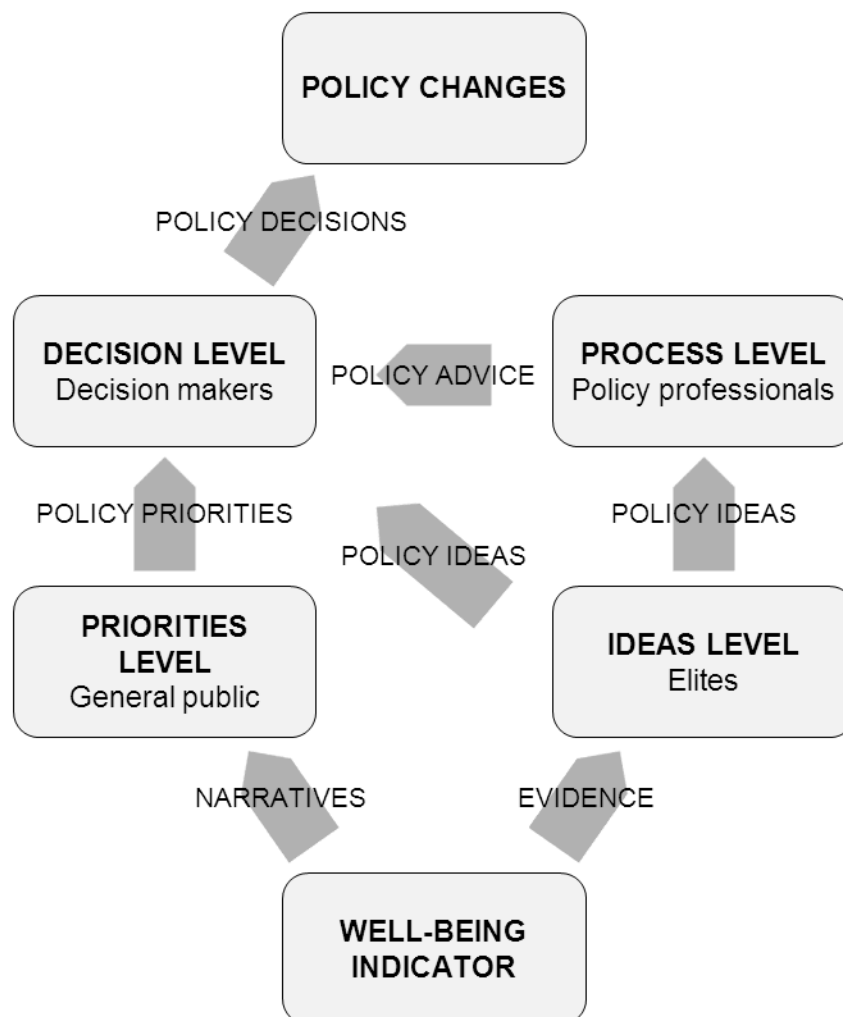
PROCESS LEVEL

Audience	Policy professionals
Tools needed	Analytical methods and policy ideas
Outcomes	Policy advice
Discussion	The Process Level describes the institutional settings in which policy options are considered, taking into account the contribution of public servants and the norms, rules and limitations imposed by institutions. These professionals may at times act as elites and generate policy ideas, but in the Process context they are assumed to use established methods to analyze policy options and make recommendations. Therefore, this audience is unlikely to benefit from a general well-being indicator, and they should not be considered a primary audience. The extent to which other forms of well-being research affects their existing methods will have a greater impact on their work (for instance, its influence on the measurement techniques used in cost-benefit analysis, as mentioned in Chapter 4). The policy ideas generated by elites and policy priorities expressed by the general public are likely to affect the policy options considered. Policy recommendations produced at the Process Level are made available at the Decision Level.

DECISION LEVEL

Audience	Senior decision makers
Tools needed	Priorities, ideas and advice
Outcomes	Policy decisions
Discussion	Much like the Process Level, the Decision Level is not directly affected by the well-being indicator itself and decision makers should not be considered a primary audience. Instead, decision makers make use of the outcomes from each of the other three levels. Policy priorities are communicated through forms of public pressure, including elections; the policy ideas produced by various elites influence the range of potential decisions; and the process level supplies recommendations and imposes institutional limitations. Using these inputs, decision makers enact policy changes.

Figure 3.2. *The effects of well-being knowledge on the public-policy process – An illustration of relationships*



GUIDELINES *Depth: The indicator provides evidence on a broad range of well-being effects and relationships.*

Validity: The measures used in the indicator are valid representations of the targeted well-being domains.

Robustness: Data used in the indicator has high coverage, is sufficiently recurrent and is free from methodological problems.

5.3. A summary of major ideas

This chapter concludes the substantive theoretical portion of this paper. The following chapters present a critical review of existing well-being indicators using the guidelines already identified. The two conceptual models presented in this chapter are meant to illustrate how robust notions of the well-being dynamic and the public-policy process can help us arrive at practical lessons on how well-being knowledge can help produce better public policy. The following is a summary of the main characteristics of a well-being indicator suggested by these models.

The indicator is an index that tracks performance in a range of well-being domains. These domains are drivers of well-being identified through empirical well-being research. They are policy-relevant drivers, specifically those that are thought to enhance people's capabilities, and predominately those that describe a range of resources external to people's psychological traits. The index also includes an outcome measure. This measure, based on a standard subjective-well-being question, is used as a check on the index, to ensure that changes in the well-being drivers correlate to changes in well-being outcomes.

These models also emphasize how such an indicator would be used. A key characteristic is that it treats the general public as a principal target audience. To effectively reach this audience, the index is designed to deliver clear messages. The data is given meaning through easy-to-understand comparisons between the performances of different jurisdictions and/or the same jurisdiction through time. The index maintains political neutrality by including measures identified by well-being theory and by refraining from offering advice on specific policy changes. A second important audience for the index are elites who have a role in creating policy ideas. To satisfy this audience, the index includes a depth of information, so that new policy ideas can be designed using reliable well-being evidence.

While the models recognize that decision makers and policy professionals also have important roles to play in the policy process, they are not considered primary audiences for the index. Treating senior decision makers as a primary audience for a generalized well-being indicator would undermine the foundations of deliberative democracy. As the

second model suggests, actions at both the Priorities and Ideas levels will affect the Process and Decision levels. Importantly, they will do so through the mechanisms of a deliberative democracy.

The key lesson from this exercise is that it is not sufficient for well-being measures to be theoretically and methodologically sound. For them to be of use in the policy process, they must be used in a way that respects democratic fundamentals. General well-being is something that concerns the public at large. If it were not so, it would not be a public-policy concern in the first place. As it is a public concern, it must be disseminated, deliberated and challenged in public forums. For well-being experts to simply pass on their recommendations to senior decision-makers would unacceptably circumvent democratic processes. These decisions, ultimately, belong to everyone.

6. Methodology

This paper has proposed concepts of both the well-being dynamic and the public-policy process, and suggested ways in which these two concepts can be considered jointly to produce useful guidelines for a well-being indicator. The remainder of this paper is focused on a critical review of existing well-being indicators using this list of guidelines as criteria. The purpose of this review is to evaluate the success of existing indicators in addressing core issues of well-being, given the ultimate goal of guiding public policy. Each indicator is evaluated against the same list of criteria in order to identify strengths and weaknesses. Following this analysis is a series of proposals describing how the indicators could be improved.

6.1. Review of the criteria

To begin, it is important to address the criteria already discussed throughout this paper. These correspond to the previously identified guidelines as well as a few expansions.

6.1.1. *Criterion 1: Completeness*

This criterion addresses the range of domains included in the index and encompasses several of the guidelines. The following are the important elements of this criterion:

- The indicator is built around a comprehensive list of driver domains identified through well-being research. As discussed in Chapter 3, the identification of well-being drivers is critical in terms of designing appropriate policy interventions.
- The indicator also includes an outcome measure (subjective well-being measure). Measures of well-being outcomes can serve as an important check on other measures of well-being, allowing index designers to verify that well-being drivers correlate with well-being outcomes (as illustrated in the lifecycle model in Chapter 5).
- Domains chosen are policy relevant.

- As discussed in the Neutrality Criterion below, well-being drivers that describe people's capabilities are more appropriate in terms of policy intervention than those that describe specific choices.
 - Those well-being drivers that describe a person's prosperity, i.e. their external resources, are generally the most policy relevant.
- Based on these requirements and the review of widely accepted drivers of well-being, a well-being index should address the following nine domains. This is meant to be an exhaustive list of appropriate well-being drivers, with the expectation that developments in the ongoing field of well-being research may necessitate changes.
 - Health
 - Education
 - Income
 - Employment
 - Social Cohesion
 - Personal freedom and governance
 - Safety
 - Environment
 - Subjective well-being

6.1.2. *Criterion 2: Clarity*

This criterion reflects a crucial argument made in Chapter 4 that a policy-focused well-being indicator ought to treat the general public as a primary audience. This is based on the idea that expert advice directed solely at decision makers undermines the principles of a deliberative democracy.

- The indicator treats the general public as a primary target audience. Its content is understandable and clear to members of the general public.
- The clarity criterion applies not only to the output of the indicator but also to all the processes that determine that output, including aggregation techniques.

6.1.3. *Criterion 3: Comparability*

Chapter 4 also emphasizes the role of narratives in public deliberation. Information alone cannot be expected to have an impact in public deliberation unless it is also given meaning. The most effective narrative technique available to measures of well-being indicators is providing comparisons.

- The indicator provides comparisons of well-being performances over time and across jurisdictions.

6.1.4. *Criterion 4: Neutrality*

While well-being indicators need to utilize narrative techniques in order to be effective, the discussion in Chapter 4 emphasizes that these must not be narratives that promote specific political values or policy ideas. In order to respect the public's priority-setting role in a deliberative democracy, the well-being index must be politically neutral.

- The indicator is politically neutral in its design, using domains and measures based on well-being theory.
- In order to respect the role of individual responsibility in a democracy, the index includes domains and measures that describe people's capabilities rather than their specific choices.
- Neither the indicator itself, nor those responsible for designing, maintaining and distributing the indicator produce specific policy recommendations.

6.1.5. *Criterion 5: Transparency*

Transparency is an important characteristic identified in Chapter 4, both in ensuring the credibility of the indicator and in offering protection from political manipulation.

- The indicator is built using a transparent, accessible methodology.

6.1.6. Criterion 6: Depth

The conceptual models in Chapter 5 show that, in addition to the general public, elites who produce policy ideas that will be broadly considered are an important audience for a well-being indicator. An indicator has a role in providing well-being evidence to this audience that can be used in policy design. As discussed in Chapter 3, both distribution and sustainability are important considerations for all well-being domains.

- The indicator provides evidence on a broad range of well-being effects and relationships.
- The indicator's measures allow for an analysis of both the distribution and the sustainability of well-being goods.

6.1.7. Criterion 7: Validity

Validity refers to both the basic statistical validity of the individual measures used in the index and the validity of the index as a whole, including its weighting and aggregation processes.

- The measures used in the indicator are valid representations of the targeted well-being domains.
- Measures capture unambiguous outcomes, not expected drivers of some other phenomena⁹
- Aggregation and weighting techniques used in the index are based on appropriate rationales and avoid producing distorting results
- Index design decisions are based on findings from research and not subjective choices from designers. However, design elements that incorporate subjective values from the public are valid.

⁹ This follows a recommendation from the OECD, which specifies that measures used in its well-being indicators focus on summary outcomes that can be easily understood and not expected drivers of those outcomes – for example, using measures of life expectancy to describe health rather than public-health expenditures (OECD, 2011, p. 18, 22).

6.1.8. Criterion 8: Robustness

This criterion addresses the underlying quality of the data upon which the indicator is based.

- Data used in the indicator has high coverage of the target population.
- Data collection is sufficiently recurrent.
- Data is free from methodological problems.

6.2. Selection of well-being indicators

The well-being indicators considered for review were identified through numerous sources. Certain published lists of indicators provided a key starting point (The EU's Beyond GDP website, beyond-gdp.eu; a survey of indicators of well-being produced by Sharpe & Smith, 2005; and a survey of GDP alternatives produced by the Wuppertal Institute, 2010). Other indicators were identified through references in the well-being literature or through news coverage during the course of research for this paper. Seventy-two indicators were considered (a complete list is provided in Appendix C).

A few of these indicators were selected for critical review based on the loose criteria of importance, credibility and variation. Indicators identified as important are those produced by national government or major NGOs, those that have enjoyed long use and those that are frequently referenced in the well-being literature. Credible indicators are, similarly, those that are treated as legitimate measures of well-being in the literature and those produced by major statistical agencies or NGOs. Also an effort was made to include indexes representing a variety of methodologies.

6.3. Review methods and limitations

Each selected indicator was reviewed based on information provided through its primary website and its primary methodology document. The review includes a brief background section on each index that describes its chief characteristics followed by a criterion-by-criterion analysis.

As these criteria do not present clear evaluation metrics, it is not possible to rank or score these indicators in a fashion that is methodologically sound. The final analysis therefore takes the form of a discussion of strengths and weaknesses. The indicators are not be judged as either succeeding or failing to meet the various criteria but rather as balancing various trade-offs.

The objective of this analysis is to showcase the usefulness of the proposed criteria, illustrate the important trade-offs involved in measuring well-being with a focus on public policy and identify both best practices and hazards in designing well-being indicators.

An important limitation of this analysis is its focus on the domain level and general neglect of the measurement level. This means that the analysis concentrates on the broad well-being categories identified by each indicator, but does not review the specific measures used in each category. The technical challenge of reviewing the validity and robustness of hundreds of statistical measures was not achievable for this project. However, a more detailed review would be worthwhile, as the technical challenges of choosing good measures to describe each domain is a critical part of designing any well-being indicator.

Thus the analysis does not address some of the criteria listed above and some are not analyzed in their entirety. The following is a list of omissions, with brief explanations:

- Criterion 4: Neutrality – There is no review of whether the indicator or the organization responsible for the indicator is the source of specific policy recommendations. For this project, it was not possible to review each group's external communication to a sufficient extent.
- Criterion 5: Transparency – The Transparency criterion is not discussed in the following analysis because only those indicators with transparent methodologies were selected for review.
- Criterion 6: Depth – As this analysis does not cover the measures level of each indicator, there is no discussion of whether each index is able to provide data on distributional and sustainability factors.

- Criterion 7: Validity – The analysis does not account for the validity at the measures level, although concerns over aggregation and weighting techniques are frequently discussed under the Validity heading.
- Criterion 8: Robustness – The robustness of the measures used in each indicator are not part of this analysis.

7. Review of well-being measures

7.1. BC Progress Board

Overview

- Created by the Government of British Columbia in 2000 and ceased operation in 2010.
- The indicator was created to measure broad social progress and to rank BC's performance against those of other Canadian provinces.
- All measures normalized by rank. Final scores in each domain represented B.C.'s ranking compared to Canada's other provinces.
- These domain scores were not aggregated into a final score.
- The indicator included several measures that did not contribute to the final domain scores.
- The indicator was made up of 26 measures organized into six categories.
- Domains included:
 - Economy
 - Personal income
 - Jobs
 - Environment quality
 - Health outcomes
 - Social conditions
- The top three domains were represented by a single measure; the bottom three were produced by aggregating multiple measures.

Completeness

- The domains selected closely match those suggested by the Completeness criteria
- Missing domains include Personal Freedom and Governance and Subjective Well-being
- Education measures are included in the Progress Board reports, but they are not categorized as a distinct domain, as suggested by the criterion.
- The Economy domain used in this indicator is not suggested by the criterion. For the economy is to be considered a driver of well-being in its own right, it would need to be valued for something other than income and employment, which are already addressed. One possible reason to include an economy domain is that it may describe the sustainability of the other two.

<p>Validity</p> <ul style="list-style-type: none"> • Validity at the domain level is generally strong. • The three domains that are a result of aggregation suffer from being normalized by rank and weighted equally, which suggests arbitrariness. • Double-counting is an issue in the Health Outcomes domain, as it includes both life expectancy and a variety of measures describing specific ailments, which are likely highly inter-related. 	<ul style="list-style-type: none"> • The most significant validity concern lies in the rank-ordering normalization technique. One danger of this technique is that domains with high natural variances will change ranks more dramatically than low-variance domains. This system could draw public attention toward high-variance domains and away from low-variance domains because of statistical reasons that have little to do with real-life conditions.
<p>Comparability</p> <ul style="list-style-type: none"> • The indicator provides full comparability between Canadian provinces and provides limited comparability with U.S. states. • A relatively small selection of indicators and low levels of aggregation greatly enhance the potential to extend the index's scope to include other jurisdictions. 	<ul style="list-style-type: none"> • Including measures that do not get aggregated to produce final scores allows this indicator to make a vast amount of potential comparisons without the requirement that the same data be available in every jurisdiction. Only the core measures that make up the final scores need be consistent. • The rank-ordering normalization technique presents a significant comparability barrier in that it masks absolute changes. This method does not convey the size of the gaps between provinces, and the relative nature of the ranking system masks absolute changes over time.
<p>Clarity</p> <ul style="list-style-type: none"> • A unique aspect of this indicator is the use of six final scores rather than a single aggregated final score. While this presents more information to the audience, this does not appear to create a significant barrier to clarity. In fact, this approach may more clearly describe the multidimensional characteristics of well-being. 	<ul style="list-style-type: none"> • Presenting largely unaggregated numbers reduces the demands placed on a general audience to comprehend aggregation techniques. • A significant clarity problem lies in the rank-based normalization, which can obscure relationships over time. These rank-based scores can be misleading if, for example, one province experiences an absolute improvement in a domain and at the same time a decline in its relative rank compared to another jurisdiction.

Neutrality

- The indicator generally meets the Neutrality criterion, particularly through choosing domains that are mostly supported by well-being theory.
- There is an important Neutrality advantage in including measures that do not contribute to the final scores. For instance, while the Progress Board report includes many measures of the economy, most of these are not used to produce the final domain scores and therefore do not skew the final product. Instead, they merely provide added context.

Evaluation

Strengths:

- A high level of clarity is achieved through the use of a small number of measures and low levels of aggregation.
- A final product made up of multiple scores is an appropriate reflection of the multidimensional nature of well-being.
- The use of relatively few measures and simple techniques greatly enhances the potential to expand such an index to include more jurisdictions.
- The inclusion of variables that do not affect the final scoring allows for virtually unlimited context-giving analysis and experimentation.

Weaknesses:

- Rank-based normalization masks absolute changes in the measures and prevents comparisons over time.
- Some validity concerns related to arbitrary weighting and double-counting.

Conclusions

- Substantial benefits are seen in using low levels of aggregation. This allows the index to avoid certain methodological challenges and does not appear to seriously limit overall clarity.
- The use of a relatively small number of measures also results in several important advantages. For one, it reduces the difficulty of expanding the index's coverage to include more jurisdictions, as only a few key measures are needed to produce final scores for comparisons.
- The inclusion of measures that do not contribute to the final scores greatly enhances the flexibility of the index. Virtually any type of measure can be included without fear of skewing the final results and without raising the need to find similar measures in every comparison jurisdiction. This can allow the index designers to explore a broad range of relationships that provide detail, context and depth, without affecting the overall product. This strategy could potentially allow an index to satisfy multiple audiences with different appetites for complexity and provide a platform for future design innovation.

Sources: BC Progress Board Methodology and Glossary, 2011; bcprogressboard.com

7.2. Canadian Index of Wellbeing

Overview

- Produced by a Canadian NGO, first published in 2009
- Data source is primarily the National Population Health Survey conducted by Statistics Canada
- Normalization based on percent change from an index year.
- The index gives a base score of 100 for the year 1994
- All measures given equal weighting
- Domain scores generated through an average of the appropriate measures
- Constructed using 64 measures organized into eight domain categories
- Domains include:
 - Democratic engagement
 - Community vitality
 - Education
 - Environment
 - Healthy populations
 - Leisure and culture
 - Living standards
 - Time use

Completeness

- The index does not include a measure of subjective well-being.
- The index includes the domains Leisure and Culture and Time Use, which are not suggested by the Completeness criterion. The measures in these domains tend to focus on specific types of activities people choose to perform rather than people's capabilities. They therefore do not align with the policy-relevance component of the Completeness criterion.

Validity

- Certain measures used do not meet the requirement of being unambiguous outcomes of the desired phenomenon rather than expected drivers: for instance, measuring student-teacher ratios in schools. The unambiguous good in this case would be education quality. As a low student-teacher is an indirect predictor of this good, rather than an unambiguous outcome, it is not an ideal measure from a validity standpoint.
- The index includes several potential double-counting issues, such as the aggregation of measures of self-reported health with measures of specific health conditions, or the aggregation of specific environmental measures with overall environmental index scores.
- The use of equal weighting raises validity concerns due to its arbitrariness. For instance, it appears difficult to defend the conclusion that the proportion of six-to-nine-year-olds who spend more than two hours per day watching television is as significant to well-being as long-term unemployment.

<p>Comparability</p> <ul style="list-style-type: none"> • The use of a single recurring survey gives the index good comparability over time. • The use of a Canada-specific survey means that this index cannot be used for comparison with jurisdictions outside Canada. 	<ul style="list-style-type: none"> • At this point, there seems to be no possibility to use this index for inter-jurisdictional comparisons within Canada.
<p>Clarity</p> <ul style="list-style-type: none"> • The aggregated measures, indexed from a base year, are able to present clear time trends. • This time trend can be clearly compared with performance of GDP and potentially other societal measures. 	<ul style="list-style-type: none"> • The normalization process of using percentage changes in each measure is relatively easy to understand. • However, the normalization process might be prone to distortions, as high-variance measures will likely be overemphasized.
<p>Neutrality</p> <ul style="list-style-type: none"> • Most of the index shows high Neutrality. • The index includes several measures of specific activities, such as attending cultural events. Such measures arguably represent the values of the designers rather than the values of the public, and are therefore less valid for a policy-focused index. The fact that they are weighted equally in the final aggregation could diminish the overall validity of the index. 	
<p>Evaluation</p> <p><i>Strengths</i></p> <ul style="list-style-type: none"> • Domains chosen generally reflect the drivers identified by well-being research. • Provides strong comparability over time as well as the possibility of comparing with GDP performance • Simple and straightforward normalization and aggregation methods help enhance the index's clarity. • Includes a comprehensive Environment domain, which goes beyond mere pollution measures. 	<p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • The reliance of a Canada-specific data set means this index cannot be used for comparison with jurisdictions outside Canada. • The designers identify certain specific activities as favourable to well-being. This does not conform to the policy-relevance guideline identified in Completeness criterion, which specifies that the focus of domains ought to be on people's capabilities rather than on their decisions. • Arbitrary equal weighting. The index can be challenged in terms of, say, whether attending cultural events is equally important to well-being as disposable income. • Low currency. The most recent data comes from 2008, a limitation that might undermine the impact of the index's findings.

Conclusions

- The index could be improved through more attention to policy relevance, particularly a focus on capabilities rather than specific behaviours.
- The aggregation system used highlights a common trade-off necessary between validity and clarity. It is simple and clear but suffers from double counting and arbitrary weighting.

Sources: The Canadian Index of Wellbeing: Technical Paper; uwaterloo.ca/canadian-index-wellbeing

7.3. Genuine Progress Indicator

Overview

- Designed as a GDP alternative, with a focus on addressing the elements of the GDP that are inconsistent with well-being concepts, particularly in terms of environmental sustainability.
- Academic in origin. Published by Redefining Progress (rprogress.org). Last output was for 2006.
- The normalization process involves transforming every measure into dollar values, using the concept of welfare-equivalent income. These values are aggregated through simple summation.
- Index constructed using 26 domains. Specific measures used are either official economic statistics or estimates.
- Domains include:
 - Personal consumption
 - Income distribution index
 - Weighted personal consumption
 - Value of household work and parenting
 - Value of higher education
 - Value of volunteer work
 - Services of consumer durables
 - Services of highways and streets
 - Cost of crime
 - Loss of leisure time
 - Cost of unemployment
 - Cost of consumer durables
 - Cost of commuting
 - Cost of household pollution abatement.
 - Cost of automobile accidents
 - Cost of water pollution
 - Cost of air pollution
 - Cost of noise pollution
 - Loss of wetlands
 - Loss of farmland
 - Loss of primary forests and damage from logging roads
 - Depletion of non-renewable energy resources
 - Carbon dioxide emission damage
 - Cost of ozone depletion
 - Net capital investment
 - Net foreign borrowing

<p>Completeness</p> <ul style="list-style-type: none"> • This index takes a form similar to the GDP. As the Completeness criterion used in this paper is based on a driver-list index form, there are some difficulties applying the criterion exactly. • Important domains not included in this index include Health Status, Personal Freedom and Governance and Subjective Well-being. 	<ul style="list-style-type: none"> • While the index does not include a specific domain for Social Cohesion, it does include certain related elements, such as time spent volunteering and work in the home. • The domains chosen in this index generally do not address capability-enhancing life domains, and therefore do not align with the policy-relevance component of the Completeness criterion.
<p>Validity</p> <ul style="list-style-type: none"> • Validity is enhanced by the fact that many of the measures used are based on real-world observation. • The use of objective figures in this measure allows the index to avoid potential problems of using subjective data. However, the estimation methods used throughout this process involves much subjectivity on the part of the designers. 	<ul style="list-style-type: none"> • The need to convert all values into dollar figures requires the designers to use estimation techniques for phenomena that are not easily valued in dollar terms. These estimations involve a significant amount of subjective judgment on the part of the designers, which can be challenged on grounds of validity.
<p>Comparability</p> <ul style="list-style-type: none"> • The process allows for consistent comparison for one nation over time. • Provides strong comparison possibilities with GDP measures. • The use of dollar measures allows for strong comparability across domains. 	<ul style="list-style-type: none"> • The index does not provide inter-jurisdictional comparisons. • The index's heavy reliance on official national statistics limits the potential comparability across nations, as the same statistics are unlikely to be available in each jurisdiction.
<p>Clarity</p> <ul style="list-style-type: none"> • Normalizing all measures into dollar values provides a clear metric. • As many people are familiar with the GDP, using a GDP form has an intrinsic clarity value. 	<ul style="list-style-type: none"> • The reliance on a great deal of estimation limits clarity, as members of the general public are unlikely to be able to easily comprehend how the final numbers are generated.
<p>Neutrality</p> <ul style="list-style-type: none"> • In terms of both the measures that are included and the estimation techniques chosen for certain hard-to-measure topics, this index involves a great deal of subjectivity on the part of designers. These judgment calls seem to be based on clear overall objectives, but not rigorous methodological criteria, which can raise questions of neutrality. 	<ul style="list-style-type: none"> • The subjectivity of the design results in decisions that might be difficult for the designers to justify: for instance, why is there such a major focus on environmental factors and none on health factors?

Evaluation

Strengths

- There are some advantages to using a dollar-figure-based GDP-alternative form. There is a clarity advantage to using a familiar technique, and the universal dollar measures can be easily compared with one another and aggregated.
- This index makes an effort to capture environmental sustainability in terms of the costs imposed on future generations from the consumption of natural resources today. This goes far beyond the measures used in other Environment domains, which amount mostly to measures of pollution.

Weaknesses

- The use of dollar measures requires the designers to make highly subjective estimation decisions, which risks undermining both neutrality and validity.
- The selection of domains is also a significant area of designer judgment. The domains chosen in this index are dissimilar from the list of research-supported domains identified in the Completeness criterion.
- Important well-being drivers are missing entirely from this index, including Health Status and Personal Freedom and Governance. This raises the question of how one might convert personal freedom into a dollar value, which illustrates the limitations of relying on dollar-unit measures.
- While the aggregation system is simple due to the comparable dollar units used, the use of a large number of estimation techniques to generate these dollar values severely limits the clarity of the index, as a member of the general public will likely not be able to fully comprehend how final values were generated.

Conclusion

- The use of a common unit, in this case dollars, provides important clarity and aggregation advantages.
- However, the high level of designer subjectivity in choosing the domains and the estimation techniques in this index severely undermines validity and neutrality.
- Overall, the designers do not justify why the GDP format is the best one to use for measuring general well-being. The many serious limitations identified in this analysis suggest it is not.

Sources: Genuine Progress Indicator 2006; rprogress.org

7.4. Gross National Happiness

Overview

- Produced by the Centre for Bhutan Studies. Development began in 1971.
- The objectives of this index are to align public policy with public happiness, particularly through addressing the needs of those who are not happy.
- Data is drawn from periodic public surveys, involving predominately subjective data.
- Normalization is based on a threshold system where a specific sufficiency level is chosen for each measure.
- Measures are weighted within each domain, with the lowest weights going to those measures that are considered highly subjective in nature. All domains are weighted equally to produce the final happiness score.
- Aggregation is based on the percentage of people who meet the sufficiency requirements in various measures. For instance, people who achieve sufficiency in more than 66 percent of the indicators are considered “happy” and those who achieve sufficiency in less than 50 percent are considered “unhappy.”
- Domains include:
 - Psychological well-being
 - Time use
 - Community vitality
 - Cultural diversity and resilience
 - Ecological resilience
 - Living standards
 - Health
 - Education
 - Good governance

Completeness

- The chosen domains are highly consistent with those identified in the Completeness criterion.
- The one important domain that is not included is Employment.
- The identification of a Culture domain is not recommended in this paper. Based on a capabilities approach, it would be more policy-relevant to instead address the opportunity to pursue cultural activities with a Social Cohesion domain, using a measure that includes access to cultural facilities, or a Personal Freedom and Governance domain, using a measure describing religious and cultural rights and freedoms.
- Life satisfaction is used as an indicator in this index. This is contrary to the recommendation of this paper to use a subjective well-being measure as an evaluative tool for the index.

Validity	<ul style="list-style-type: none"> • Each indicator used in this index appears to capture an unambiguous outcome. • There is some arbitrariness with the weighting system used. However, the overall justification of giving lower weights to highly subjective indicators is one potential way to address the problem of high-variance measures dominating the index, which is identified as a problem in other reviewed indexes. • The greatest validity concern is the choice of a sufficiency threshold for each measure. The methodology explains that these levels were chosen through extensive consultation, but validity limitations associated with a high level of designer subjectivity remain.
Comparability	<ul style="list-style-type: none"> • This is the only index in this review that accomplishes high levels of comparability both over time and across jurisdictions. As the survey used as a basis for this index can be disaggregated, the data can also be used for comparisons between different regions and population groups. • This high level of comparability is facilitated by a normalization and aggregation process based on a simple count of people who pass defined thresholds. • This index does not provide the possibility for international comparisons. First, because it is based on a nationally administered survey, and, secondly, this survey includes culturally specific elements that would make it inappropriate for international comparisons.
Clarity¹⁰	<ul style="list-style-type: none"> • The threshold-based normalization and aggregation method involves significant clarity advantages compared to other normalization techniques that use statistical methods with which a general audience is unlikely to be familiar. • However, while the aggregation techniques are clear, there are a lot of them. The high number of indicators used (124) can make the index difficult to unpack. • The greatest clarity problem involves the methods used to determine the sufficiency threshold for each measure. Without knowing how these levels were determined, it is impossible for a member of the general public to fully understand what the index's final output means.

¹⁰ A significant limitation of this analysis is the fact that no example of the GHI's final presentation could be found. This may be due to the fact that the index's public communications are not directed outside the nation of Bhutan. Based on this limitation, my analysis focuses on the clarity issues suggested by the index's design.

Neutrality:

- For the most part, the index's apparent focus on the capabilities that determine happiness enhances its neutrality.
- However, the index does include certain specific cultural indicators that appear to describe not the opportunities of people but rather their actual cultural practices and belief. These kinds of prescriptive measurements do not meet the Neutrality criterion as expressed in this paper.

Evaluation*Strengths*

- The unique system of normalizing indicators using thresholds, where aggregation can be accomplished through a simple count of how many people fall beneath or below, has several advantages. It avoids the problems associated with rank-based normalization techniques that can obscure absolute changes and render longitudinal comparisons invalid.
- The other advantage of the threshold-based aggregation technique relates to clarity: it is much simpler for a general audience to understand than a more sophisticated statistical technique.

Weaknesses

- The great limitation with the threshold-based normalization method lies in the selection of thresholds. There is a level of designer subjectivity here that implicitly undermines both clarity and validity. It is conceivable that major public disagreements over the setting of these thresholds could make the technique unusable, as these disputes could be virtually impossible to resolve in a non-subjective way.
- While most of the measures used in the index focus on unambiguous outcome that address people's capabilities, there are a few that focus on specific forms of knowledge and practices, particularly related to Bhutanese culture. It is possible that the homogeneity of Bhutan's population makes this level of prescription acceptable, but it arguably would not be in a multi-cultural democracy based on personal freedoms. This issue illustrates why the selection of capabilities-focused domains and measures is so important in terms of a well-being indicator's policy relevance.

Conclusions

- The example of a non-Western conception of happiness illustrates several important lessons about well-being. The first is its universality, as seen by the fact that the Bhutanese choice of well-being domains closely matches those identified in this paper, which were selected based largely on available Western literature.
- The second lesson is that different cultures may have different interpretations about what well-being factors are politically appropriate to include in a national index. While the well-being literature emphasizes the importance of spirituality, a multicultural country such as Canada would likely choose to capture this in terms of religious rights and freedoms as opposed to Bhutan's index with measures specific examples of religious knowledge and practice.

Sources: A Short Guide to Gross National Happiness Index, 2012; grossnationalhappiness.com

7.5. Legatum Prosperity Index

Overview:

- Produced by a British think tank, the Legatum Institute, as of 2010.
- The “prosperity” approach involves using both subjective well-being and income as dominant measures.
- All variables are statistically normalized.
- Weighting is determined through regression analysis. Only measures that are found to have statistically significant relationships with either subjective well-being or income are selected. The weight given to each measure is based on its regression coefficient with the two chief variables.
- Aggregation at the domain level involves summing the weighted scores of each measure both for well-being and income (depending on whether the measure is a statistically significant factor of one, the other or both). A final score is achieved by summing the scores of all eight domains, which are equally weighted.
- Domains include:
 - Economy
 - Entrepreneurship and opportunity
 - Governance
 - Education
 - Health
 - Safety and security
 - Personal freedom
 - Social capital

<p>Completeness:</p> <ul style="list-style-type: none"> • The one major domain that is not included in this index is environment. • This index includes several domains that are not identified under the Completeness criterion: <ul style="list-style-type: none"> ○ Entrepreneurship and opportunity are not generally identified as drivers of well-being in and of themselves. Arguably, these are drivers of other important factors, such as income and employment. However, entrepreneurship and opportunity could potentially be helpful in describing both sustainability and distribution elements of income and employment domains. 	<ul style="list-style-type: none"> ○ Economy is, again, not an identified driver of well-being. At best, measures of economic health may describe sustainability elements of more direct drivers of well-being, such as income and employment. ○ This index separates Governance and Personal Freedom into distinct domains. As these domains involve a great deal of overlap, this could cause a double-counting problem, especially considering that domains are equally weighted in this index. Similarly, there is some conceptual overlap in the measures in the Governance and Social Capital domains.
<p>Validity:</p> <ul style="list-style-type: none"> • This index avoids the arbitrary weighting problem through a regression-based weighting system. • The equal weighting at the domain level, involves some arbitrariness. Where domains overlap in terms of the concepts they address and the measures they use, there is a risk of double-counting errors. • The treatment of income and subjective well-being as twin objectives of “prosperity” is not supported by well-being theory, which – with a great deal of consensus – treats income as a driver of well-being. 	<ul style="list-style-type: none"> • Many of the measures used in the index do not represent unambiguous outcomes: for instance, statistics on the availability of certain technologies. These do not seem to be well-being “goods” in and of themselves but rather expected drivers of other goods. Measures that directly capture the desired effects of these drivers, rather than their assumed outcomes, would have greater validity.
<p>Comparability:</p> <ul style="list-style-type: none"> • The index allows for a high level of comparability across a vast range of countries. 	<ul style="list-style-type: none"> • The index uses a normalization process based on relative relationships between variables, which prevent comparisons over time.
<p>Clarity:</p> <ul style="list-style-type: none"> • The high level of aggregation used in this index allows for very clear rankings between countries. 	<ul style="list-style-type: none"> • The normalization and aggregation processes used are of a highly technical nature, severely limiting the ability for a general audience to understand how the final figures are produced.

Neutrality:

- The fundamental structure of this index, using subjective well-being and income as twin components of their “prosperity” concept, is not an approach suggested by well-being literature, which raises serious neutrality questions. One potential motive on the part of the index designers would be elevate the importance of economic factors in the discussion of human well-being, which implies the injection of ideological preference. If true, such a choice specifically undermines the objective of neutrality.

Evaluation*Strengths:*

- The statistical techniques used for normalization and aggregation are useful in that they avoid arbitrariness problems.
- The extensive aggregation used results in simple scores that are easily comparable. Combined with the grand scope of the index, this allows for a vast amount of cross-country comparability.

Weaknesses:

- The index deviates from well-being theory by not treating income as a driver of well-being.
- In several instances, the index includes both measures and domains that do not seem to fall into the category of unambiguous “good” outcomes, but rather expected drivers of some other good outcome. This undermines the conceptual validity of these measures.
- The use of a relative method of normalization limits the usefulness of the index in terms of longitudinal analysis.
- The lack of an Environment domain is a significant deviation from the list of drivers identified in this paper.

Conclusions

- By deviating from the practice of treating well-being as the prime research goal, this index is arguably not a true well-being indicator. Its authors may well agree with this statement, perhaps with arguments that their concept of “prosperity” is more useful. But as this paper has stated in regard to the GDP, if the measure is not meant to measure well-being, it should not be used for that purpose.
- While highly technical methods of normalization and aggregation can be used to overcome issues such as arbitrary weighting, these come at a very high price in terms of clarity. By putting the techniques underlying the index out of the reach of a general audience, the designers are demanding a great deal of trust, which can undermine the effectiveness of the index, particularly if there are concerns that the index is not politically neutral. In this case, such concerns appear justified.

Sources: The 2012 Legatum Prosperity Index: Methodology and Technical Appendix; prosperity.com

7.6. OECD Better Life Index

Overview:

- Produced by the OECD, a major international research group, as of 2011.
- Based on an objective to involve citizens in a discussion about what type of progress society should achieve.
- Measures are normalized statistically.
- Measures are given equal weight and aggregated to produce domain scores. Domain scores are not weighted. Instead, members of the public are invited to assign their own weights using a web-based tool.
- The authors specify that this index will not be static, with new measures added as data become available. An online tool exists allowing people to suggest changes.
- Index is based on 24 measures organized into 11 domains.
- Domains include:
 - Housing
 - Income
 - Jobs
 - Community
 - Education
 - Environment
 - Civic engagement
 - Health
 - Life satisfaction
 - Safety
 - Work-life balance

Completeness:

- The one domain identified in the Completeness criterion that does not appear explicitly in this index is Personal Freedom.
- While Life Satisfaction is included in the index, it is not used as an evaluation tool of the index itself, as suggested in this paper.
- The domains Housing and Work-Life Balance are not identified in the Completeness criterion. However, both pass the common-sense tests for being drivers of well-being and policy relevant; they have the potential to enhance people's capabilities by enhancing their "prosperity" resources. While these domains did not appear as commonly cited well-being drivers in the literature reviewed for this paper, it is plausible that they may be justifiable additions in an expanded list of drivers.

Validity:

- Both measures and domains used in this index benefit in terms of validity by capturing unambiguous good outcomes.
- The one notable exception may be in the Work-life Balance domain, which uses the number of hours worked as a measure. This arguably falls into the Functioning category of the well-being framework, as some people may choose to work long hours, rather than a capability-focused category.
- The measures in the Environment domain are focused solely on pollution statistics, which are arguably not valid measures of a more complete notion of environmental sustainability.
- The issue of arbitrary weighting is partially avoided, at least in terms of the weighting of domains, by the novel strategy of allowing each reader to determine their own weights. This strategy avoids the validity problem of expert-imposed subjectivity by moving toward public subjectivity, which is considerably more valid from the deliberative-democracy perspective.

Comparability: <ul style="list-style-type: none"> • The index allows for a broad range of inter-jurisdictional comparison, both using index scores and domain scores. The ability of readers to adjust weights themselves greatly expands the potential for comparisons. • The use of a relative normalization process severely limits the ability to produce longitudinal comparisons by masking absolute changes. 			
Clarity: <ul style="list-style-type: none"> • The aggregation system generates scores that are clear and easy to compare with each other. • User weighting allows the audience to understand the value judgments behind a part of the aggregation process. • The normalization process is technical, which can make it difficult for a general audience to understand the figures presented in the index. • The use of audience weighting prevents the presentation of definitive overall well-being scores. 			
Neutrality: <ul style="list-style-type: none"> • Generally, this index displays a high level of neutrality, with domains that mirror those well-being drivers identified by well-being theory and measures that capture unambiguous outcomes. • The choice of a Civic Engagement domain rather than a Personal Freedom or Governance domain may reflect the fact that this index is directed toward a group of countries made up predominantly of advanced democracies. It is possible that the variance in human rights and governance quality is low enough among this group that these domains would have less value than a domain covering civic engagement. 			
Evaluation <table> <tr> <td> Strengths <ul style="list-style-type: none"> • The domains chosen generally cover the full spectrum of well-being drivers identified in the literature. • Clear presentation and a high degree of inter-jurisdictional comparability are assets that should help the index achieve its stated goals of assisting public deliberation on social progress. • The clarity of the index is enhanced by the selection of a relatively small number of measures. In theory, the low data requirement would make it easier to expand the index to cover yet more nations. </td><td> Weaknesses <ul style="list-style-type: none"> • As with all relative normalization processes, this index has limited utility in terms of longitudinal comparability. • Also, the statistical technique of normalization will not be clear to a general audience, who can be left guessing about how the final numbers were produced. • As with many indices of this nature, the environment measures are not sufficient to cover the important issues of environmental sustainability, rather than just levels of pollution. </td></tr> </table>		Strengths <ul style="list-style-type: none"> • The domains chosen generally cover the full spectrum of well-being drivers identified in the literature. • Clear presentation and a high degree of inter-jurisdictional comparability are assets that should help the index achieve its stated goals of assisting public deliberation on social progress. • The clarity of the index is enhanced by the selection of a relatively small number of measures. In theory, the low data requirement would make it easier to expand the index to cover yet more nations. 	Weaknesses <ul style="list-style-type: none"> • As with all relative normalization processes, this index has limited utility in terms of longitudinal comparability. • Also, the statistical technique of normalization will not be clear to a general audience, who can be left guessing about how the final numbers were produced. • As with many indices of this nature, the environment measures are not sufficient to cover the important issues of environmental sustainability, rather than just levels of pollution.
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Conclusions

- This index demonstrates the several advantages in using a small number of measures, including greater overall clarity, less of a clarity barrier created from aggregation and, in theory at least, the ability to expand the index to include more countries more easily.
- However, even with a small amount of aggregation, some functionality is lost. In this case it is the difficulty of making longitudinal comparisons due to the use of statistical normalization.
- The other important lesson from this index is that well-being indicators should not be limited to conventional communication techniques. The OECD's innovative approach to user weighting shows that, where appropriate, accommodating valid subjective input from the public is good practice.

Sources: How's Life? Measuring well-being, 2011; oecdbetterlifeindex.org

8. Analysis

The analysis of this critical review begins with a summary of the main observations from each criterion, followed by a discussion of the limitations of the review.

8.1. Completeness

This analysis demonstrates the consensus that exists between well-being researchers and index designers about the important drivers that make up well-being. Although this is a small collection of indicators, the obvious agreement regarding the life domains considered drivers of well-being lends credibility to the well-being drivers identified through academic research. The fact that these drivers are, in a general sense, also common-sense components of a good life strengthens the notion that a non-controversial list of well-being drivers can be identified and tracked. Another consensus shown in this review is the importance of pursuing a driver-focused approach, in some cases supplemented with measures of well-being outcomes.

Another commonality among the domains chosen in these indices is a focus on policy-relevant drivers of well-being, very much along the lines advocated in this paper. Only very rarely were domains or measures used that deviated from the policy-relevant guidelines suggested in this paper, which emphasizes domains in the prosperity category of the well-being framework and also those associated with people's capabilities rather than their specific life choices.

This paper's suggestion to use a well-being output measure as a way to evaluate the index's list of driver measures appears to be unique, as no index reviewed here incorporates this idea.

8.2. Comparability

The Comparability criterion emphasizes that indexes allow for comparisons both over time and across jurisdictions. Only one index accomplished this task: Bhutan's Gross National Happiness index with its threshold-based normalization technique. And this was achieved at great cost, as the setting of these thresholds involves the most significant weakness of this measure.

The multi-dimensional nature of well-being demands the use of many measures, which, in turn, seems to require some form of normalization to allow for comparisons. The ability to make comparisons is much affected by this technique. The most common practice, a relative rank-based process, has the result of masking absolute changes in the measures, which means sacrificing the ability to make comparisons over time.

Another important factor involves the data itself. Certain indexes such as the Canadian Index of Wellbeing and Gross National Happiness make use of extensive country-specific surveys, which, while providing a rich level of data, make it essentially impossible to include international comparisons. The OECD index and the BC Progress Board have an advantage in this regard as their relatively small number of measures theoretically makes the inclusion of more jurisdictions possible.

8.3. Clarity

Aggregation techniques seems to include an inherent trade-off involving clarity. In the benefits column is the fact that aggregation produces simple, clear numbers that can be easily compared with each other. On the cons side, the more an index is aggregated, the further removed from the raw data the audience becomes, and the more they must trust the designers to have done their job correctly and responsibly. A key lesson learned from the BC Progress Board project is that a high level of clarity can be maintained without necessarily resorting to aggregation.

Some analysts may wish to mimic other societal measures such as the GDP by producing a single score, but this notion should be challenged. Well-being is inherently multidimensional, and the presentation of multiple scores for each jurisdiction is likely the

better approach. This presents a challenge to communicators regarding how best to convey multi-faceted information. Efforts by the OECD, which does much of its communication at the domain level, show the dynamic possibilities for moving beyond single-numeral outputs.

8.4. Neutrality

If we consider an index's effectiveness in a deliberative democracy to be a function of its credibility, then its ability to maintain political neutrality is vital. This is the core issue that stands out concerning the Legatum Prosperity Index. Its deviation from fundamental well-being research findings, by treating income as an equivalent to well-being rather than as a driver, raises significant questions about the index's political neutrality. In this case, it is easy to think of ideological reason behind their choice but difficult to imagine a methodological one that confirms to a broader notion of well-being.

The main lessons appear to be that neutrality is best accomplished by following the directions of research. This is by no means a straightforward task, as well-being research will certainly develop over time. The overt acknowledgement of the OECD that the index will change over time arguably enhances the sense that this is a politically neutral endeavour.

8.5. Validity

The validity issue underlies a second major trade-off involved in the design of aggregation methods, particularly in terms of weighting. Several indices reviewed here used arbitrary weighting process, mostly relying on equal weighting. Being arbitrary, they reflect a level of subjective choice on the part of the index designers, which is far less valid in a democratic sense than the subjective choices of the public.

However, it seems that any effort to aggregate invariably involves the weighting pitfall, although this is cleverly finessed by the OECD method of allowing user weighting. A more attractive option may well be to pursue the BC Progress Board approach and simply not aggregate. This depends, of course, on being able to find a single measure

that adequately captures the essence of a life domain, which may be an insurmountable obstacle in some cases.

The other issue that became clear in this analysis is the importance of both domains and measures capturing unambiguous outcomes rather than phenomena that are only valuable as drivers of some other good. It may be that some causal assumptions must be made in cases where the direct measurement of a desired outcome is impossible, but it should be clear that introducing designers' assumptions into a well-being indicator undermines its overall validity.

8.6. Limitation of the review

It is important to reiterate that the review presented in this paper is incomplete. This review was not able to address many of the technical issues at the measures level. A more thorough evaluation of well-being indicators will include a robust analysis of the criteria that were not considered in this abbreviated review process, including Depth and Robustness.

9. Recommendations

The recommendations presented in this chapter are based on both the theoretical conclusions established in the first portion of this paper and the observed lessons seen in the critical review. For the most part, these recommendations describe how a public-policy-focused well-being index ought to be designed and are therefore targeted primarily at index designers. Hopefully, these recommendations will also be useful to the users of well-being knowledge, suggesting which types of well-being indicators they should seek out and how to use them in ways that are appropriate and relevant in terms of public policy.

9.1. Public policy is a discussion of drivers

On this topic, there appears to already be substantial consensus: the most effective well-being indicators for public policy are designed as lists of well-being drivers. This approach is clearly beneficial in terms of making comparisons between various jurisdictions at the domain level and sparking discussions about the kinds of policy interventions that might enhance general well-being. While some academics favour well-being indicators focusing on outputs, these models are ill-suited to policy discourse.

That said, there is a role for outcome measures that no existing well-being indicator seems to have incorporated: using measures of subjective well-being as tools to evaluate the validity of the list of drivers. Index designers should not forget that the principal weakness of the driver-list approach is that it cannot be created without some form of designer subjectivity, which is always a potential source of distortion. This fundamental limitation demands respect. Therefore, this paper recommends that any driver-list index be evaluated regularly based on how well it correlates with measures of subjective well-being.

9.2. Respect democracy: speak to the public

The observation that an indicator of general well-being should treat the general public as its primary audience is perhaps the most powerful in terms of generating other guidelines. According to the rationales laid out in this paper, a general measure of well-being with a focus on guiding public policy is fundamentally a tool for education and communication, not a tool for primary research. As such, its effectiveness must be measured in terms of reaching its audience and providing it with something of value. This recommendation is founded on the concept that changes to public policies require democratic legitimacy. Therefore, it is recommended that well-being knowledge is best able to influence public policy by enhancing democratic deliberation. Simply providing research findings to political leaders and expecting policy changes represents a misunderstanding of the public-policy process.

9.3. Don't try to recreate the GDP

As discussed at several points in this paper, well-being thinkers tend to spend much of their energy on issues related to the GDP. It is seen as a dominant measure of social progress and is therefore the target of substantial critique. As mentioned, this discussion usefully emphasizes the well-being indicators society needs and currently lacks. However, the benefits end there.

As seen in the critical review presented in this paper, the one well-being indicator modelled on the GDP, the Genuine Progress Indicator, has numerous and substantial design weaknesses that prevent it from being an effective tool for public policy. These shortcomings should serve as a warning that the GDP format is an inferior choice in terms of describing well-being.

Even indexes that do not take an explicit GDP form often appear to try to mimic the outputs generated by similar societal measures, particularly in terms of generating an outcome in the form of a single numerical figure. This approach has benefits in terms of clarity, and most of the social statistics used today take this form, whether they describe debt, unemployment or life expectancy.

However, well-being is, by nature, a multidimensional dynamic involving many separate life domains. Any attempt to boil these elements down into a single measure will come at a price. And as shown with the BC Progress Board, it is possible to generate clear, compelling, policy-relevant narratives using multiple outputs. Even the OECD Better Life Index, which does produce single-number scores, can be used quite effectively at the domain level.

Abandoning the single-numerical output raises a significant design challenge. An appropriate and effective measure of well-being may look like no societal indicator we've seen before. This presents challenges, to be sure, but also enormous opportunities. The design options seen in the critical review certainly do not cover all possibilities. There is much room left for future innovations.

9.4. Keep things simple: avoid aggregation

The critical review demonstrates that any effort to aggregate the various elements that make up well-being comes at a price. Often it's in terms of validity, in cases of distortionary aggregation or arbitrary weighting. Or the price is paid in terms of clarity, when the index relies on complex statistical techniques that are beyond the reach of the target audience.

The BC Progress Board design shows that much can be accomplished with low levels of aggregation. However, some aggregation is likely unavoidable. It will not be possible to identify a single, reliable measure that fully captures the essence of certain domains, particularly those that describe complex concepts, such as social cohesion. However, much aggregation can be avoided, for instance by focusing discussions on domain-level results rather than overall single-figure results.

Another key design element to help keep things simple is to include as few measures as possible. As seen with both the BC Progress Board and the OECD Better Life Index, this produces benefits in terms of clarity, comparability and often validity. The BC Progress Board has a particularly interesting approach in using "Headline" measures that produce comparable scores for each jurisdiction and "Explainer" measures that are not used in this way. As discussed, this radically expands the potential uses of the index.

The index's final output and major comparative narratives are dependent on only a small number of Headline measures, and for most audience members that will be the end of the story. But those who want to dig deeper can start combing through the Explainer measures to extract more context and detail. As the Explainer measures don't affect the final output, designers can feel free to include as many as seem beneficial without sacrificing clarity at the Headline level. This could be an important tactic in terms of the ability to address distribution and sustainability issues. For instance, a Headline measure might describe median incomes and an Explainer measure might describe income distribution.

9.5. Comparability is key: the more the better

The primary target audience of a well-being index is, according to my recommendations, the general public. We cannot expect this audience to perform sophisticated data analysis, and therefore an effective well-being index offers clear narratives that give the data meaning. It is argued in this paper that the most appropriate narrative technique available is comparison, both over time and across jurisdictions.

The ability of a well-being index to deliver a broad range of comparisons is therefore a crucial element in terms of its potential effectiveness. The more comparisons the index makes available, the more the index can be used to enrich democratic discourse. The high priority for comparability therefore adds significant emphasis to the previous recommendation regarding aggregation. For instance, the critical review shows that normalization techniques based on relative ranking prevent longitudinal comparisons, which restricts the range of possible comparisons the index can make.

Placing a high priority on comparability also reinforces the recommendation to limit the number of measures used in an index. The fewer measures are used, the easier it is, at least in theory, to expand the scope of the index to cover more jurisdictions. The flip-side of this argument, of course, is that including fewer measures supports fewer potential comparisons. Once again, this is a problem that can be addressed by using both Headline measures and Explainer measures. Only the Headline measures need be

available in all jurisdictions covered by the index in order to achieve baseline comparability; Explainer measures can be added without meeting this requirement.

9.6. Balance clarity and complexity through innovative designs

Perhaps the most difficult trade-off to be made in the design of a well-being index is between clarity and complexity. A complex index may enhance the validity, robustness and depth of an index, while at the same time undermining clarity. Complex aggregation techniques may enhance clarity, in one sense, by generating easy-to-read outputs but limit clarity on the other hand by hindering the audience from understanding how those outputs were produced.

This problem is emphasized by the fact that two important target audiences are identified in this paper: a general audience that uses narratives to produce policy priorities (which emphasizes clarity) and an elite audience that uses evidence to generate policy ideas (which emphasizes depth). The one index that appears capable of meeting both these conflicting needs is, again, the BC Progress Board, through its use of Headline and Explainer variables. Although in its most current form, the index does not use this design to its full potential, its ability to target two audiences simultaneously by using two categories of measures remains a powerful design element.

9.7. Stay policy-relevant: focus on capabilities and prosperity

This recommendation may be seen as heretical to well-being researchers tasked with understanding the nature of well-being based on strict empirical evidence, without regard for what may be considered “appropriate.” And if it were this paper’s objective to offer recommendations on academic research, the discussion of this topic would be quite different. But the idea that well-being knowledge should be used to guide public policy introduces limitations. For present purposes, the public-policy process is seen to take place in a democracy, and a tool meant to influence that process must abide by democratic fundamentals.

As argued in this paper, this goal can be accomplished by limiting the index to domains and measures that meet two overarching conditions: they describe people's capabilities rather than their personal choices and they focus predominantly on prosperity, the category in the well-being dynamic that describes resources that are outside people's own minds. As seen in the critical review, current well-being indicators tend to follow these guidelines, even if their designers do not specify the theoretical justification to the extent seen here.

9.8. Be neutral: advocacy is the next person's job

This paper presents the notion that the role of a public-policy-focused well-being indicator is to enhance deliberation within a democracy and thus improve the public policies that flow from that deliberation. To meet this objective, the index must be politically neutral. A non-neutral index would, by definition, be pursuing some other objective. This concept illustrates another reason why a policy-focused well-being indicator should focus on people's capabilities. This approach fundamentally respects the decision-making rights and responsibilities of the individual in a democracy.

To meet the challenge of creating a politically neutral well-being index, we are fortunate that a research-supported consensus concerning the primary drivers of well-being appears to have emerged. This consensus will shift over time as well-being research advances, but at the moment the widely accepted drivers of well-being serve as a credible baseline that should underlie any well-being indicator.

Another important element of this recommendation is that those involved in designing and maintaining indicators of well-being do not, at the same time, advocate for specific policy changes. This paper presents a model of how different social actors are thought to use well-being knowledge within a democracy. This model includes ample room for political advocacy using well-being knowledge, but it occurs at least one step removed from the well-being indicator.

9.9. Use the criteria presented here for future analysis

This recommendation is based on the important fact that the review and analysis detailed in this paper is not complete. It was not possible to extend the analysis to the measures level of the index design for this project, and the potential and limitations of a well-being index will largely be dictated by the data sources available at that level.

These limitations may have significant impacts on design decisions. For instance, the recommendations presented in this analysis give strong support for a well-being index similar to the BC Progress Board report, which includes both Headline and Explainer measures. However, this design is dependent on identifying of a series of high-quality data sources that can serve as adequate Headline measures, an exercise not undertaken in this analysis. The results of an in-depth analysis of available measures would therefore have a significant impact on the decision to use this design option.

It is recommended that such a measures-level analysis be based on the criteria presented here, although this study does not pursue that task. These criteria are based on understandings of both the well-being dynamic and the public-policy process, and the conceptual structure they present are meant to be helpful at all levels of analysis.

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Appendices

Appendix A.

Drivers of well-being

One of the most important features of any well-being indicator is the selection of domains it seeks to measure. As emphasized in Chapter 3, a well-being indicator focused on public policy will be predominantly concerned with the drivers of well-being, as these offer targets for public-policy intervention. Therefore, a thorough discussion of the recognized drivers of well-being is needed before a review of existing well-being indices is possible. These drivers are categorized based on the integrated concept of well-being introduced in Chapter 3, using the personality and prosperity components.

Both personality and prosperity drivers have been identified as important for determining a person's overall well-being. While the research of psychologists has emphasized the role of personality drivers, public-policy oriented well-being measures have favoured the use of prosperity measures. Both approaches are justified, according to research in the field. As Diener et al. conclude, "even if life circumstances do not lead automatically to elation or despair, they can and do influence [subjective well-being]" (Diener et al., 1999, p. 294).

In addition to discussing specific drivers, this chapter also addresses important cross-cutting issues, specifically the importance of aspiration and adaptation dynamics and the importance for measures to capture characteristics of distribution and the sustainability.

Personality drivers

As discussed in Chapter 3, the personality component of the well-being dynamic describes the relatively stable psychological traits and resources that help determine people's overall capabilities in achieving well-being. An important question within well-being research is whether subjective well-being is, in fact, a type of inherent personal trait itself over which we have little control – a genetic predisposition toward happiness. If so, subjective well-being would be resistant to change based on other supposed drivers, limiting the utility of well-being-focused policy interventions. However, measurable differences in people's levels of subjective well-being over time and across jurisdictions suggest this is not the case, and that people's well-being is, at least to some degree, a

product of other influences, although many of these are psychological in nature (Diener et al., 1999, p. 280).

As discussed in Chapter 4, there is generally little role for government intervention in people's psychological traits (with some important exceptions, such as in early childhood education). Therefore, personality drivers are not discussed in great detail in this paper, although they are worth identifying. Diener et al., in their review of psychological well-being research, discuss a series of important psychological drivers, including self-esteem, belief systems, optimism, coping mechanisms, and even the use of positive illusions and self-deception (Diener et al., 1999, pp. 276-280).

Spirituality and religious observance are factors that have received particular attention in well-being research, perhaps because they can be relatively easily identified using survey methods. Overall, religious people tend to report higher levels of subjective well-being, with positive effects seen for both religious practices such as attending services or engaging in prayer, and also for religious beliefs, such as feeling that God is important in one's life (Dolan et al., 2008; Diener et al., 1999, p. 289; Helliwell, 2002, p. 13).

Prosperity drivers

Income

As demonstrated in 1974 by Richard Easterlin, and repeatedly since, overall levels of self-reported happiness have remained stagnant in developed despite strong economic growth (Easterlin, 1974). The role of income on subjective well-being has therefore been much debated, with a major focus on the role of relativity. Elements of Easterlin's observation of the negligible effect of income on well-being have been confirmed by subsequent research. Major economic growth in developed nations between 1946 and 1990, for instance, are not associated with major change in subjective well-being. However, comparisons between rich and poor nations show that income explains much of the difference in observed subjective well-being (Dolan et al., 2008). These findings suggest that the effect of income on subjective well-being may be non-linear, with substantial effects for those who lack basic needs, and greatly diminished effects for those with relatively high incomes (Diener et al., 1999, p. 288; Fleche et al., 2012, par. 36; D'Acci, 2011; Helliwell, 2002, p. 16).

Unemployment

Many empirical studies show that unemployment has a strong negative effect on subjective well-being (Dolan et al., 2008). What's more, the loss of income associated with unemployment does not account for the full drop in subjective well-being, suggesting that employment has social and psychological benefits relevant to well-being (Diener et al., 1999, p. 293).

Health

Empirical studies show a consistent positive relationship between health and well-being, with psychological health seen as particularly important. However, there may be cross-causalities at work in this relationship, with high levels of subjective well-being likely being a driver of mental health (Dolan et al., 2008; Helliwell, 2002, p. 10). However, measures of self-reported health – which are used in many of the surveys well-being researchers study – are much more significant drivers of subjective well-being than objective health measures, such as life expectancy (Helliwell, 2002, p. 21).

Education

The study of education as a driver of subjective well-being presents some challenges. Studies of its effect have produced conflicting results, with many showing very small effects (Dolan et al., 2008). This fails to confirm common-sense expectations about the effect of education. There is ample evidence that education is highly related to better health and higher incomes, and, more broadly, it is logical to expect that educated people generally gain exactly the sort of expanded capabilities we associate with high levels of well-being.

One problem with the empirical research may involve limitations of the regression-analysis methods used. As education is considered a driver of other factors, such as income and health, mathematical models that include all these factors may not accurately capture the effect of education (Dolan et al., 2008; Diener et al., 1999, p. 292; Helliwell, 2002, p. 24). Education, in other words, might be best described as a driver of other well-being drivers. In practice, education is almost universally considered a well-being driver in existing well-being indicators, reflecting its effect on other well-being

drivers, a strong public consensus of its importance in a good life and its strong perceived role in determining human capabilities.

Partnership

Researchers have found a consistent positive relationship between being in a romantic partnership such as marriage and subjective well-being, with similar results for both men and women (Diener et al., 1999, p. 289; Dolan et al., 2008; Helliwell, 2002, p. 11).

Divorce is seen to have a negative effect on subjective well-being (Fleche et al., 2012, par. 27; Helliwell, 2002, p. 11).

Family and friends

Intimate social connections in general are found to have a positive effect on subjective well-being (Dolan et al., 2009). There are many reasons to expect this to be the case, as strong social connections facilitate pleasurable experiences involving other people, community-based benefits and even access to employment (Stiglitz et al., 2009, p. 51).

Trust

Trust is a driver that can be considered to belong in either the personality category (if we are referring to an individual's trusting nature) or the prosperity category (if we are considering the general level of trust that exists in a community). Researchers have found positive relationships between various measures of trust and subjective well-being. In addition to trust being a systematically important predictor of well-being, it is thought to have important economic benefits and – in terms of generalized trust in a society – is considered a valid proxy for the broad concept of social cohesion (Helliwell, 2002, p. 21).

Environment

Theoretically, it is logical to expect that environmental conditions will have an impact on people's subjective well-being, as the environment affects health, susceptibility to long-term risks such as disasters, access to necessary resources such as clean water, and access to pleasant natural amenities (Stiglitz et al., 2009, p. 52). As such, an environment domain is regularly included in existing well-being indicators. However,

empirical research into the drivers of well-being has failed to confirm the consistent positive relationship suggested by theory. Fleche et al., for instance, found a significant positive relationship, but with a very small effect (Fleche et al., 2012, par. 32). Analysis by Eurostat found no relationship (Eurostat, 2010). There are several reasons why statistical methods might be unable to detect the effect of environmental conditions on subjective well-being, such as the limitations of people's ability to forecast into the future and the lack of clear measures of environmental degradation.

Personal freedom and quality of governance

These two factors are often considered together in the well-being literature. Stiglitz et al., for instance, consider quality of governance an integral component of well-being because of its role in allowing people to participate in public decisions, to express dissent without fear and to speak out based on one's values (Stiglitz et al., 2009, p. 50). Index measures of quality of governance have been found to be significantly and positively related to subjective well-being (Helliwell, 2002, p. 20; Fleche et al., 2012, par. 31). Other measures of personal autonomy have also been found to have strong positive relationships to subjective well-being (Diener et al., 1995, p. 852).

Personal security

Risks to personal security, such as crime, accidents and natural disasters are generally expected to have a negative effect on general well-being. However, researchers caution that, particularly in terms of crime, the observed relationship with well-being may partially be reflecting other important socio-economic factors (Stiglitz et al., 2009, p. 53; Dolan et al., 2008, p. p. 110).

This list of widely accepted drivers is quite general. There is no discussion here about the very tricky problem of how success in each domain ought to be measured. Existing well-being indicators sometimes rely on different measures for the same thing, such as employment domains measured either by the unemployment or the employment rate, income domains measured through GDP statistics or disposable-income estimates, etc. The measures used to gauge social cohesion are particularly diverse, with some

measures favouring numbers of volunteer hours, others choosing statistics for participation in community groups, and more. This paper does not address specific measurement issues, although it is important to recognize the fundamental role they play in the construction of a functional well-being indicator.

Appendix B Comparing index domain selections

This appendix describes the life-domain categories used in 11 well-being indicators, comparing them with the nine policy-relevant domains used in the analysis portion of this paper. Grouping these domains involves some subjectivity, and the charts are meant to demonstrate rough similarities only. For instance, several indicators use domains labelled “Economy” or “Business” whereas this paper recommends using the domains “Income” and “Employment.” In the following charts, these concepts are deemed similar enough to illustrate the general consensus that exists around the identification of the principal drivers of well-being.

Domains suggested in this paper	Gross National Happiness	Legatum Prosperity Index	BC Progress Board	Canadian Index of Wellbeing	OECD Better Life Index	Australian Unity Wellbeing Index
Health	Health	Health	Health outcomes	Healthy populations	Health	
Education	Education	Education		Education	Education	
Income	Living standard	Economy	Personal income	Living standards	Income	Economic situation
Employment		Entrepreneurship and opportunity	Jobs Economy		Jobs	Business
Social cohesion	Community vitality	Social capital	Social conditions	Community vitality	Community	Social conditions
Personal freedom / governance	Good governance	Governance Personal freedom		Democratic engagement	Civic engagement	How Australia is governed
Safety		Safety and security			Safety	National security
Environment	Ecological resilience		Environment quality	Environment	Environment	State of the environment
Subjective well-being	Psychological well-being				Life satisfaction	
Not identified as policy-relevant drivers in this study	Cultural diversity and resilience Time use			Leisure and culture Time use	Housing Work-life balance	

Domains identified in this paper	Oxfam Humankind Index	Measures of Australia's Progress	Measuring Ireland's Progress	ONS National well-being Programme	The New Zealand Social Report
Health	Physical and mental health	Health	Health	Health	Health
Education	Getting enough skills and education to live a good life	Education and training	Education	Education and skills	Knowledge and skills
Income		National income National wealth Household economic well-being	Economy Employment and unemployment	Personal finance The economy	Economic standard of living
Employment	Having satisfying work to do Secure work and suitable work	Work			Paid work
Social cohesion	Having good relationships with family and friends Being part of a community	Family, community and social cohesion	Social cohesion	Our relationships	Social connectedness
Personal freedom / governance	Human rights, freedom from discrimination, acceptance and respect	Democracy, governance and citizenship		Governance	Civil and political rights
Safety	Feeling that you and those you care about are safe	Crime	Crime		Safety
Environment	Living in a neighbourhood where you can enjoy going outside and having a clean and healthy environment Access to green and wild spaces; community spaces and play areas	Land Inland water Oceans and estuaries Atmosphere Waste	Environment	The natural environment	
Subjective well-being	Feeling good			Individual well-being	Life satisfaction
Not identified as a policy-relevant driver in this study	Affordable, decent and safe home Access to arts, hobbies and leisure activities Having the facilities you need locally Having good transport to get where you need to go Being able to access high-quality services	Housing Productivity	Innovation and technology Population Housing	What we do Where we live	Cultural identity Leisure and recreation

Appendix C

Well-being indicators

Australian Unity Wellbeing Index
B.C. Regional Socio-Economic Indicators
BC Progress Board
Calvert-Henderson Quality of Life Indicators
Canadian Index of Well-Being
Capability Index
Capital Region Wellbeing Survey
Conference Board of Canada list of indicators
CPRN Quality of Life Indicators
Diener Quality of Life Index
Dutch Social and Cultural Planning Office's Living Conditions Index
Economist Intelligence Unit Quality-of-life index
EEA Core Set of Indicators
Environmentally Sustainable National Income
Environment and Sustainable Development Indicators for Canada
Environmental Performance Index
EU Social Indicators: The Atkinson Report
EU Suite of Sustainable Development Indicators
European Benchmark Indicators (environmental)
European Structural Indicators
European System of Social Indicators
FCM Quality of Life Reporting
Finland's Indicators for Sustainable Development
Fordham Index of Social Health
General Accounting Office Key Indicators Initiative
Genuine Progress Indicator
Genuine Savings / Adjusted Net Savings

German Environmental Economic Accounting
German System of Social Indicators
GPI Alberta
GPI Atlantic
Gross National Happiness
Happy Planet Index
Human Development Index
Index of Economic Well-being
Index of Sustainable Economic Welfare
Indicators of Well-Being In Canada
Italian Urban Ecosystem Report (environmental)
JFS Sustainability Vision and Indicators
Legatum Prosperity Index
MDG Dashboard of Sustainability
Measure of Economic Welfare
Measure of Economic Welfare
Measures of Australia's Progress
Measuring Ireland's Progress
National Accounts of Well-Being
National Footprint and Biocapacity Accounts
Natural Capital Index Framework
New Zealand Social Report
Newfoundland Community Accounts
OECD Better Life Index
OECD Social Indicators
ONS Measuring National Well-being Programme
Ontario Social Development Council Quality of Life Index
Oregon Benchmarks
Oxfam Humankind Index
Prescott-Allen's Indexes of the Wellbeing of Nations
Prosperity Quintile
Regional Quality Development Index

SESAME - System of Economic and Social Accounting matrices and Extensions
Social Well-being of Vermonters
Sustainable Society Index
Swedish Social Indicators Program
System of Economic Environmental Accounts
Treasury Board of Canada Quality of Life Indicators
UK Indicators of Social Development
United Way Action for Neighbourhood Change
Vital Signs
Weighted Index of Social Progress
Well-Being in 2030
WellBeBe
World Health Organization Quality of Life