القمة العالمية للحكومات
WORLD GOVERNMENT SUMMIT

Global Happiness and Wellbeing

Policy Report 2019

Global Council for Happiness and Wellbeing

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Global Council for Happiness and Wellbeing

Global Council for Happiness and Wellbeing (GCHW) is a global network of leading happiness and well-being scientists and key practitioners in fields and sectors spanning psychology, economics, education, health, urban planning, civil society, business, and government. The GHC identifies the best available evidence-based happiness and well-being policies to encourage their adoption and advancement at the local, national, and international levels. The work of the Council is complementary to the annual World Happiness Report and related research on the theory, measurement, and advancement of happiness and well-being.

Council members oversee the work of six thematic groups – education, workplace, personal happiness, public health, city design, and metrics – who each produce a chapter of policy recommendations in the annual Global Happiness and Wellbeing Policy Report, launched at the World Government Summit (WGS) in Dubai. This report provides rigorous evidence, international case studies, and detailed policy recommendations on efficient ways to promote happiness and well-being via public policy.

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Chapter 1

Introduction to the 2019 Global Happiness and Wellbeing Policy Report

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Introduction

Why are happiness and well-being being given so much more attention by governments around the world? Why are nations around the world signing up to the UAE's Global Happiness and Well-being Coalition? After all, the pursuit of happiness is as old as politics itself. Yet three things are bringing happiness and well-being to the top of the global policy agenda.

First, more and more nations are learning that economic growth alone is not enough to produce happiness. Second, as psychological science has demonstrated, happiness and well-being can now be measured and studied with rigor. Third, there are new and effective public policies for raising societal well-being. This Global Happiness and Wellbeing Policy Report is based on the idea that the "pursuit of happiness" should no longer be left to the individual or the marketplace alone. Happiness and well-being should be of paramount concern for all of society, engaging governments,
companies, schools, healthcare systems, and other sectors of society.

Wealth is not enough

The main economic strategy since Adam Smith's *Wealth of Nations* has been to raise national wealth in order to raise national happiness. In one sense, the pursuit of economic growth has worked. The world today is now very wealthy, at least on average. According to the IMF, world output (and therefore world income) in 2018 totaled $135 trillion when measured at purchasing-power adjusted prices. With 7.7 billion people, that comes out to around $17,500 per person, an astoundingly high average for the world.

Yet despite this remarkable affluence, there remains considerable unhappiness. Of course, part of the unhappiness results from the enormous inequality in the distribution of global income. Around 1.2 billion people live in high-income countries, with an average income of around $47,000, while around 700 million people in low-income countries live on just $2,000 per person per year (World Bank data for 2017). Life expectancy in rich countries stands at around 80 years, compared with just 63 years in low-income countries. Basic economic development in low-income countries, and the end of extreme poverty in those countries by 2030 as called for by the Sustainable Development Goals, remains a fundamental key to higher happiness.

Yet there is more at play. Many rich countries, including my own, the United States, have become a lot richer in recent decades, but not much happier or even less happy, according to survey data. Richer but less happy is a syndrome in many parts of the world. The standard approach of maximizing economic growth to maximize happiness is far from adequate.

If we listened more carefully to the great moral teachers – Confucius, Buddha, Aristotle, Jesus, Mohammed – the broken link from wealth to happiness would of course not surprise us at all. Happiness requires not just adequate material conditions but also good health, both mental and physical; good friendships and social support; honesty of business and government; the freedom of each person to pursue their life's dreams with meaning and purpose; and social trust and generosity. "Tis better to give than receive" is a proven path to personal happiness and social peace.

Indeed, the situation is even more perverse. The very manner that we are chasing wealth today is simultaneously wrecking the planet through global warming, massive deforestation, the reckless overuse of freshwater, and the air and water pollution claiming millions of lives every year around the globe. The current approach to economic growth threatens our very survival.

Our societies are not well organized to promote happiness. The global market economy is good at producing wealth, but not at sharing it fairly or protecting the environment from vicious greed. Globalization has accelerated economic growth but also environmental destruction and widening inequalities. The world's tax havens and secrecy havens, many of which are managed by powerful nations, facilitate corruption and shield hundreds of billions of dollars of corporate profits from taxation.

The unregulated pursuit of economic growth is also unleashing new forms of unhappiness, including epidemics of substance abuse to new drugs, as well as widespread addictions to fast foods, gambling, compulsive shopping, and many sorts of online activities. Adolescents and young adults in particular seem to be succumbing

to depression and anxiety as a result of their heavy use of online social media and games and their ensuing isolation. The world's advertising industry and giant tech companies are adept at fostering these addictive behaviors. More screen time means more revenues, whether or not the consequences of the resulting addictions are dire for the users' well-being.

Happiness can be measured and assessed

A second reason for growing interest in the pursuit of happiness is that well-being can now be measured with rigor, validity, and reliability. Psychologists and neuroscientists, in particular, have developed many important tools for assessing multi-dimensional individual well-being, in terms of emotional well-being as well as in terms of more global life satisfaction, meaning and purpose, and healthy relationships. And well-being measurement is now multi-method, including self-report surveys, behavioral instruments, magnetic resonance imaging and electro-encephalograms of the brain, and most recently, with advancements in AI and machine learning, big data.

Multi-method mental health assessments also enable public health services to track the prevalence and incidence of mental disorders such as depression, addictions, and anxiety. This report and the complementary annual *World Happiness Report* detail many of the key data that are collected and assessed worldwide. The Organization for Economic Cooperation and Development (OECD), an increasing number of national governments, academia, and the private sector continue to develop new and important multi-dimensional indicators of well-being for individual happiness and for public policy.

Happiness can be promoted via public policy

A third and perhaps most important reason for the new and burgeoning interest in happiness is that it's possible to do something about it! The UAE launched the Global Council for Happiness and Wellbeing and the Global Coalition for Happiness and Wellbeing precisely to identify best happiness practices of government, businesses, schools, city planning, health systems, and other institutions in society. More and more governments are studying the impact of their public policies on the happiness of their residents, using the cutting-edge instruments of modern psychological science. This year's Global Happiness and Wellbeing Policy Report aims not only to present such best practices but also to outline how governments can proceed to put them into operation, a kind of policy handbook for happiness.

Some of the methods are strikingly important and obvious, such as the availability of mental health services for the population. Large proportions of individuals suffering from depression and other mental disorders are not able to access vitally important services, even in the richest countries. Other policies are less obvious, such as proven school curricula to foster healthy well-being skills and virtues among young students. These programs have been shown not only to raise students' well-being but also to improve their long-term academic performance.

Overall, the Agenda 2030 and Sustainable Development Goals (SDGs) point us in the right direction, by emphasizing the crucial importance of a holistic approach to development that includes economic development and the end of extreme poverty, the promotion of social inclusion and social justice, and the protection of the environment. Agenda 2030 commits specifically to "a world with equitable and universal access to quality education at all levels, to health care and social protection, *where physical, mental, and social well-being are assured*." (Emphasis added)

The SDGs are, indeed, a framework and a roadmap for global happiness and well-being. The countries that rank highest on happiness are not the countries with the highest income per capita; income and happiness have quick and stark diminishing marginal returns. Rather, the countries that enjoy the highest levels of well-being are those that are closest to reaching the 17 SDGs – those that have the highest social capital, the most inclusive and equitable economies, and policies that effectively protect and promote the natural environment. Interestingly, policy research is revealing that the SDGs contribute to happiness, and vice versa – happiness also contributes to the SDGs. Individuals and societies with higher levels of well-being are more prosocial, civic, innovative, and productive. The SDGs promise to increase the levels of global happiness and well-being.

A worldwide movement

The global happiness and well-being movement is therefore based on an upsurge of societal needs, happiness metrics, and proven policies to promote happiness and well-being. The UN member states recognized these opportunities as early as 2011 by adopting a Bhutan-sponsored UN General Assembly Resolution (65/309) calling on member states to "pursue the elaboration of additional measures that better capture the importance of the pursuit of happiness and well-being in development with a view to guiding their public policies."

The UAE has become a major global leader in this effort, convening interested governments to meet annually in Dubai at the World Government Summit and to join together in the Global Coalition for Happiness and Wellbeing, with the Global Council for Happiness and Wellbeing to advise on best practices. The Organization for Economic Cooperation and Development, on behalf of its member nations and its many non-member partners in the developing world, has also shown enormous energy and creativity in promoting new well-being metrics and public policies. The Sustainable Development Solutions Network (SDSN) actively supports both the UAE and OECD in their efforts, by hosting the Global Council for Happiness and Wellbeing and by engaging universities around the world to join the happiness and well-being effort through research, teaching, and engagement with policy makers and other stakeholders in society.

Happily, and for the benefit of all nations, the UAE, OECD, and SDSN will intensify their common efforts in 2019 in many forums around the world, commencing with the World Government Summit in Dubai in February, the International Day of Happiness at the United Nations in New York in March, and at the OECD headquarters in Paris in October. It is their shared desire that more and more governments will use the findings of the Global Happiness and Wellbeing Policy Report and join the growing Global Coalition for Happiness and Wellbeing.

As gratitude is another rigorously proven path to individual and social happiness, I would like to thank the individuals and institutions that made this Report possible. I start by thanking the Report's lead authors – John Helliwell, Richard Layard, Tessa Peasgood, Derek Foster, Paul Dolan, Martin Seligman, Alejandro Adler, Jan-Emmanuel De Neve, George Ward, Christian Krekel, Ed Diener, Robert Biswas-Diener, Aisha Bin Bishr, Ali Alazzawi, Martine Durand and Carrie Exton. I would like to express my deep gratitude to Jean Fares, Tarek Abu Fakhr, Khalifa Al Ansari, and all UAE colleagues who make the work of our Global Council for Happiness and Wellbeing feasible and so exciting. I deeply thank Sharon Paculor, Sybil Fares, Stislow Design, and the rest of the Report's wonderful production team. Finally, I applaud and thank the UAE's Minister of State for Happiness and Wellbeing, H.E. Ohood Al Roumi, for her visionary leadership.

I wish all the readers of this Report happiness and the inspiration to act for the common good!

Chapter 2

How To Open Doors To Happiness

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Abstract

"How to" lessons are drawn from the six theme chapters, and then divided among key stages for successful happiness polices: establishing a happiness strategy, getting it into action, enabling collaboration within and across ministries, creating the necessary space for experimentation, facilitating consistency among policy choices, assuring continuity, and learning from experiences near and far. Providing all of these components, along with adequate well-being data and analysis, can be an ambitious challenge at a whole-of-government or even ministerial level. Meanwhile, smaller-scale projects within firms, neighbourhoods or individual schools are readily available entry points for delivering results. Successes at that scale should inspire further progress at the whole-of-government level.

Creating spaces for experimental design and delivery of happiness policies happens most easily in "Partnerships for Happiness" that provide cross-silo collaboration at a small enough scale to make the attendant risks easier for all the partners to accept. Such partnerships permit government ministries to obtain important results about the benefits of alternative policies without requiring large changes of direction for central government policies. In the meantime, below the radar if need be, there is ample scope for smaller scale partnerships to design, deliver, and evaluate happiness policies attuned to local and organizational needs. In addition to their direct happiness benefits, these partnerships help to increase the evidence base and foster citizen support for broader adoption of happiness policies.

Background

The *Global Happiness and Wellbeing Policy Reports* are intended to help redirect the aims and content of government policies so as to increase equitable and sustainable human well-being. This change in policy perspective has been decades in the making, built on a growing dissatisfaction[1] with using GDP per capita as a sufficient measure of human progress, inspired by the Bhutanese choice more than 40 years ago to make happiness a national objective, and fuelled by decades of research aimed at creating a transdisciplinary science of happiness.[2] These converging threads came together on July 19, 2011, when the United Nations General Assembly adopted a Bhutan- sponsored resolution that "called on United Nations Member States to undertake steps
that give more importance to happiness and well-being in determining how to achieve and measure social and economic development."[3]

That resolution led to a High-Level Meeting on Well-Being and Happiness: Defining a New Economic Paradigm,[4] convened by the Prime Minister of Bhutan, at the United Nations on April 2, 2012. The meeting marked the release of the landmark first *World Happiness Report*, which brought together the available global data on national happiness and reviewed related evidence from the emerging science of happiness. That report, which in turn built on many other reviews of the science of well-being, provided strong support for the view that the quality of people's lives can be coherently, reliably, and validly assessed by a variety of subjective well-being measures, collectively referred to in this report as "happiness." It also built upon, as did the UN meeting itself, the UK launch of a well-being initiative in November 2010, still unique in combining engagement at the highest level from the political, administrative, and data-gathering pillars of government.[5]

Life evaluations are granted a central role in the *World Happiness Reports*, because they provide an umbrella measure by which the relative importance of the supporting pillars for good lives can be compared. The *OECD Guidelines on Measuring Subjective Well-Being*,[6] which were previewed as a case study in the first report, also emphasized the need to measure life evaluations as a primary indicator, ideally in concert with monitoring affect (i.e., the frequency of feelings, states and emotions, both positive and negative) and "eudaimonia" (i.e. measures of life purpose). These guidelines also discuss the need to consider other factors that have been found to support better lives (e.g. income, health, good jobs, family and friends, welcoming communities, good government, trust, generosity, and a healthy environment). Having an umbrella measure of subjective well-being permits the relative importance of these factors supporting well-being to be assessed, making it possible to move beyond a general wish to improve

well-being towards some specific policies with established credentials for supporting better lives.

Both before and after the April 2012 UN meeting, attempts were made to sketch the possible implications of happiness research for public policies. A number of national and international efforts also aimed to develop a well-being policy framework, as summarized in the OECD chapter in this volume. The Bhutanese government has been unusual in carrying out systematic multidimensional happiness surveys (even including a life satisfaction question in the latest national census) and using the results to investigate the relationship between various policies and happiness.[7] Although there are now many countries that collect some official happiness statistics, there are still very few with enough data to support adequate research about what policies might best serve to support a happiness agenda. The Global Council for Happiness and Wellbeing[8] was formed in early 2017 to facilitate happiness policy development in interested countries. The first order of business was to assemble an inventory of happiness policy strategies and interventions that have been proposed or tested in communities and countries around the world.

The *Global Happiness Policy Report 2018* presented the first attempts by the Global Council for Happiness and Wellbeing to assess the range and quality of evidence on possible best practices for happiness policy, as well as how happiness data are collected and used in policy. The first step was to form six policy theme groups, each with a particular focus: health, education, work, personal happiness, cities, and metrics. The initial work plan for each group envisaged the *Global Happiness Policy Report 2018* and the *Global Happiness and Wellbeing Policy Report 2019* as together providing an inventory of happiness policy ideas (mainly in *GHPR 2018*) as well as a roadmap towards the eventual goal of policy frameworks designed to improve happiness, with specific policy initiatives being chosen (mainly in *GHWPR 2019*) in accordance with their capacity to provide the largest improvements in the levels and distribution of happiness.

The theme chapters in both reports generally accept as a starting point that self-assessed well-being—especially, but not exclusively, obtained by asking how people evaluate the quality of their own lives—provides a good measure of the quality of life in society as a whole, and is a useful tool for public policy. The scientific basis for that starting point has been laid out over several years in the *World Happiness Reports*, and a host of studies reviewed there and elsewhere. It remains the case, however, that most of the national initiatives discussed by the OECD for the *Global Happiness and Wellbeing Policy Report 2019* do not yet grant life satisfaction the
umbrella role that a happiness focus would entail. Instead, almost all adopt a broad dashboard of indicators. This probably makes it easier in both political and administrative terms to adopt a well-being approach, and can enhance the quality of policy advice by making explicit the trade-offs and synergies - as well as winners and losers - across different outcomes. But it also makes it harder to provide an overall comparison of policies that have different effects on the various indicators, as well as to communicate overall progress in raising a nation's well-being.

How does policymaking change when happiness is the focus of attention? First, a happiness approach fundamentally changes the ways in which policies are evaluated. For example, a commonly used tool in government decision-making, benefit/cost analysis, compares the benefits and costs associated with policies and recommends them if they offer the highest economic return. One key problem with this procedure is that it is difficult to compare the social, environmental and economic consequences of policy options, with non-market consequences in particular often treated in footnotes or as complications. With happiness as the focus, it becomes possible to treat health, income, social trust and other features of life comparably as sources of well-being. Benefit/cost analysis can then be done using well-being as the objective, with policies preferred that promise to deliver the greatest net increases in the quality of life.[9] The availability of research showing how different aspects of life are related to overall happiness thereby permits a fundamental shift in the way policies are analyzed. As observed from the heart of the policymaking process, this shift provides a method of analysis applicable across a wide range of government agencies

and departments.

Second, and perhaps more fundamentally, using happiness as an overarching policy objective has the potential for building cross-government cooperation. It may be easier to find and implement consistent policy choices if happiness becomes the common currency used to evaluate policy outcomes. This, in turn, may aid the achievement of a wider sense of common purpose.

Third, once happiness is established as the overall goal for policy, it becomes feasible and natural to improve the policymaking process in fundamental ways. The happiness focus extends attention beyond the direct benefits for the recipients of government services to include the impact of the services on the happiness of both those designing and delivering them, and those living in the surrounding communities. The various chapters in *Global Happiness Policy Report 2018* and *Global Happiness and Wellbeing Policy Report 2019* provide many examples showing that the social context—how highly people think of each other and cooperate with one another—is vitally important to how highly they rate their lives.
This is true at work, on the streets, in families, in schools, and in the institutions of government and politics. Without a happiness focus these important aspects of life risk being lost in the footnotes or left entirely outside the policy-making process.

Fourth, an average score for life satisfaction can provide a simple and easily understood umbrella measure of the quality of life, and a more encompassing indicator of policy success. It has more breadth of coverage than GDP, and more simplicity than dashboards of indicators or other multidimensional measures. Life satisfaction measures, if they are widely enough collected, can also be more readily applied to individual regions, communities, and demographic groups than can GDP or dashboards of indicators. The distribution of life satisfaction scores can also provide measures of inequality that are more comprehensive than any of the usual statistics relating to the distribution of income and financial wealth.[10]

The rest of this chapter comprises three parts. The first identifies the main "how to" points in each of the six theme chapters. The second section highlights the main advice for accomplishing eight key elements in support of successful policy-making for happiness:

- Establishing happiness strategies
- Creating the magic sauce to turn talk into action, translating research into policy and practice
- Enabling collaboration within ministries or organizations
- Enabling collaboration across ministries, NGOs and others
- Creating the necessary space for experimentation, innovation, evaluation, and risk-taking
- Facilitating consistency among policy choices
- Assuring continuity
- Learning from experiences near and far

Finally, after reviewing this impressive list of necessary conditions for success, the chapter concludes on a positive note, emphasizing the possibility of making progress on happiness policies even when and where national governments are not yet using happiness as a central focus for policy design. It introduces the idea of "Partnerships for Happiness" whereby a mixture of outside and inside efforts may provide a viable way to design and deliver happiness policies without taking ministries and national governments too far outside their comfort zones. By delivering happiness effectively on the ground, these partnerships can be an effective tool for building even broader public support for a happiness agenda.

"How to" Lessons from the Thematic Chapters

Health

This year's health chapter, entitled *Priority Setting in Healthcare Through the Lens of Happiness* offers four main "how to" recommendations for improving healthcare appraisal methods so as to deliver greater happiness:

1. Formal healthcare appraisal should guide decision making.
2. Decisions should explicitly consider alternative uses of resources (their opportunity cost).
3. Benefits of healthcare should be measured in terms of happiness rather than health.
4. Benefits (and opportunity costs) to all parties should be considered, looking beyond the

patients to consider carers and family members.

What the chapter is essentially proposing is a widening of healthcare assessment procedures to use happiness rather than health as the primary goal, with expenditures allocated to where they deliver the biggest happiness improvements across the board. The chapter can best be seen as an important "how to" manual for better decision-making within a health ministry to allocate scarce resources across a given set of health care interventions. Since these expenditures amount to some 10% of GDP across the world, with potential new treatments appearing daily, a broadened healthcare evaluation procedure offers the possibility of substantially improving lives. The chapter notes in particular that using a happiness lens would increase resources devoted to mental health and to improved end-of-life care with an emphasis on palliative care and pain relief. All of these recommendations still reflect a ministerial approach to allocations among a competing list of established treatments. Health policy has an even broader conception when using a happiness lens to improve the health of populations. For example, there are likely to be interventions in many other ministries ranging from education to policing, social services, and community centres, that improve (or worsen) both health and happiness, with likely implications for future health-care expenditures. But the implications of these policies for the health of populations and for health care budgets and activities are not normally taken into account.[11] This issue is further discussed later in this synthesis.

Education

This year's education chapter, entitled *Positive Education 2019*, uses case studies to emphasize four different aspects of positive education: a whole-school approach (Geelong Grammar School), teacher training (Adelaide), a whole-university approach (Tecmilenio, Monterrey) and tests of the effects of specific positive education courses in national settings (principally Bhutan, with comparisons to courses in Mexico and Peru).

The Geelong Grammar School has the longest experience among the case studies, with more than 10 years of continuing development. Their "how to" lessons are therefore especially relevant, and include: extensive research, regularly engaging with experts in the field, involving the whole school community, empowering the initiative of classroom teachers, having an in-house training team, and accepting a long-term commitment.

The Adelaide Wellbeing Framework was developed in 2018 for application in 2019. The planning partnership included heads of schools, program directors, course coordinators, teachers, course designers, current students and graduates now teaching in schools. This breadth of partnership is one of the central "how to" lessons, with echoes in the other case studies, all of which have longer histories. Making a well-being framework central to the training of future teachers also improves the prospects for subsequent applications in school settings.

Since 2012, Tecmilenio, a recently established but fast-growing private university based in Monterrey but with 29 campuses across Mexico, has committed to be a 'positive university' with the aim of delivering "a learning community that cultivates the best self in each person, allowing them to flourish, discover their purpose in life, and benefit society." Every student (5,000 per year) takes an incoming course in well-being and happiness, and a final year course in positive organizations. Although university administrators are heavily invested in the mission, with more than 85% having positive psychology certification, fewer than 20% of faculty are similarly accredited. There is, however, a special focus on training in the fields of positive education and positive leadership. The "how to" lessons of the Tecmilenio case include obtaining buy-in at the outset from the board, adopting the best of international experience, using in-house training to scale up capacity, enabling faculty and students to live positive lives, and finding appropriate ways to evaluate progress.

The fourth case study draws the "how to" lessons from an evaluation of Education for Gross National Happiness in Bhutan. The case is especially relevant because Bhutan is the country where the linkage between academic performance and increased well-being was first established by empirical comparisons between treatment and control groups. Although increased well-being and fitness for life may be the fundamental goal of positive education, the finding of matching increases in academic performance dramatically raises the appeal of positive education to school

administrators, teachers, students and parents. To develop and test a positive education program on a large scale is a daunting task that has given rise to a correspondingly long and important "how to" checklist:

1. Cultural immersion (required to ensure an appropriate curriculum)
2. Multi-stakeholder engagement
3. Needs and goals assessment
4. Study design and baseline measurements (to ensure the validity of subsequent evaluations)
5. Curriculum development and adaptation (to ensure relevant life skills training)
6. Training of educators
7. Curriculum implementation (infusing well-being in subject courses)
8. Measurement of results and impact evaluation (showing large increases in both academic performance and well-being, N=6500)
9. Ongoing evaluation of implementation at different scales (revealing smaller but still substantial effects in larger scale applications in Mexico [N=69,000] and Peru [N=700,000]).

The chapter concludes, based especially on the experimental evidence from Bhutan, that building well-being skills and academic skills hand-in-hand is both feasible and desirable. Hence the importance of the "how to" lessons and the relevance of the appended report of current progress in positive education around the world.

Work

This year's work chapter, entitled *Employee Wellbeing, Productivity and Firm Performance: Evidence and Case Studies* has as its centrepiece a meta-analysis of workplace surveys, involving in the aggregate almost 2 million employees in more than 200 business units from 73 countries. The chapter highlights the impact of job satisfaction and employee engagement on several measures of firm performance: customer loyalty, employee productivity, profit and staff turnover. A range of specific cases studies, mainly from the private sector, but including one from the UK National Health Service, illustrate the variety of particular tools used to improve employee satisfaction and engagement, and thereby to influence the measures of work unit performance. Across a wide variety and very large number of workplace studies, the results for job satisfaction, employee engagement and firm performance together provide an impressive body of evidence.

There is little evidence offered about the life satisfaction of employees, managers, customers and shareholders, thereby illustrating that the happiness lens has perhaps not yet been used comprehensively enough in the workplace. One notable common feature of this large number of workplace studies is that they are primarily evaluated in terms of their ability to deliver better performance using conventional measures of firm success. The ultimate objective is taken to be the financial bottom line, with employee retention and customer satisfaction valued chiefly for their ultimate impact on financial returns. This approach in turn suggests an instrumental rather than fundamental role for happiness, with life satisfaction outcomes not directly measured for any of the parties involved, and implicitly being valued for their contribution to the financial bottom line. If there is a "how to" inference for improving happiness in the workplace, it is that adoption of well-being policies requires first of all that a case be made that such interventions improve firm performance, so that management can see that these measures will not hurt the bottom line. However, primary reliance on traditional outcome measures is likely to skew the choice of interventions, and thereby to miss valuable opportunities for improving workplace and population happiness. Perhaps the underlying reality is that a well-being strategy should initially be sold on its delivery of conventional outcomes, and then later, when more broadly accepted, redesigned to deliver even greater happiness.

For its "how to" lessons, the chapter uses a broad range of evidence to support its recommendation that firms should invest much more in employee well-being by targeting social relationships on the job, making jobs more interesting, and enabling employees to achieve a better work/life balance. This is coupled with advice to document the effects of such interventions as well as possible, so as to increase the stock of good practices for themselves and others to follow.

Personal Happiness

This year's personal happiness chapter, entitled *Well-being Interventions to Improve Societies* focuses on interventions aimed at improving the well-being of individuals. The chapter starts by listing a dozen different interventions classified

into four types: 1) thinking happier, 2) social interactions, 3) diet and exercise, and 4) listing and labelling (e.g. counting your blessings).

Of course, these can be combined into packages, as illustrated by the first main case study, the 3-month ENHANCE program designed for either in-person or online delivery. The 10 modules of the ENHANCE program relate to the core self, the experiential self, and the social self. Example exercises for the social self include giving compliments, feeling and expressing gratitude, noticing and sharing good news, active listening, and making others the centre of attention. Experimental evaluations show sustained improvements in several different happiness measures, as well as in physical health over a 3-month follow-up period.

The second half of the chapter offers a "how to" guide for effective interventions. Interventions are, in the authors' experience, more effective when they contain multiple components, including education, skills development, and reflection. Key considerations in design include stakeholder buy-in and input, cultural fit, language, a clear strategy for measurement and evaluation, clear target populations, mode of delivery, and revision and improvement in response to results.

The second case study is quite different from the first, as it illustrates how individuals can work together to redesign their own communities to make them happier places. The Blue Zones project was designed to enable communities of any size to build some of the features of those places around the world where abnormally large fractions of the population live beyond 100 years. The interventions, which are organized and managed at the town and city level, involve the active participation of a range of local institutions, including schools, restaurants, stores and places of worship. The main thrust of the Blue Zones program is to alter the local environment in ways that promote healthier life styles. The collaborative methods used are intended to improve the social fabric of happiness, so it is no surprise that the outcomes include better health and more happiness. Documented outcomes in three California cities included increased rates of walking to school from 1% to 30%, less obesity, less smoking, better eating and greater life satisfaction. The Blue Zones team has identified a number of "how to" features for successful adoption and implementation. These include readiness for change (indicated by an invitation to the Blue Zones team), buy-in and 5-year commitments from a range of local leaders, creating a strategic plan and a five-year steering committee, and securing funding for the necessary core staff.

The chapter ends with three "how to" suggestions, applicable to policy-makers in general, for improving the pace and structure of interventions. These are to disseminate and promote well-being interventions, to tailor interventions to suit the target audience, and to commit to tracking and evaluation of each of these targeted policies.

Cities

This year's chapter, entitled *Happy Cities Agenda*, considers six aspects of city design – city planning, contact with nature, mobility, sustainability, culture, and quality of service – that contribute to happiness through their interaction with eight enabling factors: trust, safety and security, affordability, tolerance and inclusivity, health and life balance, meaning and belonging, economy and skills, and sociality. Example policies are then chosen to showcase these eight enabling factors while being in general focussed on one of the six aspects of design. The example projects exhibit a striking variety of sources and management structures, with a remarkably high proportion coming from local citizen initiatives, most effectively with support from local government.

Two examples in particular are worthy of special mention, given the extent to which they illustrate cross-cutting attention to several of the enabling factors. The first example is from Aarhus in Denmark, where the municipality partnered with an architecture firm to cover the cobbled town square with an undulating carpet of grass and hundreds of trees, thereby creating a pop-up urban forest littered with social spaces and opportunities. The forest promoted well-being by inviting play, relaxation, and even improving social norms, with local police reporting no incidents in a place that normally witnessed crime. The second example is Melbourne Knowledge Week, where annually for ten years the city has challenged its inhabitants to build a shared vision. The resulting broad participation – and transparency – in turn has helped to increase

trust between city managers and residents, with councillors setting municipal priorities according to citizen preferences collected during knowledge weeks.

The chapter draws two main "how to" lessons. First is the importance of empowering people to take responsibility, using a mix of both top-down and ground-up approaches to build successful communities. Second, and drawing from the chapter's conclusion, "many examples illustrated the importance of sociality as a primary enabler. This theme was visible in many examples: the design parameters of Seaside Florida, the Hey Neighbour community initiative in Vancouver, the family focused counselling in Denmark, a park re-design in Manchester, UK that helped people interact more with each other, even the Ciclovia cycling days event in Bogota, which had a strong social element to augment the benefits from the physical activity. City managers should focus on getting people together, and catalysing their interaction. Some of these examples underscore the *Socially Smart City*, by using data and innovative methods to attend to the social needs of the city, and ultimately people's happiness."

Metrics

This year's chapter, entitled *Adopting a Well-Being Approach in Central Government: Policy Mechanisms and Practical Tools* surveys national whole-of-government approaches to well-being policy in two parts. The first surveys the mechanisms used by a number of different national governments to introduce well-being data and objectives into their national policy-making processes. The second part of the chapter examines the tools and methods available to help policy analysts working within the government service to design and compare policies in terms of their likely contributions to well-being.

The first part considers five mechanisms that have been used to introduce well-being metrics and analysis into central government policy-making: the budget process, legislation to establish well-being objectives or collect well-being data, national development strategies with a well-being focus, new ministries or agencies, and strengthening civil service capacity.

In essentially all of the examples considered, the national well-being focus is multidimensional, without any central measure assigned an overall umbrella role. This appears to be a natural first step in a 'beyond GDP' development strategy, and perhaps gains cross-government support by giving ministries their own favorite variables in the dashboard of indicators while also avoiding the need to argue over the weighting structure inherent in any composite indicator of well-being. The chapter leaves uncertain the current amount of policy momentum there is for subjective well-being to provide an umbrella measure of progress and a research base for evaluating competing projects and proposals, both of which are argued in this synthesis to be central features of a national happiness agenda. Perhaps this modest role in most current national well-being strategies is appropriate while the evidence base accumulates to facilitate these expanded roles for subjective well-being. But in the meantime, of course, there is the need to ensure much more universal collection and understanding of happiness data, supported by comparable data for a wide range of potentially important indicators that can help to explain the sources of happiness.

The chapter articulates this need persuasively, arguing that "…putting well-being at the centre of policy analysis requires supporting machinery: a well-developed and accessible evidence base, civil servants with the training, tools and capability to conduct the analyses and interpret the findings, and perhaps most crucially, leaders (both political and managerial) who demand greater use of well-being evidence in order to arrive at their decisions. They will only make these demands if they can see that the quality of the advice, subsequent decision-making, and ultimately people's lives improve as a result of adopting a well-being lens. This means honestly evaluating the methods being developed, and continuing to share knowledge and lessons among practitioners."

The most helpful advice in the chapter lies in the specific examples offered for how to develop the capacity within the civil service to use well-being research based on happiness data to compare policies. The key examples offered are from the United Kingdom and the United Arab Emirates. In the United Kingdom, established procedures for evaluating projects have been appropriately broadened, and courses offered to civil servants on how to compare projects in terms of their impacts on subjective well-being. The United Arab Emirates *Happiness Policy Manual* sets out a vision to place happiness at the centre of

public policy and to ensure policy alignment across departments by quantifying and comparing the results of policy using several different happiness measures.

Digging deeper into the work of policy analysts, the chapter notes several ways in which well-being data can help: by developing a logic for policy action, exposing the nature of policy trade-offs, changing the data and methods used for regulatory impact assessments, and, most importantly, using well-being research to inform a broader cost-benefit analysis for choosing policies based on their likely impacts on the quality of peoples' lives.

Useful "how to" examples from this section of the chapter include the provision of better data and more training for analysts, the use of a range of evaluation techniques to better understand and map the underlying complexities, raising awareness, and helping to shape the public dialogue. Progress will require patience, and patience will also permit the all-important evidence base to be built up and better understood.

What are the Secrets for Opening Doors to Happiness?

We return here to consider features of successful happiness policies, using the eight stages listed in the introduction:

Establishing a happiness strategy for a country, region, city, ministry or organization

A recurring feature of the case studies is the need for buy-in from all the key stakeholder groups. The need for buy-in goes across all the major interest groups and top-to-bottom within each of those groups. Buy-in from the top provides a licence to innovate for all those at the lower levels. Buy-in from the front-line service providers greatly increases the chances of finding a workable strategy, and is essential for its implementation. The necessity for buy-in is reported throughout the chapters of this report. But there is very little evidence on how to create this buy-in among policy-makers long used to doing things in comfortably established ways.

A second key requirement for a successful strategy is an accepted objective, coupled with data to chart progress, as well as analysis sufficient to support policy decisions. Happiness data, and especially life evaluations, are uniquely able, if collected on a sufficiently broad basis, to underpin a happiness strategy for any government or organization, because they:

1. provide a single powerful umbrella measure of welfare and of the equality of its distribution
2. provide individual-level data to enable the sources of well-being to be identified at all levels of aggregation and the results used to inform cost/benefit analysis
3. can be made available for all demographic subgroups
4. can be made available at all geographies

Several of the theme chapters emphasize the benefits of policy innovations in terms of their consequences for conventional policy success measures - namely academic scores in education, health outcomes following health care or personal interventions, and profits for workplace interventions. Furthermore, the metrics chapter notes that most of their case study countries still employ well-being strategies that do not afford a central role to subjective well-being, and some even exclude it entirely. If a central role for happiness is essential for happiness policy to succeed in the long term, then there needs to be more widespread acceptance of life evaluations as an appropriate indicator of national well-being. The *Global Happiness and Wellbeing Policy Reports* are intended to share happiness policy advice among those already convinced of the relevance of happiness data and research. This is a constituency that needs enlarging in order to assure more selection of policies on the basis of their expected power to improve lives as assessed by peoples' own evaluations of the quality of their lives.

Creating the magic sauce to turn talk into action

If a strategy is based on the two criteria noted above - buy-in from top to bottom, and support from happiness data and analysis - then moving to action becomes much easier. Perhaps the best spur to action is the availability of good examples to copy, coupled with encouragement of innovation and experimentation at the operating level. Stepping outside normal practice involves a leap of faith and a dose of courage, both of which are likely to be aided by upper-level acceptance of any related risks. Getting

started may also be easier with a phased introduction, with the first steps being explicitly designed to test concepts and to provide any redirection needed for the following stages. Being small scale and off the radar can sometimes help as well.

What are the key components of an effective action team? In several of the case studies, the key features were human assets: the presence of a committed leader or central figure, shared enthusiasm for action among all those in positions to help, and high levels of trust and shared purpose. (e.g. "This is important for us, will benefit others, and together we can do it"). It has been argued that the 2010 launch of the UK well-being agenda based on widespread collection of happiness data (and the related public consultations) required shared convictions and mutual trust among those at the very top of the government, the civil service, and the Office for National Statistics.[12] One of the key elements of the UK well-being strategy was to bring subjective well-being into the heart of policy-making, including revising the Treasury's 'Green Book' that sets out the procedures for developing and evaluating policy proposals. Despite the strong leadership support for the proposals, there was resistance within the Treasury to giving a central place to subjective well-being. Without strong and unified leadership, the required changes to the statistical framework, the establishment of well-being as the key policy objective, and the use of subjective well-being research to provide the all-important conversion factors linking trust, incomes, and health, might never have happened.[13]

Enabling collaboration within portfolios

Substantial evidence shows that people who work in flatter organizational structures are happier,[14] and that across schools and countries, more collaborative teaching structures are associated with higher levels of social capital.[15] The extent of trust and social connections between those at different levels of an organization has been labelled "linking social capital".[16] These are the kinds of environments most likely to provide the top-to-bottom trust linkages needed to support successful happiness interventions. Hence any policies or procedures that serve to increase trust among colleagues at different levels of an organization may be viewed not just as sources of happiness in their own right, but as being likely to increase the chances of success for other well-being interventions.

Well-being research has regularly shown that the social context within workplaces, communities, ministries, prisons, schools and hospitals is of first-order importance for the lives of all those involved, whether as residents, patients, inmates, students, teachers, parents, employees, managers, doctors, or any other combination of life roles.

This finding has not yet been recognized within ministries and organizations. For example, workplace trust tends to get into the policy agendas of firms or economics ministries only to the extent that it is seen to influence firm productivity. However, the happiness implications for the individuals involved are far larger than revealed by those productivity measures. Similarly, the success of prison life is measured more by its freedom from violence than by the current or future happiness of prisoners, staff, and the communities from which the prisoners come and into which they return.

One of the initially unforeseen benefits of the increasing availability of happiness data has been the possibility to evaluate the social context in ways that have exposed its primary role as a support for well-being. This in turn has exposed a whole new range of possibilities for previously unconsidered ways of making lives better. For now, however, these remain mostly just as possibilities, with few ever having been implemented, or even appearing among the examples in this report. There is thus a shortage of "how to" examples for policy changes that could improve the social context within ministries and the constituencies they serve. There is a broader range of examples in the cities and personal happiness chapters, as expected given that both are dealing with diverse populations whose well-being clearly depends on the quality of the social contexts in which they live.

Enabling collaboration across ministries, NGOs and interested others

The structure of government, and even the structure of this report, reflects a high degree of specialization, with each department using its own tools to achieve its own defined goals and objectives. Even where it is possible to insert a broader objective, as in the health chapter's

recommendation for happiness-based cost-effectiveness analysis, or by using the SHAPE tool presented in the cities chapter, there are still natural incentives to seek these broader objectives using the department's established tools and resources. The theme chapters of this report concentrate on initiatives involving single firms or ministries. The changes are often adopted and justified for their expected contributions to health, grades, profits, or ease of congestion and pollution. What is largely missing from policy-making, and from this report, are examples of silo-joining activities and ideas for how to create and evaluate such innovations.

Given the importance of the social context for happiness, it is natural to look in this area for actual and untapped policies to span ministries and disciplines. Not surprisingly, such ventures tend to start from outside the regular policy-making system. One obvious, and highly illustrative, silo-linking possibility is provided by linking the young and the old in ways that permit both groups to help, to learn from, and to enjoy each other. But this involves disrupting the flow of the increasingly professionalized and gated facilities used for schools and pre-schools, child care, hospitals, hospices and elder care.

To drop young children into an elder care environment is likely to upset all the prevailing norms and expectations about who is giving and who receiving the care, and for what purpose. Several types of elder-younger mixing have been tried, including having music students living in an elder-care facility[17] to share their music and experiences with the elder residents,[18] and opening up elder-care spaces in Helsinki for young residents, simultaneously providing needed housing and happiness at the same time. A number of age-mixed community-level housing options also exist, including several considered in the cities chapter. The Bridge Meadows project in Oregon aims especially to foster healing for vulnerable populations, thus linking the portfolios of family services, elder care and assisted living, with the intent of providing happiness for all.[19]

A variety of programmes mix pre-school and elder care. The pioneer was perhaps the Kotoen project in Tokyo, which was founded almost forty years ago, and by the end of the 20th century was among 16 examples in Japan of *yoro shisetsu*. These are "institutions where the very young and elderly interact and share experiences that let them both see that the beauty of life has neither a minimum age nor an expiration date…You can't reach old-age without acquiring a lot of life experience along the way, and if the reward for imparting that to future generations is being surrounded by their smiles during some of their most formative years, that sounds like a good deal for everyone involved, both young and old."[20] This idea took root in Seattle's Mount St. Vincent care facility in 1991, and flourishes still.[21] Other similar programs exist in North America and Europe[22], but apparently not in Latin America, where the extended multigenerational family is still a happiness-inducing norm.[23]

There are also non-residential options for mixing, including programs linking individuals, sometimes seen as filling the intergenerational space for those whose own families are far away, dead, or just too busy or disinclined to enjoy such activities. A program in Zimbabwe taps the wisdom of the nearby old volunteers to help avert depression among the young.[24] The happiness benefits of these intergenerational encounters have been documented for elderly participants by gerontology researchers.[25] The apparent lack of broader analysis covering the benefits (and sometimes costs) for the old and young, and the families and care-givers, may well reflect the disciplinary silos that define research as well as care design and delivery.[26]

Another option is to move school classes, for a whole term or year, into an elder care facility. The iGen project in Saskatoon, Saskatchewan,[27] a partnership between Sherbrooke Community Centre and Saskatoon Public Schools, has been in operation for several years, with the resulting happiness gains for young and old evident in their faces and descriptions of what they have learned and enjoyed. The Saskatoon iGen program has attracted more grade six student applicants than the program can accommodate, with a lottery used to select the participants, opening the doors to more formal study of what the program has achieved for the students. A similar program in British Columbia, the Meadows Schools Project,[28] which operated from 2000 to 2008, has led to a successor organization[29] devoted to helping intergenerational "i2i"[30] projects to thrive elsewhere.

What are the possible "how to" lessons for establishing these cross-silo innovations? The pioneers of such experiments remembered initial worries that students would miss their school social context in a crucial year, that it would be impossible to monitor adequately the complex interactions within the shared environment, and that conventional learning outcomes would suffer. More comprehensive evaluations remain to be done, but experience has generally convinced participants that there is a magic to the mixing, an opening of important doors to the life experiences of others, and to the breadth of the human condition, that makes the prior worries seem misplaced. But nonetheless a leap of faith is required, and a willingness to accept the consequences, whatever they may turn out to be. Once again, the "how to" recipe seems to require at least one committed leader at the centre plus an effective cadre of collaborators from the connected schools, school boards, and elder care facilities. Without all these elements, the experiments do not happen, and when a key element is lost, the program dies.

The United Kingdom provides perhaps the best examples of interventions that are based on subjective well-being research, are applied across ministerial boundaries, and are tested and evaluated at significant scale. The 2010 launch of a happiness agenda in the United Kingdom involved not only large scale data collection and a reform of cost/benefit analysis to focus on improving subjective well-being, but also the establishment of a Behavioural Insights Team tasked with using experimental methods to test the benefits of alternative ways of delivering public policies. This combination of new data, new techniques for evaluation, and growing awareness of the importance of the social context has led to several cross-silo interventions of a sort that would have been unlikely without this combination of reforms, supported by the accumulation of evidence about what was needed, and what might work, to improve well-being. For example, focusing on well-being in services led the UK Social Action Team[31] to expand volunteering at a large teaching hospital, based on a survey asking staff "what are the things that you would like to do for patients, but just don't have the time to do?" A year later, with 2,000 volunteers giving patients someone to talk to, and to help them settle back into home, patient satisfaction soared, and hospitals across the country followed suit, with 78,000 volunteers by early 2015.[32]

Creating the necessary space for experimentation, evaluation, and risk-taking

Experimentation is more easily accepted with higher level buy-in, risk-pooling, phased introduction and small scale, all of which were seen earlier to also aid the transition from proposal to action.

Convincing evaluations require that the results from an experimental treatment be compared with a suitable control group. Yet the "how to" advice for successful innovation includes building an enthusiastic team of collaborators as a key element. Since the intervention is introduced and managed by those with enthusiastic commitment to the project, the gains obtained from a more general application may be smaller, by an unknown amount. Ideally, even fairly early in the experimentation phase, it should be possible to create a pool of willing volunteers for a program, and then draw the treatment group randomly from among the volunteers, or at least use a phased application. This procedure provides more appropriate control groups, but still does not assure that the results would generalize to the population at large. The underlying experimental strategy therefore seems to require a step-by-step approach, with initial experimentation and test-of-concept being conducted in the most favorable circumstances, and the most successful features carried forward to progressively wider applications. Beginning with an initial small scale may also help to obtain buy-in from sceptical partners, to minimize the costs and attendant risks, and to increase the scope for mid-course corrections.

Facilitating consistent policy choices

What is most needed to achieve consistency is a standard for well-being evaluation that encompasses all the relevant factors, and is able to establish equivalent values for policies in different areas, and with consequences for a whole range of economic and social outcomes. Several chapters, and especially health, cities,[33] and metrics, made the case for project evaluations that use subjective well-being research to establish the relative values for a variety of key outcomes. This is perhaps the most important "how to" lesson for the long-term

sustainability of any well-being strategy.

There are two related issues that might complicate policy consistency. The first is how to compare policies with different effects on the distribution of subjective well-being. One answer to this is to recognize that people generally are happier living in societies with less inequality in the distribution of well-being,[34] and to adjust the cost/benefit calculations accordingly. The second issue relates to the frequent policy emphasis within ministries and caring professions on diagnosing and treating misery rather than identifying and building the sources of happier lives. Targeting misery has the benefit of helping those who need it most. But such targeting risks stigmatizing the afflicted and losing the broad support attracted by more universal programs.[35] It also is more likely to involve diagnosis and treatments focused on removing the signs of illness rather than building positive circumstances, thereby ignoring policies that might be better for the entire population, whether initially in misery or not.[36] Some evidence also suggests that policies designed to improve the social context in general will in fact provide the greatest benefits for those in misery.[37]

Assuring Continuity

Even the best ideas often succeed only to be abandoned shortly after. Sometimes this may be because a government has changed and the new leadership wants to present a different vision, and has not yet appreciated the value of what has been achieved. For example, a highly successful school-based program held classes in an elder care facility, with widely recognized happiness and education gains for students, teachers, care givers, residents of the care facility, and the families of all. Then a new principal came to the school determined to return the school to its core function of delivering higher test scores, and to keep all students in their regular classrooms. What had been a beacon project cherished by all became history due to the insertion of just a single out-of-sync individual into what had been a collaborative chain of innovation supporting better lives. Traditional methods and goals reasserted themselves and the gains were gone. Disappointed students moved back to schools closer to home, and momentum was lost, perhaps permanently.

At the national level, happiness agendas can come to be associated with particular leaders or parties, thereby rendering them vulnerable to elimination with any change of government.

How can this situation be avoided? Some have recommended the use of explicit long-term commitments to the policy (as in the Blue Zones example in Chapter 6 on personal happiness). Continuity is also more likely where the benefits of the previous happiness policy have been widely disseminated, perhaps replicated elsewhere, and become the focal point for favorable attention (as in the Hey Neighbour example in the cities chapter). This spread of information can help to attract supportive new leaders and participants, and to develop a cadre of local supporters who are likely to act swiftly to protect a cherished program from needless extinction. However, it must be recognized that it takes great effort to keep innovations alive and responsive to changing needs and waning attention. Avoiding attrition due to fatigue within the original leadership team can perhaps best be avoided by ensuring the training of a new cadre of staff convinced of the value of the program and equipped with the skills required to enable it to survive and improve. Several chapters listed such training as a central "how to" suggestion, with continuity and growth among the chief benefits.

Learning from experiences near and far

Why do obviously good ideas not spread faster and farther? Why is it not easy and natural to benefit from policy innovations elsewhere? The central purpose of the *Global Happiness and Wellbeing Policy Report* is to help fill this knowledge gap by collecting and sharing happiness-based policy experiences from around the globe. The transmission of experiences offers two hoped-for benefits. The first, of course, is to shed light on ideas that have been tried elsewhere, so that they might be adapted to local circumstances and given a chance to show their benefits. A second benefit might flow through the creation of national and international networks of people deriving fresh energy and inspiration from their far-flung peers. If there is an inspiration gap to match the knowledge gap, then the connections that fill one gap might fill the other as well. This

report is dedicated to all those willing and able to fill those twin gaps. If the resulting levels of trust and enthusiasm are high enough, then it will be as easy to learn about what did not work elsewhere as what did, thereby lowering the costs and raising the chances for successful happiness innovations.

What Next? Partnerships for Happiness?

The "how to" lessons reported in the chapters of this report all attach high importance to buy-in from top to bottom, and from one ministry or discipline to another, as well as to commitment, continuity, flat-structures, freedom to innovate, and fearless reporting of results, whether they are favorable or not. But existing bureaucratic structures, especially at the national level, are typically not able to deliver even a fraction of these characteristics. Still, there is growing interest among the public, and even within government policy circles, to redirect policies so as to enable happier lives.

Perhaps what is needed is to create safe spaces for happiness innovations that embody all the "how to" lessons, but do not require ministries or whole national governments to go too far outside their comfort zones. One common element of the most innovative and successful examples reported in this volume is their ability to get collaboration and cooperation across the board without excessive commitments – to achieve desirability while maintaining deniability. These examples might collectively be described as Partnerships for Happiness, each created for a specific purpose, usually on an initially small scale, and being quite explicitly experimental in nature. At the national level, the UK appears to have a bigger variety of such partnerships, including What Works Wellbeing,[38] Happy City Bristol,[39] Action for Happiness,[40] the Behavioural Insights Team,[41] and many others. All of these organizations have secured cooperation and sometimes direct participation from government departments, often in the form of robust collection of happiness data and support for the underlying research, but including the provision of issues and expertise, and the reform of project evaluation to grant primacy to better lives as measured by peoples' own evaluations. Yet all of these activities and ventures are removed enough from the central engines of government that their progress and results do not require a central policy commitment, and are at a sufficient distance that deniability is at hand for experiments that do not pan out, or that fail in ways that might be embarrassing to the government.

Partnerships for Happiness can operate as easily across ministries as within them, and are not restricted in the range of interventions to be conducted or benefits to be considered, nor in how the costs and gains might be allocated across budget items. Of the examples in this report, the greatest number of Partnerships for Happiness do not have their origins in government, but in the minds and with the leadership of those who see opportunities and simply try to assemble the elements required to produce happiness. The ENHANCE and Blue Zone examples of the personal happiness chapter, the entire positive education movement, many of the examples in the cities chapter, and all of the cross-silo examples described in this chapter are all Partnerships for Happiness originating from the bottom up or the outside in. Their architects may have broader and more policy-driven applications in mind, but achieve their success by being small, nimble, and opportunistic in finding support where they can. In all cases, the leaders tend to have had experience and connections within a particular interest or organization, and start with a promising idea for improving happiness. There is also a need for organizations, such as the Happiness Research Institute[42] in Copenhagen, that can act as clearing houses for ideas and idea generators for future Partnerships for Happiness. Also important are a whole range of foundations, including in many of the world's cities, that have the means and credibility to provide seed money and linkage opportunities for fledgling partnerships.

National governments have important roles to play in fostering Partnerships for Happiness. Existing dashboards of national well-being indicators provide valuable guides to the policy salience of different aspects of well-being, and show where interventions are most likely to be politically attractive. The broader collection of happiness data, and their use in policy assessments, can allow policy makers and citizens to better understand the linkages between the different areas of well-being, and to help ensure that the chosen policies are those

most likely to deliver greater happiness in effective ways. Government support could and should also extend to collaboration and partial funding of agencies that are either themselves Partnerships for Happiness or can help to incubate new ones. The *Global Happiness and Wellbeing Policy Report 2019* aims to encourage such Partnerships for Happiness by sharing policy ideas across the world.

Endnotes

1 See Stiglitz et al (2009).

2 See www.grossnationalhappiness.com, Ura et al (2015), and www.gnhc.gov.bt/en/.

3 Resolution 65/309. See https://undocs.org/en/A/RES/65/309

4 For the report of the meeting, see: https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=617&menu=35

5 See Halpern (2015), especially Chapter 9.

6 See OECD (2013).

7 See NSB (2017). *Questionnaire of the 2017 Population and Housing Census*. The Population and Housing Census carried out in 2017 asked life satisfaction questions to all the heads of 163,000 households in Bhutan. A report on this and other happiness related responses will be released in 2019.

8 The Council was formed with the support of the United Arab Emirates, is chaired by Prof. Jeffrey Sachs, and publishes the *Global Happiness and Wellbeing Policy Report* through the Sustainable Development Solutions Network.

9 See Chapter 4 of *World Happiness Report 2015*, and the metrics and health chapters of this *Report*.

10 See Goff et al (2018).

11 In particular, health practitioners do not usually even monitor the positive states of mind of their patients, even though tested suites of questions are available (e.g. Su et al 2014). The relevance of such positive measures is shown by Keyes et al (2010). Examples of non-medical interventions that improve both health and happiness are surveyed by Holt-Lunstad et al (2010).

12 At the launch of the UK Government's well-being strategy, focused on measuring subjective well-being and rebuilding cost benefit analysis to make subjective well-being the objective, the Prime Minister, David Cameron, was flanked by the Cabinet Secretary, Gus O'Donnell, and the Head of the Office of National Statistics, Jil Matheson, both of whom were instrumental in enabling these plans to come to fruition. David Halpern (2015, especially Chapter 9) provides an insightful insider's account.

13 See Halpern (2015), especially pp. 258-265.

14 For example, in large samples of US workers, those who regard their immediate superior as a partner have significantly higher subjective well-being than do those who regard the supervisor as a boss (Helliwell et al 2018b).

15 See Algan et al (2013).

16 See Szreter and Woolcock (2004).

17 For the Cleveland example, see https://www.nytimes.com/2015/05/14/business/retirementspecial/in-cleveland-young-and-old-keep-tempo-of-life.html

18 See https://www.youtube.com/watch?v=Xiofjk9rYAM

19 For a link to the Bridge Meadows project, see https://www.pdxmonthly.com/articles/2016/10/10/at-bridge-meadows-derenda-schubert-leads-an-innovative-portland-housing-community

20 This quote about the Kotoen project is from https://soranews24.com/2015/02/01/yoro-shisetsu-japans-progressive-joint-care-centers-where-kids-and-seniors-interact/

21 See https://washington.providence.org/services-directory/services/i/intergenerational-learning-center

22 For the first UK example, see https://www.youtube.com/watch?v=VSG_FCQ10fA

23 See the results in Rojas (2018) showing intergenerational family living and socializing to be much more frequent, and much more appreciated, in Latin America, helping to explain why happiness is higher there than would be otherwise predicted.

24 See http://www.bbc.com/future/story/20181015-how-one-bench-and-a-team-of-grandmothers-can-beat-depression

25 See, for example, Morita and Kobayashi (2013).

26 But news reports of intergenerational mixing are more symmetric in showing the benefits for both young and old. See, for example https://www.theglobeandmail.com/news/national/kindergarten-in-a-retirement-home-proves-a-hit-with-young-and-old/article4103165/

27 For a description and further links to the Saskatoon iGen program, see https://www.cbc.ca/radio/thesundayedition/the-sunday-edition-september-23-2018-1.4831872/sixth-graders-in-a-nursing-home-an-unlikely-but-life-changing-school-year-1.4832327. The iGen program was proposed by its founder Keri Albert in 2013, inspired both by earlier shared-site art programs involving children and elders (https://susanwhiteland.weebly.com) and also the Eden alternative model for elder care (http://www.edenalt.org) with the Sherbrooke Community Centre being one of its sites.

28 For a description, see http://intergenerational.ca/i2i/meadows-school-project/history/. For a radio documentary: https://drive.google.com/file/d/1A2Kvns0oKE03YbXbJ-hY046jigFPDUpl/view

29 See http://intergenerational.ca/i2i/

30 See, for example http://intergenerational.ca/i2i/meadows-school-project/bc-williams-lake-project/

31 The Social Action Team, founded in 2012 with substantial Cabinet Office funding, is itself an important example of support for silo-bridging social innovations. See Halpern (2015, 251-2.)

32 From Halpern (2015, 261-2).

33 See especially the Smart Cities Evaluation Tool (SHAPE) presented in the Appendix to the Cities chapter.

34 See Goff et al. (2018).

35 See Kumlin and Rothstein (2005).

36 See Keyes et al. (2010).

37 For example, Helliwell et al (2018a, Fig 18.3) show that living in an environment of high social trust is of greatest value for those most likely to be in misery, whether through illness, unemployment, or being a member of a group subject to discrimination.

38 See https://whatworkswellbeing.org The organization is funded by eight different government departments, and has strategic partnerships with organizations and universities in several countries. Topics of special importance have included job quality, social connections in the community, dashboards of social indicators, mental health, and fuller use of the four ONS measures of subjective wellbeing.

39 See http://www.happycity.org.uk

40 See http://www.actionforhappiness.org

41 See https://www.behavioural insights.co.uk

42 See https://www.happinessresearchinstitute.com

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Chapter 3

Priority Setting in Healthcare Through the Lens of Happiness

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Executive Summary

Increased spending on healthcare has delivered better and longer lives. But *how* budgets are used matters every bit as much as *how much* is spent. The allocation of healthcare resources through a formal healthcare appraisal (HCA) process, which systematically considers the costs and benefits of an intervention, will help us to get the most out of the resources devoted to healthcare.

Our recommendations are that HCA should:

1. Guide decision-making in all countries.
2. Explicitly consider alternative uses of resources (opportunity costs).

Current practice within HCA focuses on valuing benefits in terms of health and is very patient-centric. In this chapter, we propose that:

3. Benefits should be measured in terms of happiness, broadly defined (health is an important part of people's lives but not all that matters).
4. The benefits of all those affected by the decision should be accounted for (patients matter, of course, but so do the carers and families of those affected by a condition).

We show how looking at HCA through the lens of happiness would lead to at least two major shifts in focus:

5. Greater priority to mental health.
6. Improved end-of-life care, with more emphasis on palliative care and pain relief.

There are some serious challenges for measuring happiness in ways that produce robust and reliable estimates of the value of the benefits associated with healthcare interventions, but our contention is that the tools are available to address these concerns. In so doing, priority setting through the lens of happiness will go a long way towards ensuring that scarce healthcare resources are used to the best effect.

1. Introduction

Globally, we devote about 10% of everything we earn to healthcare, and in many countries substantially more.[1] This commitment has delivered longer (and probably also better) lives.[2] But *how* resources are used matters every bit as much as *how much* is spent. Table 1 shows two countries that usually score highly on health systems efficiency lists (Spain and Singapore) and two that usually score poorly (USA and Brazil). High health expenditure – in absolute terms or as a percentage of GDP – does not always result in longer life expectancy. Notwithstanding the fact that health outcomes are influenced by a range of social, economic, and environmental factors, this raises questions about the differences in the return countries are able to achieve for each dollar they spend on healthcare.

Some interventions bring much greater health improvements per dollar than others – that is, they are more *cost-effective*. The third edition of *Disease Control Priorities* (*DCP3*) (Jamison et al., 2017), which includes economic evaluations of about 100 health interventions in low- and middle-income countries (LMICs; Figure 1), highlights the kind of choices available to policy-makers. For example, $10,000 is estimated to achieve an additional three years of healthy life if spent on screening for and treating breast cancer in low-income settings, but 667 years when used to provide emergency obstetric care – more than 200 times the benefit.[3]

These resource allocation decisions have tangible effects. Using World Bank data from 2015, we looked at countries that devote resources to a highly cost-effective intervention, the provision of a skilled birth attendant,[4] to see if this led to better outcomes. Countries in which skilled personnel are more likely to be present during labor do indeed have significantly higher life expectancy and lower infant and maternal mortality (Figure 2).[5]

By consistently choosing the best-value interventions, some countries could greatly improve population health – even without additional investment. A study by the Center for Global Health Research, for example, estimated that providing a basic package of cost-effective healthcare in India would reduce total deaths in the country by 28% whilst costing only half of the country's per capita public spending on health (Reddy et al., 2011). Taken together, the evidence is clear: it matters not just how much is spent on healthcare but what it is spent on.

In this chapter, we set out a vision for happiness-based priority setting in the health sector. We define happiness in terms of people's reports of their subjective well-being, which can range from specific moods at a given moment through to global evaluations of life satisfaction (OECD, 2013). With overall happiness as the goal, distinctions between sectors of government (health, housing, education, and so on) become fairly arbitrary, and cross-sector prioritization is important for making the best use of resources. However, we

Table 1: Health expenditure and performance of four countries' health systems

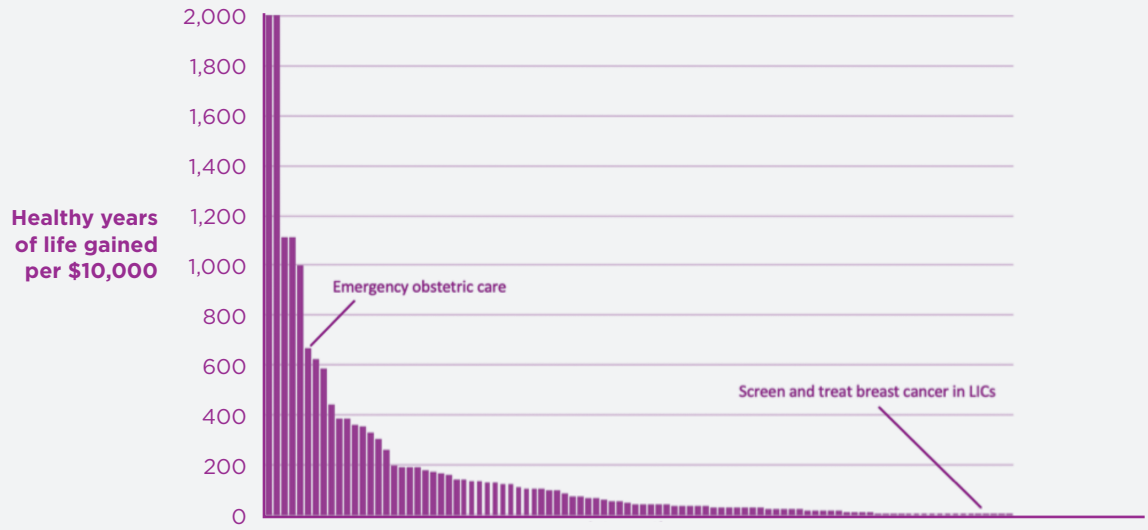
	Life expectancy (years)*	Health expenditure (USD per capita)*	Health expenditure (% GDP)*	WHO ranking of health systems performance†	Bloomberg Healthcare Efficiency Index 2018‡
Singapore	83	2,280	4	6	2
Spain	83	2,354	9	7	3
USA	79	9,536	17	37	51
Brazil	76	780	9	125	54

*Source: World Bank, 2015 (https://data.worldbank.org/)

†Source: *The World Health Report* (World Health Organization, 2000)

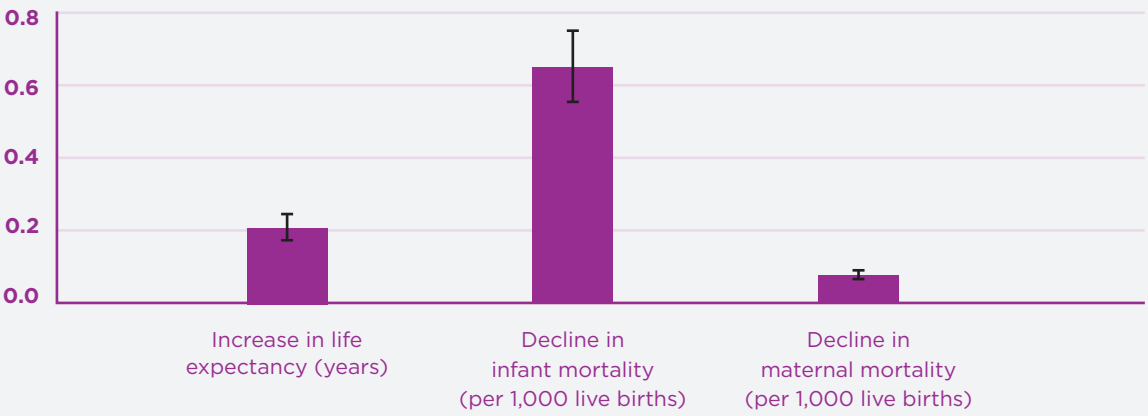
‡Source: https://www.bloomberg.com/news/articles/2018-09-19/u-s-near-bottom-of-health-index-hong-kong-and-singapore-at-top

Figure 1: The cost-effectiveness of health interventions in low- and middle-income countries



Source: Disease Control Priorities (3rd Edition), Annex 7A (http://dcp-3.org/sites/default/files/chapters/Annex%207A.%20Details%20of%20Interventions%20in%20Figs.pdf). LICs = low-income countries.

Figure 2: Predicted average impact of a 1% increase in the percentage of births with a skilled birth attendant present



Source: World Bank, 2015 (https://data.worldbank.org/).
n = 149 to 157 countries. Error bars indicate 95% confidence intervals.

focus here on processes and interventions that promote happiness through healthcare. This pragmatic approach is broadly consistent with how governments function around the world, which should enhance the feasibility of our recommendations.

With that in mind, Section 2 establishes the need for a formal system of healthcare appraisal (HCA) that allocates resources to where they do the most good. Section 3 argues that decisions must be based on what matters most of all, namely the happiness of everybody affected by an intervention. Looking through this happiness lens, Part 4 envisions significant changes to healthcare priorities, including greater attention to mental health and end-of-life care. In Part 5, we discuss some of the important but not insurmountable challenges to using happiness in HCA, followed by some concluding remarks in Part 6.

2. The need for healthcare appraisal (HCA)

All healthcare systems across the world must make decisions about what they will and will not fund – about which patients to treat and which not to. This allocation happens in different ways. It may arise through a price mechanism (you receive treatment if you personally have the funds to pay for it), through a continuation of the status quo (you receive treatment if the health-care providers have a history of treating patients like you), through political voice within the health system or society more broadly (you receive treatment if there is sufficient advocacy to shift resources towards patients like you), or through a formal process based on cost-effectiveness (you receive treatment if that would bring greater benefit than alternative uses of those same funds). Or, more likely, some combination of the above.

The need for rational priority setting in healthcare is ever more apparent as healthcare budgets across the globe are increasingly pressured by two common forces: an aging population and technological innovation. The aging population, caused in part by improved survival for certain conditions, is increasing the total number of years lived in poor health.[6] Globally, the number of people with the greatest health and social care needs – those aged 80 or over – is projected to triple from 137 million in 2017 to 425 million in 2050 (United Nations Department of Economic and Social Affairs, 2017). For the near future, this demographic shift means that many health systems face an increasing demand for healthcare from age-related chronic conditions.

Technological improvements have the potential to benefit population health. Some of these innovations, such as consultations using video calls, can also reduce costs (de la Torre-Díez, López-Coronado, Vaca, Aguado, & de Castro, 2015). But overall they appear to be driving up total expenditure. An analysis of European healthcare expenditure attributed an increase of about 2% per year to technological developments (Dybczak & Przywara, 2010).

Healthcare spending globally is expected to continue rising (Dieleman et al, 2018), and the vast majority will be distributed through health insurance systems. Whatever their structure – single-payer or multi-payer, privately or publicly funded – all of them will face competing demands on their funds. Having a formal process for setting healthcare priorities, guided by the aim of doing as much good as possible within a fixed budget, is an important step in ensuring these resources are spent efficiently.

Recommendation 1: Formal HCA should guide decision-making

Funding decisions should be based primarily on the results of healthcare appraisal (HCA) – also called health technology appraisal (HTA). This centers around economic evaluation, which assesses all additional costs and consequences of an intervention relative to a comparator (usually current practice). Appraisal normally considers many factors beyond cost-effectiveness, however, such as engagement of stakeholders (including the public), equity, transparency of decision-making, budget impact, program feasibility, consistency with other government decisions, and supporting innovation. HCA guidelines show considerable variation across countries (Angelis, Lange, & Kanavos, 2018; Zhao et al., 2018).

Whatever the details of the framework, the HCA process must be able to reject the use of resources in categorically inefficient ways. This involves not only assessing new interventions,

but also evaluating existing practice and, where the evidence indicates resources could be used more effectively elsewhere, disinvesting from current provision (Elshaug, Hiller, Tunis, & Moss, 2007). For example, *DCP3* reports that in LMICs "a high proportion of mental health budgets is being used in the provision of the least cost-effective interventions, such as long-term inpatient treatment of severe mental disorders in mental hospitals. Very little is invested in more cost-effective strategies, including the community-based provision of adjuvant psycho-social treatment for severe mental disorders, and measures to reduce access to or marketing of alcohol" (Levin & Chisholm, 2016). Removing funding from healthcare interventions that have previously been provided may be politically unpopular, but all treatments and systems need to be open to challenge if resources are to be used to their maximum effect.

Robust institutions, supported by government and understood by the public, will stand more chance of withstanding the pressure to provide inefficient healthcare. This was demonstrated in Colombia, where the development of institutions to incorporate new interventions in an "orderly and legitimate way" has counterbalanced the pressure from high-income groups to use newer, but less cost-effective, technologies (Gaviria, 2014). In contrast, Dittrich and colleagues (2016) provide examples from Thailand, Costa Rica, Uruguay, and Brazil where decisions made by the courts undermined the government's ability to operate rational health care prioritization, often compelling authorities to provide unproven or more expensive treatments to specific individuals. This results in less potential health gain, and a distribution in favor of those with the capacity to enforce their 'rights'.

Some developing countries do not have the resources to establish full HCA systems, and the appraisal activity itself needs to be cost-effective in each context. There are good initiatives to develop HCA capacity internationally,[7] share findings[8] and support translating existing economic evaluations to local circumstances (Tantivess, Chalkidou, Tritasavit, & Teerawattananon, 2017), with the broad aim to "globalize the evidence, localize the decision" (Eisenberg, 2002). In this chapter, we do not discuss the steps required to run a healthcare appraisal program (see Drummond et al., 2008 for a list of key principles) but we do now draw attention to a critical yet often over-looked factor in HCA, namely the consideration of opportunity costs.

Recommendation 2: Decisions should be based on opportunity cost

Under a fixed healthcare budget, spending on a new intervention will mean *not* spending on some other existing healthcare. The benefit that is lost will be the 'opportunity cost' of that new intervention. It would not be practical to work out the actual opportunity cost for every case, but we can think of a 'threshold' which represents the average benefit lost from withdrawal of a certain amount of funding – or more commonly, the average cost per unit of benefit, such as quality-adjusted life-year (QALY) gained or disability-adjusted life-year (DALY) averted (we say more about these metrics in Section 3). A decision maker might still wish to fund something with a price tag higher than this 'cost-effectiveness threshold', and therefore achieve less overall benefit than they would otherwise, but in a transparent HCA system they should have, and provide, good reasons to do so.

Determining the opportunity cost of healthcare spending has been hindered by a lack of relevant data, leading to the use of somewhat arbitrary thresholds. Some of these took previous decisions as a rough benchmark, such as the £20,000 per QALY adopted by the UK's National Institute for Health and Care Excellence (NICE, 2013) and the $150 per DALY suggested by the World Bank (World Bank, 1993). Others have been based loosely on estimates of what members of the public are (hypothetically) willing to pay for health gain. Most notably, the WHO's Choosing Interventions that are Cost–Effective project (WHO-CHOICE) suggested that "interventions that avert one DALY for less than average per capita income for a given country or region are considered very cost-effective; interventions that cost less than three times average per capita income per DALY averted are still considered cost-effective" (WHO, 2001).

Research in the UK has now demonstrated the feasibility of estimating the actual opportunity cost of healthcare expenditure using routine data. By examining the relationship between changes in healthcare expenditure and changes in mortality and health-related quality of life, it

has been estimated that the UK has a threshold of around £13,000 per QALY (Claxton et al., 2015), which is about 51% of GDP per capita.[9] Ochalek et al. (2018) used a range of similar methods to obtain preliminary cost per DALY averted thresholds for 97 LMICs (see Figures 3a–c and the Appendix). The estimates vary widely across countries, but the median is $1,344 (41% of GDP per capita) and only nine are above 1xGDP. For low-income, lower-middle-income and upper-middle-income countries the respective figures are $185 (27%), $1,267 (49%) and $5,507 (76%). This suggests that adherence to standard guidelines would be severely detrimental to health, especially in the poorest countries.

In the next section, we argue that overall happiness, and not just health, should drive decision making. Basing decisions on opportunity cost is just as important when happiness rather than health is the main outcome, and similar methods can, and should, be used to estimate appropriate thresholds. In addition, happiness offers comparability to non-health areas of public expenditure. Using the same outcome metric, the cost-effectiveness of spending in different sectors (social care, health, transport, housing, and so on) can be compared, with the potential to achieve greater cross-government coordination and better allocation of scarce public resources. Estimating the current opportunity cost for each sector will shine a light on disparities in the returns to investment between different sectors.

3. Measuring what matters

Economic appraisal requires that we have a single measure of benefit so that we can compare the effects of a wide range of interventions. Many HCA authorities, mostly in high and upper-middle-income countries, recommend the use of QALYs gained as the primary outcome measure (Zhao et al., 2018). QALYs combine quality of life and length of life into a single metric by rating each health state on a scale that is anchored to 0 (death) and 1 (full health). One QALY is therefore equivalent to one year spent in perfect health, two years spent living in a state valued at 0.5, and so on.

Estimating QALYs typically involves both description and valuation of health states. The states are usually described using 'generic' classification systems that can be applied to a broad range of conditions. For example, the widely-used EQ-5D defines health in terms of mobility, self-care, usual activities, pain/discomfort, and depression/anxiety (EuroQol Group, 1990). The relative values or 'weights' for these domains (and levels of severity within domains) are then derived from people's preferences over different lives described by the domains. So, for example, members of the public will be asked how many

Figure 3a. Cost-effectiveness thresholds for low-income countries

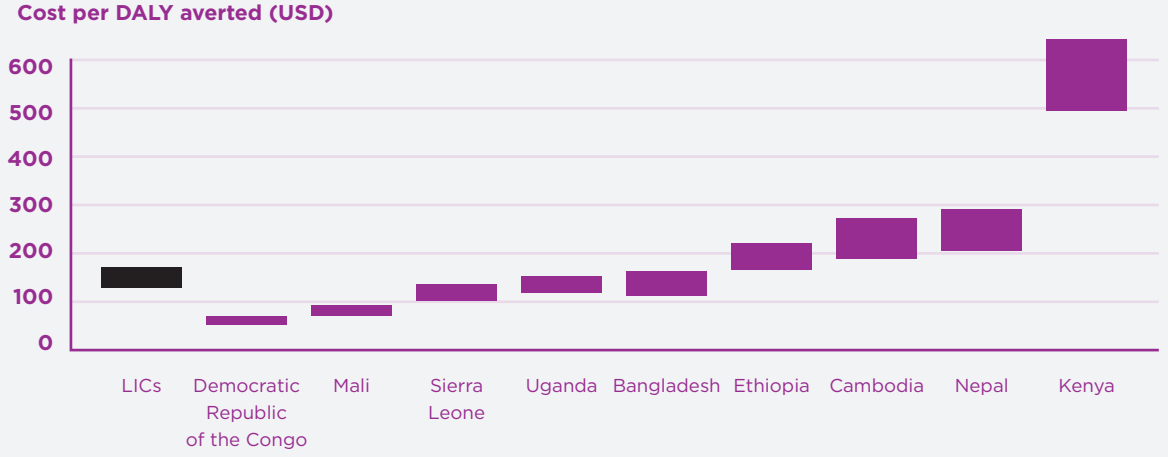


Figure 3b: Cost-effectiveness thresholds for lower-middle-income countries

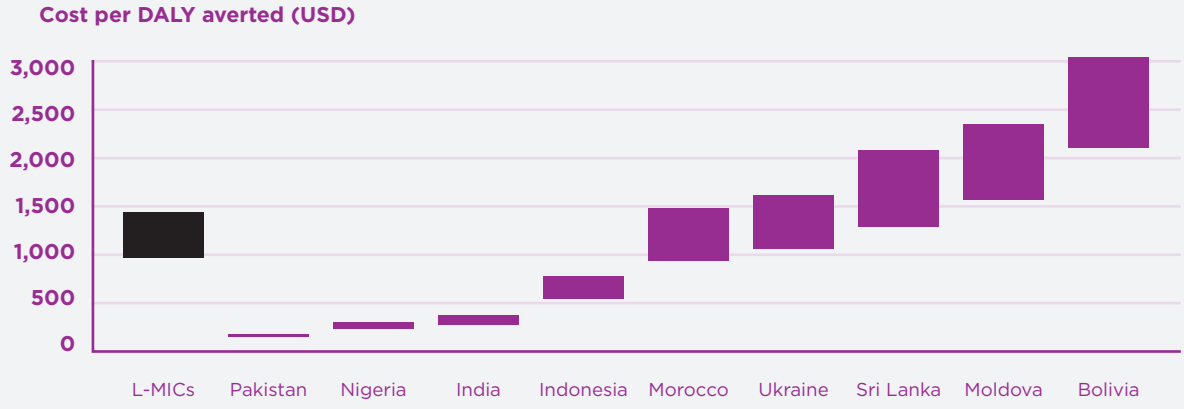
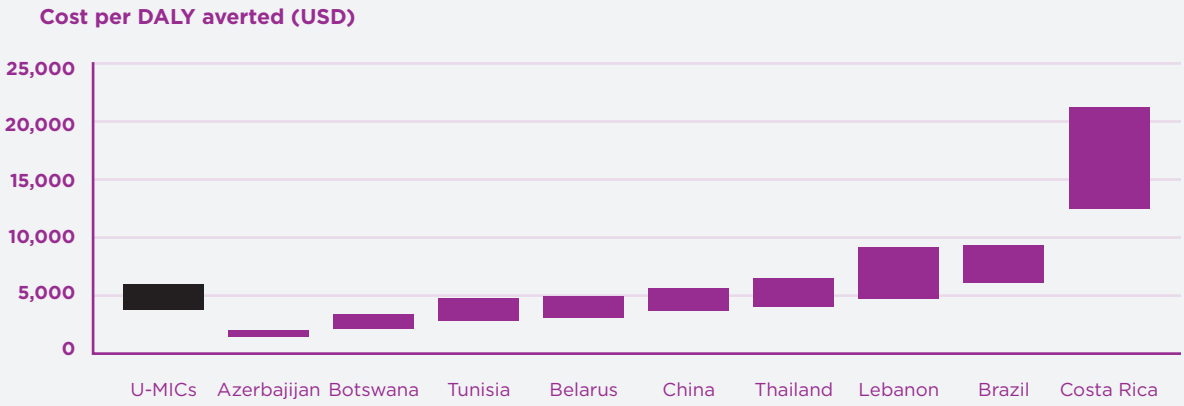


Figure 3c: Cost-effectiveness thresholds for upper-middle-income countries



Source: Ochalek et al. (2018). Costs are in 2015 USD, and World Bank income classifications are from the same year (http://databank.worldbank.org/data/download/site-content/CLASS.xls). There were four estimates for each country; bars represent the range. The black bars indicate the range of possible group medians, based on the median of the lowest and the median of the highest of the four estimates for all countries in the income group. For each group, the selection of countries broadly reflects the distribution of thresholds. For a complete list, see the Appendix. LICs = low-income countries. L-MICs = lower-middle-income countries. U-MIC = upper-middle-income countries.

years in full health they consider to be equivalent to a longer period with moderate pain or discomfort and some problems walking about (the fewer the stated number of years in full health, the worse the health state). There are 'tariffs' of values for the EQ-5D based on responses to these 'time trade-off' (TTO) questions, and these are now being used as the measure of benefit in HCA in many countries (Rowen, Zouraq, Chevrou-Severac, & Hout, 2017).

In the developing world, the DALY is used more frequently than the QALY, both as a measure of benefit in HCA and to quantify the overall burden of diseases, injuries and risk factors.[10] A DALY attaches a disease weight to a year lived with a health condition where value 0 represents full health and value 1 represents death, so it can be thought of as the inverse of a QALY.[11] To generate these weights, members of the public are presented with examples of two hypothetical people with different health conditions, briefly described in layman's terms, and asked: "Who do you think is healthier overall, the first person or the second person?" (Vos et al., 2016, Methods Appendix).

In principle, the 'quality' of a QALY and 'disability' of a DALY can reflect any kind of value, including happiness and misery, and they can measure outcomes for anybody affected by an intervention. But in practice, they are used almost exclusively for estimating the health of the individual patient. In this section, we argue that they are unfit for purpose in their current form, and propose an alternative that measures disease burden – on family and carers as well as patients – "in terms of the whole of wellbeing" (Broome, 2002).

Recommendation 3: The measure of benefit should be happiness

As should be clear from the above description, current QALY and DALY measures focus on a relatively narrow conception of health or health-related quality of life, neglecting other important aspects of our lives. Of course, the main way health treatments affect people's happiness *is* through improving their health, and so the focus on health rather than happiness will sometimes be a moot point. But it will make a big difference if health conditions or treatments impact directly on non-health domains, such as relationships or autonomy, and if these effects are not strongly correlated with changes in health states. For example, chemotherapy involving extended periods of time in hospital and hair loss may lead to improvements in health at the same time as negatively impacting family life, intimate relationships, and self-worth (Lemieux, Maunsell, & Provencher, 2008). Treatments that deliver less health gain but have other advantages will be more appropriately evaluated where these non-health outcomes are explicitly accounted for. So, we need to move away from trying to put an arbitrary boundary around what is health, and instead focus attention on dimensions of happiness that impact greatly on people's lives.

Whatever the description of benefits included in a QALY measure (pain, mobility, and so on), there are serious problems with current methods of valuing them. In particular, preference-based methods, including the TTO and the pairwise comparisons used to obtain DALY weights, suffer from severe 'focusing effects' (Dolan, 2008). Firstly, they draw respondents' attention to the health state as if health were the only thing that matters when trading off years of life – rather than to other domains of life that may matter more and may be largely unaffected, such as relationships, work, or hobbies. Focusing effects also mean that the aspects of a health state that are easiest to imagine will stand out most (pain rather than anxiety, for example), and therefore the more vivid domains will disproportionately influence the valuation. Of course, people may think more broadly about the non-health consequences of a health state or symptom when doing these valuation tasks, and there is some evidence that they try to do just that (Karimi, Brazier, & Paisley, 2017), but an unnecessary level of uncertainty is introduced by not describing those non-health effects associated with a health state within the valuation exercise.

Secondly, valuation tasks that ask relatively healthy members of the public to imagine poor health states draw attention to the transition from their current state to the one being evaluated. People may therefore fail to consider what it might be like to live for a long period of time in that state, taking into account their capacity for adaptation (Dolan & Kahneman, 2007). For example, arthritis patients may learn to walk with a stick, take up less strenuous hobbies, get assistance with daily activities, and ultimately pay much less attention to the effects of the

condition. Preference-based valuation consequently overestimates the loss in happiness associated with many health states (e.g. Gilbert & Wilson, 2000; Karimi et al., 2017).

The main exceptions are mental disorders such as anxiety and depression, whose effects we tend to *underestimate*. By their very nature, these conditions place distressing thoughts and feelings at the forefront of our attention, making them inherently resistant to adaptation. This is borne out in research comparing the values given to health states by patients and other groups. A review of 38 studies found that physically ill patients typically consider themselves healthier than others who value the same states (including medical staff and family members as well as the public), whereas people with schizophrenia – the only psychiatric patients included in the review – provide similar or lower values (De Wit, Busschbach, & De Charro, 2000). This has also been found when comparing valuations of depression, with currently depressed patients giving lower values than the public (Pyne et al., 2009; Schaffer et al., 2002). So it is clear that current QALY and DALY weights are based on inaccurate predictions of how health states will affect our lives.

Should we therefore rely on patient preferences to derive the weights? They may be better than public preferences, but they still run into the same problem: patients will focus too much on the gains from moving to full health, imagining that they will pay attention to not being unhealthy, when in fact they will often adjust to the change (Dolan & Kahneman, 2007).

More fundamentally, it does not make much sense to let an illness or disability dictate the value of an entire life. When we live, we care about many things beyond our health; and when we die, we lose far more than our EQ-5D score. An appropriate outcome measure will therefore try to capture a much greater proportion of what matters to us.

There are two potential ways of addressing these issues. One is to weight QALYs (or DALYs) using preference-based instruments with a better combination of pre-specified health and happiness dimensions. The Assessment of Quality of Life (AQoL-8D), for example, is more sensitive to psychosocial aspects of health (Richardson, Iezzi, Khan, & Maxwell, 2014) and the ongoing 'Extending the QALY' project aims to incorporate a broad range of experience and emotions.[12] While these efforts represent an improvement on current practice, their reliance upon public preferences in providing the weights for different domains and levels means they are still subject to some focusing effects, and potential failure to appreciate adaptation to physical health limitations.

An alternative approach is to use self-reports of happiness (or subjective well-being, as many researchers call it). These can be broadly divided into two types: evaluation (e.g. "Overall, how satisfied are you with your life/health/work?") and experience (e.g. "Overall, how worried/sad/happy were you yesterday?") (Kahneman & Riis, 2005). Evaluative questions are generally simpler to complete and reflect what we *think* about our lives, while experience-based measures capture how we *feel*, and lend themselves more directly to use in duration-weighted measures of benefit like the QALY or DALY (Dolan, 2015). Estimated happiness differs depending on the choice of measure (Dolan, Kudrna, & Stone, 2017), and both types can include items about a range of aspects of our lives, including meaning or purpose (OECD, 2013), so the use of self-reports of happiness does not completely eliminate the need for *a priori* judgements about what matters. However, they do allow us to find out how much a determinant of happiness (such as mobility) affects people's lives without asking them to directly ascribe its impact, thus avoiding focusing effects. Whatever measure, or combination of measures, is chosen, the results can be anchored to the 0–1 scale required to generate QALYs or DALYs.

Valuing health outcomes using changes in happiness, rather than changes in scores on preference-weighted health utility instruments such as EQ-5D, will often result in a different ranking of outcomes. As discussed above, non-health outcomes will now count – but the relative weight of different attributes of health will also change. Dolan & Metcalfe (2012) compared the values for each of the five dimensions of the EQ-5D obtained using different methods: one sample of the US general public used the TTO to value a range of hypothetical health states described by the EQ-5D, while another described their own health state with the EQ-5D, and also assessed their happiness using both a day affect measure

Figure 4: A comparison of EQ-5D scores based on time trade-off, life satisfaction and day affect

Source: Dolan & Metcalfe (2012). Error bars indicate 95% confidence intervals.

(which records positive and negative emotions) and a life satisfaction scale. As shown in Figure 4, each of the five dimensions received about the same utility decrement for level 2 (moderate problems) based on preference-based TTO score, while pain/discomfort and mobility were considered the worst problems at level 3 (severe). The happiness scores are less precise due to small sample sizes, but the contrast with the TTO weights is clear: experiencing anxiety/depression is by far the worst in terms of affect, followed by extreme pain/discomfort, while life satisfaction scores were similar for extreme anxiety/depression and being unable to perform one's usual activities. Mobility is most notable for its lack of impact on happiness.

These results are far from exceptional. Similar findings came out of UK data using life satisfaction as the outcome, with both EQ-5D and another common utility instrument, the SF-6D (Dolan, Lee, & Peasgood, 2012; Mukuria & Brazier, 2013). The pattern seems to hold in LMICs: Graham et al. (2011) analyzed EQ-5D questions included in the 2007 Gallup Poll in Latin America, and found that life satisfaction was more strongly associated with anxiety (and pain) than with mobility and usual activities.

In our own analysis, using data from the UK Household Panel Survey, Understanding Society[13] (University of Essex, 2018) we find that people with depression score slightly higher (hence are judged

to be healthier) on the SF-6D relative to a sample (matched for age and gender) with mobility problems. This contrasts with the substantially lower value of mean life satisfaction for the depressed group (0.64 lower on the 1 to 7 scale).

What does this mean for healthcare prioritization? Using the preference weights, reducing a mobility problem would normally be considered at least as valuable as improving anxiety/depression by the same amount. Using weights based on subjective well-being, improving mental health would generally be considered more important – and therefore, all else being equal, receive a greater share of the resources. These implications are discussed further in Section 4.

Recommendation 4: The benefits to all those affected should be included

When someone becomes sick or disabled, it has implications for the whole family in terms of worry and anxiety, a stressful living environment, and caring responsibilities. We could simply assume that, below a certain threshold of health, patients will require informal care, and that any health gain for the patient will bring a proportional gain to the carer – but this would not reflect reality in many cases (Brouwer, van Exel, & Tilford, 2010). For example, an improvement in sleep and an improvement in ability to perform personal care (such as bathing) may be equally valued from the patient's perspective, but the

Figure 5: Examples of the consequences of caring

A study of 151 primary family caregivers of haematologic cancer patients in Iran found many experienced a high level of financial distress and anxiety and depression (Abbasnezhad et al., 2015)

A cohort of 1,387 caregivers across mainland China found that dementia care had the greatest impact on caregivers' professional lives, with 25.5% reporting a reduced work schedule (Mould-Quevedo et al., 2013)

A study of 43 children of centenarian parents in Portugal found that caregiving impacts social and leisure dimensions, with important personal life plans needing to be changed (Brandão, Ribeiro & Martin, 2017)

A study of 104 children caring for blind parents in Ghana identified not attending school as a primary concern (Kuyini & Alhassan, 2016)

A study of 309 carers of Alzheimer's patients in China found that depression, anxiety and sleep problems were common (Liu et al., 2017)

A study of 100 caregiving mothers of children with epilepsy in Zambia found that 20% reported feeling stigmatized (Elafros et al., 2013)

Carers of patients who underwent cataract surgery in Vietnam reported improvements in attendance at work, hope, happiness and life satisfaction (Feeny et al., 2018)

A study of 300 carers of mental health patients in Uganda reported low quality of life (measured by WHOQOL-BREF) and high levels of stress (Ndikuno et al., 2016)

A study in the USA on 423 married couples found that providing practical support to others outside the household or emotional support to one's spouse reduced risk of mortality (Brown, Nesse, Vinokur, & Smith, 2003)

A study in the Netherlands found that people who provided care for between 1 and 5 hours per week were happier than non-carers, but that caregiving for over 11 hours was associated with lower happiness (van Campen, de Boer, & Iedema, 2012)

In study of 289 Canadian caregivers, 73% identified at least one positive aspect of caring, such as feeling fulfilled and finding a sense of companionship and meaning within the relationship (Cohen, Colantonio, & Vernich, 2002)

A study of 18 caregivers of patients with traumatic brain injury in Botswana found a significant proportion of caregivers experienced anxiety, depression, and social isolation (Mbakile-Mahlanza, Manderson, & Downing, 2017)

latter may have a much greater impact upon the carer. So it is important to take direct consideration of the impact upon carers and family members in resource allocation decisions.[14]

Many guidelines for economic evaluation in healthcare have recommended the inclusion of the health of family members as an additional QALY gain (e.g. Gold, Siegel, Russell, & Weinstein, 1996; NICE, 2013). Others have focused on the time-use aspect of caring by including caring costs in the analysis (such as guidelines from the Netherlands [Versteegh, Knies, & Brouwer, 2016]). Yet incorporating just the health of carers and family, or just the cost of the caring time, is insufficient as sickness or disability of a family member causes impacts that extend beyond health or time use.

Caring has wide-ranging impacts on health and happiness. Taking on a care-giving role has the potential to add purpose and meaning to life, to offer a sense of fulfillment and closeness to a loved one (Mackenzie & Greenwood, 2012). It also has the potential to have a substantially negative impact on the caregiver's happiness. As shown in Figure 5, studies from across the globe find caregivers to be at increased risk of anxiety, depression, poor sleep, social isolation, reduced productivity, impaired cognitive function, stigma, deteriorating financial situation, and loss of leisure time and activity. These effects cannot be captured purely by health outcome metrics or time use, and without measuring the full impact upon carers' happiness, evidence will not be provided to support good decision making around healthcare resource use (which may include direct activities to support carers).

The incorporation of carer happiness into HCA raises a couple of potential concerns. First, will individuals without family and friends be disadvantaged because an improvement in their health brings less overall benefit? Although including carer happiness may alter the relative benefits of providing treatment across conditions in favor of those with a larger carer burden, decisions to fund treatments are not made at the individual level but based on averages from patient groups, ensuring that no individual patient would be disadvantaged because of an absence of close friends or family.

Second, would a treatment that shortened a patient's life, or reduced their happiness, be preferred if the subsequent improvement in carer happiness were greater than the loss in happiness of the patient? This is an important challenge. Whilst cost-effectiveness analysis may by default adopt a consequentialist position that gives equal consideration to all those affected, this is not necessary. For example, different weights could be assigned to the patients and carers when aggregating changes in happiness, and rights-based criteria can be incorporated into the HCA process.

4. Implications of the shift from health to happiness

When using a happiness lens, the best interventions are those that most improve the happiness of everybody affected. In this section, we examine two areas with particularly high potential for happiness gains: mental health and end-of-life care.

Recommendation 5: Greater priority should be given to mental health

The burden of mental illness accounts for between 7% and 13% of DALYs worldwide, placing it alongside cardiovascular and circulatory diseases (Vigo, Thornicroft, & Atun, 2016). Through a happiness lens, the problem would appear even greater as mental disorders would be considered worse than current DALY or QALY weights imply (as discussed above). Further investment in cost-effective treatments, innovations in care, and a broader perspective on mental well-being would go a long way to improving lives around the world.

In high-income countries, the case for investment in mental health is overwhelming. As detailed in Chapter 3 of the 2018 Global Happiness Policy Report (Layard, 2018), every dollar spent on depression and anxiety treatment through England's Improving Access to Psychological Therapies program saves about the same amount in physical healthcare costs – making it cost-neutral to the health system – and generates an additional $2.50 or more in productivity gains. Thus, as well as alleviating a great deal of suffering, it makes sense from a purely financial perspective.

A similar case has been made for LMICs, where scaling up treatment coverage for common mental disorders would perhaps bring economic benefits of between 2.3 and 3.0 times the cost of the programs (Chisholm et al., 2016). Since these gains would be through increased productivity rather than public sector savings, however, the opportunity cost of investing in mental health must be carefully considered. In addition to financial constraints, progress in mental health in LMICs is hampered by limited health system capacity, widespread stigma, and a relatively sparse evidence base relevant to the developing world (Patel et al., 2016, 2018).

Nevertheless, even the current QALY and DALY frameworks suggest there are a number of attractive options for most middle-income countries. As shown in Table 2, regional estimates for *DCP3* (Levin & Chisholm, 2016) indicate that some standard interventions for depression and alcohol use disorders are cost-effective in many lower-middle-income settings, and that some upper-middle-income countries could additionally provide treatment for bipolar disorder and schizophrenia without displacing more valuable activities. Country-specific analyses – which are generally preferable to regional estimates – have also identified cost-effective treatments for depression (Prukkanone, Vos, Bertram, & Lim, 2012), migraine (Linde, Steiner, & Chisholm, 2015), and a selection of other mental and neurological conditions.[15]

The picture in the least developed settings is less clear. Using current outcome metrics, and thresholds based on opportunity cost, none of the mental health interventions covered in *DCP3* are cost-effective in the vast majority of low-income countries – nor in some of the most populous lower-middle-income nations, such as India, Pakistan, and Nigeria. It is possible that these countries could maximize their happiness by focusing on physical health, and it is important not to fall into the trap of presuming that the cause we are most passionate about just happens to be the top priority in every circumstance.

However, with outcomes properly measured in terms of the patient's overall happiness, it is reasonable to assume that more mental health treatments would be considered cost-effective – perhaps including some in low-income settings. Incorporating effects beyond the individual may

Table 2: Regional cost-effectiveness of interventions for mental, neurological, and substance use disorders

	Cost per QALY gained or DALY averted (USD)					
	Sub-Saharan Africa	Latin America & the Caribbean	Middle East & North Africa	Europe & Central Asia	South Asia	East Asia & the Pacific
Threshold (USD/DALY), median (range)	241 (58 – 4,500)	4,531 (164 – 16,559)	3,557 (234 – 6,342)	2,001 (385 – 9,510)	252 (138 – 1,636)	1,639 (239 – 5,889)
Schizophrenia	6,199 – 6,208	14,090 – 14,306	14,651 – 14,879	11,596 – 11,764	3,603 – 3,637	3,990 – 4,016
Bipolar disorder	4,662 – 7,828	13,722 – 15,781	11,810 – 13,517	9,631 – 11,795	3,990 – 4,016	4,270 – 5,610
Depression	1,440 – 2,614	3,470 – 5,086	3,156 – 5,004	2,535 – 3,329	811 – 1,411	923 – 1,471
Alcohol use disorders	407	878	–	494	684	332

Sources: Thresholds are from Ochalek et al. (2018), which did not include all countries in each region. Cost-effectiveness estimates are from Disease Control Priorities (3rd Edition), Volume 9, Chapter 12, Table 12.1 (Levin & Chisholm, 2016), inflated to 2015 USD, and are relative to a situation with no intervention. The ranges indicate the cost-effectiveness of different interventions within each condition.

further shift priorities. For example, the high cost of treating schizophrenia and bipolar disorder might be considered a good investment in most of the world after accounting for their considerable impact on caregivers, family members, and wider society. Unfortunately, the precise implications of a happiness lens cannot be known until the happiness effects of a wide range of physical and mental health interventions are systematically compared – a project which, to our knowledge, has not yet begun.

There is also an urgent need for more innovative, effective, low-cost, and scalable mental health treatments – both pharmacological and psychological.[16] One promising example of the latter is the Friendship Bench in Zimbabwe, where lay health workers are trained to diagnose and treat common mental disorders using a form of cognitive behavioral therapy. Its effectiveness has been established in a high-quality randomized controlled trial (Chibanda et al., 2015) and there are plans to roll it out across the country (Chibanda, 2017), though its cost-effectiveness has not yet been determined. As technology spreads to poor communities, there may also be an important role for therapy delivered through smartphone apps, such as *Mind Ease*[17] for anxiety and *UpLift*[18] for depression.

The most exciting developments in psychopharmacology involve the medical use of 'psychedelic' drugs, broadly defined.[19] In particular, a growing body of evidence supports the use of ketamine, psilocybin (the active ingredient in 'magic' mushrooms) and MDMA-assisted psychotherapy to treat depression, anxiety, obsessive-compulsive disorder, drug and alcohol addiction, and post-traumatic stress disorder (Duman, 2018; Reiche et al., 2018; Thal & Lommen, 2018). To some extent, their potential has been (belatedly) recognized by regulatory bodies: all three drugs have been designated 'Breakthrough Therapies' by the US Food and Drug Administration,[20] providing a fast track through the approval process, and intravenous ketamine is already available in a number of clinics in the US, Canada and the UK.[21]

However, much-needed further research is being hindered, in some jurisdictions, by their legal status. In the UK and many other countries, psilocybin and MDMA are categorised as Schedule 1, meaning they have no medical use. It can consequently take years and thousands of dollars to obtain permission to conduct even a very small study – and since the drugs are unpatentable, pharmaceutical companies have little incentive to make the required investment. The solution is simple: reclassify them as Schedule 2. This would retain the tight controls required to prevent misuse while permitting the necessary research. Governments should also consider funding the large, long-term, high-quality trials that will establish to what extent, for whom, and in what circumstances these treatments are cost-effective. There are few better opportunities to combat the intense suffering caused by mental illness around the world.

That said, there is a danger of taking an overly individualistic and treatment-oriented approach to mental health. Public health interventions that are not exclusively targeted at mental illness, many of which are delivered at a national or community level, have the potential to increase current happiness, improve health behaviours, reduce the risk of both physical and mental illness in the future, and extend life expectancy. 'Best practices' from *DCP3* include raising taxes on alcohol, which reduces the incidence of chronic diseases, injuries, and even HIV, as well as depression and alcohol addiction; and school-based social and emotional learning programs, which help improve academic performance while reducing substance abuse and other risky activities (Petersen, Evans-Lacko, Semrau, Barry, & Chisholm, 2017). Measures to tackle loneliness also seem important, given that social isolation is both highly detrimental to happiness and has about the same effect on survival as smoking (Pantell et al., 2013). Although many of these interventions could be justified by their impact on health and life expectancy alone, valuing the direct happiness gains will make them appear relatively more cost-effective and therefore more likely to be adopted.

Recommendation 6: End-of-life care should be improved

Across the globe, many people in their final months and days experience inappropriate healthcare – or in some places, no care at all. The focus of health systems on curing disease, enhancing 'health' and extending life (rather than improving happiness) is a major factor. Evaluating end of life care through a happiness lens has four

implications: considering the impact on loved ones; measuring and valuing people's actual experience at the end of life; withholding non-beneficial treatments; and improving access to pain relief and palliative care.

First, family and carers experience long-term effects from bereavement and, as we argued above, the impact upon the happiness of significant others should be taken into consideration in resource allocation decisions. When happiness is the outcome measure, interventions that directly support the patient's loved ones – which may include ways of making more positive memories of the patient's final months, days and hours,[22] grief counselling, or support with administration post-death – can be evaluated for their cost-effectiveness in the same way as health interventions.

Second, a happiness-based approach to end-of-life care would be based on helping people live well and die well. Studies which explore patients' concerns at the end of life find they typically extend to non-health factors and are not focused on prolonging life. For example, in a large survey across seven European countries, 71% of respondents chose "improve quality of life for the time they had left" as the main priority if faced with a serious illness, with just 4% saying that extending life was most important (Higginson et al., 2014). Likewise, older patients in Thailand were most concerned with knowing the truth about their illness, having relief from uncomfortable symptoms, being respected, and not receiving treatments intended to extend life when the chance of surviving is slim, with 76% of the respondents agreeing or strongly agreeing to the latter statement (Srinonprasert et al., 2014). Similar results have been found in high, middle- and low-income countries around the world, in all age groups, and among family and healthcare providers as well as patients (e.g. Meier et al., 2016; Powell et al., 2014). Measuring outcomes in terms of overall happiness will make it more likely that these types of non-health concerns will be taken into consideration.

In end-of-life care, there is often a perceived, and sometimes real, tension between clinicians', patients' and families' acceptance of forthcoming death and feeling hopeful that death will be delayed. Some researchers have even suggested the possibility of giving additional weight to interventions that offer hope (Garrison, Kamal-Bahl, & Towse, 2017). In some cases, happiness at the end of life may be indeed be higher if patients and their families hold onto the possibility of a cure, however slim. But providing false hope can also be detrimental to the happiness of both the patients and their loved ones, who are then denied an opportunity to prepare for death. In many circumstances, providing futile care also causes other individuals to suffer, or die prematurely, by using up scarce resources. Providing guidance in accepting death, rather than continuing to offer (potentially unpleasant) treatments, may therefore lead to the best outcomes overall.

A happiness lens enables this to be empirically evaluated. Looking at health outcomes will not suffice since dying well is not about sustaining health: we need measures of actual happiness up until the moment of death – and for relatives, considerably beyond. This may be an area with substantial variation across individuals and groups, so patient-level decision making will be aided by evidence of what 'people like me' experience across different treatment options.

Third, a focus on happiness can lead to the withdrawal of non-beneficial treatments (NBTs). Expensive, ineffective, and unpleasant interventions near the end of life are remarkably common. Cardona-Morrell and colleagues (2016) conducted a review of 38 studies across 10 countries looking into NBTs (which they defined as aggressive active management beyond comfort care, when the clinical presentation should have signaled the time for transition to palliative care) for elderly patients in the last six months of life. They found evidence of widespread (though variable) use in acute hospitals (33 to 38% receiving NBTs), including dialysis, radiotherapy, transfusions and life support treatments to terminal patients; non-beneficial administration of antibiotics, cardiovascular, digestive, and endocrine treatments; and non-beneficial tests, ICU stays, and chemotherapy in the final weeks of life.

In many cases, an earlier transition to palliative care would also improve health outcomes. For example, a trial among patients with a form of lung cancer at Massachusetts General Hospital compared regular treatment with regular treatment plus early palliative care. The latter resulted in less aggressive end-of-life care (stopping

chemotherapy sooner), higher quality of life and less depression – and patients lived for 2.7 months longer (Temel et al., 2010). The use of feeding tubes for patients with dementia (Finucane, Christmas, & Leff, 2007; Mitchell, Mor, Gozalo, Servadio, & Teno, 2016) and, in some circumstances, transitions to and from hospital (Mezey, Dubler, Mitty, & Brody, 2002) have also been found to reduce quality of life, and generally have no other benefit.

Even by current methods of evaluation, based on a health-focused DALY or QALY outcome measure, this level of intervention at the end of life is unlikely to be justified. A happiness lens that gives greater weight to non-health aspects of well-being should make this more apparent, and hopefully speed up adoption of palliative care, where appropriate, through altering the attitudes of healthcare providers. This process can be assisted by interventions that are known to be cost saving, or low cost, and enhance happiness, such as end-of-life discussions with doctors in which patients can express their preferences (Wright et al., 2008).

Fourth, a happiness-based framework would urgently demand better pain control in developing countries. The Lancet Commission on Palliative Care and Pain Relief reported that over 61 million people experienced serious health-related suffering in 2015, including more than 25 million approaching the end of their lives – 45% of everyone who died around the world that year. The vast majority had no access to palliative care or pain relief, most notably opioids. The contrast with wealthier nations is astonishing: of the 298.5 metric tonnes of morphine-equivalent opioids distributed in the world per year, only 0.1 tonnes are distributed in low-income countries (Knaul et al., 2018).

Unlike many treatments, this disparity is not primarily due to financial constraints. While poor health infrastructure is one factor, the greatest barriers are stigma around some forms of pain control, lack of training and awareness among clinicians, overly restrictive domestic regulations, and fear of addiction – concerns that inevitably influence political attitudes (Lohman, Schleifer, & Amon, 2010). To an extent, this is understandable: the epidemic of opioid abuse has killed about half a million Americans since the turn of the century,[23] driven largely by the over-prescription of opioids for relatively mild, chronic pain (deShazo, Johnson, Eriator, & Rodenmeyer, 2018). But such consequences can be avoided by implementing a few sensible measures, such as restricting use to moderate-to-severe pain that does not respond to alternatives, and tightly regulating opioid manufacturers (Humphreys, 2017). This has been demonstrated in Europe, a number of African countries, and the Indian state of Kerala, where morphine consumption has increased without leading to widespread abuse (Häuser, Petzke, Radbruch, & Tölle, 2016; O'Brien, Schwartz, & Plattner, 2018; Rajagopal, Karim, & Booth, 2017).

Again, much progress could be made in this area by consistently applying current evaluation methods, which already give substantial weight to pain and discomfort. But a happiness lens would give additional emphasis to these inherently subjective states, and help overcome the attitudes that underpin resistance to reform.

5. Some challenges to the happiness lens

The suggestion that happiness be used as the measure of benefit in HCA has come in for substantial criticism (e.g. Hausman, 2015; Smith, Brown, & Ubel, 2008). We will briefly discuss four issues: defining happiness, anchoring to the QALY scale, adaptation, and sensitivity.

First, there is philosophical disagreement about the meaning of 'happiness' or 'well-being' (Haybron & Tiberius, 2015), and therefore about how it should be operationalised (Dolan et al., 2017). Even among researchers who focus on *subjective* well-being (just one of several alternatives), there are still some unresolved questions about what feelings and cognitive states should be included – satisfaction, anxiety, joy, meaningfulness, pain, anger, grief, and so on – and about the methods for agreeing what should be included.

While not a trivial issue, this is not a good reason to continue using health-focused metrics. Any thoughtful option, or combination of options, that focuses on lived experience would capture far more of what matters in life than a measure of health alone. Moreover, it is worth noting that conceptual difficulties are not unique to happiness: definitions of 'health', 'mental health' and 'health-related quality of life' are also subject to disagreement (Karimi & Brazier, 2016).

Second, as noted in Section 3, QALYs use a scale on which 1 is the maximum and 0 is equivalent to dead, so negative values represent states that are worse than being dead. The scale is cardinal, meaning an increase in happiness from 0.8 to 0.9 is exactly as valuable as a change from 0.1 to 0.2 (or from -0.5 to -0.4). Movements along the scale represent equivalent proportional changes in life expectancy, so gaining 0.1 points for ten years is exactly as valuable as gaining one year in good health (or two years at 0.5). In contrast, there is no obvious 'dead' point on life satisfaction scales, which typically range from something like 'worst possible life' (zero) to 'best possible life' (10), nor on profiles of positive and negative affect.

With evaluative scales, one solution is to simply anchor the bottom (such as zero out of 10) to dead and the top (10/10) to 1. A linear relationship can be assumed, such that a 10% increase anywhere along the happiness scale (+1) is equivalent to a 10% increase anywhere along the QALY scale[24] (+0.1). However, this does not accommodate states worse than dead, which may result in too few resources going to people in extreme mental or physical pain. A second option is to stipulate in advance that a certain value on the happiness scale represents indifference between life and death; respondents could then evaluate their own happiness relative to that. Third, the general public, or individuals selected for their (current or past) experience of low subjective well-being, could be asked where on a given scale they would place 'dead', and the average of the responses could serve as the anchor point. These approaches, and others, require more research; but current methods have serious unresolved methodological flaws, particularly when applied to very poor health states (Bernfort, Gerdle, Husberg, & Levin, 2018; Tilling, Devlin, Tsuchiya, & Buckingham, 2010), so this is an area in which more methodological research should bring improvement.

Third, people are often surprised by how happy disabled individuals report themselves to be. In small but frequently-cited studies, paraplegics, blind people, and patients on kidney dialysis reported happiness levels above neutral and in some cases above those predicted by members of the public (Brickman, Coates, & Janoff-Bulman, 1978; Feinman, 1978; Sackett & Torrance, 1978). The standard explanation for this is 'hedonic adaptation': as people get used to a new situation, their actual (not just reported) level of happiness improves despite lack of change in objective circumstances (Myers & Diener, 1995). This raises a concern that measures of happiness will not capture the innate loss of capability that a health condition or disability brings, and that consequently too few resources will be allocated to people in such states (Graham, 2011; Sen, 1987).[25]

Two responses are in order. First, people do not always adapt fully to difficult circumstances, and if they do, it can take a long time. The paraplegics in Brickman et al. (1978), for example, remained permanently much less satisfied with their lives than the control group. Much larger, better-quality studies have since found widely varying degrees of adaptation, from very little and very slow to complete and rapid, depending to some extent on the severity of the disability (Cubí-Mollá, Jofre-Bonet, & Serra-Sastre, 2017; Howley & O'Neill, 2018; Lucas, 2007; Luhmann & Intelisano, 2018; Oswald & Powdthavee, 2008; Powdthavee, 2009). Second, it is worth stressing that prioritizing patients who have adapted necessarily means directing resources away from patients who have not adapted. The onus is surely on opponents of the happiness approach to provide a moral justification for a system that prefers greater suffering.

Finally, a related concern is that happiness measures may not be sensitive to small changes in physical health, which could hinder their use in healthcare decision-making (Mukuria, Rowen, Peasgood, & Brazier, 2016). This mirrors criticisms of generic preference-based measures (such as the EQ-5D), which have been found to be insensitive to perceived clinically relevant differences (Brazier, Roberts, Tsuchiya, & Busschbach, 2004; Bryan & Longworth, 2005; Davis & Wailoo, 2013; Hounsome, Orrell, & Edwards, 2011).

The failure to detect changes that do not affect how people think and feel is of questionable importance. Nevertheless, it is possible that, because happiness is influenced by many other factors, small yet important improvements in happiness following treatment may not be captured (particularly in small samples). Where this is the case, a pragmatic solution would be to measure intermediate outcomes that are more sensitive to change (such as mobility) and value them in line with their predicted contribution to well-being.

Existing happiness metrics have many flaws, and more research is needed into their use in HCA. But health utility instruments, as well as ignoring a large part of what matters in life, suffer from most of the same measurement problems – and others besides. So, while identifying the very best approach will be challenging, finding one that improves upon existing practice will not.

Conclusion

Healthcare improves and extends lives, but how the available resources are used is just as important as the amount spent. Ensuring the best possible outcomes from a fixed budget requires a transparent, systematic, evidence-based framework of healthcare appraisal (Recommendation 1) – one which only funds interventions that do more good than the activities they displace (Recommendation 2).

But it is vital that these systems optimize for what really matters. Since health spending affects many aspects of our lives, outcomes should be measured in terms of overall happiness, rather than health narrowly conceived (Recommendation 3). The considerable effect that illness – and recovery – can have on the patient's family and carers should also be fully accounted for (Recommendation 4).

Viewing health policy through a happiness lens has a number of implications for priority setting, of which we have highlighted two. First, more mental health interventions in more countries would appear cost-effective: policymakers should invest in these while supporting research into even better alternatives (Recommendation 5). Second, end-of-life care would become more humane: the impact on loved ones should be considered, aggressive yet futile treatments should normally be withheld, and effective pain relief should be made available to the tens of millions who die in agony every year (Recommendation 6).

A happiness-focused approach, like any other, is not without its challenges. But we are convinced that the imperfect pursuit of what ultimately matters (happiness) is better than the continued pursuit of only one, albeit important, part of this final consequence (health).

Endnotes

1 World Health Organization Global Health Expenditure Database estimates 9.9% of GDP spent on health in 2015 (http://apps.who.int/nha/database/Select/Indicators/en).

2 See https://ourworldindata.org/wp-content/uploads/2016/04/health-exp-vs-life-expectancyl.png and https://ourworldindata.org/wp-content/uploads/2016/04/health-exp-vs-u5mr-with-labels-1.png

3 For details of the cost-effectiveness analyses in *DCP3*, see Volume 9, Chapter 7 (http://dcp-3.org/node/2561).

4 Births attended by skilled health staff are the percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period; to conduct deliveries on their own; and to care for newborns. Where data was not available the most recent year for which data was available was used. The use of skilled birth attendants is widely held to be cost-effective although there is surprisingly little high-quality evidence of its cost-effectiveness across different countries. One randomized controlled trial in Zambia found that training traditional birth attendants to perform interventions targeting birth asphyxia, hypothermia, and neonatal sepsis reduced all-cause neonatal mortality by 45%. For the base case, optimistic, and conservative scenarios, the estimated cost per DALY averted was $74, $24, and $120, respectively (Sabin et al., 2012).

5 The analysis controlled for GDP per capita, health expenditure per capita, and a measure of government effectiveness (http://info.worldbank.org/governance/wgi/#home), which increases our confidence that the link is causal. Of course, there may be other factors that we have not accounted for, but it is notable that we found no association between indicators of potentially less cost-effective healthcare, such as the number of hospital beds, and health outcomes.

6 The most recent Global Burden of Disease Study estimated that all-cause age-standardised rates of years lived with disability (YLDs), which do not account for changing demographic profiles, decreased by 3.9% between 1990 and 2017, while the total YLDs – the most relevant consideration for health systems – increased by 29.8% (James et al., 2018).

7 See, for example, https://www.ispor.org and https://htai.org

8 See, for example, EUROSCAN and the International Network of Agencies for Health Technology Assessment: http://www.inahta.org

9 Based on a GDP per capita of £25,442 in 2008, the same year as the cost data in Claxton et al. (2015) (https://data.worldbank.org/indicator/NY.GDP.PCAP.CN?locations=GB)

10 http://www.healthdata.org/gbd

11 Despite their similarity, differences in both the description and valuation of QALYs and DALYs can lead to substantial disparities in cost-effectiveness estimates (Augustovski et al., 2017)

12 https://scharr.dept.shef.ac.uk/e-qaly/

13 Understanding Society is an initiative funded by the Economic and Social Research Council and various Government Departments, with scientific leadership by the Institute for Social and Economic Research, University of Essex, and survey delivery by NatCen Social Research and Kantar Public. The research data are distributed by the UK Data Service.

14 Ideally, impacts on wider society would also be taken into account. For example, a decision relating to local versus centralized hospital provision may wish to value the reassurance a known facility offers the local population. Similarly, evaluations of universal free basic healthcare may wish to include the added security and reduced anxiety experienced by those who do not subsequently become patients. But measuring literally *all* effects is impossible, so a line has to be drawn somewhere. When setting priorities within the health sector, it may not currently be feasible, or offer value for money, to extend the net beyond the family and carers.

15 For complete lists of studies, cost results, and cost-effectiveness estimates for mental, neurological, and substance use disorders in *DCP3*, see http://dcp-3.org/chapter/2227/mental-health-annexes

16 For a list of programs and research projects around the world, see http://www.mhinnovation.net/innovations

17 See https://www.mindease.io/

18 See https://www.uplift.us/

19 The term *psychedelic* is sometimes restricted to serotonergic hallucinogens such as LSD, DMT and psilocybin. However, it is used here to refer also to dissociatives such as ketamine and empathogens such as MDMA.

20 Ketamine: https://www.jnj.com/media-center/press-releases/esketamine-recieves-breakthrough-therapy-designation-from-us-food-and-drug-administration-for-major-depressive-disorder-with-imminent-risk-of-suicide
Psilocybin: https://www.prnewswire.com/news-releases/compass-pathways-receives-fda-approval-for-psilocybin-therapy-clinical-trial-for-treatment-resistant-depression-868824616.html
MDMA: https://maps.org/news/media/6786-press-release-fda-grants-breakthrough-therapy-designation-for-mdma-assisted-psychotherapy-for-ptsd,-agrees-on-special-protocol-assessment-for-phase-3-trials

21 E.g. https://newpathways.co/ (USA), https://www.crtce.com/ (Canada), https://www.oxfordhealth.nhs.uk/ketamine-service/ (UK).

22 "How people die remains in the memories of those who live on" (Saunders, 1984)

23 Based on data from https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates

24 For convenience, we only refer to the QALY in the discussion below, but all comments apply equally to the DALY, with trivial differences to match the inverted scale.

25 This applies to interventions that improve quality of life, not those that extend life, where the higher value attached to the adapted state would result in greater benefit of each additional life year.

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Chapter 3 **Appendix**

This appendix contains further presentation and analysis of cost-effectiveness thresholds in low- and middle-income countries using data from the following study:

Ochalek J, Lomas J, Claxton K. Estimating health opportunity costs in low-income and middle-income countries: a novel approach and evidence from cross-country data. BMJ Global Health 2018; 3: e000964. http://dx.doi.org/10.1136/bmjgh-2018-000964

Cost-effectiveness thresholds for low-income countries

Country	Region*	Cost per DALY averted	
		2015 USD (range)	% GDP per capita (range)
Bangladesh	SAS	$140 (114 – 165)	12% (9 – 14)
Benin	SSF	$199 (171 – 223)	26% (22 – 29)
Burkina Faso	SSF	$153 (138 – 182)	26% (23 – 31)
Burundi	SSF	$112 (99 – 131)	41% (36 – 47)
Cambodia	EAS	$244 (189 – 276)	21% (16 – 24)
Chad	SSF	$139 (124 – 165)	18% (16 – 21)
Comoros	SSF	$273 (233 – 311)	38% (33 – 43)
Democratic Republic of the Congo	SSF	$60 (54 – 69)	13% (12 – 15)
Eritrea	SSF	$129 (112 – 147)	24% (21 – 27)
Ethiopia	SSF	$192 (167 – 221)	31% (27 – 36)
Gambia, The	SSF	$288 (247 – 326)	61% (52 – 69)
Guinea	SSF	$125 (111 – 145)	23% (21 – 27)
Guinea-Bissau	SSF	$58 (52 – 68)	10% (9 – 12)
Haiti	LCN	$166 (133 – 190)	20% (16 – 23)
Kenya	SSF	$576 (491 – 647)	42% (36 – 47)
Madagascar	SSF	$76 (66 – 87)	19% (16 – 22)
Malawi	SSF	$140 (124 – 164)	38% (33 – 44)
Mali	SSF	$77 (69 – 93)	11% (10 – 13)
Mozambique	SSF	$220 (189 – 244)	42% (36 – 46)
Nepal	SAS	$256 (206 – 291)	34% (28 – 39)
Niger	SSF	$99 (88 – 118)	27% (25 – 33)
Rwanda	SSF	$247 (211 – 277)	35% (30 – 40)
Sierra Leone	SSF	$117 (105 – 137)	18% (16 – 21)
Tajikistan	ECS	$392 (323 – 449)	42% (35 – 48)
Tanzania	SSF	$266 (231 – 305)	30% (26 – 35)
Togo	SSF	$134 (117 – 153)	24% (21 – 27)
Uganda	SSF	$134 (117 – 154)	19% (17 – 22)
Zimbabwe	SSF	$244 (202 – 273)	26% (22 – 30)
Mean		**$188 (160 – 215)**	**28% (24 – 32)**
Median		**$147 (129 – 173)**	**26% (22 – 29)**
Range		**$58 – 576**	**10 – 61%**

Source: Ochalek et al. (2018)

*SAS = South Asia. SSF = Sub-Saharan Africa. EAS = East Asia & the Pacific. LCN = Latin America & the Caribbean. ECS = Europe & Central Asia.

Cost-effectiveness thresholds for lower-middle-income countries

Country	Region*	Cost per DALY averted	
		2015 USD (range)	% GDP per capita (range)
Armenia	ECS	$1,239 (954 – 1,422)	36% (27 – 41)
Bolivia	LCN	$2,616 (2,106 – 3,053)	85% (68 – 99)
Cameroon	SSF	$120 (107 – 140)	10% (9 – 12)
Cape Verde	SSF	$2,463 (1,938 – 2,843)	80% (63 – 92)
Congo	SSF	$1,438 (1,235 – 1,613)	78% (67 – 87)
Cote d'Ivoire	SSF	$231 (205 – 268)	16% (15 – 19)
Egypt	MEA	$1,237 (977 – 1,474)	34% (27 – 41)
El Salvador	LCN	$3,395 (2,573 – 3,832)	80% (61 – 91)
Georgia	ECS	$950 (743 – 1,044)	25% (20 – 27)
Ghana	SSF	$433 (371 – 491)	32% (27 – 36)
Guatemala	LCN	$1,516 (1,226 – 1,726)	39% (31 – 44)
Guyana	LCN	$1,978 (1,566 – 2,147)	48% (38 – 52)
Honduras	LCN	$2,190 (1,707 – 2,530)	87% (68 – 100)
India	SAS	$317 (264 – 363)	20% (17 – 23)
Indonesia	EAS	$679 (535 – 778)	20% (16 – 23)
Kyrgyzstan	ECS	$837 (644 – 973)	76% (58 – 88)
Lesotho	SSF	$652 (556 – 718)	61% (52 – 67)
Mauritania	SSF	$317 (272 – 360)	23% (20 – 26)
Moldova	ECS	$2,080 (1,570 – 2,353)	113% (85 – 127)
Mongolia	EAS	$1,764 (1,394 – 1,949)	44% (35 – 49)
Morocco	MEA	$1,191 (927 – 1,484)	41% (32 – 52)
Nicaragua	LCN	$2,687 (1,830 – 3,674)	129% (88 – 176)
Nigeria	SSF	$246 (214 – 291)	9% (8 – 11)
Pakistan	SAS	$153 (133 – 175)	11% (9 – 12)
Paraguay	LCN	$4,716 (3,401 – 5,797)	116% (83 – 142)
Philippines	EAS	$845 (672 – 987)	29% (23 – 34)
Senegal	SSF	$339 (284 – 371)	38% (32 – 41)
Sri Lanka	SAS	$1,687 (1,281 – 2,090)	43% (33 – 53)
Sudan	SSF	$351 (302 – 398)	15% (12 – 16)
Swaziland	SSF	$1,888 (1,505 – 2,351)	59% (47 – 73)
Ukraine	ECS	$1,377 (1,059 – 1,626)	65% (50 – 77)
Uzbekistan	ECS	$1,237 (985 – 1,426)	58% (46 – 67)
Vietnam	EAS	$1,585 (1,198 – 1,813)	75% (57 – 86)
Yemen	MEA	$237 (202 – 267)	17% (14 – 19)
Zambia	SSF	$504 (417 – 575)	39% (32 – 44)
Mean		**$1,300 (1,010 – 1,526)**	**50% (39 – 59)**
Median		**$1,237 (954 – 1,426)**	**41% (32 – 49)**
Range		**$120 – 4,716**	**9 – 129%**

Source: Ochalek et al. (2018)

*SAS = South Asia. SSF = Sub-Saharan Africa. EAS = East Asia & the Pacific. LCN = Latin America & the Caribbean. ECS = Europe & Central Asia.

Cost-effectiveness thresholds for upper-middle-income countries

Country	Region*	Cost per DALY averted	
		2015 USD (range)	% GDP per capita (range)
Albania	ECS	$2,861 (2,087 – 3,338)	73% (53 – 85)
Algeria	MEA	$5,173 (4,086 – 6,485)	123% (97 – 154)
Argentina	LCN	$6,445 (4,936 – 7,469)	48% (37 – 56)
Azerbaijan	ECS	$1,673 (1,345 – 1,954)	30% (24 – 36)
Belarus	ECS	$4,095 (3,113 – 4,967)	71% (54 – 87)
Belize	LCN	$4,000 (2,935 – 4,808)	82% (60 – 99)
Botswana	SSF	$2,710 (2,097 – 3,411)	43% (33 – 54)
Brazil	LCN	$7,952 (6,048 – 9,318)	93% (71 – 109)
Bulgaria	ECS	$5,286 (4,067 – 5,952)	76% (58 – 85)
China	EAS	$4,823 (3,650 – 5,669)	60% (45 – 71)
Colombia	LCN	$9,391 (7,067 – 11,459)	155% (117 – 189)
Costa Rica	LCN	$17,200 (12,473 – 21,327)	153% (111 – 189)
Dominica†	LCN	$4,731 (3,740 – 5,849)	66% (53 – 82)
Dominican Republic	LCN	$3,593 (2,731 – 4,045)	56% (42 – 63)
Ecuador	LCN	$5,808 (4,479 – 6,965)	94% (72 – 112)
Gabon	SSF	$2,758 (2,275 – 3,047)	33% (28 – 37)
Jamaica	LCN	$2,685 (2,137 – 3,270)	51% (41 – 63)
Jordan	MEA	$6,617 (4,917 – 8,771)	134% (100 – 178)
Kazakhstan	ECS	$4,918 (3,734 – 5,809)	47% (36 – 55)
Lebanon	MEA	$6,548 (4,704 – 9,105)	81% (58 – 113)
Macedonia	ECS	$4,849 (3,373 – 6,335)	100% (70 – 131)
Malaysia	EAS	$6,121 (4,396 – 7,314)	63% (45 – 75)
Mauritius	SSF	$4,608 (3,560 – 5,442)	50% (38 – 59)
Mexico	LCN	$7,401 (5,723 – 8,730)	82% (64 – 97)
Namibia	SSF	$4,041 (3,142 – 5,014)	86% (67 – 107)
Panama	LCN	$14,315 (11,003 – 17,101)	108% (83 – 129)
Peru	LCN	$5,071 (3,836 – 6,531)	84% (64 – 108)
Romania	ECS	$7,027 (5,382 – 7,838)	78% (60 – 87)
South Africa	SSF	$3,035 (2,480 – 3,334)	53% (43 – 58)
Thailand	EAS	$5,493 (4,069 – 6,507)	94% (70 – 112)
Tunisia	MEA	$3,688 (2,763 – 4,730)	95% (71 – 122)
Turkey	ECS	$9,902 (7,446 – 13,032)	109% (82 – 143)
Turkmenistan	ECS	$2,004 (1,636 – 2,230)	30% (25 – 33)
Venezuela	LCN	$4,716 (3,618 – 5,540)	38% (29 – 45)
Mean		**$5,634 (4,266 – 6,844)**	**78% (59 – 95)**
Median		**$4,884 (3,737 – 5,900)**	**77% (58 – 87)**
Range		**$1,673 – 17,200**	**30 – 155%**

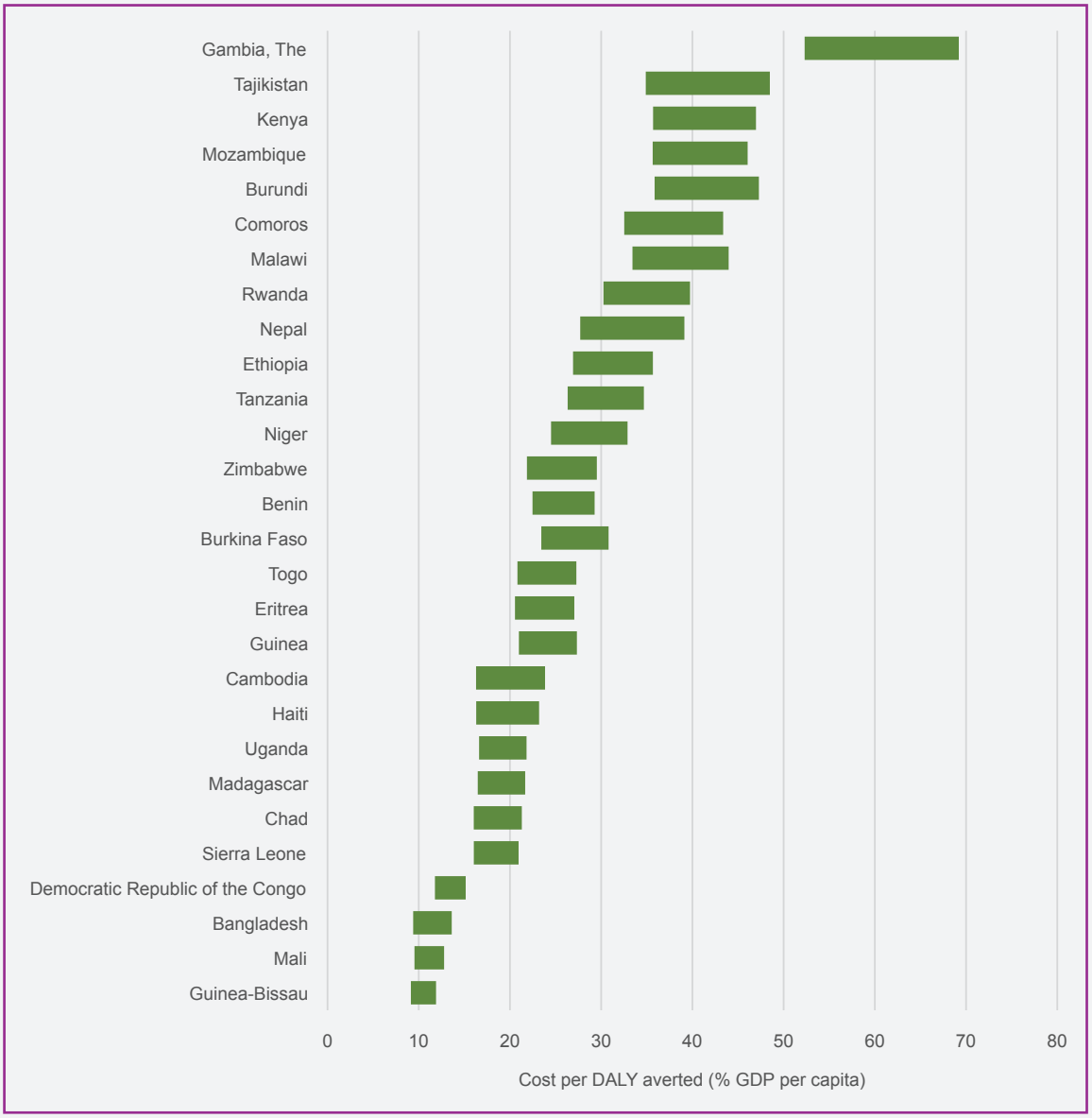
Source: Ochalek et al. (2018)

†Based on three, rather than four, estimated thresholds due to data unavailability.

*SAS = South Asia. SSF = Sub-Saharan Africa. EAS = East Asia & the Pacific. LCN = Latin America & the Caribbean. ECS = Europe & Central Asia.

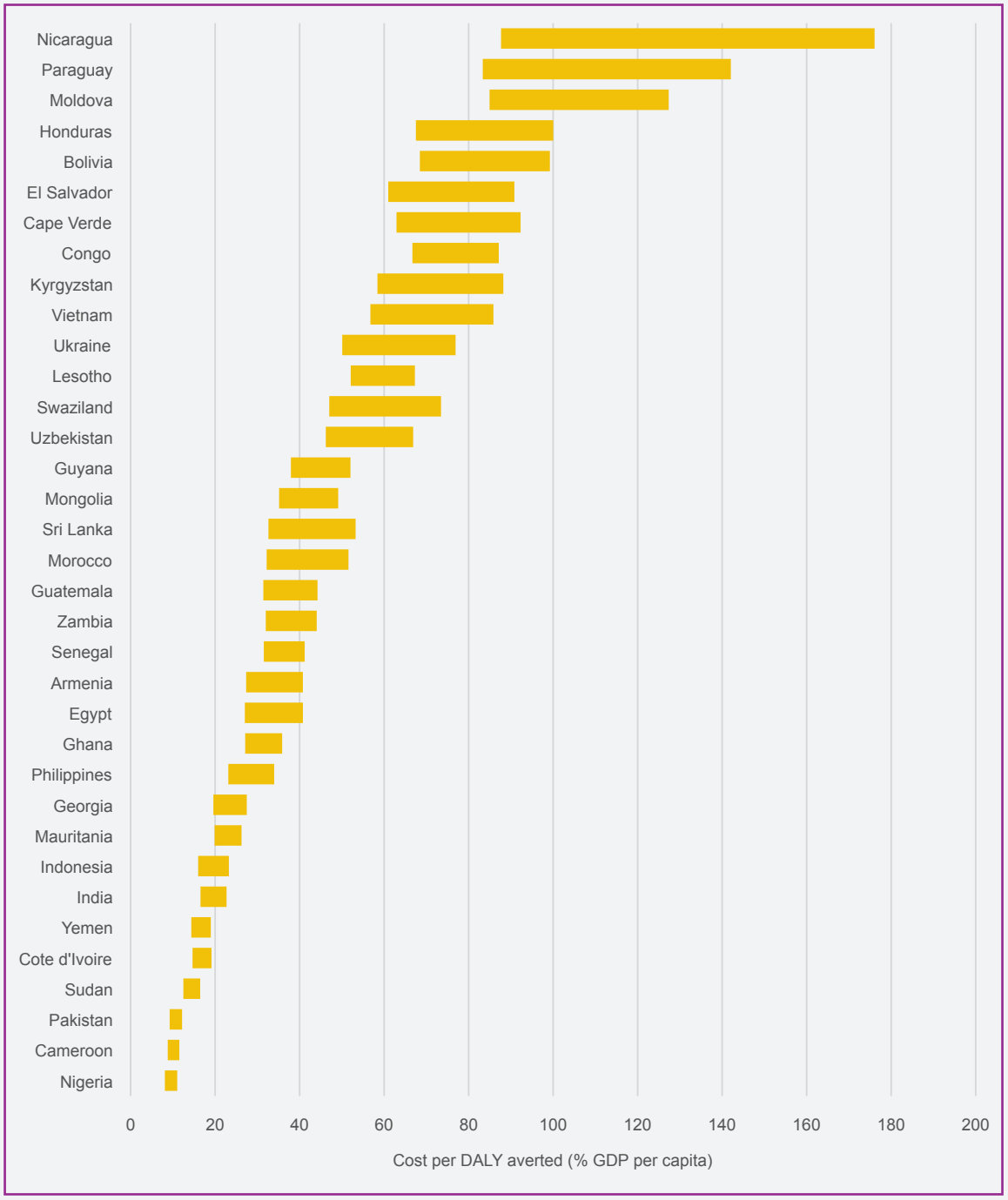
Cost-effectiveness thresholds as a proportion of GDP per capita, by income group

Low-income countries



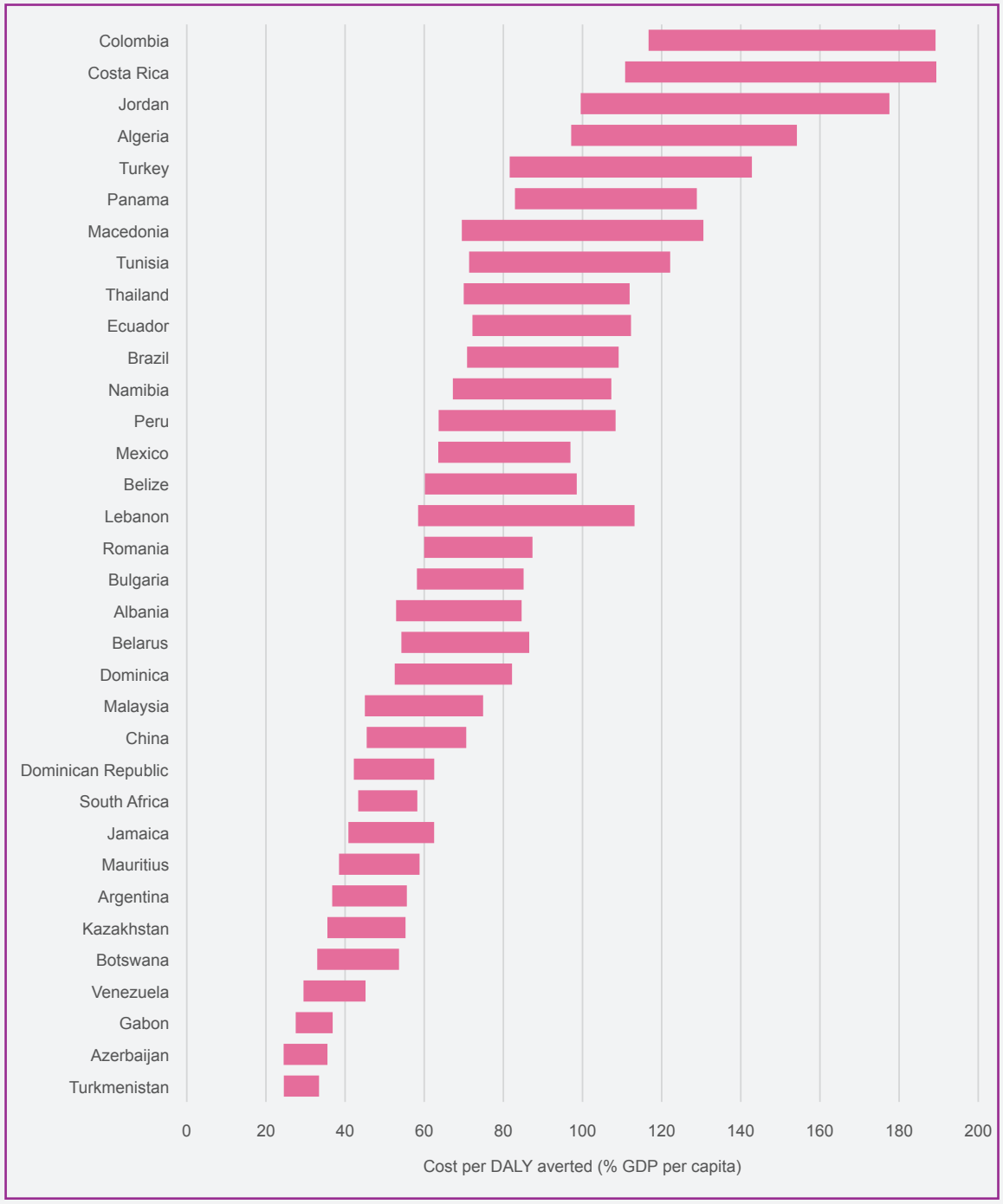
Cost-effectiveness thresholds as a proportion of GDP per capita, by income group

Lower-middle-income countries



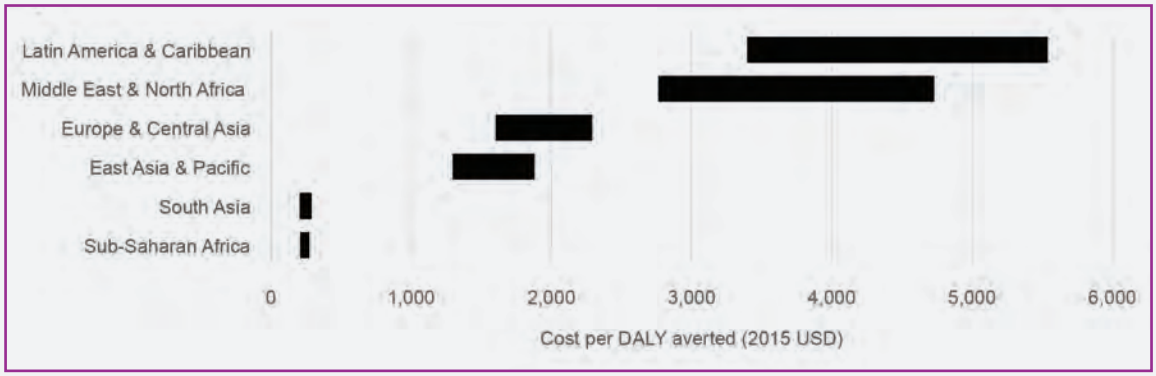
Cost-effectiveness thresholds as a proportion of GDP per capita, by income group

Upper-middle-income countries



Cost-effectiveness thresholds by region

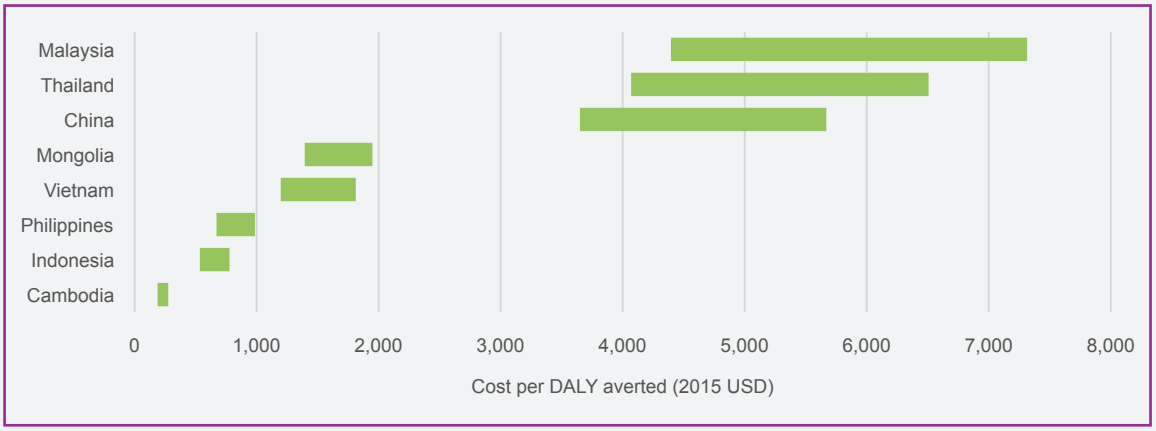
Regional estimates*



*The bars indicate the range of possible medians, based on the median of the lowest and the median of the highest of the four estimates for all countries in the region.

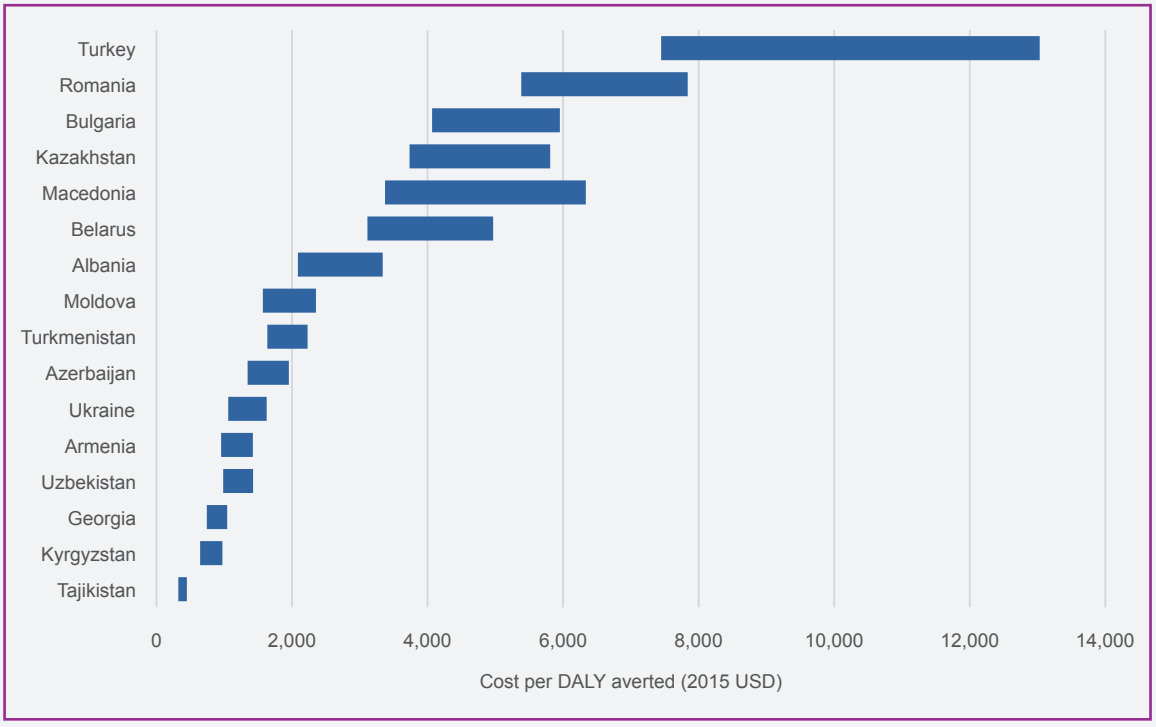
Cost-effectiveness thresholds by region

East Asia & the Pacific



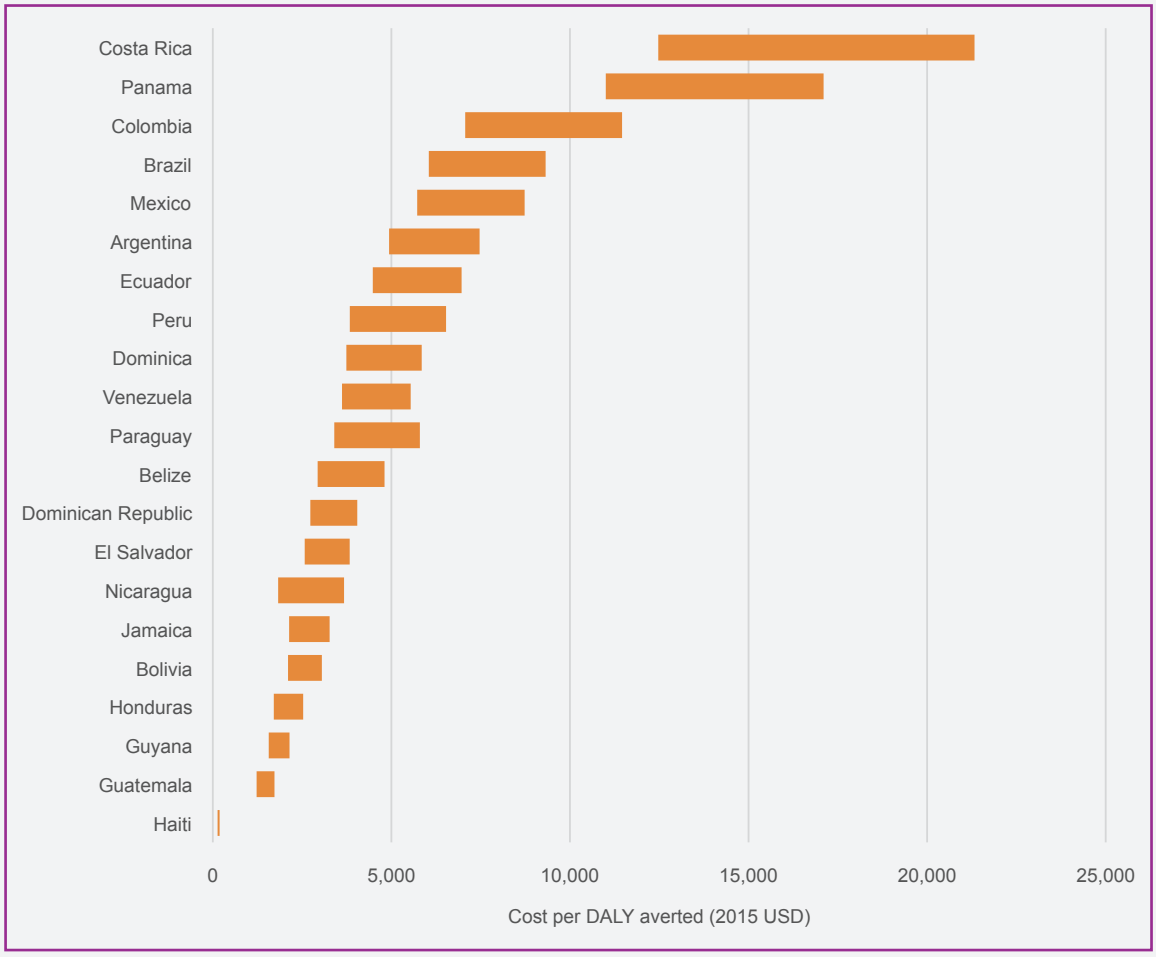
Cost-effectiveness thresholds by region

Europe & Central Asia



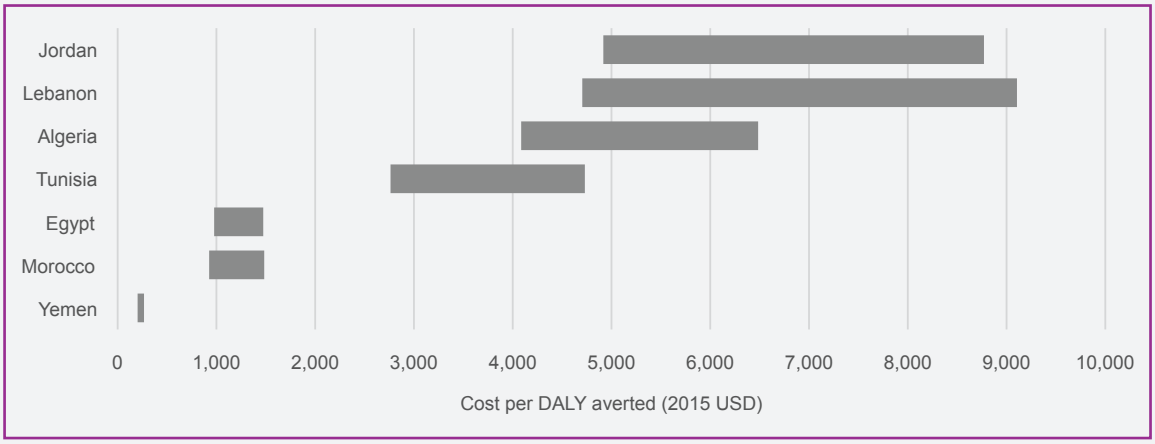
Cost-effectiveness thresholds by region

Latin America & the Caribbean



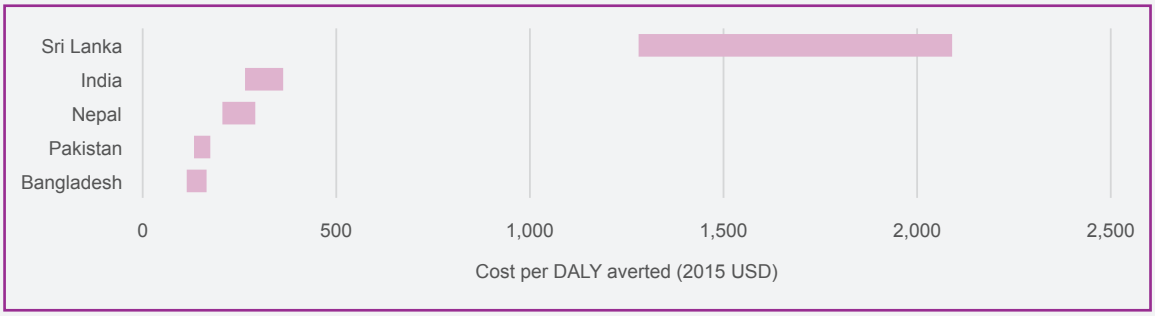
Cost-effectiveness thresholds by region

Middle East & North Africa



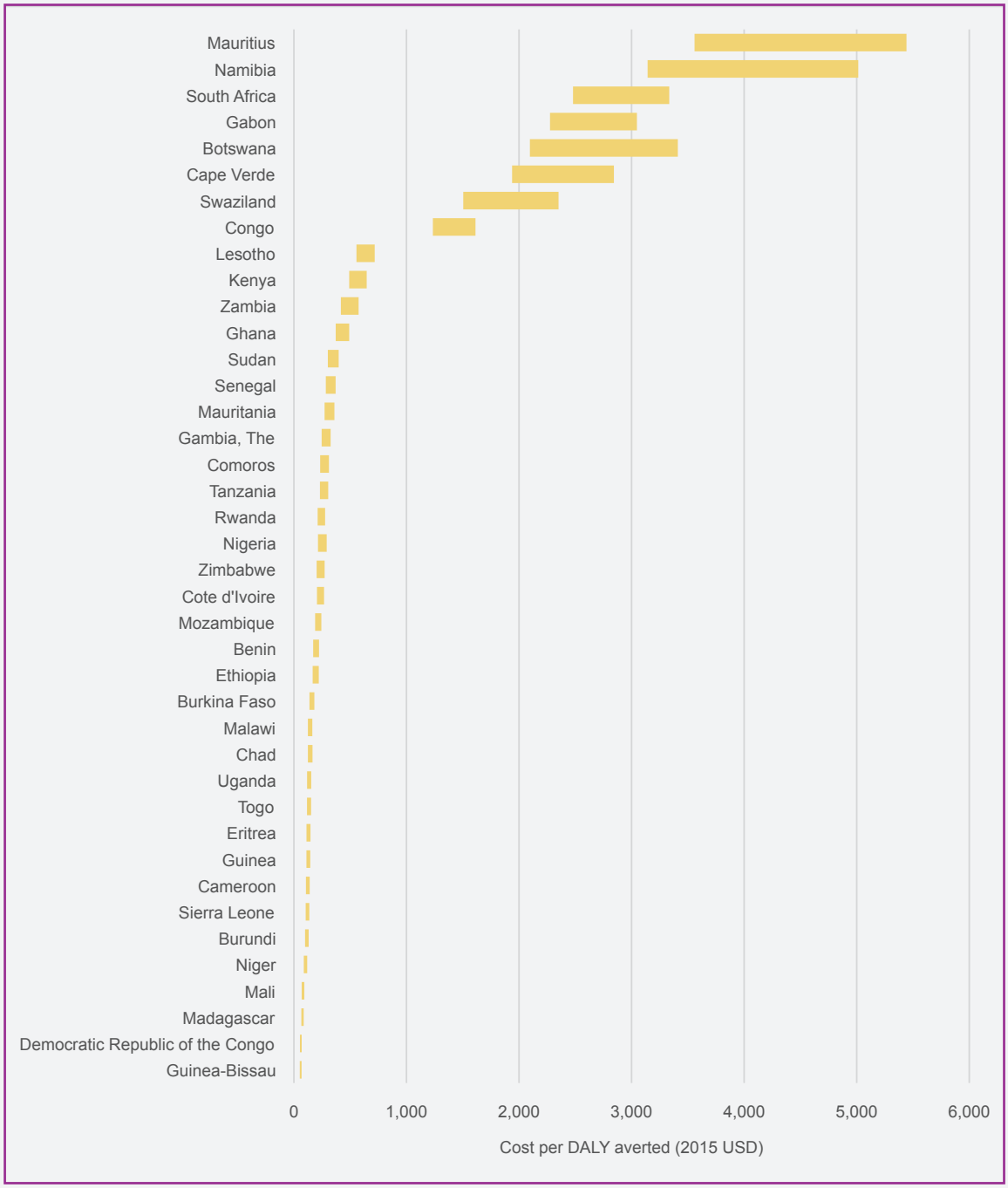
Cost-effectiveness thresholds by region

South Asia



Cost-effectiveness thresholds by region

Sub-Saharan Africa



Chapter 4

Positive Education

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The members wrote drafts about PosEd in their regions of the world but were not responsible for the report as a whole. We are grateful to all of the following people who provided updates about their projects: Hector Escamilla, Chris Stawski, Angela Duckworth, Justin Robinson, Mathew White, Yukun Zhao, Jo Maher, Kerry Sanderson, Alan Martin, Guang Zeng; Ye Hong, David Cooperrider, Steve Leventhal, Sharron Russell, and Tal Ben-Shahar.

Since this Chapter is aimed at education policy and decision makers at all levels, we begin with a "How To" Checklist that summarizes ideal steps to a sustained systemic shift towards Positive Education. In the rest of this chapter, we expand on each of these twelve chronological steps of Positive Education.

Positive Education "How To" Checklist

- ☐ 1. Contextual and cultural immersion and understanding
- ☐ 2. Multi-stakeholder engagement
- ☐ 3. Needs and goals assessment
- ☐ 4. Quantitative baseline measurement
- ☐ 5. Curricular development and adaptation
- ☐ 6. Training of educators
- ☐ 7. Curriculum implementation
- ☐ 8. Ongoing training and embedding
- ☐ 9. Post-intervention measurement and ongoing impact evaluation
- ☐ 10. Evidence-based policy design and legal institutional embeddedness
- ☐ 11. Large-scale policy implementation
- ☐ 12. Ongoing evidence-based evaluation, adaptation, and evolution

Last year we reported on the state of Positive Education (PosEd) around the world. There has indeed been progress in the last twelve months on several fronts and in several nations and we will update the progress. But this chapter will mostly be a "how to" guide. Positive Education is spreading and it seems to be a bottom-up movement. Students, teachers, and parents learn about it, believe in it, and then advocate for it. But this requires convincing the people who actually run schools and universities to adopt it. These executives have small budgets and many competing factions demanding their piece of the budget. PosEd is not inexpensive and PosEd requires training of teachers and re-tooling of curricula. Therefore, it is no simple matter to convince education decision-makers to adopt it. So, we start with four "how-to" case histories. The first comes from Geelong Grammar School's endeavors to build whole school Positive Education. The second comes from Adelaide, Australia and shows how The University of Adelaide imbedded Positive Education into teacher training on a state-wide basis. The third comes from Monterrey, Mexico and tells the story of the first entire Positive Education University. The fourth comes the wide experience of Alejandro Adler in convincing ministers of education of entire nations to adopt Positive Education.

We begin with our definition of our subject matter. Positive Education has three aspects: 1) The **goal** of PosEd is to produce both well-being as well as to forward the traditional outcomes of schooling.

2) PosEd **measures** the well-being outcomes before and after: measures of "happiness," which are decomposed into elements less vague than the highly ambiguous term, "happiness." In addition, PosEd measures the relief of ill-being or unhappiness, typically depression and anxiety. Third, PosEd measures academic success. The specific measures are detailed in our 2018 report.

3) PosEd uses reasonably well-validated interventions that increase well-being and decrease ill-being (for meta-analyses of positive interventions and their validation, see Sin & Lyubomirsky, 2009 and Boller, Haverman, Westerhof et al, 2013). The specific interventions are detailed in our 2018 report.

Given this definition we now turn to four case histories, four lessons in how to spread PosEd at scale.

Our first case study comes from Geelong Grammar School, where Positive Education began in 2008.

"How to" implement Positive Education: Whole School Approach

Over the past ten years GGS has committed both human and financial resources to its whole-school approach of nurturing both a love of learning and a love of life. While exciting progress and growth have been seen over the past decade, the school recognizes that Positive Education is an ongoing journey. Through harnessing the heart, hands, and minds of the school community, the school has been energized by the many specific activities, lessons and interventions that naturally ebb and flow. What remains strong and bold, however, is a continual commitment to placing well-being at the heart of education (Norrish, 2015).

How did Geelong Grammar School do it?

Step 1: Carry out extensive research and due diligence

For GGS, it didn't start in 2008 when Professor Martin Seligman and a team of colleagues from the University of Pennsylvania trained 100 of our staff on a nine-day Positive Psychology course. It started more than two years earlier as the School investigated ways to proactively nurture student well-being. What began as an initiative to build an integrated Wellbeing Centre Building, evolved into complementing this iconic building with a deep underlying philosophy and framework for nurturing staff and student well-being. This philosophy was coined as 'Positive Education'.

Step 2: Engage with experts in the field

The empirical evidence and rigor that comes with Positive Education is an important hook for many staff and parents within a school community. To leverage this science, GGS was able to engage with a large number of national and international experts in the fields of positive psychology, resilience, educational and developmental psychology and more. Each visitor's expertise added insights to our ever-evolving program and philosophy and contributed to the validation of this new field.

Step 3: Bring the community along on the journey

Providing clear and consistent messaging as to the aims and hopes of Positive Education is

essential. Articles in school publications, public addresses, opportunities for parents to ask questions and seek clarification were all part of the implementation plan. All stakeholders were kept regularly informed, using jargon-free language and were invited to ask any questions and raise any concerns. The key personnel leading the change welcomed questions and contributions from colleagues, understood and embraced *skepticism* but urged staff not to take a *cynical*, closed-minded approach to Positive Education. The hope was to both kindle curiosity and develop a sense of shared ownership for our staff, parents and students.

Step 4: Combine the decision-making authority of the School leaders with the knowledge and enthusiasm of the teachers who have daily contact with the students

With School leadership on board and fully committed to the implementation of Positive Education, it was then vital to empower teachers in the classroom, and non-teaching colleagues in their offices to trial, adapt, design and pilot ideas and activities to nurture well-being in their environments and circles of influence.

Step 5: Ensure sustainability through establishing an in-house training team

To ensure the long-term viability of Positive Education it became evident that the School needed to invest in building the capacity of a small number of colleagues to lead and drive the ongoing delivery of Positive Education training to new staff members, new parents and new students. This led to full-time Positive Education faculty. Of course, beyond the initial training course, ongoing professional learning sessions are vital to keep the concepts fresh and to ensure the community stays abreast of the latest developments in the relatively young and evolving science of well-being.

Step 6: Realize the commitment is an ongoing commitment

The School was advised from a very early stage that any investment in human resources and operational costs for Positive Education would not be a one-off payment, but would be an ongoing financial cost. The School continues to fund a Positive Education department which consists of a Head of Department, Positive Education Campus Coordinators, Activity Leaders and classroom teachers.

The second case study is how to radically change teacher education.

The Wellbeing Framework for Initial Teacher Education at the University of Adelaide

Teaching is a highly complex profession. Aspiring teachers start wanting to contribute positively to learning and engagement with school students, but are often overwhelmed with the complexity of their roles. They grapple with professional identity while confronted by poor school literacy and numeracy, and this results in widespread declines in student engagement in schools. Teachers' well-being itself has a significant role to play in the attraction, retention and sustainability of teachers for the profession. To consider the teachers' well-being is new across the world as most research to date has focused on the deficit model that contributes to an unwell teacher. Very little research identifies how to develop well teachers and sustain their health and well-being. We argue for an equitable and sustainable approach, one that integrates well-being as a part of pre-service teacher education from the very outset. We claim this will better prepare pre-service teachers for the complexities of the profession. It also is a pathway to show pre-service teachers how to teach well-being to their future students.

The University of Adelaide

The University of Adelaide's School of Education is one of the oldest, yet most innovative and influential, educational research-intensive schools in Australia. Over the past 18 months, the School of Education has reviewed all undergraduate and postgraduate initial teacher education programs to ensure graduates are job-ready and able to make a positive impact on student learning when they start teaching. While a growing number of Australian primary and secondary schools have adopted a scientific approach to well-being, and professional development programs are available around the world until now university pre-service teacher education has failed to prepare teachers adequately for the social, emotional, and physical aspects of the job (McCallum (2016, p115 – 116), (Kern & White, 2018; White, 2015, pp. 167-175; White, 2017).

Why initial teacher education?

Teachers are surely the most important in-school factor contributing to student achievement, belonging, satisfaction and flourishing (Hattie & Yates, 2014; Allen, Kern, Vella-Brodrick, Hattie, & Waters, 2018). However, up to 53 percent of beginning teachers leave teaching within the first five year--across the world. Over a decade ago Moon (2007) advised that teachers were leaving due mainly to 'burn-out', increasing demands of the role as the curriculum is crowded with more and more issues that society cannot deal with, coupled with the administrative burdens and teacher accountability connected for results with challenging student behaviors, and mounting stress on families and communities.

The impact of teachers leaving the profession is the loss of quality teaching graduates, which will, in turn, undermine the long-term development of an educated, healthy workforce. Integrating a Wellbeing Framework into initial education degrees establishes the importance of well-being early in a teaching candidate's journey.

A Wellbeing Framework

In 2018 under the leadership of Professor Faye McCallum, Associate Professor Mathew White and the team at the School of Education at the University of Adelaide created an evidence-based Wellbeing Framework for teacher education. To be implemented in 2019, the framework integrates foundational elements from character virtue philosophy and evidence-based approaches with well-being. This significant reform in the Bachelor of Teaching and Master of Teaching programs was achieved while addressing the requirements established by the Teachers Registration Board of South Australia, and it also explicitly addresses the Australian Institute for Teaching and School Leadership's (AITSL, 2016) Australian Professional Standards for Teachers and Leaders (APSTs)

Curriculum Design Participants

The Learning Enhancement and Innovation partnership teams for the Bachelor of Teaching and Master of Teaching programs included:

- Heads of School
- Program Directors
- Course Coordinators
- Current and future teaching teams
- Learning Designers and colleagues in Learning Enhancement and Innovation
- Students with existing degrees
- Graduates from all degrees who are practising teachers

The strengths of the process enabled the team to establish:

- curriculum alignment between the core courses within a program (linkage in course/ program/ graduate level outcomes, course objectives and assessment), and
- course learning activity and blended design models to support course outcomes.

Potential Impact of the Wellbeing Framework

Within the next five years over 750 University of Adelaide teaching graduates of language and literature, foreign languages, humanities, social sciences, mathematics, natural sciences and human sciences will graduate through our well-being framework. These graduates have the potential to teach over 93,750 middle and senior school aged students. The School of Education has an ambitious research and engagement strategy which aligns in a teaching-research nexus and will raise the significance of the Wellbeing Framework to over 1.6 million South Australians.

Globally, the impact could be much wider if initial teacher education programs included a well-being curriculum in their programs and courses. Teacher well-being is an individual, collective, community and global responsibility. McCallum concluded that '... wellbeing as a concept has a place in initial teacher education to ensure that early career teachers are retained in the profession alongside seasoned teachers in all locations across the globe. There is a clear link between teachers' wellbeing, their role in the classroom and school community, and the success and satisfaction of children and young people' (2016, p. 128).

Table 1: Summary of the University of Adelaide Wellbeing Framework Program Enhancement Process

Activity	Goals	Outcome
Pre-PEP consultation	Engaged key stakeholders from Advisory Board on Wellbeing Framework Strategy	Engagement with the Chief Executive Officers of the Department for Education, Catholic Education South Australia, Association of Independent Schools of South Australia
Pre-PEP facilitator meeting	Program Coordinator held a series of planning meetings with Learning Designers to co-create workshop goals, success criterion and vision.	Clarity on the purpose of the Wellbeing Framework
Workshop 1	To co-design new program learning objectives, mapped against the University of Adelaide Graduate Attributes and current AITSL APSTs, to establish a point of difference.	Compliance with requirements for Teacher Registration Board, Australian Institute for Teaching and School Leadership
Mapping the program and course learning outcomes.	Integration of a Wellbeing Framework against the Graduate Attributes, current Australian Institute for Teaching and School Leadership Australian Professional Standards for Teachers and program learning outcomes	
Workshop 2	Map course learning outcomes for existing specialisations against new program objectives.	
Mapping the course learning outcomes for new specialisations against new program objectives.	Integration of a Wellbeing Framework against the course learning outcomes and professional teaching experience for students	
Workshop 3	Mapping the course learning outcomes for new specialisations against new program objectives.	
Complete Carpe Diem process for all specialisations.	Integration of a Wellbeing Framework against the course assessment and professional teaching experience for students	
Post Workshops	Integration of Wellbeing Framework into Bachelor of Teaching and Master of Teaching programs for accreditation with South Australian Teachers Board	Compliance with requirements for Teacher Registration Board, Australian Institute for Teaching and School Leadership

Our third case study is *how to* build an entire Positive Education University. It comes from Tecmilenio University in Mexico.

Tecmilenio University is recognized as the first Positive University in the world. It is comprised of 58,200 students from upper secondary school, college and masters programs distributed over 29 campus across Mexico. Its explicit vision is, "To prepare students with a life purpose and with competencies to achieve it". Students are empowered to customize their own college program, and a learning-by-doing approach is infused across all academic programs. We seek the highest return on education investment that translates into competent graduates in a global economic environment with high employment rates and with well-being and happiness.

They define a Positive University as a learning community that cultivates the best self in each person, allowing them to flourish, to discover their purpose in life, and to benefit society.

Everything at Tecmilenio is aligned with their "Wellbeing and Happiness Ecosystem," inspired by Martin Seligman's PERMA model of well-being *(positivity, engagement, positive relationships, meaning, and achievement)*, plus physical well-being, mindfulness, and character strengths. Facilities and services, student activities, training and development, and academic programs are all seek to develop well-being and happiness. Academic programs, faculty, staff, administrators, facilities, and service providers are aligned to generate a "Positive Culture" and learning environment in each of Tecmilenio's 29 campuses (Figure 1).

At the college level, every year, 100% of students (5,100 per year) take a course on well-being and happiness in the first semester, and then during the sixth semester 100% of students take a Positive Organizations course.

Tecmilenio University defines its "Positive Experience" across 5 stakeholder groups and domains: (1) students, (2) faculty and staff, (3) alumni, (4) partners and (5) sustainable management (Figure 2)

(1) For students: Discovering and developing their purpose in life, reaching high levels of well-being and happiness, living a memorable student experience, and developing skills to be competent in a global economy;

(2) For faculty and staff: Positive and empowered faculty, staff, and leaders managing

Figure 1: Ecosystem of Happiness and Wellbeing

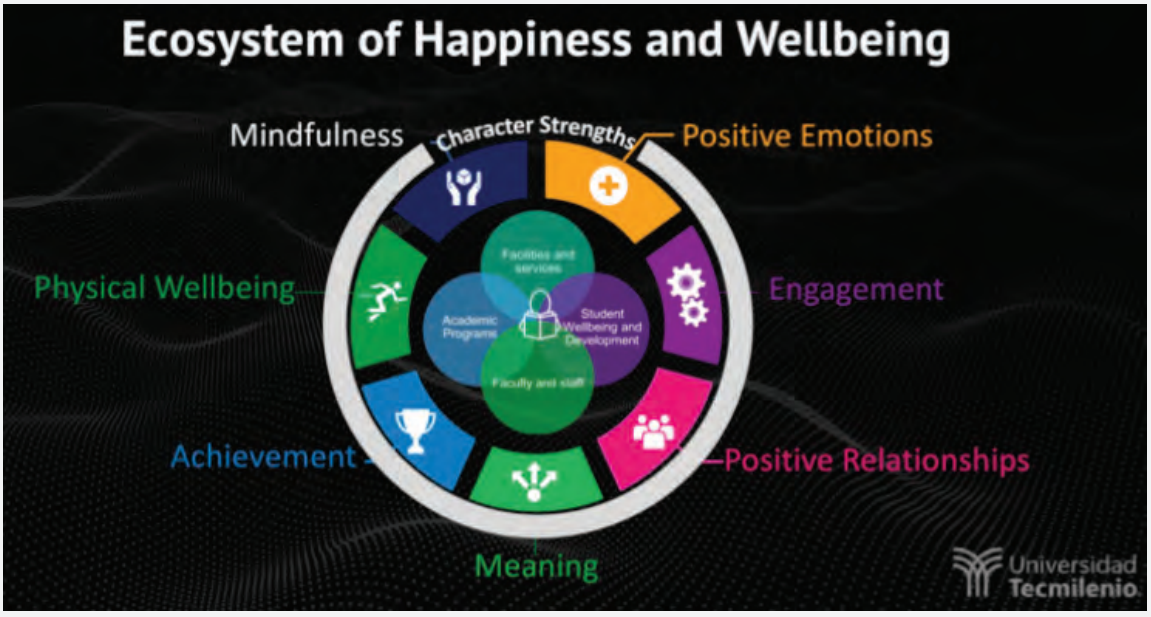


Figure 2. Tecmilenio's Vision: A Positive University Experience

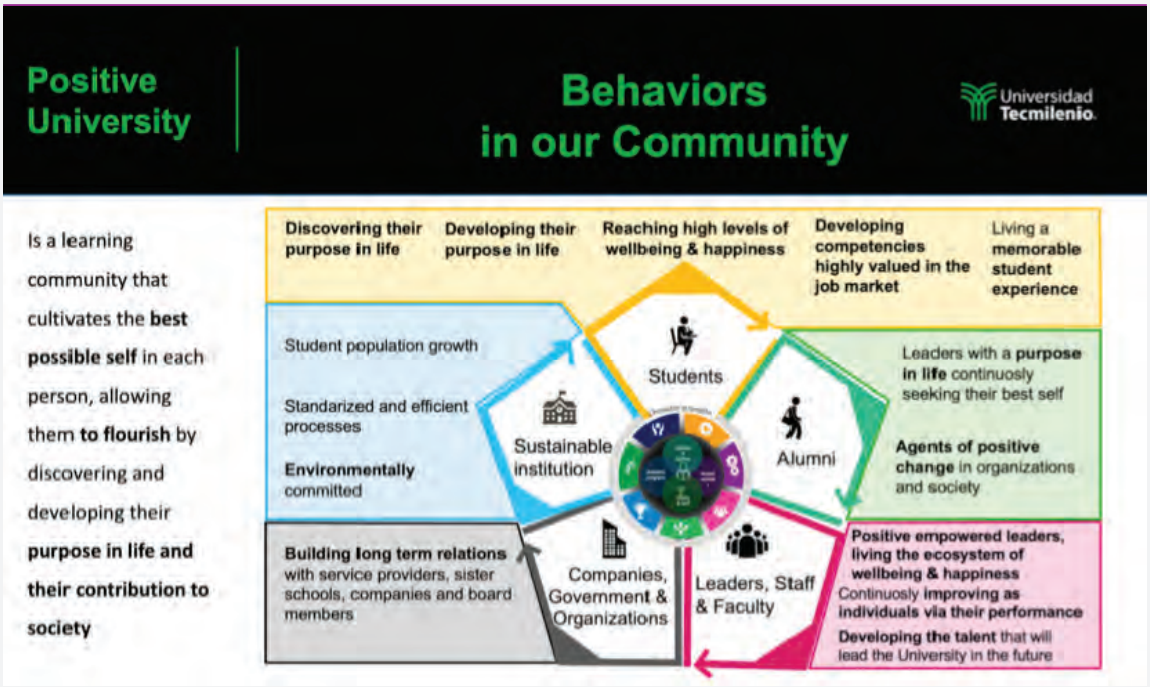


Table 2. Training in Positive Psychology and Positive Organizations

	Certified in Positive Psychology	Certified in Positive Organizations	Life Purpose
Employees (1,673)	84 %	10 %	83 %
University Leaders (225)	97 %	83 %	88 %
Faculty (4,052)	18 %	3.8 %	55 %

and living coherently in our well-being and happiness ecosystem, continually improving as individuals and developing co-workers that will lead the University into the future;

(3) For alumni: leaders with a purpose in life continually seeking to become their best possible selves as agents of positive business and as positive community change makers;

(4) For partners: Building long-term relationships with schools, industry-partners, advisory boards, and suppliers; and

(5) For sustainable management: protocols with efficient and equitable processes, committed to the social and natural environments

We created a well-being and happiness institute, *Instituto de Ciencias de la Felicidad*, to provide training and scientific support for the University's development and decisions (see: http://cienciasdelafelicidad.mx/).

Extensive training and funds (USD $3.5 million) have been invested since 2012 in programs and certifications for faculty, staff, and University leaders in the following fields (i) Principles of Positive Psychology, (ii) Positive Organizations and (iii) Life Purpose (Table 2).

Positive Education "How To" Checklist and Policy Manual

Our final case study comes from the international experience of Dr. Alejandro Adler. His job for the last six years has been to convince minsters of education and other high government officials to buy into Positive Education. His advice turns on the most frequent questions and challenges that anyone trying to convince the people who run education at scale must know how to answer.

We use his case study of *Education for Gross National Happiness* in Bhutan, the country where the relationship between increased well-being and enhanced academic performance was first empirically established. We tested two questions in Bhutan: (1) Does the Gross National Happiness (GNH) Curriculum increase well-being? and, (2) Does increasing well-being improve academic performance? (Multiple international replications of this methodology can be found in the 2018 *Positive Education* chapter of the *Global Happiness Policy Report*).

1. Cultural immersion

"Gross National Happiness is more important than Gross National Product."
—Jigme Singye Wangchuck, the 4th King of Bhutan, 1986 Interview with Financial Times

Bhutan is a small Himalayan country with fewer than one million inhabitants, and it uses Gross National Happiness (GNH) rather than Gross Domestic Product (GDP) to assess national progress and to drive public policy. The GNH index includes nine domains of progress: health, time use, education, cultural resilience, living standards, ecological diversity, good governance, community vitality, and psychological well-being. In line with this, Bhutan has organized its education system around the principles of GNH; the Bhutanese Ministry of Education's explicit mission is to "Educate for Gross National Happiness."

Researchers from the University of Pennsylvania spent nine immersive months in Bhutan understanding and learning from local knowledge, skills, attitudes, and values before beginning any kind of program, project, study, or policy described later in this checklist. They interacted with and learned from the 10 stakeholder groups listed in Phase 2 below.

2. Multi-stakeholder engagement

"I will be very happy if we can increase our math, reading, and science scores. However, different people in our education system care about different outcomes. Politicians care about standardized exams and reelection; teachers care about job security and salaries; parents care about their children's well-being and about preventing bullying; and students just want to have fun. How can we please them all?"
—Minister of Education, country in Central America (2018)

To design education policies that deliver sustainable change at the education system level, it is essential to jointly design and deliver all components of Positive Education with as many local education stakeholders as possible. These include:

1. Policy makers at the local, regional, and national levels (ministries of education)
2. Teachers
3. Principals
4. Schools staff
5. Students
6. Parents and caretakers
7. Academic researchers
8. Private sector employers
9. University leaders
10. Non-profit and independent educational organizations

3. Needs and goals assessment

"I know you think you understand education with your numbers, statistics, and fancy university titles. But I have been teaching for over 40 years and I don't think you have any idea about what teachers like me know about teaching and learning, what we care about, what we need, and how we are actually treated in public schools."
—Secondary school teacher, Marikina City Secondary School, Philippines

Using an Appreciative Inquiry (Cooperrider and Whitney, 2008) approach, researchers from the University of Pennsylvania worked with members of the 10 stakeholder groups above to identify the existing strengths in the Bhutanese education ecosystem together with the needs, objectives, and incentives for the different stakeholders. The methodology for the needs and goals assessment phase of the project included unstructured

data collection (i.e., informal conversations), structured interviews and focus groups, and quantitative demographic and anthropological data compilation and collection.

4. Study design and quantitative baseline measurement

"How do you know that if we invest our limited financial and human resources in well-being that students' academic performance will *not* deteriorate?"
—Minister of Education, country in South Asia (2015)

The Bhutan study included 18 public secondary schools in three representative *dzongkhags* (districts) in Bhutan: Thimphu, Punakha, and Wangdue Phodrang. 95% of Bhutanese students attend public schools and the language of instruction in Bhutan is English.

The study used a nested cluster randomized design at the whole-school level in 18 Bhutanese secondary schools (8,385 students). We randomly assigned the schools to either the treatment group, which received the *GNH Curriculum* during 15 months, or to the control group, which received a placebo *GNH Curriculum* during the same 15 months. We included a placebo Curriculum for the control group to control for demand artifacts in our results, such as the Hawthorne Effect or the Pygmalion Effect, which have been reliably documented in the literature of longitudinal studies. 11 schools (n=5,247 students) were in the treatment group, and 7 schools (n=3,138) were in the control group. The mean student age was 15.1 years old (SD 2.2, min 10, max 24). 54% of students were female.

This was a single blind study – students, teachers, and school staff were unaware of whether they were part of the treatment or control group. Throughout the intervention, only two researchers from the University of Pennsylvania and nine staff members from Bhutan's Ministry of Education were aware of which school was in which group.

The student well-being survey used the validated EPOCH measure of adolescent well-being (Kern et al., 2015). The survey also included an overall measure of life satisfaction, the 5-item adolescent Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). The survey also included questions about age, gender, home-town, and social media use.

We collected baseline well-being data from all students in the 18 secondary schools (n=8,385) during May 2012, the month before introducing the *GNH Curriculum*. In addition to self-reported well-being measures, we had participating students' performance on annual standardized exams (the National Education Assessment or NEA) from September 2011 (pre-intervention). The NEA assesses students on math, science, and reading and is administered annually in September by the Ministry of Education to all students in both primary and secondary public schools in Bhutan.

5. Curricular development and adaptation

"How do you find a healthy balance between what the science tells you works best and what teachers actually need in different contexts and cultures to be able to teach effectively in the classroom?"
—Under-Secretary of Education, country in Central Europe (2017)

The Bhutanese Ministry of Education invited us to *co-develop* a *GNH Curriculum* that targeted ten non-academic "life skills" for secondary school students (grades 7 through 12):

1. Mindfulness: calm awareness of thoughts, emotions, and surroundings
2. Empathy: identifying what other individuals are feeling or thinking
3. Self-awareness: understanding of personal talents, strengths, limitations, and goals
4. Coping with emotions: identifying, under-standing, and managing emotions
5. Communication: being active and constructive in communication
6. Interpersonal relationships: fostering healthy interactions with friends and family
7. Creative thinking: developing ideas that are novel and useful
8. Critical thinking: conceptualizing, applying, analyzing, synthesizing, and/or evaluating information as a guide to beliefs and actions
9. Decision making: choosing the best beliefs or action plans from available options
10. Problem solving: accessing effective heuristics to solve theoretical and practical problems

The curriculum teaches these skills in a 15-month stand-alone course called Life Skills Training. The

curriculum also infuses these skills into existing academic subjects.

6. Training of educators

"If you want to train someone with these well-being skills that you speak of, teach them directly to the students. They are the intended beneficiaries of our schools. Why would you bother to train the teachers? And why would you train a principal like me? I pretty good at my job, which is much more about leadership and keeping everybody in line than about teaching."
—Head of School, public secondary school in South America (2014)

"All adults in the schools, from the principal to the teachers to the staff members, are the people who define the general culture and the behaviors in the school. They are the ones who should be trained to be able to have a real, sustained change."
—Same Head of School, public secondary school in South America (2018)

The principals and teachers from both groups of schools were told that they were being trained to teach the *GNH Curriculum* and that they would be delivering a 15-month Life Skills Course aimed at increasing student well-being. A "Director of GNH" with training in education was recruited and trained for each school; these Directors were also blind and did not know in which group their school was. The Director of GNH ensured that the curriculum was properly implemented throughout the 15-month intervention. The students in both groups of schools received the same number of classroom hours during the real 15-month Life Skills Course and the placebo 15-month Life Skills Course: two hours per week.

All principals and teachers from the 11 treatment schools received training during a 10-day *GNH Curriculum* retreat. The trainers were psychologists from the University of Pennsylvania and nine trained staff members from Bhutan's Ministry of Education; a training manual (*Educating for GNH*) was used. The trainers taught principals and teachers how to practice and how to teach the ten life skills. Teachers were also trained to infuse their academic subjects (e.g., math, science, reading) with the ten life skills.

The principals and teachers from the 7 schools in the control group received training during a four-day placebo *GNH Curriculum* retreat during which they learned about how to teach nutrition, psychology, and human anatomy. The trainers in this retreat were the same as the trainers in the *GNH Curriculum* retreat for the treatment group.

7. Curriculum implementation

"I'm a mathematics teacher. What does well-being have to do with mathematics?"
—Teacher, public secondary school in the Middle East/North Africa (2017)

Educators were trained to infuse their own academic subjects (e.g., math, science, reading) with the ten life skills. Literature, for instance, was taught through a "GNH lens" by identifying strengths and virtues in characters from novels and by encouraging students to use these strengths in their daily lives. Further, all students in the intervention group participated in botany practices in organic gardens in every one of the 11 school campuses. They learned to plant, grow, and harvest vegetables and other foods. By studying the plants' physiology, genetics, ecology, classification, structure, and economic importance, students learned how to interactively apply what they were learning in their biology, chemistry, physics, and mathematics classes to their botanic practices. Furthermore, through the complex process of growing different plants with their fellow students and understanding the role of food in the larger local and national economic system, students learned to practice critical thinking, creative thinking, decision making, and problem-solving skills.

In the classroom, teachers learned how to give students feedback in a way that empowered and motivated them. Teachers learned the importance of identifying and noting what students were doing *right* in their classwork, instead of only highlighting what they were doing wrong.

8. Post-intervention measurement and ongoing impact evaluation

"How do you know whether this works? How do you know if you're actually increasing well-being? And how do you know if you're bettering learning outcomes?"
—Minister of Education, country in East Asia (2017)

We collected well-being data again at the end of

the intervention, in September 2013 (n=7,363, participation rate = 99%). We collected well-being data a third time in September 2014, 12 months after the end of the intervention (n=6,524, participation rate = 99%). Only data from students who completed all three rounds of data collection were included in this study (n=6,524).

The *GNH Curriculum* significantly increased student well-being longitudinal school-level analyses of survey data from May 2012 and September 2013 indicate that the *GNH Curriculum* significantly increased adolescent well-being (as measured by the EPOCH scale) in treatment schools, compared to control schools (*Cohen's d* = 0.59, *t*(16) = 3.54, *P*=0.002). The *GNH Curriculum* significantly increased adolescent well-being in treatment schools, compared to control schools.

The *GNH Curriculum* substantially and significantly increased academic performance. As illustrated in Figure 1, longitudinal school-level analyses of standardized test scores from September 2011 and September 2013 showed that the GNH Curriculum increased academic achievement significantly in treatment schools, compared to control schools (*Cohen's d* = 0.53, *t*(16) = 2.37, *P*=0.031).The difference between treatment schools and control schools remained significant twelve months later (*d* = 0.48, *t*(16) = 2.24, *P*<0.040).

An upward shift of 0.53 standard deviations (SDs) in standardized exam performance means that, on average, students who were performing at the 50th percentile before the intervention performed at the level of students in the 60th percentile after the 15-month intervention. That is *roughly equivalent to a gain of a full academic year.*

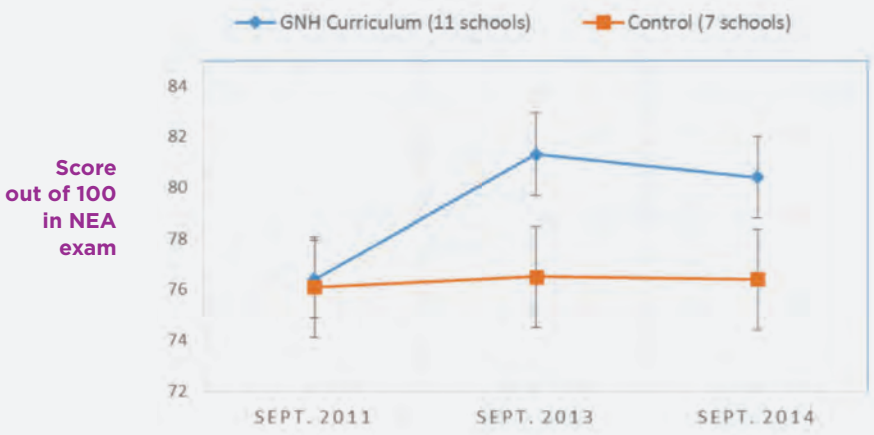
The strongest predictors of increased performance on standardized test scores, controlling for academic performance at time t0 were: more engagement, more perseverance, and higher connectedness (all as measured by the EPOCH instrument).

9. Ongoing impact evaluation, adaptation, and scaling

"Does this work at scale and in the long run? —Minister of Education, country in East Asia (2018)

The "Education for Gross National Happiness" program in Bhutan, designed to enhance student well-being, not only increased well-being, but it also significantly increased students' performance on national standardized exams. Taken together, these data demonstrate that well-being and academic achievement are not antagonistic, as

Figure 3. Standardized Test Scores in Bhutan



(Adler, Seligman, Tetlock, & Duckworth, 2016)

some have suggested (Mayer & Cobb, 2000); on the contrary, teaching life skills consistently increased well-being and academic achievement in different social, economic, and cultural contexts and at large scales. The Bhutanese Ministry of Education is currently on schedule to implement the GNH Curriculum in every public secondary school in the country by 2022.

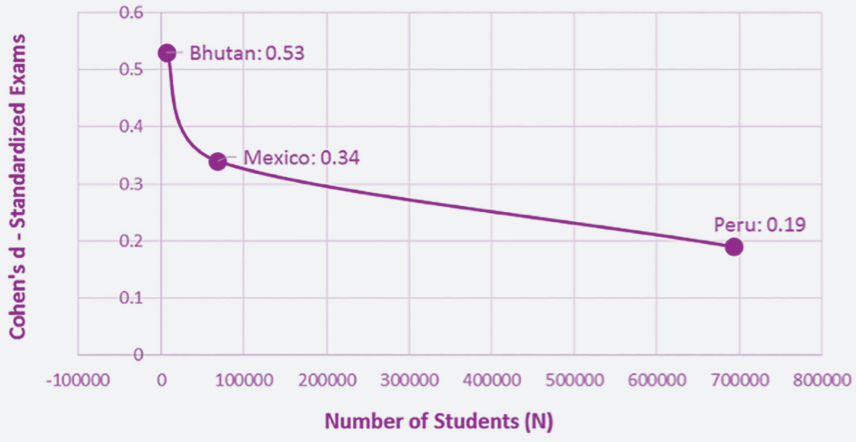
Meta analyses have shown that the best interventions that directly target academic performance have, on average, "small" effect sizes of about 0.15 to 0.20 SDs (Durlak et al., 2011). These interventions are expensive and have been implemented at a relatively small scale (less than 1,000 students). Our interventions had effect sizes on students' performance on national standardized exams of 0.19 SDs with 694,153 students in Peru to 0.53 SDs with 6,524 students in Bhutan. Taken together these results suggest that targeting the skills for well-being might yield even more academic dividends than directly targeting academic performance. Teaching students these life skills may make them more receptive to learning academic material and may enable them to better deploy their academic skills when taking standardized exams.

Our results revealed a tradeoff between number of students in intervention and effect sizes, both for well-being and for academic performance. There was a tradeoff between the number of students in our three interventions and the effect sizes on student academic performance. In Bhutan, we had 6,524 students in our RCT and found an effect size of 0.53 standard deviations on their academic performance, as measured by the NEA national standardized exam. In Mexico, we had 68,762 students in our RCT and found an effect size of 0.34 standard deviations on their academic performance, as measured by the ENLACE and PLANEA national standardized exams. In Peru, we had 694,153 students in our RCT, and we found an effect size of 0.19 standard deviations on their well-being, as measured by the ECE national standardized exam.

Our treatment fidelity results indicate that the larger the size of the intervention, the lower the treatment fidelity of well-being curricula. The treatment fidelities for our three well-being curricula interventions were 87% in Bhutan, 78% in Mexico, and 71% in Peru. The increased layers of trainers could have diluted the fidelity of the implementation of the well-being curricula. In Bhutan, there were no intermediary trainers, in Mexico there was one layer of intermediary trainers, and in Peru there were two layers of intermediary trainers.

The education literature has consistently identified teacher quality as the single most important

Figure 4. Cohen's d vs. Number of Students (Academic Performance)



(Adler, Seligman, Tetlock, & Duckworth, 2016)

factor in students' education outcomes, during the schooling years and beyond (Rice, 2003). The well-being retreats, whether they were for principals and teachers in Bhutan or for trainers in Mexico and in Peru, were designed to be immersive transformative experiences. Only in such a context could adults learn to practice and embody the well-being life skills in a short period of time. The fact that students in each of the three studies were at different distances from the adults who had the immersive well-being retreats could also additionally account for the decrease in treatment fidelity and corresponding effect sizes. In Bhutan, for instance, the actual teachers who experienced the well-being retreat taught students the *GNH Curriculum*. In Peru, on the other hand, teachers who taught students the *Paso a Paso Curriculum* were trained by trainers who themselves were trained by trainers who had the immersive well-being retreat.

With the adequate financial, human, and infra-structural resources during future interventions, all teachers who teach a well-being curriculum should have immersive well-being retreat experiences. Thus, whether we can have the large effect sizes on both well-being and academic performance that we found in Bhutan at a larger scale like Peru is an empirical question that future well-being and education experiments will answer.

A New Educational Paradigm

Even though material standards have improved across most of the world during the last 50 years, well-being has remained roughly unchanged in most countries (Easterlin, 2013). During the same five decades, the prevalence of depression has increased at an alarming rate, and the median age of a first episode of depression has also moved from adulthood to early adolescence (Birmaher et al., 1996). Mental illness contributes to lower grades, higher absenteeism, lower self-control, and higher dropout rates (McLeod & Fettes, 2007). These findings suggest a need for an education that simultaneously raises adolescent psychological well-being *and* teaches academic skills. Such a "positive education" offers a new educational model that, in addition to academic learning, emphasizes well-being as a buildable life-long resource (Seligman, 2011).

Previous small-scale studies have suggested that youth well-being contributes to academic achievement, fewer risky behaviors, and better physical health in adulthood (Hoyt, Chase-Lansdale, McDade, & Adam, 2012). Other studies have also suggested that student well-being is likely a protective factor against youth depression and may promote creativity, social cohesion, and good citizenship (Waters, 2011). Moreover, 15 years later in life, adolescents with higher subjective well-being likely earn more money, are more successful, and have higher academic attainment than less happy teenagers (De Neve & Oswald, 2012).

So, a case can be made for an education that raises well-being in its own right and also as preventive of mental illness. In other words, well-being deserves to be seen as a universal pursuit with intrinsic value. But a common worry about such interventions is that they might interfere with traditional academic goals and divert scarce resources away from academics. In the three first large-scale, whole-school randomized studies on well-being and achievement, we showed that teaching the skills for well-being at a large-scale is possible and that it lastingly improves academic performance. We conclude that positive education – building both well-being skills and academic skills hand-in-hand – is feasible and desirable. This new paradigm will sow the seeds for enhancing the human condition sustainably.

Positive Education Around the World 2018-2019

IPEN (http://ipen-network.com/)

Given the spreading of PE across the world, a central international organization is a big help. The International Positive Education Network (IPEN) is just such and it maintains a network of more than 28,000 educators across 165 countries on six continents, all of whom have an expressed interest in positive education. It does so through a web and social media presence, disseminating tools and resources and serving as a platform for connectivity through an open-access, membership community, the support of regional offices in the UK and Dubai, administering and sponsoring regional and global conferences, and the participation of more than 40 global representatives in 50 countries around the world. Established in 2014, IPEN is committed to advancing positive education through three aims: changing education practice by equipping practitioners with the tools they need to start delivering positive education in the classroom; persuading policymakers to change their frameworks so that practitioners are encouraged to educate for character and well-being alongside delivering rigorous and stretching academic study; and nurturing a collaborative community to develop a deeper understanding of the theory and practice of positive education.

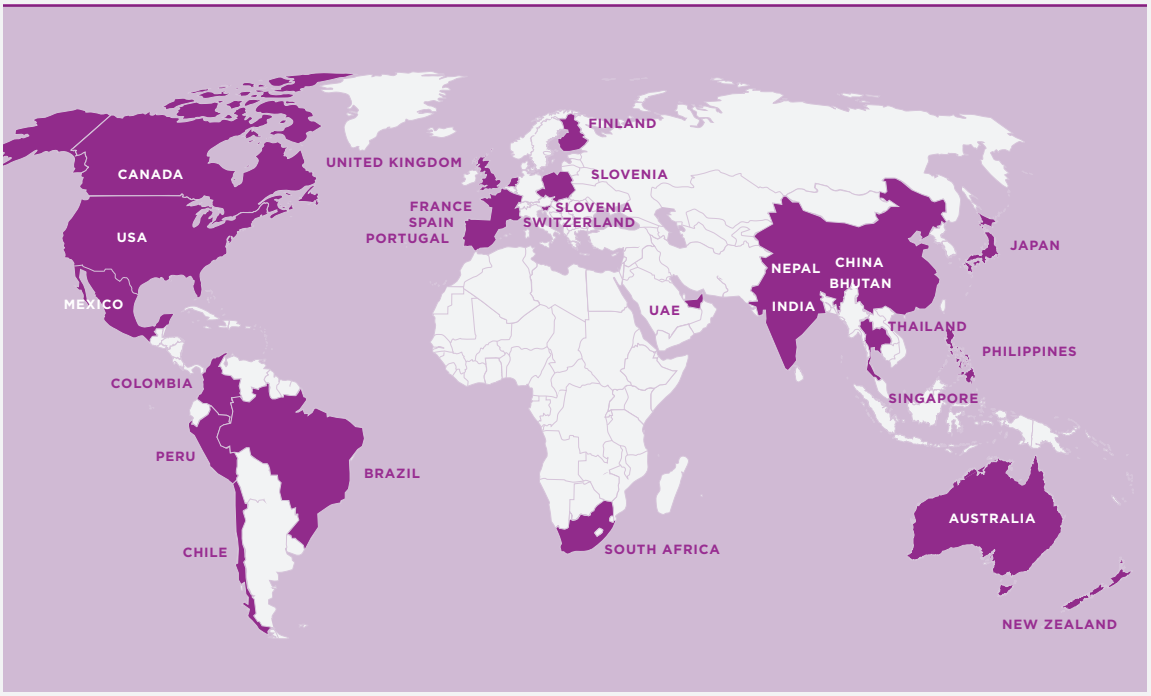
Following from the successes of IPEN's first Festival of Positive Education in 2016, IPEN and the David L. Cooperrider Center for Appreciative Inquiry at Champlain College partnered to host the World Positive Education Accelerator (WPEA) incorporating the second Festival of Positive Education and Appreciative Inquiry Summit in Fort Worth, Texas, in June 2018. The WPEA included a three-day appreciative inquiry summit, led by David Cooperrider and his team, that focused on the question: How might we accelerate a union between the best in 21st century learning, with the best in the science of human flourishing, and the positive psychology of human strengths? This collaborative accelerator was the largest of its kind ever held to advance positive education. The event brought together 800+ teachers, school leaders, policy makers, psychologists, practitioners, and students from more than 30 countries to work on designing specific initiatives to accelerate the implementation of positive education around the globe.

These initiatives covered the breadth of the education context from kindergarten to university as well as geographical contexts and other domains such as policy, assessment, research, and government. The opportunity areas for collaboration and initiative development included the role of artificial intelligence and digital technologies to accelerate positive education; youth-led initiatives to advance positive education; the role of business as a force for positive education; establishing standards and best practices for positive education; creating resources for teacher preparation, school leaders and administrators, as well as parents, and families; and the development of national summits to accelerate positive education in China, Netherlands/Belgium, Latin America, Singapore, and the United States; among many other areas. The proceedings from the WPEA have been jointly published by IPEN and the Cooperrider Center in a report entitled, "Powering Up Positive Education: Turning Inspiration into Action" (2018). The community created by the WPEA will be jointly supported by IPEN and the Cooperrider Center through facilitating initiative development and maintaining network connectivity over the next two years. The outcomes from the WPEA and the initiatives developed through the process are being disseminated via the IPEN and Cooperrider Center websites and connections (https://www.champlain.edu/ai-home/positive-education-summit-2018).

Due to the substantial growth of the network and global traction gained for positive education in its first years of existence, IPEN is in the process of innovating both programmatically and structurally. Programmatically, IPEN has been working to develop a framework for school certification to create a gold standard for administering and teaching positive education. The framework would be based upon taking a whole school approach so that it is not isolated within specific classes, student welfare departments, or with student counselors. IPEN is in the exploratory phase of determining the market for positive education certification and developing partnerships with respected regional and global school authorities within specific regions where the certification model and process can be piloted.

Structurally, IPEN's Board is developing an organizational strategy to grow beyond its original London base in order to ensure it has a truly worldwide reach. IPEN is in the early stages of restructuring through the establishment of regional bases, prospectively to be located in Australia, Dubai, Mexico/Latin America, United Kingdom, and the United States, that would advance positive education within their regions and work in collaboration with each other and a global headquarters. IPEN's goal in embarking on this restructuring is to help build an organization that is strong and well-positioned for growth and evolution over the long-term that captures the energy at the regional level for positive education and makes the value proposition for our global network clear to educators and policymakers at national and international levels.

Regional and national Positive Education programs' websites



USA

https://www.champlain.edu/ai-home/positive-education-summit-2018

https://casel.org/

https://www.characterlab.org/

https://static1.squarespace.com/static/5980a22e9de4bb9ca8bce449/t/5b61a08b758d4614bdbf3855/1533124747483/2018_annualletter.pdf

https://www.shipleyschool.org/page/about/positive-education

drandolph@riverdale.edu

dlevin@kippny.org

sanderson@gatewaycc.edu

laurie.santos@yale.edu

CANADA

https://education.alberta.ca/media/3069624/social-emotional-learning-conversation-guide-002.pdf

https://greatergood.berkeley.edu/article/item/how_to_close_the_social_emotional_gap_in_teacher_training

smmckinney@ucc.on.ca

jedwardkidd@ridleycollege.com

MEXICO

http://www.tecmilenio.mx/es/instituto-de-la-felicidad

https://smpp.org.mx/

COLOMBIA

http://avivaeducation.com/about/

BRAZIL

http://www.ayrtonsenna.com.br/en/idolo/ayrton-para-sempre-legado/instituto-ayrton-senna/

https://www.iepbr.com.br/

CHILE

http://impresa.lasegunda.com/2016/01/18/A/TS2RTQB6/DT2RVP9U

cis@enhancingpeople.com

PERU

https://steinhardt.nyu.edu/site/ihdscblog/2018/03/13

social-emotional-learning-across-the-american-continents/

CHINA

http://usa.chinadaily.com.cn/a/201804/27/WS5ae33475a3105cdcf651b003.html

https://www.tsinghua.edu.cn/publish/psy/2345/2017/20170515131200553611595/20170515131200553611595_.html

zhaoyukun@gmail.com

JAPAN

https://measuringsel.casel.org/social-emotional-learning-competency-assessment-east-asia-part-1/

kawaguchi@giveness-i.com

yuji@giveness-i.com

drkaori@hotmail.com

INDIA

https://corstone.org/international/

NEPAL

http://livingnepal.org/en/fondos-proyectos/

BHUTAN

http://www.grossnationalhappiness.com/9-domains/education/

www.education.gov.bt/

UAE

https://www.khda.gov.ae/en/dswc

https://www.khda.gov.ae/en/100daysofpositivity

https://wsn.hw.gov.ae/en

SINGAPORE

https://www.moe.gov.sg/education/secondary/values-in-action

http://www.suss.edu.sg/microsites/SASS/WB2018/index.html

THAILAND

http://www.uwcthailand.net/learning/social-emotional-learning-and-mindfulness/

https://www.unicef.org/eap/

PHILIPPINES

https://www.philippinesbasiceducation.us/2013/06/social-and-emotional-learning.html

SOUTH AFRICA

https://www.isasa.org/workshop-on-positive-psychology/

AUSTRALIA

https://www.pesa.edu.au/

https://www.weeklytimesnow.com.au/country-living/education/secondary/geelong-grammar-school-birthplace-of-australian-positive-education/news-story/1ff4eff19fb1a18364498f63aa3558f1

NEW ZEALAND

http://www.ipen-network.com/blog/penz-2018-positive-education-new-zealand/

https://www.positivepsychology.org.nz/

positiveeducation.nz/

UNITED KINGDOM

http://www.actionforhappiness.org/toolkit-for-schools

http://www.howtothrive.org/

Lucy Bailey lucy@howtothrive.org

FRANCE

https://www.faacademy.org/academics/social-emotional-learning/

FINLAND

https://bigthink.com/mike-colagrossi/no-standardized-tests-no-private-schools-no-stress-10-reasons-why-finlands-education-system-in-the-best-in-the-world

PORTUGAL

https://positivepsychologyprogram.com/executive-master-of-applied-positive-psychology/

SLOVENIA

https://www.newstatesman.com/world/europe/2017/12/slovenia-happy-country-should-be-even-happier

SWITZERLAND

https://www.swippa.ch/de/veranstaltungen/swippa-fachtagung-2018/informationen.html

SPAIN

http://www.congresosepp2018.com/17363/detail/iv-congreso-espanol-de-psicologia-positiva.html

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Please refer to the electronic version of the Report at http://www.happinesscouncil.org/ for links to the regional and national Positive Education programs' websites and for an appendix with details about the significant national programs.

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Chapter 4 **Appendix**

We now turn to an update for 2018 country-by-country. We emphasize that this is a sample rather than an exhaustive update.

United Kingdom

The United Kingdom has started to emphasize positive education as a mechanism to prevent mental health problems by concentrating on improving well-being rather than risk reduction. A single theme that is mentioned in positive education literature is the importance of whole school approach that supports in well-being development (MAPPCP, 2018). Additionally, coaching psychology is now gaining popularity within educational institutions in the UK as it provides opportunities to improve mental health well-being by including coaching in application of positive psychology interventions (Nieuwerburgh & Barr, 2017).

Universities UK (UUK), the representative organization for UK universities, have introduced a new program of work on mental health in higher education in December 2016. The aim of the program is to ensure that well-being and mental health are a strategic priority for universities. Two principles that guide this work are:

- We all have mental health, well or unwell.
- A whole university approach to well-being is needed.

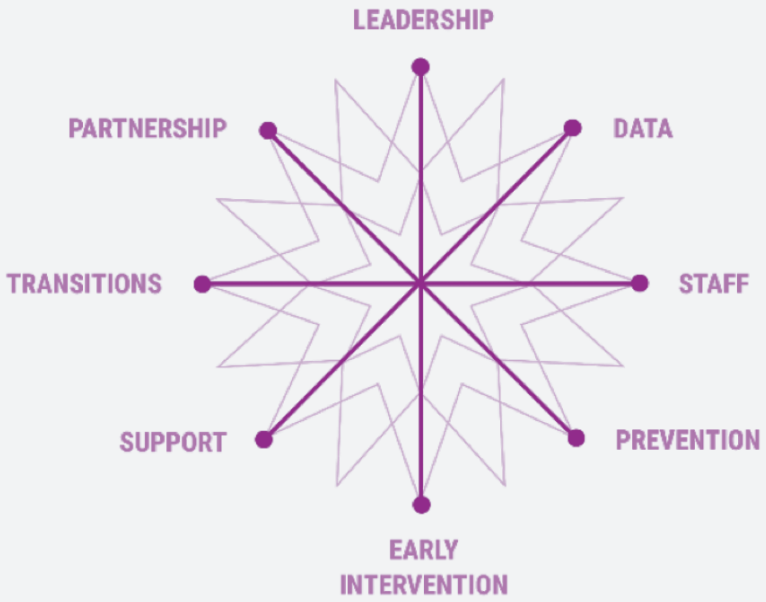
UUK has since introduced a Step Change framework that was published in September 2017 to support higher education institutions to take on the whole university approach and improve students and staff well-being. The publication sets out

- a case for a strategic approach
- a vision
- a whole-institution approach
- an eight-step framework for achieving the vision (Metcalfe, Wilson, & Levecque, 2018)

Table A1. Synthesis of PosEd landscape in the UK (MAPPCP, 2018)

Need	1. Crisis affecting children and young people's mental health in UK 2. Negative impact on health and education outcomes 3. Prevention of illness 4. Promote mental health and protect against mental illness
Solution	1. Improve accessibility to a range of clinical or specialist interventions, e.g., Counselling and Children's Mental Health Services. 2. Significantly ease pressures on clinical mental health services by developing school-based interventions. 3. Develop a whole school culture within schools that values and promotes mental health and protects against mental illness. 4. Improve teacher's confidence and ability to identify issues and provide preventative strategies. 5. Academic resilience programmes for children and young people, targeted at those who are vulnerable and at risk. 6. Identify evidence-based prevention programmes
Synthesis	Nuanced and integrated approach to PosEd that provides prevention through • A whole school approach that includes a range of targeted interventions for more at-risk children and young people. • PosEd programmes for the whole school community that improve well-being, skills for achievement and create a sustainable culture of mental health and well-being. • Support for teachers and staff to develop skills for well-being that protect against mental health problems, promote well-being, develop resilience and contribute to sustainable mental health and well-being culture. • Access to a range of clinical or specialist interventions for those that need it. • Coaching schools through the long-term change and system transformation to ensure well-being becomes fabric of the school.

Figure A1. Eight-step framework for achieving the vision



(Metcalfe, Wilson, & Levecque, 2018)

UUK framework for Higher Education

Student Minds

Student Minds, a UK based student mental health charity, works in conjunction with students, professionals, service users and academics to improve student mental health. They have announced plans to develop a University Mental Health Charter which will recognize and reward institutions that deliver improved student mental health and well-being while keeping student and staff mental health a priority. This charter is created in partnership with various charities and Higher Education organizations and with an initial support of £100,000 grant from the University Partnerships Programme (UPP) foundation.

Future in Mind

Has introduced cross-agency services for mental health among children and young adults so that the local areas could collaborate with commissioners and other providers across education, health, social care, youth justice and the voluntary sector. This system would help everyone plan strategically while reflecting the needs of the local communities (Department of Health & Department for Education, 2017).

Time to Change Campaign

The Government has invested up to £31 million in this campaign for reducing the stigma towards mental health. Time to Change claims it has already helped four million people bring positive changes in their lives.

Schools

After the Department for Education's survey on mental health support in schools and colleges in 2017, a government Green paper proposed three ways to improve support for children and young people's mental health in the UK.

1. All schools will be incentivized to identify and train a Designated Senior Lead for Mental Health to help other staff members deliver the whole school approach in promoting mental health.
2. Funding for new Mental Health Support Teams will be provided to persons who would work jointly between schools and the NHS to help improve support for vulnerable groups.

3. Steps to reduce NHS services waiting time will be taken for children and young people needing specialist help (Department of Health & Department for Education, 2017).

However, these steps will need additional funding which is uncertain given the UK's transition to leaving the EU in 2019.

How to Thrive

How to Thrive (Lucy Bailey lucy@howtothrive.org) has trained teachers in 400 schools (110 primary. schools) to teach the Penn Resilience Program. Some of these teachers have now been teaching the PRP for 9 years. They (conservatively) estimate the Penn Resilience Program to have reached 150,000 students in the UK.

China

Positive education is rapidly taking off in China. Numerous practical models of positive education which are tailored for Chinese culture have emerged and been widely applied. Positive education may be the right antidote for the existing effective yet psychologically expensive educational system in China.

Beijing

From 2014 to 2018, the Positive Psychology Research Center (PPRC) of Tsinghua University has provided rigorous training courses, positive education curricula, and scientific measures for 19 schools, with over 17,500 students and 900 teachers from Guangdong, Sichuan, Hunan and other provinces in China. From 2016 to 2017, compared to control group, the scores of experimental group has increased in psychological resilience, growth mindset and hope in Yuncheng Vocational School. In Taohuajiang primary school, scores rose in 2017 compared to 2016 in students' hope (4.54%), resilience (5.87%), and optimism (6.31%).

To further disseminate PE, PPRC also launched a non-profit program called "Happy Gardener" (Gardener is the common metaphor of teacher in China) that trains school principals and head teachers for free, funded by the Beijing Happiness Foundation. From 2013 to 2018, this 16-session program, trained 1,678 principals and head teachers, who went to Tsinghua University for a five-day training in PE. Partnered with GuiXin Foundation, the Happy Gardener program has provided PE training for 1,500 teachers in rural regions in Hunan, Sichuan, Qsinghai, Guizhou and Heibei Provinces in China through 2018.

In 2018, the Bureau of Education of Beijing decided to implement a positive education program for all primary schools, junior high schools, and senior high schools in Chaoyang district. This was done under the supervision of the Institute of Psychology of the Chinese Academy of Sciences, and involved 15,000 students and 1,000 educators. This positive education program emphasized cultivating positive character strengths, growth mindset, grit and the pursuit of academic achievement as well as well-being. It also established a psychological wellness profiler for each student, aiming to track their long-run psychological development.

Starting in 2014, Beijing local government partnered with Tsinghua University China Positive Psychology Research Foundation, to fund the research and application of positive education in the amount of US $285,000 per year.

Zengcheng

In 2014, the city of Zengcheng (now part of Guangzhou), Guangdong province, launched the largest program to date in China. Under the supervision of Ms. Ye Hong, member of the standing committee, more than 600 school principals and head teachers completed an intensive training program of positive education provided by the Positive Psychology Research Center of Tsinghua University (PPRC). Martin Seligman lectured to the educators of Zengcheng in 2015.

As of September 2018, Ye Hong reports that 20 primary schools, junior high schools, and senior high school have consistently launched Positive Education for four years in Zengcheng under the supervision of positive education experts of PPRC, influencing over 30,000 students and their families. In 2018, the Education Bureau of Zengcheng provided 50 or more positive education workshops as a public service for parents, impacting 9000 families.

Mayor Ye Hong reports that from teachers' point of view, measured career devotion is now higher

and teaching methods have improved – they are more flexible and more effective. From the students: academic performance is higher on University Entrance Exams (gaokao) compared to 2017: in 2017 the rate at which students were admitted to key universities was 41.2%, while in 2018 it had gone up to 56.2%.

USA

The Shipley School

The Shipley School (Bryn Mawr, Pennsylvania) is to our knowledge the only school in the USA that has adopted full whole-school Positive Education. It works towards the integration of Positive Education throughout the entire school community. Baseline data of Shipley students prior to the launch of Positive Education showed that perseverance, connectedness, and happiness were significantly higher than national averages. Engagement and optimism, on the other hand, were significantly lower, and also lower than the national average. Anxiety and depression among students were relatively high. Since the start of formal training of all teachers and staff in Positive Education in August 2017, most domains of student well-being (engagement, perseverance, optimism, happiness, and overall well-being) showed moderate improvements. Additionally, depression and anxiety declined modestly during the same time period (2016 to 2017). Shipley continues to monitor and evaluate the impact of the Positive Education whole-school initiative on academic performance, as measured by admissions testing data, in-school reading testing, and SAT/ACT scores.

Early evidence of Shipley teachers and staff found that baseline well-being was significantly higher than national averages. Three months after the 2017 all-colleague Positive Education retreat, the area of quality of relationships showed a significant improvement.

Here is the timeline for the next steps to continue the integration of Positive Education at Shipley:

- August 2018 – Summer Symposium for Curriculum Integration of Positive Education
- August 2018 – Training of New Colleagues
- August 2018 – Training of Student Leaders
- September 2018 – Launch of an elective course in Positive Psychology (to complement the Social, Emotional and Ethical Development course taught to all PK-12 students)
- September 2018 – May 2019 – Pilot Parent Training (4th grade parents)
- November and December 2018 – Student and Colleague well-being surveys
- Summer 2019 – Host training for local/national educators in Positive Education at Shipley.

Gateway Community College

GateWay Community College in Phoenix, AZ, launched an initiative in 2018 to become the first Well-Being Community College in the world. GateWay's comprehensive effort will create a whole-school system that promotes well-being in an integrated program targeted to staff, faculty, students, employers and community members. The core components (Five Cs highlighted below) will bring GateWay's current efforts together under one overarching commitment to positively impact the college and its broader community.

Character: Creating a strengths-based culture through college-wide use of the VIA Character Strengths Assessment.

Connection: Creating and supporting deeper, more meaningful connections among all community members to support employee engagement, students' sense of belonging, and students' efforts to persist and complete their degrees.

Care: Taking care of psychological, physical and financial well-being, including mindfulness, physical exercise, financial stability and other supportive programs.

Career: For both current employees and students pursuing new careers, providing an integrated experience focused on making decisions that contribute not just to career success, but life success by exploring alignment with strengths and values, understanding how to find meaningful work, and increasing energy and engagement.

Contribution: Building connections to the greater community so that students and employees can elevate their personal contribution to the greater good and make an impact that is socially and personally significant. The goal is for all to "feel

valued and add value" and to become educated, compassionate, active citizens.

Anticipated outcomes of GateWay's increased well-being include improving student achievement, increasing retention and graduation rates, elevated levels of effort and engagement for both students and employees, and a culture where all community members feel they matter.

United Arab Emirates

The vision of the government of the United Arab Emirates (UAE) is to become one of the happiest nations in the world by the 50th anniversary of its nationhood in 2021. Including all public and private sector industries in the UAE and Dubai, and delivered through targeted policies, programs and partnerships at the local and international levels, the UAE has made much progress on its well-being journey in 2018.

Within this context, the awareness and application of positive education has begun to take hold across the UAE's public and private schools. With the guidance of the Minister of State for Happiness and Wellbeing, the National Program for Happiness and Wellbeing has undertaken a pilot project to train public school teachers in positive education practices. In partnership with the Institute of Positive Education at Geelong Grammar School in Australia, 80 teachers and 40 school leaders across 10 public schools took part in initial training, with follow-up training conducted six months later. Preliminary qualitative findings – evaluated by collaborative teams from United Arab Emirates University and the University of Melbourne - indicate an improvement in student well-being and an increase in community engagement. Final results will be released in February 2019.

The UAE's commitment to happiness and well-being in education has also seen support from the higher education sector. Zayed University[1], a federal institution educating UAE nationals, has recently introduced 'The Quest for Happiness' – a mandatory course for all new students. This interdisciplinary course takes students through a journey of connecting with self, others, and community as they explore concepts of positive psychology and apply tools to find their purpose and improve their well-being. Topics will include meaning, purpose, resilience, motivation, emotional intelligence, gratitude, mindfulness, altruism, empathy, and happiness around the world. This course uses an experiential approach in guiding students to understand and apply core concepts, analyze foundational texts and exercise self-reflection. Students will be exposed to the discourse on how to live a purposeful life and will gain insights and practical strategies to engage in a search for fulfillment.

The Knowledge and Human Development Authority (KHDA) in Dubai, working in partnership with the Department for Education in South Australia, recently completed the first year of a 5-year project to measure the well-being of middle school students across Dubai's private schools. Involving nearly 65,000 students across 168 schools, first year results of the Dubai Student Wellbeing Census[2] have revealed that 84% of Dubai's students consider themselves to be happy most of the time.[3] The second year of the Census will be expanded to include students up to Grade 12. Results will be released in February 2019.

KHDA will survey principals, teachers, administrators, governors and school owners about their own well-being in order to gain a more complete picture of well-being in education and to enact policies to benefit the whole community. The Adults@School Wellbeing Survey, run with the support of Michelle McQuaid, was launched in late 2018, and is based on the PERMA model pioneered by Dr. Martin Seligman.[4] Schools will receive summary reports of responses from their student and adults that they can use as evidence and reference points for developing initiatives to improve well-being across their school community.

The Well Schools Network

The Well Schools Network is a national network offering optional membership for the UAE public and private schools seeking to foster positive education and well-being culture for their students and teachers. The network provides a flexible mechanism that allows member schools to implement positive education and well-being principles in line with a set of pillars that would yield positive benefits for the school community.

Registration

Schools willing to promote positivity and well-being can register in the network

Implementation

Member schools implement activities and initiatives aiming to boost positive education and well-being within the school community, in line with the network's key pillars.

Optional Consultation

Member schools can access consultation and advice on their proposed initiatives from the network's pool of experts in positive education and well-being. These optional consultations aim to maximize the impact of the initiatives.

Grants

The network offers a range of grants to support the activities and initiatives undertaken by its member schools. Schools wishing to benefit from these grants can submit a detailed list of their proposed activities and initiatives, and the network will select the initiatives eligible for the grants.

Well Schools Mark

The Well Schools Network supports member public and private schools to adopt the principles of positive education and well-being by providing financial and advisory support to related activities and initiatives. Given the flexible nature of the network's pillars and related elements, member schools can focus on the pillars and elements they deem more important to them. Distinguished schools will be granted the 'Well Schools Mark', which highlights the school's outstanding efforts in promoting positive education and well-being. Obtaining such mark will serve as a proof of the school's excellence in promoting positivity and well-being among parents and the whole community."

https://wsn.hw.gov.ae/en

India

CorStone works with some of the world's most marginalized populations to empower them to "bounce back" and thrive despite significant adversity. CorStone is an internationally recognized nonprofit organization with the mission to provide evidence-based resilience programs to improve mental and physical health, increase academic achievement, and reduce poverty among marginalized youth and women. Since 2009, CorStone has reached over 65,000 beneficiaries in India and Kenya. Its largest program, *Youth First*, is an evidence-based integrated emotional resilience and health program that has been rigorously tested through a randomized controlled trial among 3,600 schoolgirls in a rural setting.

In India, CorStone works through three modalities: providing *Youth First* to students in government middle schools; providing *Girls First* to students in Kasturba Gandhi Balika Vidyalaya (KGBV) schools, which are government-run residential middle schools for vulnerable girls; and providing the *Self Help Group Resilience Project* to rural women in self-help groups.

Youth First and Girls First in Middle Schools

CorStone has trained nearly 500 government middle school teachers to conduct a 25-session resilience and health curriculum among 6th, 7th and 8th standard students in 250 schools. As of the end of the 2017/18 academic year, *Youth First* and *Girls First* had reached over 65,000 students. Teachers report better rapport with students and improved student focus in the classroom. Students report improved goal-setting and problem-solving skills, and describe using their character strengths to help them work towards goals and solve problems. Quantitative pre- and post-assessments among student participants also show improved resilience skills as well as improved psychological well-being. For example, in a recent pre- to post-test uncontrolled evaluation of *Girls First* conducted in KGBV schools, resilience, self-efficacy, social-emotional assets, psychological well-being and social well-being improved significantly (p's < 0.001; see Figure 1).

In 2018, CorStone launched a longitudinal randomized controlled study of *Youth First* in government middle schools in Bihar. This evaluation will provide some of the first evidence in the region about the longer-term impact of emotional resilience training on students' enrollment into high school, mental health, substance use and reproductive outcomes.

In addition, CorStone has entered into an understanding with the Bihar Education Department to plan for scale-up of its *Youth First* program in government schools and *Girls First-KGBV* program in KGBV schools throughout Bihar. There are over 70,000 middle schools and 500 KGBV schools in Bihar, serving over 6,000,000 primarily low-income students.

Self-Help Group Resilience Project

In 2018 CorStone completed piloting a new program aimed at rural, low-literacy women, delivered through the self-help group platform. Six hundred women in 50 self-help groups participated in the pilot. An observational study of this program showed that the intervention had significant impact on women's assets and well-being (see Figure 2). Resilience measures increased by 25%, from 25.1 to 31.3 (maximum possible score of 40 points). Similarly, statistically significant increases were found for General Self-Efficacy scale (+18%). Increases were also found on the State Hope Scale (+12.8%), which encompasses aspects of both agency (goal-directed energy) and pathways (planning to meet goals). Significant impacts on mental well-being were also found, measured. Scores decreased by 21.6%, representing a clinically meaningful change.

Kenya

Youth First Kenya

In the past year CorStone expanded Youth First to Kenya, where it successfully piloted its emotional resilience and health program among 9 schools in low income rural and nomadic communities, training 16 teachers and 200 students. CorStone is now working closely with county- and national-level policy makers in the Ministry of Education to approve the curriculum and plan for a longer-term scale up strategy.

Figure A2. Girls First – KGBV: Pre- to Post-Test Changes

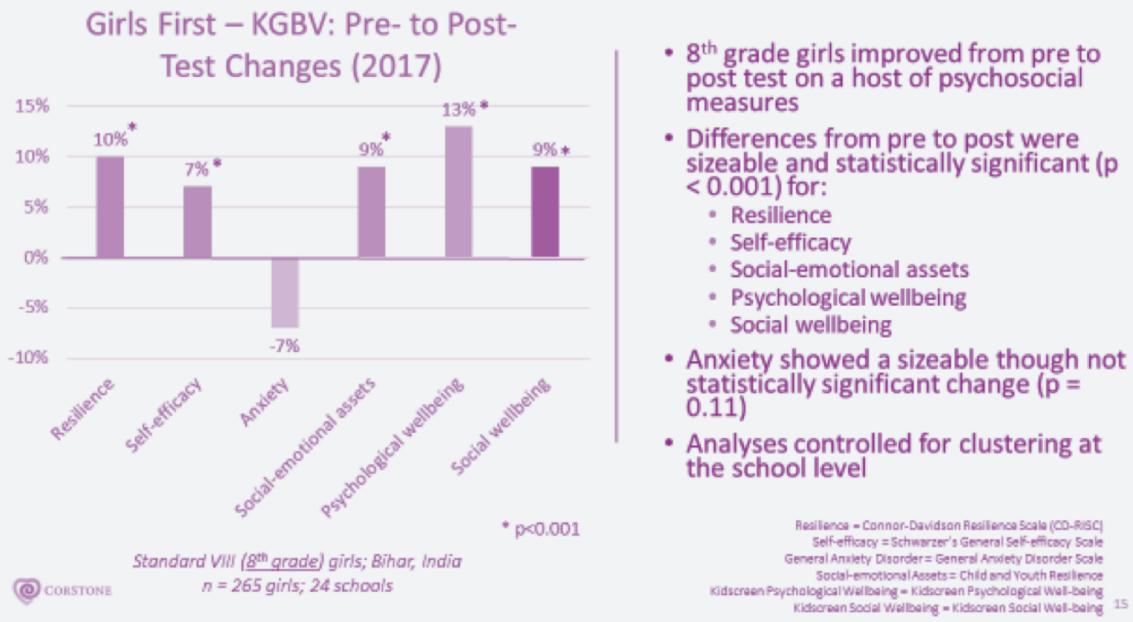
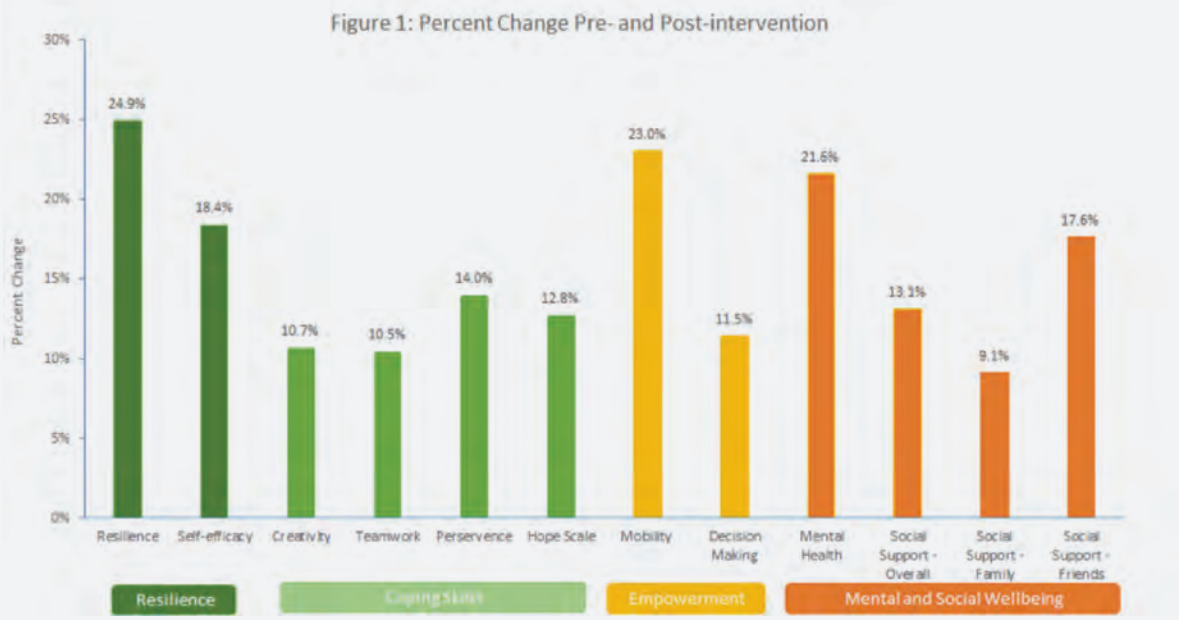


Figure A3. Self-help Group Resilience Project: Percent Change Pre- and Post-intervention



Notes for Figure A3: All items significant at p<0.001. Resilience and coping skills together represent the assets that are hypothesized to improve as a result of the SRP. Mental health is shown as improving in this figure, as indicated through a reduction in the SRQ-20 scores.

Australia

In 2018, **Geelong Grammar School (GGS)** celebrated the tenth year of its successful implementation and embedding of Positive Education, and the fifth year of operation of its I**nstitute of Positive Education**. To help mark the first decade of Positive Education, GGS hosted the 4th annual Positive Education Schools Association (PESA) conference. The conference was attended by more than 800 delegates representing each state and territory in Australia and ten different countries.

https://vimeo.com/284659310/677af18854

Professor Martin Seligman returned to GGS and delivered the opening and closing keynotes. With 20 addresses, 18 masterclasses, 60 teacher-led workshops it was a true festival of learning, living, teaching and embedding Positive Education. The **Institute of Positive Education (IPE)** continues to grow its impact in inspiring and supporting schools to discover and implement Positive Education. In 2018, the IPE delivered 124 training courses comprising 208 training days, which were attended by over 6000 participants. To meet the increasing demand, the Institute team has doubled in size in the past year to 24 members across five teams: Training, Research, Communications, Business Development and Administration. Whilst continuing to deliver a range of open-entry courses and workshops, the IPE is increasingly working directly with individual schools to provide whole-school training and in-depth, long-term consultancy to facilitate customized whole-school Positive Education implementation strategies. The Institute's training team has a combined total of more than 150 years of classroom and school leadership experience and over 50 years of practice implementing Positive Education.

Significant progress has been made by the IPE's dedicated curriculum writers in developing a Positive Education Enhanced Curriculum (PEEC). This is a research-based explicit curriculum, developmentally sequenced from Kindergarten to Year 12, and draws on ten years of experience

teaching Positive Education at GGS. Already trialed across the four GGS campuses, PEEC is now being piloted at schools both nationally and internationally, ready for its public launch in 2019. PEEC is not a replacement for the implicit Positive Education that takes place every day through pastoral care, coaching, teaching and every interaction that a teacher has with a student. It is an explicit curriculum that is implemented in a strategic way during timetabled lessons.

In 2018, GGS produced a detailed 40-page booklet titled 'Positive Education Research at Geelong Grammar School: Our contributions and discoveries to date.' Findings from a recent key collaborative venture with the Centre for Social and Early Emotional Development (SEED) at Deakin University were shared following the third year of our 'Giving for a Better World' project. The project explored the link between student eudaimonic well-being and voluntary prosocial action. The eudaimonic model posits that well-being is not so much a goal of behavior as a consequence of living virtuously – or living in a "caring and personally meaningful" way. One of the successful aims of the project was to trial new measures for kindness and eudaimonic well-being and to develop a new student interview methodology to assess student motivation for participation in the project. An important finding was that students developed a more mature understanding that caring for others can be a difficult, challenging and yet rewarding undertaking.

National and international conference keynote presentations addressed two distinct but related concepts: 'Ten Lessons Learnt' from a decade of implementing Positive Education and 'Ten Hopeful Thoughts' for the future directions of Positive Education. Blogs on both topics are published on the Institute's website.

As a School, and through the Institute's training and research, GGS remains committed to its dual foci of nurturing the well-being of its school community and furthering the field of Positive Education: the science of education at its best.

In 2018, Positive Education has continued to grow in Australia as evidenced by growth in membership of the Positive Education Schools Association (PESA) (450% growth since 2016), growth in the number of attendees at the Annual Positive Education (PESA) Conference (2017 n = 350. 2018 n = 800), growth in the number of people formally enrolling in university qualifications in Positive Education and Positive Psychology, together with an Australian first of the science of positive psychology being formally included into the Bachelor of Teaching and Master of Teaching programs at The University of Adelaide who, from 2019, will graduate teachers formally trained in the science of positive education.

2018 has seen the formation of a four 'Positive Education Cluster Models' in Australia where groups of schools are banding together to share training resources. The largest of these clusters involves 21 schools across the State Sector, Independent Sector and Catholic Sector in the Upper Hunter Region of New South Wales. This has been made possible through a three-way partnership among PESA, the Where There's a Will Charity, and Visible Wellbeing. The two-year project in Upper Hunter brings together all teachers and school leaders to receive 8 days of training in positive education together with ongoing coaching, measurement, parent education and student resources across the two years. https://www.muswellbrookchronicle.com.au/story/5196692/a-significant-milestone/?cs=1865

The Victorian State Government is investing in positive education for its state schools and has injected $6.39 million into a positive education cluster by forming a partnership between the University of Melbourne's Centre for Positive Psychology, Maroondah City Council, Maroondah Principals Network and Geelong Grammar's Institute of Positive to provide training for 20 Victorian school. http://www.maroondahyouth.com.au/Maroondah-Plus-10-Schools

Another Victorian State Schools Education cluster is the Langwarrin Positive Education Network, a cluster of 4 government secondary and primary schools, which have banded together to jointly appoint a Positive Education Coordinator, whose role is to embed Positive education across all 4 schools using a shared language and philosophy.

A similar State Schools Education Cluster was formed in Tasmania, with 50% of the funding coming from the Tasmanian State Education System towards a cluster of 4 State primary school who undertook the Visible Wellbeing Training. For more information about these 4 schools: http://www.visiblewellbeing.org/media/

The Centre for Positive Psychology at The University of Melbourne continues to be the pre-eminent place of positive psychology training for university level certificates and degrees over 3,000 undergraduate and postgraduate students graduating from the Centre's courses since 2013. The Centre for Positive Psychology has also taken its Professional Certificate in Positive Education to China and Japan.

https://education.unimelb.edu.au/__data/assets/pdf_file/0011/2851841/2018-Annual-Review-Centre-for-Positive-Psychology.pdf

Endnotes

1 https://www.zu.ac.ae/main/en/index.aspx

2 https://www.khda.gov.ae/en/dswc

3 https://www.khda.gov.ae/Areas/Administration/Content/FileUploads/Publication/Documents/English/20180218150520_WellbeingCensus_2017Results.pdf

4 https://permahsurvey.com/

Chapter 5

Employee Well-being, Productivity, and Firm Performance: Evidence and Case Studies

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Executive Summary

1. We estimate a positive correlation between employee well-being and productivity, and there is a growing evidence base documenting this being a causal effect. Recent experimental evidence suggests that a meaningful increase in well-being yields, on average, an increase in productivity of about 10%.
2. There is a large, positive correlation between employee well-being and aggregate, firm-level measures of performance across all types of industries. This relationship is particularly strong in terms of customer satisfaction and staff turnover – both of which drive overall profitability. Publicly traded companies with a happy workforce also perform better on the stock market.
3. This makes the case for a consistent measurement of employee well-being that should be widely reported upon, alongside productivity and firm performance outcomes.
4. Interventions aimed at raising employee productivity should target the key drivers of employee well-being. A good starting point are interventions identified in Krekel et al. (2018) that target *(a)* social relationships at work, especially with supervisors (for example, similar to the social recognition programme at LinkedIn or Butterfly AI's managerial feedback system described in our case studies), *(b)* making jobs more interesting (for example, through job crafting), and *(c)* improving work-life balance.
5. Intervention results should be rigorously evaluated (ideally by means of randomised controlled trials). Costs should be recorded to identify the most cost-effective interventions; results should be shared publicly to enable knowledge exchange and learning.

1. Introduction

The well-being of employees is a good in itself. But an important question frequently arises as to whether there are any objective benefits to making the subjective well-being of workers a priority. Clearly, implementing policies that promote worker well-being can be resource-intensive. And in times of limited budgets and competing priorities, the issue often boils down to the question: is it worth it? Ultimately, businesses and policy-makers alike want to know: are there any objective returns to – or, more generally, is there a compelling business case for – spending scarce resources to ensure and enhance well-being in the workplace?

It is on this key question that this paper is focused. We attempt to shed light on the issue in three different ways: first, we review the most recent and robust empirical evidence from the academic literature on the links between well-being and performance. Second, we present practice-oriented, hands-on case studies from specialists working in the field.[1] Finally, as the main contribution of this paper, we conducted a meta-analysis of research studies done by the Gallup Organization for their clients investigating the nexus between employee satisfaction and various firm performance outcomes. Taken together, the evidence very much suggests the answer to the overarching question is "yes" – there is a strong business case for promoting the well-being of workers.[2]

The data accumulated by Gallup in their client work over the past few decades yields a rich seam of data on employee well-being and firm performance. In total, we study 339 independent research studies that have been accumulated by Gallup, including the well-being of 1,882,131 employees and the performance of 82,248 business units, originating from 230 independent organisations across 49 industries in 73 countries. We tabulate the correlations between employee well-being and various firm performance outcomes at the business-unit level, and then apply meta-analytic methods to obtain average correlations across studies, adjusted for differences in sample size, measurement error, and other statistical idiosyncrasies between the 339 original research studies.

Of course, correlation does not imply causation. The breadth and depth of the Gallup data provide

us with unique insights into the relationship between employee well-being and firm performance. But we also seek to enrich this evidence with supporting, complementary empirical evidence from the academic literature. In doing so, we focus on the "causal-design" literature, and in particular, identify studies using laboratory or field experiments as well as those exploiting 'natural' experiments occurring in the real business world. Our aim is to bring together the most recent and robust studies that credibly certify (or at least strongly suggest) causality of the effect of happiness on productivity, while paying attention at the specific mechanisms through which happiness may affect productivity.

This paper is structured as follows. In Section 2, we review the theoretical as well as empirical literature on the relationship between employee well-being and productivity at the individual level. We ask the question: do happier workers work better? Then, in Section 3, we move on to the firm-level, and attempt to assess the relationship between aggregate-level well-being and firm performance. Here, the key question is: do the insights at the individual-level translate into tangible benefits on the bottom line of business? We first leverage the Gallup client data to provide a correlational meta-analysis, and then supplement that evidence with more causal research designs from the academic literature. Finally, in Section 4, we conclude by providing an outlook on likely future developments in the area, by identifying key gaps to date, as well as fascinating research opportunities in the future.

2. Individual-Level Well-being and Productivity

2.1 Theoretical Background

Before assessing the evidence on the relationship between employee well-being and productivity, it is useful to first take one step back and reflect on why we might expect employee well-being to affect productivity in the first place.

Several different theories have been studied in the literature.[3] Perhaps the most long-running and widely-known is *Human Relations Theory*. Going back nearly a century, the human relations movement has hypothesised that higher employee well-being – typically measured in terms of job satisfaction (a cognitive, evaluative judgement) – is associated with higher morale, which, in turn, leads to higher productivity (see Strauss (1968), for example). This framework is in line with research showing that positive attitudes towards a particular life domain carry with them positive behavioural implications (Fishbein and Ajzen, 1975). Following this reasoning, higher job satisfaction, with presumably more favourable attitudes towards work and the workplace, should be associated with less absenteeism or staff turnover, among other important outcomes.[4]

More recently, there has been a more "emotional turn" to the research. *Emotion Theory* postulates that employees' emotional states can affect and drive their performance (see Staw et al. (1994), for example).[5] There are several different channels through which this may take place. First, positive affect – or "mood" – may itself lead to heightened motivation, and hence better job outcomes and organisational citizenship (Isen and Baron, 1991). A further channel is through positive, stimulating arousal, either directly (Russell, 2003) or indirectly via changes in attitudes or behaviour (Baumeister et al., 2007).[6]

A related stream of work stresses the positive effect of emotions on creativity, arguing that positive affect leads to what psychologists call *cognitive variation* (Clore et al., 1994). Here, three mechanisms are proposed in the psychological literature: first, positive affect increases the number of cognitive elements available for association. Second, it increases – through defocused attention – the breadth of these elements. Finally, it increases cognitive flexibility, and hence the probability that cognitive elements become associated with each other (Isen, 1999) – for example, helping people make connections between ideas for a new project. In other words, positive affect increases the number and diversity of our thoughts, helps us muse about them more intensively, and in doing so, helps us build relationships between thoughts that have previously been disconnected from each other – a perpetual, creative process bearing new thoughts and ideas.

2.2 Empirical Evidence

The nature, form, and temporal dynamics of the relationship between positive affect and creativity at work was studied by Amabile et al. (2005). The authors employed experience sampling

methods to collect – for several months – daily and monthly reports of affect and creativity from 222 employees in seven companies and three industries (chemicals, high-tech, and consumer products) working on 26 organisational projects that called for creativity. Using 11,471 daily reports of employees and peer ratings, and controlling for education level and company tenure, amongst other factors, the authors found that positive affect has a positive relationship with creativity, defined as production of novel and useful ideas and measured by asking peers to assess the creativity of employees' work.[7]

Is this just a case of 'reverse causality'? Amabile et al. (2005) showed that positive affect is an *antecedent* of creativity with an incubation period of up to two days.[8] Perhaps even more convincingly, the causal effect of affective states on creativity has been shown in the laboratory. Isen et al. (1987), for example, induced positive affect in participants – by showing them a few minutes of a comedy film or by giving them a small bag of candy – and then administered tasks generally regarded as requiring creative ingenuity. They found that participants in the experimental condition (i.e. those with more positive affect) performed better in creative tasks than participants in the control condition.[9] Interestingly, negative affect did not produce comparable improvements in creative performance.

Besides creativity, how do emotions relate to productivity more generally? Oswald et al. (2015) conducted a series of lab experiments that randomly allocated students into either an experimental condition in which they received a happiness-enhancing treatment (like watching a ten-minute comedy clip or receiving free chocolate, fruits, and non-alcoholic drinks) or a control condition (in which they watched a calm placebo clip or received nothing at all). The participants then performed a real effort task for which they were paid a piece-rate. Increases in happiness were strongly associated with increases in productivity of up to 12% on the task (they were asked to correctly sum up numbers for ten minutes). This is a large effect that can – due to the randomised experimental nature of the study – be interpreted as causal. Importantly, the authors showed that the happiness-productivity relationship goes beyond the artificial lab setting, by exploiting randomly occurring real-life shocks to well-being (bereavement or family illness): students who reported such shocks performed systematically worse on the task than their peers who did not.

Another piece of real-life evidence comes from De Neve and Oswald (2012). Using data on more than 10,000 young adults in the US, and comparing siblings from the same family while also controlling for a wide range of observables including education, intelligence, physical health, and self-esteem, the authors found that individuals who reported higher levels of positive affect and life satisfaction at ages 16, 18, and 22 have significantly higher levels of earnings later in life.[10] Important pathways were a higher probability of obtaining a college degree, getting hired and promoted, and higher levels of non-cognitive skills (more optimism and extraversion, less neuroticism).[11]

Interestingly, a significant stream of research on individual well-being and workplace performance has focused on call centres. This is perhaps unsurprising, given that many tasks in this setting can be easily quantified at high-frequency intervals, for example, the number of calls or sales per hour or day. This is not true of many other professions, where researchers are forced to instead study outcomes like quarterly or annual managerial reviews (which are more problematic to interpret).

Rothbard and Wilk (2011) studied affect and productivity of call centre agents in two call centres of a large insurance company. The authors were particularly interested in how start-of-workday mood affects how call centre agents see interactions with customers, how they feel subsequent to them, and how these feelings affect their (objective) work productivity and quality of work. Employing experience sampling methods, the authors recorded affect – covering positive mood such as being excited, enthusiastic, upset, or irritable – daily over a period of three weeks, at the start of the workday and subsequent to calls. The authors showed that start-of-workday mood, or mood before calls more generally, did indeed affect the productivity of call centre agents: *positive affect* subsequent to calls related to better quality of work, whereas *negative affect* was positively associated with quantity – that is, more calls in total.[12]

Coviello et al. (2017), using a simple daily questionnaire, tracked the mood of more than

2,700 call centre agents located in nine different call centres for over a year.[13] The authors found that better mood *decreases* the number of calls per hour, or average call duration in minutes. This finding held even after controlling for individual fixed effects (including, for example, the innate ability of call centre agents) as well as leveraging variation in local weather patterns that may affect mood. A potential mechanism they discuss is that better mood may lead to a heightened vulnerability to social distractions, i.e. call centre agents in better mood may talk more with each other than clients on the phone (Cunningham, 1988; Pacheco-Unguetti and Parmentier, 2016).[14]

Although call centres offer an interesting real-world laboratory to study well-being and performance, some of the performance metrics are difficult to interpret. This is especially true for the number of calls. In particular, Coviello et al. (2017) rightly note that the number of calls is not necessarily a good measure of productivity: to the extent that an increase in the number of calls comes at the expense of actual call quality (which may be the case for a call centre agent in bad mood), it is difficult to interpret an increase in the number of calls as an increase in productivity *per se* (in fact, it could be interpreted as a decrease).

Staw and Barsade (1993) tested the question of whether positive or negative affect leads to better performance at the management level. Contrary to call centre agents, the work of managers is less structured, and when it comes to decision-making, potentially more influenced by affect than routine tasks. The authors conducted managerial simulations (in which 111 first-year MBA students were required to run a fictitious production plant) as part of a weekend assessment centre, including a three-hour in-basket exercise (an exercise in which participants have to work themselves through a simulated inbox under time pressure) with 21 different decision items. They found that management students with higher levels of positive affect did perform better in terms of interpersonal tasks (within-group discussions) and overall decision-making. Zelenski et al. (2008) confirm this result in a study of 75 directors employed in the private sector and the Canadian federal government: managers with higher levels of positive affect rated their productivity higher than their peers.

Overall, the literature at the individual level suggests a positive impact of mood on performance. However, the sign (and to some extent size) of the impact of positive affect on performance seems to be context-specific. It depends, in particular, on the tasks being completed and the working environment. Applying meta-analytical methods, and hence averaging across many studies, Lyubomirsky et al. (2005) conclude that this impact is, on average, positive.

3. Employee Well-being and Firm Performance

Having looked at the relationship between well-being and productivity at the individual level, we now zoom out, and look at this relationship at the firm level. We first present results from novel empirical analyses in collaboration with the Gallup Organization, analysing its extensive client database to study the relationship between employee well-being and various firm performance outcomes. We then supplement this analysis with other, supporting evidence from the literature.

In general, we expect the direct effects of "happier workers working better" identified previously to translate into positive impacts at the aggregate firm level. But beyond immediate, direct effects of mood on motivation and productivity, we also expect there to be more slowly moving and indirect effects. We thus look additionally at employee recruitment and turnover – the extent to which more satisfied workplaces are more likely to attract and retain talented workers – and at customer loyalty and satisfaction, which are particularly relevant in service industries where employees are in direct contact with customers.

3.1 Meta-Analysis of the Gallup Employee Well-being Database

Over the years, Gallup has accumulated 339 independent research studies – conducted as proprietary research for clients – that include data on employee well-being as well as firm performance. In total, these studies include (partly repeated) observations on the well-being of 1,882,131 employees and performance of 82,248 business units, originating from 230 independent organisations across 49 industries in 73 countries. We calculated, for each of the

82,248 business units, the correlation between employee well-being and various firm performance outcomes.[15] This gives us a unique, rich (yet diverse) source of data to study the relationship between employee well-being and firm performance in the field.

The 339 research studies are largely context-specific, varying not only with respect to organisation and industry but also with respect to geographical location and observation period. We therefore employ meta-analytic methods that enable us to integrate the findings accumulated across the different studies and produce generalisable insights, by controlling for differences between studies resulting from sample size, measurement error, or other artefacts, to eliminate biases (Schmidt and Hunter, 2015).[16]

Our approach involved three steps: first, we aggregated employee well-being and the respective (context-specific) performance outcome at the business-unit level for each of the 339 research studies. Second, we calculated the business-unit-level correlation between employee well-being and performance outcomes for each study. Finally, we applied our meta-analytical toolkit to obtain a single, adjusted (i.e. non-context-specific) average correlation between employee well-being and the respective performance outcome.[17]

Employee Well-being Measures. Gallup has been including well-being measures routinely in all of its studies since 1997 (Harter and Schmidt, 2008; Harter and Agrawal, 2011).[18] Our primary measure is *satisfaction with the organisation as a place to work*, which is obtained from a single-item five-point Likert scale question asking respondents: "How satisfied are you with your organisation as a place to work?" Answer possibilities range from one ("extremely dissatisfied") to five ("extremely satisfied"). For simplicity, we refer to this measure as *employee satisfaction*.[19]

Besides employee satisfaction, the Gallup survey instrument – referred to as Q[12] – also included a measure of *employee engagement*: it asks employees about twelve (hence the name) different dimensions of engagement, reflected in formative workplace conditions (such as whether there is the opportunity for employees to do what they do best, whether there is someone encouraging their development, or whether their opinions count) which are related to a wide range of business outcomes across organisations.[20] Engagement is a psychological construct that goes well beyond satisfaction: employees who are engaged with their job are positively absorbed by what they do and committed to advancing their organisation's interests; they identify themselves with their organisation's mission and values, and represent it even outside formal working hours.

Performance Outcomes. We studied four outcomes, arguably the most important key performance indicators from a business perspective:[21]

- *Customer Loyalty.* Measures of customer loyalty varied across the 339 research studies. Most studies included fairly standard customer loyalty metrics such as the likelihood to recommend or repurchase a product or service, the "net promoter score", or simply the number of repeated transactions.[22] Other studies also included measures of customer satisfaction, service excellence, or customer evaluation of the quality of claims.
- *Employee Productivity.* Measures of employee productivity included mostly financial measures such as revenue or sales per person, growth in revenue or sales over time, quantity per time period, enrolments in programs, labour hours, costs to the budget, cross-sells, or performance ratings.
- *Profitability.* Measures of profitability included the percentage profit of revenue or sales, or the difference between current profit and budgeted profit or profit in the previous time period.[23]
- *Staff Turnover.* Staff turnover was defined as the percentage of (voluntary) turnover per business unit.

Methods. Our meta-analytical methods (see Schmidt and Hunter (2015) for more details) corrected for heterogeneity within each category of performance outcome. After calculating the correlation between employee well-being and the respective performance outcome at the level of each business unit, correlations were aggregated and adjusted for differences in sample size, measurement error, and other statistical artefacts or idiosyncrasies between the 339 original research studies, to obtain true score correlations.

Results. Figure 1 shows true score correlations between employee satisfaction and firm performance as means, taken across all industries and regions. All correlations are in the hypothesised direction. Previous research has shown high generalisability of correlations across studies (Harter et al., 2015).

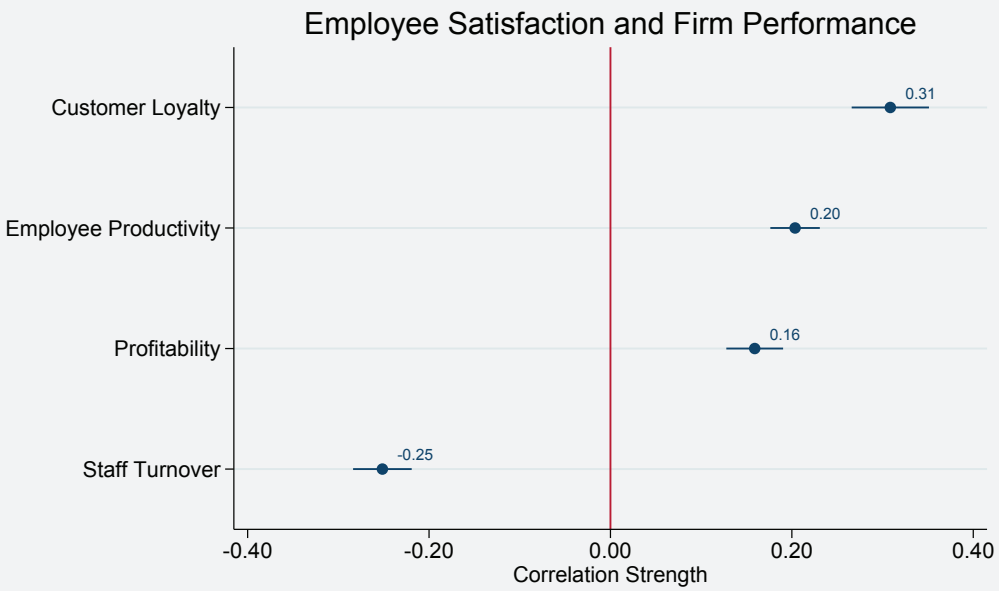
As can be seen, employee satisfaction has a substantial positive correlation with customer loyalty and a substantial negative correlation with staff turnover. The correlation between employee satisfaction and productivity is positive (0.2). Importantly, higher customer loyalty and employee productivity, as well as lower staff turnover, are also reflected in higher profitability, as evidenced by a positive correlation between employee satisfaction and profitability (0.16).

Does the importance of employee well-being for firm performance differ by industry? Figure 2a sheds light on this question.

Conducting our meta-analysis separately by industry (distinguishing finance, retail, services, and manufacturing sectors), we find that there is a gradient in the importance of employee satisfaction for the different performance outcomes by industry.[24] For most outcomes – customer loyalty, business-unit productivity, and staff turnover – employee satisfaction is most important in finance, followed by retail, and then closely, by services.[25] However, these industry differences in correlations have highly overlapping 95% confidence intervals on nearly all outcomes. The correlation between employee satisfaction and productivity appears to be somewhat stronger in the finance industry than in other industries. Perhaps surprisingly, for services and retail, employee satisfaction has a positive but lower relationship with profitability. Even so, the 95% confidence intervals fall almost entirely in the positive range and overlap with the finance industry interval. For manufacturing, we find that employee satisfaction has the lowest correlation with productivity but the strongest with profitability amongst all industry sectors.

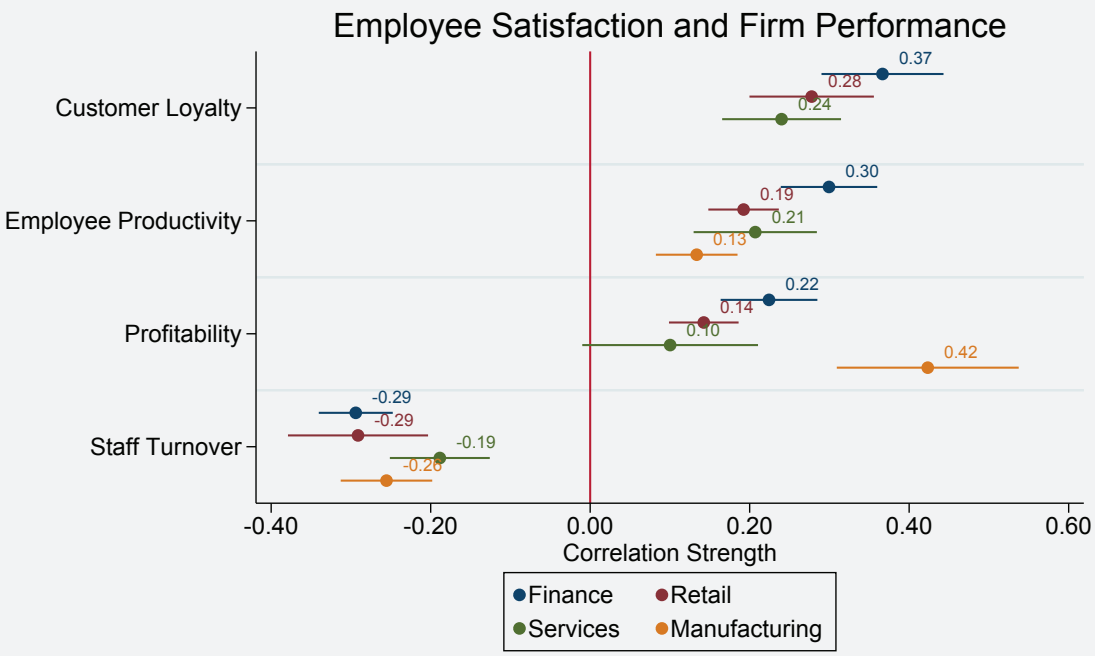
Further research will likely be focused on identifying why such differences exist across industries. One reason for the particularly

Figure 1. Correlation Between Employee Satisfaction and Firm Performance



Notes: The figure plots adjusted average correlation coefficients between employee satisfaction and different performance outcomes originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table 1 for the corresponding table and Table A4 in the Appendix for a breakdown of studies.

Figure 2a. Correlation Between Employee Satisfaction and Firm Performance, by Industry



Notes: The figure plots adjusted average correlation coefficients between employee satisfaction and different performance outcomes, by industry, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table 2a for the corresponding table and Table A4 in the Appendix for a breakdown of studies.

strong link between well-being and productivity in the finance industry might have something to do with working conditions in that sector. Although employees in finance have, on average, a higher pay than those in retail, services, and manufacturing, income is not the only – or perhaps even the most important – determinant of employee well-being. In fact, workplace characteristics such as little stress at work or work-life balance have been shown to be equally, if not more, important for employee well-being than pay (Krekel et al., 2018). Such characteristics, however, may be relatively less dominant in the finance industry than in other industries, suggesting that there is potentially more room in the financial sector for employee well-being to unlock positive productivity outcomes. Manufacturing organisations are often highly focused on process efficiency and safety as primary metrics within plants. Process efficiency and safety relate directly to the bottom line as they relate to costs. Job attitudes are likely to relate to discretionary effort that then impacts quality, efficiency, and safety within manufacturing plants and teams, possibly explaining the higher correlation between employee satisfaction and profitability.

We also ran our meta-analysis separately by region, to look at regional differences in the importance of employee well-being for firm performance. Because of the large number of studies conducted in the US, in our analysis, we can only distinguish the US from non-US regions. Figure 2b shows the findings of our separate meta-analysis by region.

As can be seen, we find some evidence that employee satisfaction tends to be more important for performance outcomes in non-US regions, with the exception of staff turnover, for which it

Figure 2b. Correlation Between Employee Satisfaction and Firm Performance, by Region

Notes: The figure plots adjusted average correlation coefficients between employee satisfaction and different performance outcomes, by region, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table 2b for the corresponding table and Table A4 in the Appendix for a breakdown of studies.

is the opposite. 95% confidence intervals for US and non-US regions are, however, highly overlapping, indicating that differences in correlations are likely due to study artefacts rather than true regional differences.

Finally, we replicated our meta-analysis for employee engagement instead of employee satisfaction, examining the relationship between employee engagement and firm performance, on average as well as separately by industry and by region.[26] We find that, when comparing adjusted average correlations for employee satisfaction with those for employee engagement, there are few differences in strength or relative rank, neither for findings at mean value nor for findings separately by industry or by region. The importance of employee engagement for performance outcomes are more homogeneously distributed across industry sectors. These consistent findings across two measures of job attitudes add support to the theory and findings reported in Harrison et al. (2006) and Mackay et al. (2017) of a higher-order job attitude-engagement factor.

In sum, aggregating data from 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units, from 230 independent organisations across 49 industries in 73 countries, we find that employee well-being is consistently positively correlated with firm performance.

Well-being has a substantial positive correlation with customer loyalty and a substantial, negative correlation with staff turnover. That is, in addition to the individual-level evidence – based largely on *Emotion Theory* – focusing on affective states and showing immediate effects of mood on productivity, there also seems to be strong evidence – more in line with *Human Relations Theory* – that employee satisfaction plays a

significant role in retaining and motivating the workforce.

Employee well-being in the Gallup data is positively correlated with employee productivity, and ultimately, profitability. The relative strength of the correlation with profitability is somewhat weaker, but this is expected given that profit is a downstream outcome in the hypothesised causal chain from job attitudes to operational outcomes to financial outcomes. Utility analysis of the practical value of the correlation between employee engagement and profitability suggests a 21% difference in profit between top and bottom quartile business units on employee engagement (Harter et al., 2015). The practical value of the size of correlations depicted in this meta-analysis has been calculated in previous studies as non-trivial (Harter et al., 2002, 2015). Although there is – depending on how employee well-being is measured – evidence of some differences by industry, the overall importance of employee well-being for key firm performance outcomes seems largely universal.

3.2 Literature on the Causal Effect of Employee Well-being on Firm Performance

From this correlational meta-analysis, we are unable to make any strong causal claim about the relationship between employee well-being and firm performance.[27] To make such claims, we need longitudinal data – repeated observations of employee well-being and firm performance over time – and some sort of randomised experimental intervention or policy change as a source of *exogenous* variation (which affects employee well-being without directly affecting firm performance), to reduce concerns about omitted variables that may be simultaneously driving employee well-being and firm performance.

Evidence from Within Firms over Time

One initial piece of longitudinal evidence comes from Harter et al. (2010) who studied the relationship between employee engagement and financial performance by exploiting temporal variation in the Gallup client database. The authors found that employee engagement and profitability are reciprocally related (i.e. they influence each other over time).[28] However, employee engagement at time *t* is a stronger predictor of profitability at time *t+1* than *vice versa*, whereby (short-term) outcomes such as customer loyalty and staff turnover are important mediators of this relationship.[29] Although establishing this temporal-causal (also referred to as *Granger-causal*) relationship between employee engagement and financial performance does not solve issues of omitted or "third" variables, it is yet another piece of evidence for a causal effect of employee well-being on firm performance.

Bloom et al. (2015) conducted an experiment on flexible work practices at a NASDAQ-listed Chinese travel agency with more than 16,000 employees, in which call centre agents (who volunteered to participate in the experiment) were randomly assigned to either working from home (the treatment group) or working in the office (the business-as-usual control group) for a period of nine months. The authors found that, at the end of the experiment, call centre agents who were working from home experienced fewer negative and more positive emotions, less exhaustion, and reported a higher overall life satisfaction compared to call centre agents who were working in the office.

Importantly, working from home also led to a 13% increase in performance, of which 9% was due to working more minutes per shift (attributed to fewer breaks and sick days) and 4% due to taking more calls per minute (attributed to a quieter working environment); staff turn-over halved.[30] After the success of the experiment (the company estimated to save about USD 2,000 annually per call centre agent working from home), the scheme was rolled out for the entire workforce (including giving workers who participated in the experiment the opportunity to change their working location again). This change almost doubled performance gains, to 22%, stressing the importance of selection and learning of workers about their own working preferences and styles.

Two other studies on flexible work practices stand out. Moen et al. (2011) examined the causal effect of switching from standard to more flexible, results-oriented working time at Best Buy, a large US retailer. By exploiting the staggered implementation of the scheme in its corporate headquarters, the authors found that staff turnover amongst employees who were exposed to the scheme dropped by 45.5% eight

months after implementation. More flexible work practices also moderated turnover effects of negative home-to-work spillovers (i.e. when responsibilities at home reduce the effort employees can devote to their jobs).

In a related study, however, Moen et al. (2016) showed that a similar organisational intervention – aimed at promoting greater employee control over working time at an IT company – reduced burnout, perceived stress, and psychological distress, while raising job satisfaction (with benefits larger for women) twelve months after the intervention. Taken together, both studies suggest that organisational interventions aimed at raising employee well-being, for example, through raising employees' autonomy over their working time, bear positively upon performance outcomes at the aggregate firm level – a win-win situation for both employees and employers.

A final example comes from the National Health Service (NHS) in the UK. Powell et al. (2014) used a large-scale longitudinal dataset generated from NHS staff surveys in 2009, 2010, and 2010. The authors found that better staff experience is associated with better outcomes for both employees and patients, and in particular, that higher well-being – measured, amongst others, in terms of job satisfaction – and better job design are linked to lower levels of absenteeism and higher levels of patient satisfaction.[31]

Evidence from Between Firms

We now move from studies looking at single companies and organisational interventions to studies examining several companies pooled together. Böckerman and Ilmakunnas (2012) examined the relationship between employee well-being and firm performance in Finnish manufacturing plants over the period 1996 to 2001. The authors linked individual-level data on job satisfaction from the European Community Household Panel with establishment-level data on employer characteristics and performance. The authors found that job satisfaction has a significant, positive effect on value-added per hours worked: a one standard deviation increase in job satisfaction at the plant level increases valued-added per hours worked by 6.6%.[32] In other words, increasing job satisfaction by one point, say, from four to five (out of six), would increase value-added per hours worked by almost 20% – a large effect.

A similar study was conducted by Bryson et al. (2017) in Britain. Using employer-employee data from the Workplace Employment Relations Survey – a nationally representative dataset on more than 2,000 workplaces covering all sectors of the economy except agriculture and mining – for the years 2004 and 2011, the authors found a strong link between well-being and performance.[33] They document a clear, statistically significant, positive relationship between average job satisfaction and performance outcomes at the establishment level (but *not* for job-related affect), in both cross-section (using the year 2011 only) and two-period panel with establishment fixed effects (using both the years 2004 and 2011).[34] Well-being had an impact on financial performance, labour productivity, quality of product or service, and an aggregated performance measure combining all other performance outcomes, even when controlling for establishment, industry, and regional characteristics as well as when looking longitudinally at firms over time. Although it is difficult to assess the exact size of these effects (performance measures are subjective scores reported by managers), the fact that job satisfaction affects *all* performance outcomes (with the exception of labour productivity in the two-period panel) across workplaces is strong evidence for a positive impact of employee well-being on firm performance.

Finally, the findings above match those of Green (2010), who found that job satisfaction is a better predictor for quits than job-related affect (see also Lévy-Garboua et al. (2007) on the predictive power of job satisfaction for quits).

Evidence from Stock Market Performance

Do firms with higher levels of employee well-being perform better on the stock market? To answer this question, Edmans (2011) studied the relationship between employee satisfaction and long-run stock returns using a value-weighted portfolio of the "100 Best Companies to Work for in America".[35] The ratings are based on survey responses from a randomly chosen 250 employees per company (asking about areas such as job satisfaction and attitudes towards management) and publicly available information (demographic make-up, pay and benefits programmes, and culture). The data show that, during the period 1984 to 2009, the "100 Best Companies to Work for in America" had an annual four-factor alpha

– a measure of excess stock market return – of 3.5%. Furthermore, they earned 2.1% higher stock returns than the industry average and had more positive earnings surprises and announcement returns.[36]

The relationship between employee well-being and stock market returns can also be replicated for the "Gallup Great Workplace Award" winners. In a recent study, the organisation compared the earnings per share of seventeen award winners, covering six industries and ranging in size between 800 and 250,000 employees, with their industry equivalents during the period 2011 to 2015 (Gallup, 2017). The data show that winners grew about 4.3 times faster during that period than their equivalents.[37]

Goetzel et al. (2016) study the stockmarket performance of companies winning the "C. Everett Koop National Health Award" – an award conferred annually to firms investing in cost-effective health and well-being programmes for their workers – relative to the average performance in the Standard and Poor's (S&P) 500 Index. The authors arrived at a similar conclusion: over a period of fourteen years (2000 to 2014), winners experienced a 325% growth in stock values, whereas their equivalents experienced growth of only 105%.

These findings are consistent with our results above, and more generally with *Human Relations Theory*, which argues that higher employee well-being causes better firm performance through better recruitment, higher employee motivation, and lower staff turnover. The importance of human resource management, however, may differ around the world, depending on the complementarity of labour market institutions. Indeed, in a recent paper, Edmans et al. (2017) extended the "100 Best Companies to Work For" analysis beyond the US, covering fourteen countries with different institutional settings. The authors found that higher job satisfaction was associated with superior long-run returns, current valuation ratios, future profitability, and earnings surprises only in flexible labour markets such as the US or the UK. Results for more rigid labour markets as in the Scandinavian countries or in Germany, however, were not statistically significant.[38] This suggests that in contexts where firms face lower barriers to hiring and firing and where worker welfare is not outsourced to "cushioning" labour market institutions, corporate social responsibility may yield higher returns.

4. Outlook

At the outset of this paper, we posed a relatively simple question: is there a compelling business case for promoting worker well-being? Overall, the balance of the evidence – both the old and the new that we have presented here – is very much in favour that there are measurable, objective benefits to well-being in terms of employee productivity and firm performance.

We began by looking at the relationship between well-being and productivity at the individual level and showed – by discussing findings from both field and lab – how higher levels of well-being are associated with more creativity and better task performance. Whether it is an effort task in a university lab or the real-life setting of a call centre, well-being is positively correlated with productivity. The evidence base is steadily mounting that this correlation is in fact a causal relationship (running from well-being to productivity).

We then panned away from the individual-level and looked at this relationship at the aggregate firm level. Conducting a meta-analysis of the extensive client database of the Gallup Organization, we showed that higher levels of employee well-being also manifest themselves in improved key firm performance outcomes, including customer loyalty, profitability, and staff turnover (although to a different degree depending on industry sector, an interesting area of future research).

Finally, we complemented our own analysis with empirical evidence at the firm-level from the wider, causal-design literature. We looked, in particular, at interventions targeting flexible work practices and studies linking employer and employee data. Again, a clear positive relationship can be seen between employee well-being and various measures of performance. Firms with higher levels of employee well-being also tend to do better in terms of stock market performance and growth.

There are a number of limitations and exciting avenues for future research. First and foremost,

we did not (and could not) present here a full account of the benefits of well-being at work: besides direct benefits in terms of employee productivity (and ultimately, firm performance), there are, of course, many other benefits to well-being at work such as better health and longevity (De Neve et al., 2013; Graham, 2017), which do not only indirectly contribute to employee productivity but also have wider, society-wide benefits beyond the world of work. Benefits presented here should thus be interpreted as a lower bound.

Second, although we studied the returns to employee well-being in terms of employee productivity and firm performance, we did not study which workplace well-being investments (i.e. investing, say, into more flexible work practices *versus* investing into higher pay) are most cost-effective from a business or policy perspective. This is partly because there are not many interventions in the first place (notable exceptions that directly target employee well-being include Proudfoot et al. (2009) and Jones et al. (2018), for example) and partly because interventions that do exist hardly report costs. It is thus difficult, given the current evidence base, to benchmark different interventions against each other in terms of cost-effectiveness. Across the board, more interventions are needed, and they need to be more transparent. Policy can play a vital role in encouraging experimentation, by providing monetary or non-monetary incentives for firms to conduct interventions and for sharing their impact evaluation results as a public good.

The evidence we have presented here is suggestive of a strong, positive relationship between employee well-being, employee productivity, and firm performance. Raising the well-being of society is a central goal for policy-makers, and it is a goal that is not in opposition to the interests of the business community. There is an important role for business leaders to play in being a strong positive force for raising the well-being of society.

Table 1. Correlation Between Employee Satisfaction and Firm Performance

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
Employee Satisfaction	0.31	0.20	0.16	-0.25
95% Confidence	[0.27, 0.35]	[0.18, 0.23]	[0.13, 0.19]	[-0.28, -0.22]
Number of Studies	68	109	66	88
Number of Business Units	14,092	35,050	26,078	35,587

Notes: The table shows adjusted average correlation coefficients between employee satisfaction and different performance outcomes originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A4 in the Appendix for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Table 2a. Correlation Between Employee Satisfaction and Firm Performance, by Industry

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
Finance				
Employee Satisfaction	0.37	0.30	0.22	-0.29
95% Confidence	[0.29, 0.44]	[0.24, 0.36]	[0.16, 0.28]	[-0.34, -0.25]
Number of Studies	15	19	14	17
Number of Business Units	7,509	7,920	6,224	9,193
Retail				
Employee Satisfaction	0.28	0.19	0.14	-0.29
95% Confidence	[0.20, 0.36]	[0.15, 0.24]	[0.10, 0.19]	[-0.38, -0.20]
Number of Studies	11	28	27	15
Number of Business Units	2,459	18,353	18,200	4,708
Services				
Employee Satisfaction	0.24	0.21	0.10	-0.19
95% Confidence	[0.17, 0.31]	[0.13, 0.28]	[-0.01, 0.21]	[-0.25, -0.13]
Number of Studies	33	32	11	38
Number of Business Units	3,314	2,928	774	10,241
Manufacturing				
Employee Satisfaction	—	0.13	0.42	-0.26
95% Confidence	—	[0.08, 0.18]	[0.31, 0.54]	[-0.31, -0.20]
Number of Studies	—	20	9	10
Number of Business Units	—	4,642	268	5,293

Notes: The table shows adjusted average correlation coefficients between employee satisfaction and different performance outcomes, by industry, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A4 in the Appendix for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Table 2b. Correlation Between Employee Satisfaction and Firm Performance, by Region

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
US				
Employee Satisfaction	0.30	0.20	0.17	-0.23
95% Confidence	[0.25, 0.35]	[0.16, 0.24]	[0.13, 0.21]	[-0.28, -0.19]
Number of Studies	45	65	32	56
Number of Business Units	12,010	23,202	17,742	22,622
Non-US				
Employee Satisfaction	0.41	0.25	0.24	-0.16
95% Confidence	[0.27, 0.55]	[0.19, 0.31]	[0.15, 0.33]	[-0.28, -0.04]
Number of Studies	6	18	14	11
Number of Business Units	563	2,238	2,593	1,032

Notes: The table shows adjusted average correlation coefficients between employee satisfaction and different performance outcomes, by region, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A4 in the Appendix for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Endnotes

1 For ease of exposition, these case studies are presented in an online appendix.

2 We focus, in particular, on the *direct* returns to workplace well-being in terms of employee productivity and aggregate firm performance – arguably the most relevant outcomes for business. There are, of course, many other positive returns to workplace well-being such as better health and longevity (De Neve et al., 2013; Graham, 2017) or improved job finding and future (non-pecuniary) job prospects (Akerlof et al., 1988; Krause, 2013; Gielen and van Ours, 2014; see Walsh et al. 2018 for a review), which *indirectly* contribute to more efficient labour markets and a more productive workforce. The returns presented here can thus be seen as lower bounds to investments into workplace well-being.

3 See Judge et al. (2001) for a review of theories on the well-being-productivity nexus and Tenney et al. (2016) for a review of the literature more generally.

4 Conversely, expectancy-based theories of motivation postulate that employee productivity follows from the (expectation of) rewards (which may include higher well-being) generated by eliciting effort (Lawler and Porter, 1967; Schwab and Cummings, 1970). Although there is no consensus about the direction of causality, empirical evidence is mounting that causality runs from employee well-being to productivity rather than the other way around.

5 See Lerner et al. (2015) for a more detailed overview of the effects of emotions on decision-making.

6 There is also a growing body of literature documenting the importance of emotions for risk attitudes and patience (see Meier (2018), for example), through changing the risk or temporal appraisal of situations (Lerner and Keltner, 2000, 2001), which constitutes another, indirect attitudinal channel.

7 Affect measures included peer ratings covering items on happiness, team satisfaction, enjoyment of work, personal frustration, and frustration with the team.

8 In complementary, qualitative analyses, the authors show that positive affect is both a consequence of creative thought events and a by-product of the creative thought process itself.

9 The control conditions watched a documentary film about math as a placebo or did not receive candy. Creativity tasks included the candle game, which requires participants to affix a candle to a corkboard in such a way that wax does not drip on the floor using various tools, and a *Remote Association Test*, which requires participants to think of words related to three other words presented to them.

10 More specifically, a one-point difference in life satisfaction – measured by a standard five-point scale asking respondents "How satisfied are you with your life as a whole?" – at age 22 was associated with a difference in earnings of about USD 4,000 at age 29, relative to the family mean.

11 See also Clark et al. (2018) for a more comprehensive account of the predictive effects of well-being in early life on later-life outcomes.

12 Productivity was measured as the availability of call centre agents to callers, the average duration with which call centre agents handled calls, and the extent to which they resolved calls on their own without escalating them; quality of work was measured as the verbal fluency of call centre agents. A caveat of this study is that the sample size is small (only 29 call centre agents), and that it relied on the self-selection of participants into the study, which could bias results if such self-selection is correlated with productivity outcomes.

13 The question asked respondents "How are you feeling today?", with answer possibilities ranging from one ("frustrated") to five ("unstoppable").

14 Coviello et al. (2017) also show that extrinsic motivation matters for the mood-productivity relationship: for call centre agents whose compensation actually depends on productivity (e.g. who face monetary incentives), the negative effect of positive mood on productivity – measured as the number of calls in total – is moderated if not, in specifications in which item non-response is interpreted as bad mood, even reversed, leading to a positive relationship between better mood and higher productivity. This is in line with recent evidence by Oishi et al. (2007) who show that the association between well-being and various performance outcomes is not linear, for example, people who are at the highest level of well-being perform better when it comes to social relationships, whereas people at slightly lower levels perform better when it comes to income.

15 If there were two studies for the same organisation and these studies were conducted in the same year, the weighted average correlation across the studies is used in our analysis. If the two studies were not conducted in the same year, for example, if data on employee well-being were collected *before* data on performance outcomes, the data that are more recent are used (or the mean in case of repeated data). Finally, if there were multiple studies for the same organisation that varied substantially in terms of sample size, as a rule of thumb, the study with the largest sample size is used.

16 We corrected, amongst others, for sampling error, measurement error in the dependent variables (i.e. performance outcomes), and measurement error and statistical artefacts such as range restriction in the independent variable (i.e. employee well-being).

17 See Harter et al. (2002, 2016) for a detailed description of the meta-analytic methods used.

18 See Table A6 in the Appendix for the different items that are included in the Gallup survey instrument.

19 There is a conceptual difference between *employee satisfaction* and *job satisfaction*, the latter of which is the more frequently used measure in business economics (see Spector (1997) or Cooper and Robertson (2003), for example). Job satisfaction only asks respondents about their job, abstracting from the organisation. We argue, however, that – in our context – employee and job satisfaction are closely related, as the Gallup survey instrument does not ask respondents about their *overall* satisfaction with the organisation but about their satisfaction with the organisation *as a place to work*. Respondents are thus likely to report about their own, personal job experience.

20 Aggregating over the twelve five-point scales yields an overall measure of engagement. We use employee engagement for sensitivity analyses, expecting to find effects of employee engagement on firm performance that are similar if not stronger than those of employee satisfaction.

21 Not every study in the Gallup client database includes every business-unit-level performance outcome: for 94 organisations, there are studies on customer loyalty, for 140 on employee productivity, for 85 on profitability, and for 106 on staff turnover.

22 The net promoter score is a customer-satisfaction benchmark commonly used in market research to provide insight into market growth prospects based on participant satisfaction, with scores ranging from -100 to +100 (Reichheld, 2003).

23 Whenever necessary, we controlled for geographical location (i.e. local market characteristics) when calculating business-unit-level correlations between employee well-being and profitability, in order to make profitability figures more comparable.

24 We focus on the financial, retail, manufacturing, and service sectors because we had fewer than 20 studies for the remaining sectors (materials and construction, personal services, real estate, and transportation and utilities), which we deem insufficient to base inference on. See Table A4 in the Appendix for a breakdown of the studies. Note that, for manufacturing, we have insufficient observations to make correlational inference between employee satisfaction and customer loyalty.

25 Differences between retail and services are (mostly) not statistically significant at conventional levels; differences between finance and services sometimes are.

26 See Figures A1, A2a, and A2b in the Appendix for these results.

27 Note, however, that many of the studies in the meta-analysis, by design, include performance measures that trail employee satisfaction or engagement measures, suggesting some predictive evidence.

28 In a similar longitudinal analysis using the same data source, Agrawal and Harter (2010) study the propagation of employee engagement along the organisational hierarchy over time. The authors find that executive engagement at time *t* affects middle-management engagement at time *t+1* and front-line engagement at time *t+2*, i.e. engagement cascades from leadership to middle management and then to the front line.

29 This finding is somewhat different from Koys (2001), who shows that employee attitudes and behaviour (measured in terms of employee satisfaction and organisational citizenship related to conscientiousness, altruism, sportsmanship, and courtesy) at time *t* are predictive of organisational effectiveness (measured in terms of profitability and customer satisfaction) at time *t+1*, but organisational effectiveness at time *t* is not predictive of employee attitudes and behaviour at time *t+1*. The context of this study, however, is quite specific: the author studies the relationship between employee well-being and firm performance at a regional restaurant chain.

30 As a possible side effect, the authors document that participants in the treatment group were less likely to get promoted conditional on performance. Leslie et al. (2012) show, in both a field study at a Fortune 500 company and a lab experiment, that flexible work practices may result in a career penalty in case that managers attribute their use as being motivated by reasons related to personal lives (as may have been the case for call centre agents who volunteered to participate in the experiment). However, to the extent that mangers attribute the use of flexible work practices to reasons related to efficiency or organisational needs, their use may actually result in a career premium.

31 Powell et al. (2014) study the links between staff experience and intermediate (staff) and final (patient and organisational) outcomes. The measure of job satisfaction used was a multi-item summed scale, including items on support from immediate managers and colleagues, freedom to choose methods of working, amount of responsibility, opportunities to use skills, the extent to which trust is seen as to value the work of staff, and recognition for good work.

32 Böckerman and Ilmakunnas (2012) estimated production function specifications in which job satisfaction – lagged to reduce concerns about reverse causality – is regressed on value added per hours worked at the plant level alongside controls for establishment and employer characteristics. The authors do not find a significant effect of job satisfaction on sales per employee as an alternative measure of productivity. However, this may have been an artefact of the manufacturing sector.

33 Job satisfaction was measured asking employees about nine aspects of their job, including pay, sense of achievement, scope for using initiative, influence over their job, training, opportunity to develop their skills, job security, involvement in decisions, and the work itself, which, when combined, yield an aggregate score of job satisfaction. Job-related affect was constructed similarly, asking employees whether they felt tense, uneasy, worried, gloomy, depressed, or miserable over the past few weeks.

34 Interestingly, Bryson et al. (2017) also test for reverse causality in their two-period panel, by regressing employee well-being in 2011 on firm performance in 2004. They do not find evidence for causality running from firm performance to employee well-being, suggesting – in line with Harter et al. (2010) – that causality runs rather the other way around, from employee well-being to firm performance.

35 The annual ranking is compiled by the Great Places to Work Institute in San Francisco, which rates organisations on four domains, including credibility, respect, fairness, and pride and camaraderie.

36 Edmans (2012) shows that returns even range between 2.3% and 3.8% if the years 2010 and 2011 are also included.

37 The winners experienced a 115% growth in earnings per share during that period, whereas their equivalents experienced growth of only 27%.

38 A sharper theoretical distinction is the difference between liberal and coordinated market economies (Hall and Soskice, 2001): in *coordinated market economics*, where state-facilitated, top-down coordination in employer-employee relations already ensures minimum standards for worker welfare, the marginal cost of spending on additional welfare may be higher than its marginal benefit, or in other words, spending on worker welfare may already be in the range of diminishing returns. In *liberal market economies*, however, corporate social responsibility may have more benefits to workers and firms.

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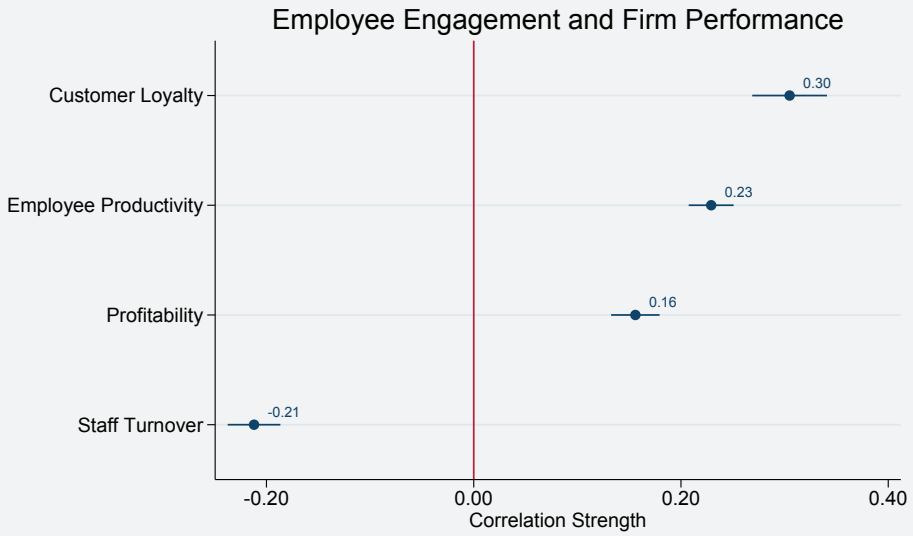
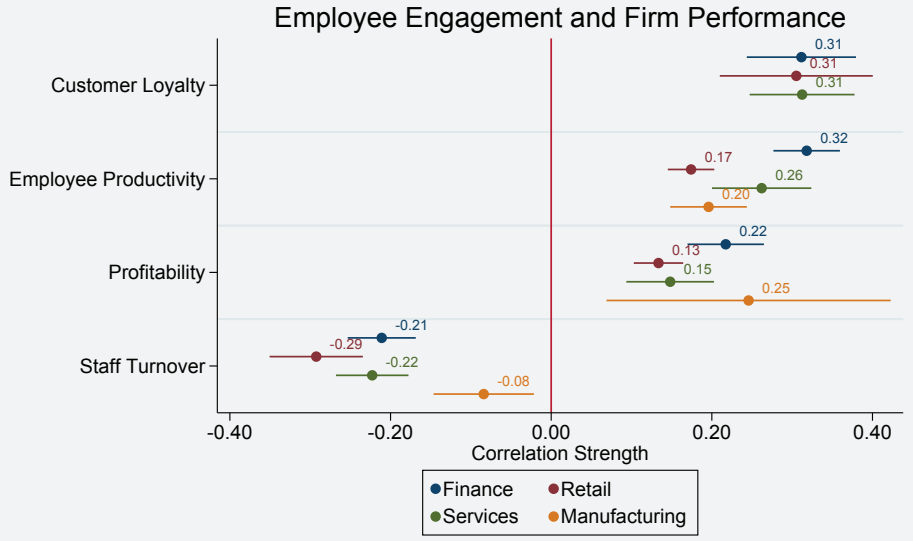
Chapter 5 **Appendix A**

Figure A1. Correlation Between Employee Engagement and Firm Performance



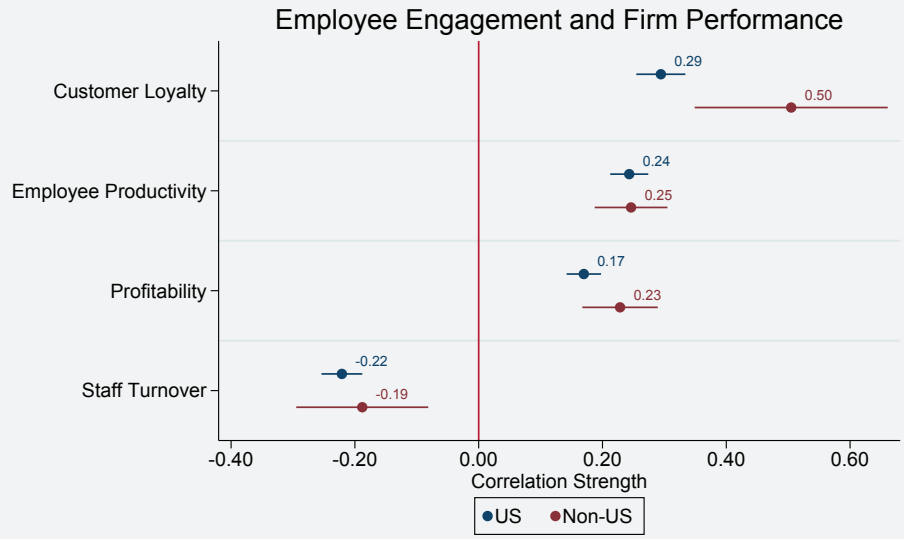
Notes: The figure plots adjusted average correlation coefficients between employee engagement and different performance outcomes originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A1 for the corresponding table and Table A5 for a breakdown of studies.

Figure A2a. Correlation Between Employee Engagement and Firm Performance, by Industry



Notes: The figure plots adjusted average correlation coefficients between employee engagement and different performance outcomes, by industry, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A2a for the corresponding table and Table A5 for a breakdown of studies.

Figure A2b. Correlation Between Employee Engagement and Firm Performance, by Region



Notes: The figure plots adjusted average correlation coefficients between employee engagement and different performance outcomes, by industry, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A2b for the corresponding table and Table A5 for a breakdown of studies.

Table A1. Correlation Between Employee Engagement and Firm Performance

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
Employee Engagement	0.30	0.23	0.16	-0.21
95% Confidence	[0.27, 0.34]	[0.21, 0.25]	[0.13, 0.18]	[-0.24, -0.19]
Number of Studies	94	140	85	106
Number of Business Units	20,679	45,328	31,472	43,987

Notes: The table shows adjusted average correlation coefficients between employee engagement and different performance outcomes originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A5 for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Table A2a. Correlation Between Employee Engagement and Firm Performance, by Industry

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
Finance				
Employee Engagement	0.31	0.32	0.22	-0.21
95% Confidence	[0.24, 0.38]	[0.28, 0.36]	[0.17, 0.26]	[-0.25, -0.17]
Number of Studies	19	21	16	17
Number of Business Units	11,852	15,140	8,395	11,531
Retail				
Employee Engagement	0.31	0.17	0.13	-0.29
95% Confidence	[0.21, 0.40]	[0.15, 0.20]	[0.10, 0.16]	[-0.35, -0.23]
Number of Studies	16	40	38	20
Number of Business Units	3,687	19,999	19,954	7,912
Services				
Employee Engagement	0.31	0.26	0.15	-0.22
95% Confidence	[0.25, 0.38]	[0.20, 0.32]	[0.09, 0.20]	[-0.27, -0.18]
Number of Studies	45	42	14	48
Number of Business Units	4,224	4,170	1,380	12,787
Manufacturing				
Employee Engagement	-	0.20	0.25	-0.08
95% Confidence	-	[0.15, 0.24]	[0.07, 0.42]	[-0.15, -0.02]
Number of Studies	-	26	10	11
Number of Business Units	-	4,832	393	5,426

Notes: The table shows adjusted average correlation coefficients between employee engagement and different performance outcomes, by industry, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A5 for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Table A2b. Correlation Between Employee Engagement and Firm Performance, by Region

	Customer Satisfaction	Employee Productivity	Profitability	Staff Turnover
US				
Employee Engagement	0.29	0.24	0.17	-0.22
95% Confidence	[0.25, 0.33]	[0.21, 0.27]	[0.14, 0.20]	[-0.25, -0.19]
Number of Studies	57	77	39	67
Number of Business Units	17,177	31,729	21,747	27,844
Non-US				
Employee Engagement	0.50	0.25	0.23	-0.19
95% Confidence	[0.35, 0.66]	[0.19, 0.30]	[0.17, 0.29]	[-0.29, -0.08]
Number of Studies	8	24	18	13
Number of Business Units	976	2,683	3,023	1,736

Notes: The table shows adjusted average correlation coefficients between employee engagement and different performance outcomes, by region, originating from a meta-analysis of 339 independent research studies that include observations on the well-being of 1,882,131 employees and performance of 82,248 business units. See Section 3 for a description of the procedure. See Table A5 for a breakdown of studies.

Source: Gallup Client Database, Years 1994 to 2015; Confidence Intervals 95% in Brackets.

Table A4. Breakdown of Studies on Employee Satisfaction

Panel A – Studies by Industry
Studies on Employee Satisfaction with Indicators of

Industry	Customer Loyalty	Employee Productivity	Profitability	Staff Turnover	Total
Finance	15	19	14	17	65
Manufacturing	0	20	9	10	39
Retail	11	28	27	15	81
Services	33	32	11	38	114
Total	59	99	61	80	299

Panel B – Studies by Region
Studies on Employee Satisfaction with Indicators of

Industry	Customer Loyalty	Employee Productivity	Profitability	Staff Turnover	Total
US	45	65	32	56	198
Non-US	6	18	14	11	49
Total	51	83	46	67	247

Notes: The number of studies by industry and by region, respectively, is smaller than the total number of studies (339) because the total number studies, which is used to calculate average correlations across industries and regions, includes industries and organisations that operate across regions (which are excluded in our heterogeneity analysis).

Source: Gallup Client Database, Years 1994 to 2015.

Table A5. Breakdown of Studies on Employee Engagement

Panel A – Studies by Industry
Studies on Employee Engagement with Indicators of

Industry	Customer Loyalty	Employee Productivity	Profitability	Staff Turnover	Total
Finance	19	21	16	17	73
Manufacturing	0	26	10	11	47
Retail	16	40	38	20	114
Services	45	42	14	48	149
Total	80	129	78	96	383

Panel B – Studies by Region
Studies on Employee Engagement with Indicators of

Industry	Customer Loyalty	Employee Productivity	Profitability	Staff Turnover	Total
US	57	77	39	67	240
Non-US	8	24	18	13	63
Total	65	101	57	80	303

Notes: The number of studies by industry and by region, respectively, is smaller than the total number of studies (339) because the total number studies, which is used to calculate average correlations across industries and regions, includes more includes industries and organisations that operate across regions (which are excluded in our heterogeneity analysis).

Source: Gallup Client Database, Years 1994 to 2015.

Table A6. The Gallup Q[12] Instrument

Employee Satisfaction with Company

"On a 5-point scale, where 5 = extremely satisfied and 1 = extremely dissatisfied, how satisfied are you with your organisation as a place to work?"

Employee Engagement

"On a 5-point scale, where 1 = strongly disagree and 5 = strongly agree, please indicate your level of agreement or disagreement with each of the following items.

1. I know what is expected of me at work.
2. I have the materials and equipment I need to do my work right.
3. At work, I have the opportunity to do what I do best every day.
4. In the last seven days, I have received recognition or praise for doing good work.
5. My supervisor, or someone at work, seems to care about me as a person.
6. There is someone at work who encourages my development.
7. At work, my opinions seem to count.
8. The mission or purpose of my company makes me feel my job is important.
9. My associates or fellow employees are committed to doing quality work.
10. I have a best friend at work.
11. In the last six months, someone at work has talked to me about my progress.
12. This last year, I have had opportunities at work to learn and grow."

Chapter 5 **Appendix B**

Employee Well-being, Productivity, and Firm Performance: Evidence and Case Studies

Case Study 1: Tracking Employee Mood and Training Managers in Real-Time

David Mendlewicz (Butterfly AI)

Butterfly was formed on the premise that 'great managers make great teams' and that people managers require access to employee insight as well as robust support and training to make their teams as delighted, productive, and efficient as possible. To achieve this, Butterfly conducts academically-backed employee pulse surveys that measure overall employee mood and sentiment on key areas of the business. From these surveys, Butterfly provides managers with artificially intelligent training, employee insights on a dynamic dashboard, and trends in employee engagement.

The academically-backed pulse surveys are sent out via e-mail to employees based on a defined cadence specific to each organisation. Most commonly, surveys are sent out either once or twice a month, as time between surveys is important to allow managers to act on the feedback they receive. Butterfly measures overall mood, and what are called engagement drivers: engagement drivers are specific areas within the organisation that managers would like both qualitative and quantitative information on. Most commonly, we see managers measuring *management*, *teamwork*, *work/life balance*, *work environment*, and *roles and responsibilities* as engagement drivers. Every pulse survey asks a varied question on these drivers and employees rate whether they disagree or agree on a point scale. Employees who take the surveys also have the ability to leave comments, so that clients are receiving robust insight on their employee population.

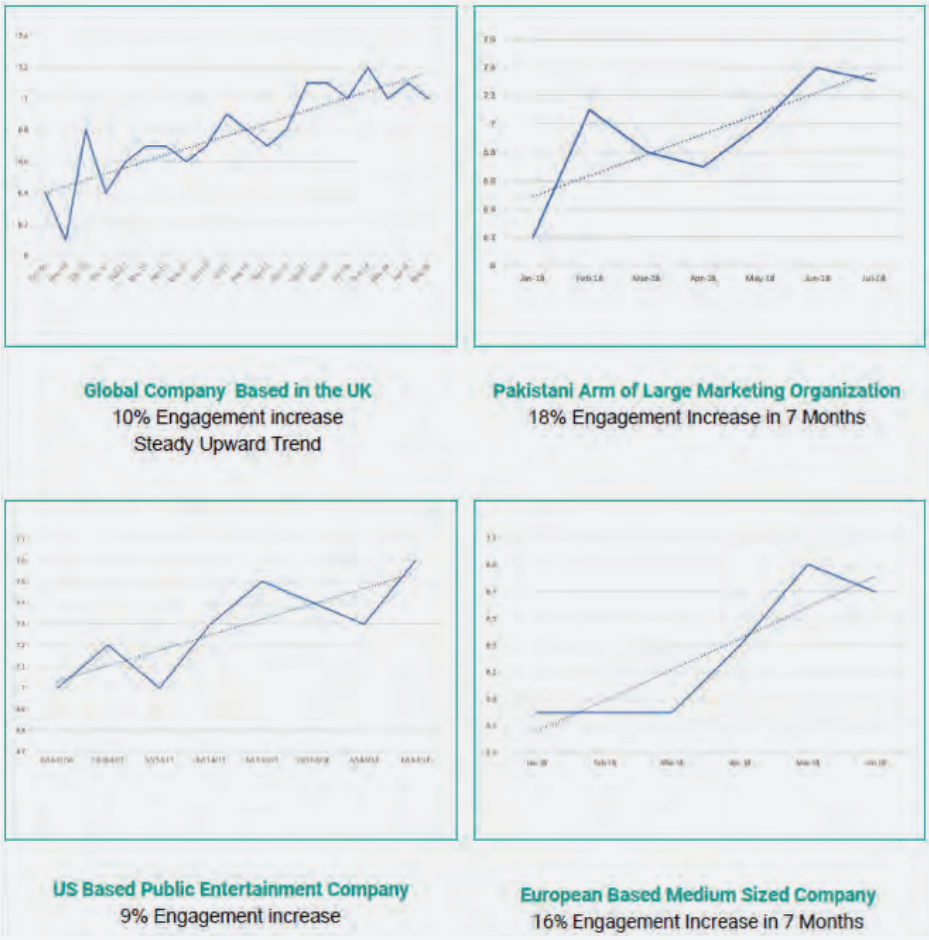
Butterfly sought to measure whether there is a direct correlation between employees having access to provide continuous feedback and their overall engagement and happiness. A few examples of companies with different profiles which – prior to using Butterfly – did not have a culture of continuous feedback were selected as case studies. Each graph in Figure B1 is measuring the overall mood of employees out of five standard mood faces, ranging from zero ("very unhappy") to five ("very happy").

The first graph (upper left) represents a decentralised media and entertainment company headquartered in London. This company experienced substantial growth in headcount over the time period when this study took place. The time frame of the study was from October 2016 to May 2018, and headcount grew from 770 to over 2,000 employees when the study concluded. We see an overall improvement in survey response participation from 22% to 51%. From the time that the survey ran and concluded, the overall mood increased from a score of 6.2 to 7.

The second graph (upper right) represents a centralised Pakistani workforce in the advertising industry. This company experienced a decrease in headcount over the time period when this study took place. The time frame of the study was from January 2018 to July 2018, and the headcount started at 184 employees and dropped to 134 employees by the end. We see again an overall improvement in survey participation: at the outset, 15% of the employee population completed the survey; at the end, the organisation had a consistent participation at around 53%. From the time that the survey ran and concluded, the overall mood increased from a score of 6.2 to 7.3.

The third graph (lower left) represents a centralised media and entertainment company

Figure B1. Positive Engagement Over Time (Butterfly AI, Various Years).



Notes: The four graphs show the evolution of employee mood over time after starting to track employee mood through Butterfly pulse surveys for a selected sample of organisations with different profiles, locations, industries, and sizes which – prior to using Butterfly – had no culture of feedback nor any continuous managerial coaching.

headquartered in California. This company remained consistent in their headcount during the time period when this study ran (157 employees). The time frame of the study was from September 2016 to July 2018. As before, we see an overall improvement in survey participation: at the outset, 64% of the employee population completed the survey; at the end, the organisation had a consistent participation rate at around 75%. From the time that the survey ran and concluded, the overall mood increased from a score of 7 to 7.6.

The fourth and final graph (lower right) represents a decentralised media and entertainment company with offices spread throughout the UK. The headcount grew slightly from 200 employees at the start of the study to 232 at the end. The survey ran for a period of about six months from January 2018 to July 2018. We see, once again, an improvement in survey participation: at the outset, 33% of the employee population completed the survey; at the end, the share was around 52%. The organisation saw the overall mood score increase from 5.8 to 6.7.

Although we can only gather suggestive, correlational evidence from such case studies, the fact that they all show similar findings may

point towards some key insights: the act of presenting employees with access to ongoing feedback channels is likely to positively drive employee engagement in terms of survey participation. We observe this relationship in every case study. We also observe the score representing the overall mood of the employee population increase over the course of the survey period, suggesting that the opportunity to provide feedback may lead to a happier, more engaged workforce.

Case Study 2: LinkedIn: The ROI of Social Recognition

A Partnership Between Globoforce and LinkedIn Shows Correlation Between Social Recognition Experience and Retention of Key Employees

Background

LinkedIn is a platform for professional networking, with over 590 million members in over 200 countries and territories. Since its founding in 2002, LinkedIn has prided itself on having a culture of transformation, integrity, collaboration, humor, and results. Despite rapid growth, LinkedIn has maintained a set of core values: members come first, relationships matter, employees should be open, honest and curious, managers should demand excellence, employees should take intelligent risks, and all employees should act like owners. It was these values that provided stability in the midst of what would soon become a turbulent time for the organization.

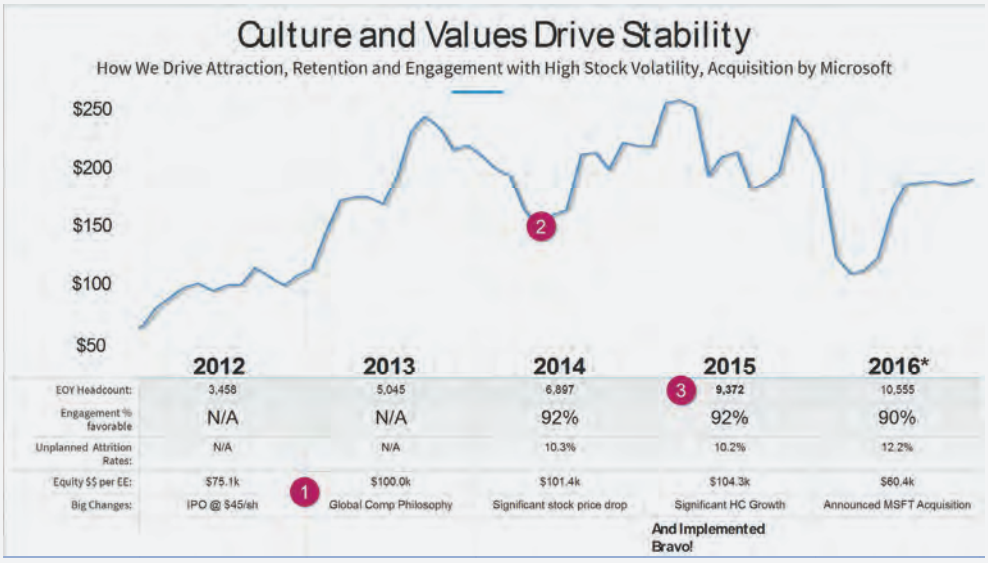
New Challenges

Starting in 2013, LinkedIn faced three core challenges as it scaled to meet the market demand. First, the company changed its compensation strategy from ad-hoc grants to compensation ranges to allow for more rapid growth. However, the following year, LinkedIn experienced stock price volatility, leading to employee retention concerns. In 2016, LinkedIn was acquired by Microsoft, a significant corporate transaction which required major change management. The confluence of these three factors posed a significant challenge to maintaining employee engagement while continuing to attract and retain top talent.

A Renewed Focus on Culture

In response to these new challenges, LinkedIn recognized the need to invest in its underlying culture. Knowing that social support is one of the three strongest predictors of long-term success

Figure B2a. New Challenges



Source: Own illustration

and happiness for employees, LinkedIn designed an intervention to boost employee morale and strengthen internal social connections. In July 2015, LinkedIn partnered with Globoforce, a leading provider of human applications, to launch a global employee recognition program called Bravo! Through the new program, any employee could recognize a colleague who exhibited great performance or efforts at work and demonstrated LinkedIn's core values. Recognized employees were offered a variety of award levels and personalized rewards, including gift cards and merchandise across all countries where employees reside. LinkedIn worked closely with Globoforce to ensure Bravo! has clear ties to LinkedIn's corporate values and is efficient, consistent, and timely.

Utilization Data

In the first 18 months of the Bravo! program, 24% of employees actively recognized another employee. There was a healthy distribution of awards given across all levels of the company, including peer-to-peer awards and manager-to-employee awards. 71% of all awards occurred at Grades 7-9, which represents a majority of individual contributors and early career managers.

Figure B2b. Utilization

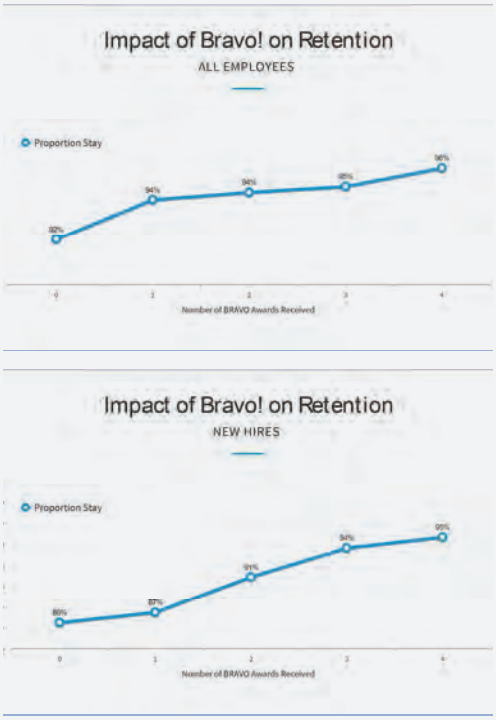
Global Grade	Below	Same	Above	# Awards Given
12	97%	2%	1%	1220
11	95%	3%	2%	2776
10	91%	7%	2%	4849
9	75%	20%	5%	12784
8	45%	35%	20%	12757
7	25%	30%	45%	7266
6	6%	35%	59%	3858
5	3%	17%	80%	581
4	7%	12%	81%	151
3	0%	7%	93%	262

Source: Own illustration

Results

Six months after the launch of the Bravo! program, initial data indicated positive results on employee retention for both new hires and overall employees. These results were confirmed 18 months after launch through in-depth research correlating the number of Bravo! awards and the impact on retention rates. Findings from the research were first presented to a group of senior business leaders at Globoforce's WorkHuman 2017 conference, an annual event dedicated to harnessing the transformative power of people for the next generation of human resources.

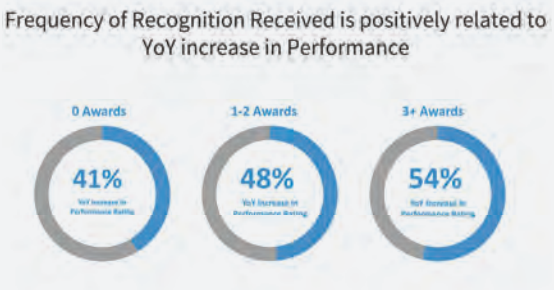
Figure B2c. Correlation Between Awards and Retention



Source: Own illustration

The Bravo! program created a positive impact on year-over-year performance, particularly for high-performing employees who received more frequent recognition.

Figure B2d. Correlation Between Awards and Performance



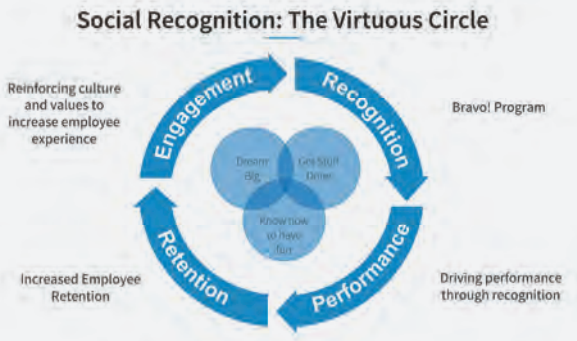
Source: Own illustration

Furthermore, data revealed that the more employees offered praise, the more praise they received in return, creating a virtuous circle of positivity and success.

Figure B2e. Correlation Between Awards Received and Awards Given

Source: Own illustration

Figure B2f. Social Recognition: Mechanisms



Source: Own illustration

Conclusion

Through the Bravo! program and the partnership with Globoforce, LinkedIn discovered just how vital culture was to boosting employee retention and performance. LinkedIn learned that whatever was recognized was repeated and was careful to align its communication strategy at launch to desired behaviors within the company.

Case Study 3: Delivering Happiness in Practice

Jenn Lim (Delivering Happiness)

Canpa (Industry: Construction)

Canpa is a construction materials distribution company based in Turkey, a family business, and had a 31-year presence in the market before its culture transformation. In 2015, it was facing challenges from declining profitability, a 30% employee turnover rate, and low company morale. Unless they could solve their pain points, Canpa would have had to consider downsizing or closing its doors. In the search for solutions, Canpa's Vice President joined *Delivering Happiness* for a Masterclass on company culture and employee engagement. Since implementing a values-and-purpose-based culture into their employee experience, hiring procedures, and brand, Canpa has achieved record historical sales, dramatically reduced their turnover rate to almost zero, and was awarded first place in Turkey's 2018 "Great Place to Work" assessment.

Northwell Health (Industry: Healthcare)

Northwell Health's Office of Patient and Customer Experience sought to roll out its Culture of C.A.R.E [Connectedness, Awareness, Respect, Empathy] to all of Northwell's 61,000 employees and 21 locations. For this project, *Delivering Happiness* (along with Vynamic) co-created and aligned a roll-out strategy, implementation program, and internal frameworks to maintain C.A.R.E through the organisation's culture leaders. Of these initiatives came Northwell's Coach-The-Coach programme, in which their culture leaders were trained and certified to champion and drive C.A.R.E across the organisation. Northwell Health also wove their core values into the set of competencies for which an employee is evaluated by. After their culture transformation, Northwell Health saw significant improvements in their patient satisfaction scores, employee engagement numbers, and the ways culture was lived out every day. Over a period of two years or less, some outcomes were: *(i)* an increase from 45% to 85% in employee engagement rates, *(ii)* 20% of ambulatory locations already reaching the 90th percentile in patient experience, and *(iii)* significant improvements in HCAHPS, a widely-used patient-experience scoring survey.

Zappos (Industry: eCommerce)

In a span of ten years, Zappos grew to $1 billion in gross revenue largely due to their employee-centric corporate culture. Tony Hsieh and his team believed that with the right culture, building a brand known for customer service would be a natural result. To commit to the "right culture", the leadership team defined their core values and made it so that living up to them was part of the job expectation. They also implemented practices from the science of happiness and positive psychology into the employee experience – leading to more workplace happiness. Zappos' culture set itself apart from their competitors through customer loyalty so much that even in 2008 when the e-commerce industry went down for the holiday season, the company still grew in sales and achieved its market of $1 billion in gross revenue. Just a year after, Zappos was acquired by Amazon at a deal valued at over $1.2 billion on the day of closing. For seven years, the company has ranked on Fortune's "100 Best Companies to Work For" list.

Case Study 4: Psychological Technologies in Practice

George MacKerron (Psychological Technologies)

Psychological Technologies (PSYT Ltd) was founded by Nick Begley, former Head of Research for leading mindfulness app *Headspace*, and Dr. George MacKerron, creator of the *Mappiness* research study into hedonic well-being at LSE. Drawing on their expertise, PSYT's award-winning *me@mybest* app aims to help employees and employers to both understand and drive well-being and productivity.

App

The app delivers pulse surveys that include questions on instantaneous happiness, stress, and self-reported productivity, and over time also cover a wide range of potential drivers of these states in terms of the user's behaviour and the organisational environment and culture. Users receive in-app insights based on their answers.

The app also includes a library of tools, including breathing exercises, interactive and audio mindfulness practices, self-assessments, and workplace tips. Employees can dip into these at any time,

Figure B3. Change in Happiness During Use of App

Source: Own illustration

and appropriate tools can also be signposted in reaction to related survey responses. For example, a person who says they slept badly may be signposted to a sleep hygiene checklist or a mindfulness practice focused on better sleep.

In one client organisation, employees reported becoming on average 3 – 5 percentage points happier (which is in line with findings from the original *Mappiness* study), and 5 – 10 percentage points more productive over the period that they used the app, as seen in the line charts above.

Dashboard

Aggregated data from the app are also analysed and fed back to the employer, anonymously, via an interactive dashboard. First, the dashboard provides employers with a descriptive overview of the data, including trends over time and heatmaps across both different slices of the organisation and different aspects of well-being.

Second, the dashboard's analytics engine identifies priority drivers, defined as those that are both high impact — that is, strongly related to happiness and productivity — and below target. Conversely, it identifies strengths, where an item is both high impact and *above* target. Finally, it estimates the potential return on investment (ROI) of improvements in well-being, using linear and logistic regression to connect happiness self-ratings to monetisable outcomes.

The *me@mybest* dashboard shows that employees are happiest on Friday and least happy on Tuesday. This mirrors the original *Mappiness* results. Interestingly, however, Friday also sees employees reporting relatively higher stress and lower productivity.

High-impact predictors of happiness and productivity at client include autonomy ("I have a choice in deciding how I do my work"), psychological safety ("at work, I often try new out things as I have little fear of making mistakes"), confidence in talking to a line manager about a mental health problem, and effectiveness of IT systems. Employees who rate these items favourably are 2.5 - 4 times more likely to rank above the median for happiness and productivity than others, and these differences are significant at the 5% level or better.

Finally, the *me@mybest* dashboard estimates that a 1 percentage point improvement in employee happiness at client could be worth approximately £600 per employee per year as shown.

Case Study 5: An Ecosystem Approach to Staff Well-being in the Education Sector

David Whiteside (Plasticity Labs), Vanessa Buote (University of Waterloo), Rodrigo Araujo (Plasticity Labs), and Anne Wilson (Wilfrid Laurier University)

There are 84.3 million teachers in the world (see Figure B4a) and yet 80% of teachers are considering leaving the profession. Not only is it challenging for students when teachers leave the profession, but schools lose between $1 billion and $2.2 billion in attrition costs yearly from teachers switching schools or leaving the profession altogether. Although it appears recruitment numbers for this sector has increased, employers (predominantly the government) suffer from retention issues. The data show that over the next five years, almost half of those teachers will either transfer to a new school or give it up completely. The teacher shortage is such a massive global employment issue that UNESCO claims the world must recruit 69 million **new** teachers to reach the 2030 education goals. Although there are myriad complex issues related to the teacher shortage, one of the most cited reasons in the OECD countries is the lack of ability to recruit young people to the profession and burnout of current teachers. In developing countries, teacher status and lack of training is the most highly cited reason for attrition.

Plasticity Labs, a Canadian-based research and consulting company, began working with The Waterloo Region District School Board (WRDSB). Comprised of over 8,000 staff serving 63,000 students across 120 schools, the WRDSB is one of the largest school boards in the province and the first in Canada to take on such a wide-spread, evidence-based, research-driven approach to integrate staff and student well-being into their strategic objectives. Their strategy established a critical importance of **productive working relationships** and **positive interconnectedness** between student and staff well-being. For their efforts, more fully detailed below in the case study, the board was listed in the Forbes 100 Top Canadian Employers in 2017.

Case study

Phase 0:
Baseline measures were gathered. Surveys gathered data on; engagement, sense of community, inspiration, satisfaction, predicted satisfaction, culture, trust, recognition, communication, upward feedback, stress, well-being, hope, efficacy, resilience, optimism, gratitude, performance, citizenship behaviours, and net promoter score (NPS). Data provided key insight as to the areas for improvement most notably **communication**, **recognition**, and **upward feedback** - or key drivers of culture.

Within a school board environment, where staff are decentralized, widely dispersed across hundreds of locations, and fill a wide range of roles and responsibilities, it was determined that benchmarking tools would be developed to identify “At Risk”, “Average”, and “Healthy” scores for each survey response.

After seeing the first round of data, there was a swift response to engage training and programming to address these areas for improvement. Budgets and resources directed at well-being were increased 300%, with a commitment to ongoing data collection at both the department and school level.

Over the four years since working with the WRDSB, interventions varied in size and intensification across 125 schools and eight support departments measured. Groups were identified by schools across three cities; the Education Center (board office), broken out by departments (e.g. HR, Finance, Executive, IT); and parents were also considered a distinct group.

Phase 1:
2014 began with a goal to educate the senior leadership about the benefits of seven social-emotional skills that have been empirically shown to increase happiness and performance; **Hope**, **Efficacy**, **Resilience**, **Optimism**, **Gratitude**, **Empathy**, and **Mindfulness**. The goal was to incorporate these seven traits as the new values framework for well-being across all staff, then expand to students, and eventually outwards, to parents and the broader community.

The interventions began methodically with an aim to create a shared language with the seven traits at the core of all interventions. Education consisted of one-hour talks at annual events,

full-day training and workshops at regional and provincial conferences and speaking with staff during mandatory professional development days. After one year of pure education at the leadership level, phase two was engaged.

Phase 2:
The ecosystem theory was engaged. Teachers, and all staff including custodial, part-time, ECE's, leadership and administrative, plus students and parents were invited to employ the HERO GEM traits in their language at work and at home. The goal was focused on improving workplace culture amongst staff, to subsequently improve conditions for learning for students. These schools, aptly named HERO Generation schools, were provided an exploratory framework for staff and students to utilize. Interventions included, student and staff cocreated mantras read aloud daily, mindful minutes, curated music focused on one of the seven traits, monthly student-led, public assemblies, and priming (gratitude walls, hope trees, HERO-focused art, mantras at all entrances of the school, posters with three intervention examples related to each trait, written in multiple languages located in staff lunch rooms and in all school bathrooms (staff and student). Online employee portals were cocreated with staff, education consultants and Plasticity Labs internal teams for digital collaboration and curriculum guidance. None of the framework was programmatic, it was tool and resource agnostic and showed up differently in each group/school. Most notably, teachers would get three hours every month of Paid Time Off (PTO) for professional development in positive psychology. Lead HERO teaching staff would gather monthly to learn and ideate plans, then return to their individual schools and train other staff. Researchers from Plasticity Labs, Wilfrid Laurier University and WRDSB worked together to measure at three times points throughout the year to identify outcomes.

Simultaneously, interventions were ongoing with corporate staff at the education centre. The research and consulting team worked with departments to understand their daily experiences and personas and target specific programming. Custodial staff, Finance, Marketing, HR, union groups, parent councils, focused on a variety of well-being programs that included; improving physical health, using empathy in communication, building resiliency for front line staff, a well-being portal was created, and programming resources were propped up with an exponential budget increase. March focused on IDOH with a community- wide gratitude installation in the city's core.

Phase three expanded the research to 11 schools and two control schools – these in-sights were cross referenced with the entire school board's data and a full report was developed to capture the outcomes from Phase 0 data gathering, Phase 1 pilot project, and the Phase 2 expansion.

Outcomes
There were several major outcomes that stood out to the research team. One was the "proximity to purpose" as defined by Dr. Whiteside in his white paper that argues the pros and cons of engagement and refers to it as an incomplete measure when it comes to the mission-driven workforce. With the WRDSB, engagement is not a strong predictor of health and happiness because engagement scores are high across almost all schools due to their purpose. The real driver of well-being is the school's culture - particularly recognition, communication, and feedback. This is why interventions such as the HERO Gen that positive influence these areas are so important. On the flipside, the groups at the education centre that are farthest from students (IT, finance, etc.) did not have strong engagement scores, despite having similar culture issues. Because their "proximity to purpose" is significantly lower, it pales in comparison to the engagement of teaching. On average, HERO schools score about 10-14 points higher than non-HERO schools on Recognition, Communication, and Feedback. Employee Net Promoter Score (eNPS) is based on a 0-to-10 rating of how likely an employee is to recommend the organization as a place to work, with 0 not at all likely and 10 extremely likely. Net Promoter Scores for HERO staff were consistently higher than non-HERO staff. Dr. Whiteside suggests that this is because through teaching the importance of traits such as gratitude, empathy, and optimism, staff are cultivating the strengths required to foster and build strong cultures.

It is important to note, in these workplaces, proximity to purpose can also be a leading cause of depletion and burnout. Employees in purpose- driven organizations will often do whatever they can to contribute to their mission – and this can often come in the form of over-

exertion and de-prioritizing their own well-being. The WRDSB and Plasticity Labs are working to identify warning signals and prevention measures going into Phase 3.

Phase 3:
The project is now in 21 schools in WRDSB with a critical focus on building a core team at the board level that works together on well-being. No longer is there a separate group designed to look at student well-being and another team working on staff well-being – they are working congruently. There is a community focus where social media plays a large role in sharing the work going on with the schools to the public. Analyzing the impact on the network effect will be phase four as Plasticity Labs, WRDSB, and Children's Planning Table combine efforts to win the Smart City Canada bid after being short-listed to the top five cities in Canada to be selected.

Figure B4a. Number of Teachers over Time

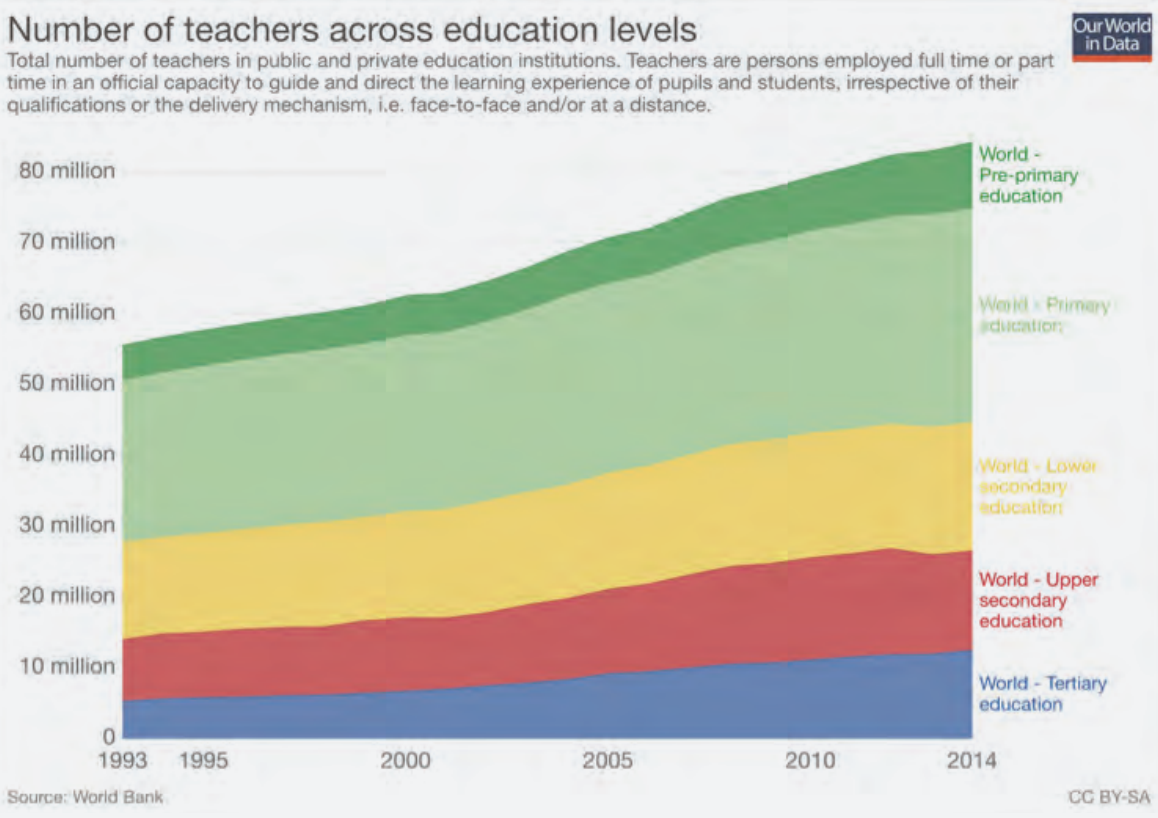
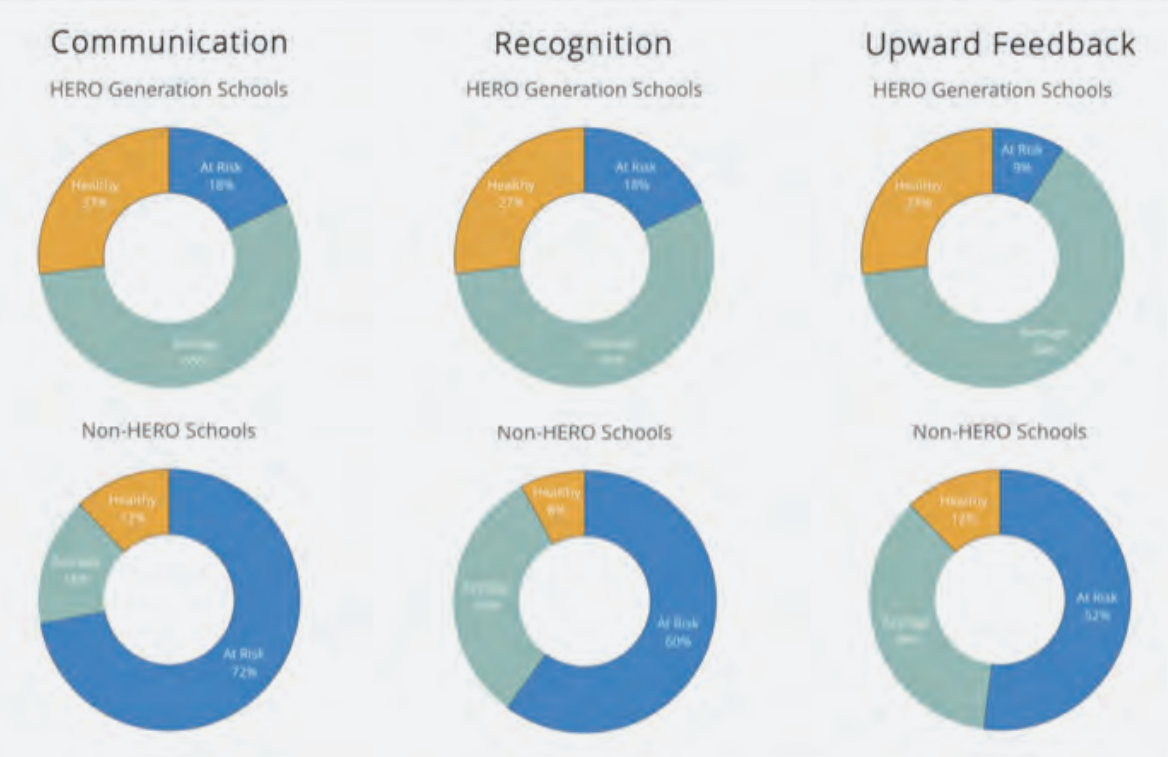


Figure B4b. Selected Outcomes in HERO Generation Schools Compared to Control Schools



Source: Own illustration

Endnotes

i Why Teachers are Lining Up to Leave (The Guardian, 2018) (https://www.theguardian.com/education/2018/apr/10/lesson-battle-why-teachers-lining-up-leave).

ii https://thejournal.com/articles/2014/07/17/the-problem-isnt-teacher-recruiting-its-retention.aspx

iii http://unesdoc.unesco.org/images/0024/002461/246124e.pdf

Chapter 6

Well-Being Interventions to Improve Societies

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Abstract

In recent decades evidence has accumulated showing that high well-being, or "happiness," has beneficial outcomes. Happier people – those with high psychological and social well-being – enjoy better physical health, have better relationships, and are better citizens. At work, happy people are somewhat more productive, and are more likely to help co-workers. Based on these research results, we argue that happiness is an essential policy concern. This chapter focuses on interventions aimed at improving the well-being of individuals. We begin by describing well-being interventions and the mechanisms by which they work. Some, for instance, target changes in thinking while others focus on improved social connection. We use a case study to illustrate the ways in which multiple interventions can be bundled together and delivered digitally or in person. The second half of the chapter includes a practical guide to implementing well-being interventions. We discuss the importance of measurement, attention to cultural norms, the inclusion of didactic education, and opportunities to learn specific behavioral skills. This section concludes with a case study illustrating how stakeholders were able to improve well-being over a 5-year period. The final section of the chapter discusses how to attract participation to well-being programs, and how to insure completion of them. We also include an appendix with links to further resources.

Introduction

Around the world people rate being happy as "extraordinarily important" (Diener & Oishi, 2000). Happiness serves as a major motive for important decisions regarding education, travel, recreation, professional development, charity, and health. The individual impulse to seek a happier and more rewarding life is echoed in the role of government. Traditionally, governments at the municipal, provincial, and national levels have attended to security, economy, education, health, and the environment because these are areas that affect the well-being of the citizenry. Until recently, however, well-being was not directly emphasized as a policy goal. That has changed as governments increasingly recognize the long-term benefits of well-being. Happiness has become a policy concern in a range of nations, including the United Kingdom, Bhutan, the UAE, and France, as well as at international organizations such as the United Nations and the OECD (Sachs, 2018; Tay, Chan, & Diener, 2014).

An emphasis on raising positive well-being – not just alleviating suffering – is an important component of well-being interventions. Recent research suggests that increasing positive emotions (as opposed to simply reducing painful moods) is a helpful approach for a wide range of maladies including:

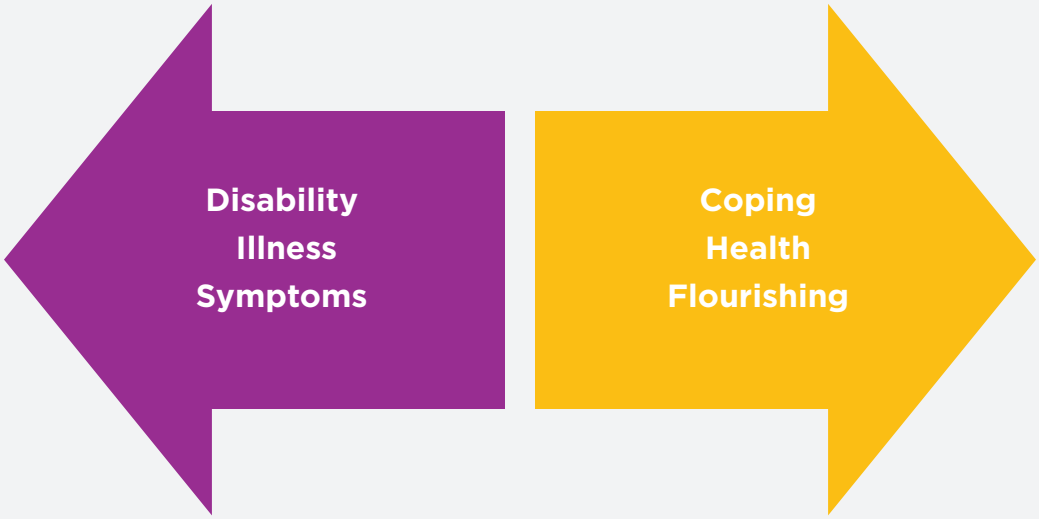
- Coping with depression (Taylor, Lyubomirsky, & Stein, 2017)
- Physical health problems such as HIV, pain, and breast cancer (Moskowitz et al., 2017; Hausmann, Parks, Youk, & Kwoh, 2014).

Furthermore, people without major mental health issues can profit from well-being interventions. They can learn life skills and habits that make their lives more meaningful, enjoyable, and satisfying, as well as learning healthier habits. In addition, well-being interventions can increase their civic engagement, supportive relationships, productivity, and resilience to stress.

Well-being is an absence of ill-being of course, the absence of experiences such as depression or chronic anxiety. However. flourishing requires more – moving from the neutral middle position upward in terms of life satisfaction, enjoying life, and feeling worthy, for example. As shown in Figure 1, happiness does not mean just the elimination of unhappiness, but moving upward in the blue zone. While traditional clinical psychology and psychiatry focus on removing unhappiness, the well-being interventions focus on moving people up in flourishing above the neutral point.

The new emphasis on well-being as a policy goal is, in part, due to the emergence of a science of happiness. Over the last 40 years, scientific papers on happiness have soared from a few hundred publications to hundreds of thousands of articles spanning economics, sociology, psychology and other disciplines (Diener et al., 2017). Helliwell (2018) argues that including happiness as a policy concern is now justified and fundamentally improves policy decisions. It does so by:

Figure 1. Ill-being and Well-being



1. **Changing the methods used to evaluate and compare policies.** Using well-being as a standard for evaluation shifts away from economic cost-benefit analysis alone and toward a metric in which citizen flourishing is given greater weight. Indicators such as income equality or literacy are important, in part, to the extent they translate to citizen well-being.
2. **Increasing cross-governmental cooperation.** Traditionally, government departments are focused on their specific mandates, such as transportation, security, or education. Well-being provides a superordinate goal around which multiple departments can marshal their efforts in concert.
3. **Improving policy making.** A focus on well-being adds attention to the delivery and impact of policy. Not only is it possible to consider direct policy outcomes such as employment or literacy, but it is also possible to investigate how these outcomes affect the well-being of individuals, their communities, and the people administering these policies.

The word "happiness" may conjure ambivalence in many because it seems fleeting, vague, and outside the purview of policy. Nothing could be further from the truth. Happiness is widely desired, measurable, and directly relevant to policy. Happiness is now a legitimate topic for policy and good governance. We believe that the major impediment to implementing happiness interventions is no longer a bias against the topic but, instead, uncertainty about how to effectively intervene. This lack of clarity can include how best to access high quality scientific information, how to specify happiness policy and initiatives, and how to create and use effective happiness interventions. In this paper, we provide background on well-being intervention (part one) while also providing a practical guide for policy makers wishing to focus on raising well-being (part two).

What is Happiness?

Typically, people use the word "happiness" to indicate multiple experiences. Perhaps the most common use of the word is to denote emotional experiences such as joy. When considering the emotional side of happiness, it can be tough to pinpoint a single feeling that best sums up happiness. People from diverse cultures appear to emphasize different elements of happiness and have distinct beliefs about well-being (Oishi, 2018). Americans, for example, may associate happiness with excitement while, in contrast, Japanese people are more likely to associate happiness with peace and calm. Scientists who study "subjective well-being" (SWB) tackle the thorny issue of defining happiness by including a wide range of elements in its definition, including many desirable emotional states (Tov, 2018; Diener, 1984).

In addition, happiness can be used to signify an overall mental appraisal of life. For example, we might describe a person as "satisfied" with her life and this reflects a series of judgements about the quality of her life rather than an in-the-moment feeling. These judgements are distinct from feelings because they require people to weigh information such as the quality of their relationships, work, and health. It is this sense of happiness that researchers often measure and use as a social indicator (Helliwell and Wang, 2012).

The type of happiness we discuss is not narrowly what people think of as having fun or enjoying leisure. Instead, we mean something much broader – leading a thriving and flourishing life from the person's own perspective. In other words, "happiness" is how people appraise their lives, evaluate their lives, in both thoughts and feelings. It can include enjoyment, but also feeling worthwhile and that one's life is meaningful. It is important to differentiate "Sustainable happiness" that which tends to provide lasting flourishing, from "having fun", which is momentary. Although momentary happiness can be good (and occasionally destructive), long-term sustainable happiness usually comes from things such as close family and friends, engaging in meaningful activities, and engaging in activities that are greater than ones' own self. Policy makers with an interest in measuring well-being should include a 'local' understanding of happiness. That is, we recommend including measures that reflect the local understanding of the good life. This will include measures such as life satisfaction and positive feelings about life, but also might include measures of joy, connectedness, and optimism.

The measures of well-being we have developed illustrate the range of different types of happiness that exist. Our Scale of Positive and Negative Emotions (SPANE) assesses a variety of feelings – moods and emotions, while the Satisfaction with Life Scale (SWLS) inventories people's life satisfaction. Our Flourishing Scale (FS) measures general well-being, including social relationships, meaning in life, and several more concepts. The broadest measure is our Comprehensive Inventory of Thriving (CIT), that assess a broad range of types of social well-being, feelings of mastery and meaning in life, and facets of subjective well-being. All these measures can be found on the internet at: *eddiener.com*

Part One: Types of Interventions to Raise Happiness

Attempts to improve well-being can occur at many levels. First, at the societal level policies can target health, income, corruption, and pollution. Interventions can also occur at the more local level, such as in cities. In 2018, Diener and Biswas-Diener described this level of social policy with a focus on reducing domestic violence, reducing government corruption, and creating more tight-knit neighborhoods. In the current chapter, we focus on interventions that are directed at individuals, wherein members of target groups can learn skills and habits that will improve their well-being. Many treatments of this type are aimed at helping people with serious mental problems (see Barlow, Bullis, Comer & Ametaj, 2013; and Clark, Fleche, Layard, Powdthavee & Ward, 2018, for general reviews). In this chapter, however, we focus on interventions that are aimed primarily at people without serious mental health problems, but those who might be at risk for professional stress or who might benefit from a greater sense of meaning or life satisfaction. This might include first responders, teachers and students, government employees, non-profit workers, healthcare professionals, and other groups.

Interventions to improve individual well-being are numerous and diverse and an overview of this field is offered by Stone and Parks (2018). Emerging research also points to the effectiveness of these interventions (Bolier et al., 2013; Malouff & Schutte, 2016; Sin & Lyubomirsky, 2009; Weiss, Westerhof, & Bohlmeijer, 2016). There are a few interventions that specifically include attention to enjoyment. For example, the Happiness Research Institute, in Denmark, conducted an intervention with 82 young people between 16 and 24 years old. The interventions used were group activities and classes that occurred outside of school hours. These included hip hop dancing, participation in role playing games, cooking, or engaging with the natural environment. Over the course of the program, 55% of the participants improved in their perceived quality of life. Of these, the average gain was 12% increase in happiness.

Well-being interventions extend beyond encouraging enjoyment; they offer a broad array of life skills and habits of thinking that can broadly affect happiness. Examples of well-being interventions include:

- Writing about emotional experiences (Pennebaker, 1997)
- Meditation (Hofmann, Grossman, & Hinton, 2011)
- Expressing gratitude (Emmons & McCullough, 2003)
- Identifying and savoring positive experiences (Friedman et al., 2017)
- Counting kindnesses (Chancellor, Margolis, Jacobs Bao & Lyubomirsky, 2018;Otake, Shimai, Tanaka-Matsumi, Otsui & Fredrickson, 2006)

Among the most important contributions of the positive psychology movement is scientific attention to happiness interventions. There are those that focus on modifying thinking and feeling directly, those that target social relationships, those that work principally through biological channels, and those that are effective by creating lists and labels that help highlight

Table 1. Focus of Well-being Interventions

Thinking	Social	Biological	Listing, Labelling, and Describing
Cognitive Behavioral Psychotherapy	Altruism	Learning Deep Relaxation Techniques	Strengths Identification
Mindfulness Training	Forgiveness & Gratitude	Exercise	Narrative Writing
Loving Kindness Meditation	Social Recreation	Sleep	Counting Kindnesses & Blessings

the positive aspects of life. We briefly describe each in Table 1. We include additional details and resources in the Appendix.

Thinking Happier

There are many words of wisdom suggesting that happiness is a state of mind. These include sayings such as "happiness is a choice," "people are about as happy as they decide to be," and "life is what you make of it." These reflect the common wisdom that how a person thinks about life—her mental habits of optimism, her reactions to difficulties, and her ability to remember positive events—is a major influence on well-being. Lyubomirsky (2001) and Lyubomirsky, Tucker and Kasri (2001) identified patterns of thinking that distinguish happy from unhappy people. Happy people, for instance, are less likely to dwell on negative life events, and are less affected when others fare better than they do.

Developing healthy thinking habits is at the center of one of the most established and well-researched approaches to counseling: cognitive-behavioral psychotherapy (CBT). CBT focuses on ways that people with depression, anxiety, and other disorders suffer, in part, due their habits of thinking (Beck, 1970). For example, some people jump to conclusions, blow problems out of proportion, or succumb to perfectionism. Cognitive-behavioral therapists work to replace these habits of thought with healthier thinking patterns. Layard (2018) reports that CBT is the therapy of choice for depression and anxiety, and that psychotherapy interventions have success rates of 50% or more. This is important because mental illness is a growing concern. Many people suffer from some form of mental illness at some point in their lives. Mental illness is implicated in half of all disability claims within OECD nations and is associated with an earlier death (Layard, 2018).

Given the suffering caused by mental illness, it is not surprising that researchers and practitioners have worked to improve psychotherapy. Interestingly, many of the refinements of the last few decades have involved increasing attention to the positive. For example:

- Therapies that focus on building resources and planning, rather than focusing on past problems can shorten the duration of treatment (De Jong & Kim Berg, 2008)
- Focusing on strengths reduced depressive symptoms for up to six months, and this reduction outperformed a placebo control condition (Seligman, Rashid, & Parks, 2006)
- Regular, non-religious meditation practice is associated with lower emotional exhaustion at work (Hülsheger, Alberts, Feinholdt, & Lang, 2013)
- Regular meditation is associated with lower drug and alcohol consumption by prisoners (Chiesa & Serretti, 2010)
- Mindfulness meditation is linked to mild physical improvements including better immune functioning in people with HIV (Creswell, Myers, Cole, & Irwin, 2009)

There are other treatments for problems such as depression that also use mindfulness, take stock of strengths and resources, and attend to positive events. Two such examples include Acceptance and Commitment Therapy (ACT) and Dialectical Behavioral Therapy (DBT). We want to emphasize that although these mental interventions have traditionally targeted clinical populations, healthy thinking habits and meditation are also beneficial for every day, non-clinical stress and wellness. Here, we endorse the notion that psychological intervention is simply too good to be reserved only for the mentally ill. Learning healthy thinking techniques can benefit people from all cultures and all walks of life.

Social Happiness

If there is a single "secret" to happiness, it is to be found in high quality social relationships. This finding emerges time and again in the research literature. Diener and Seligman (2002) found that the one feature that distinguished the most from the least happy people is that the former group had supportive, trusting, and rewarding social relationships. Good friends offer a buffer against negative life events and provide a sense of belonging (Gable & Bromberg, 2018). Importantly, it is not just receiving social support that is associated with well-being, but giving it as well (Siedlecki, Salthouse, Oishi, & Jeswani, 2014). Social support and trust also explain major differences in happiness between nations (Helliwell, Aknin, Shiplett, Huang, & Wang, 2018). It is plausible, then, that efforts to create high quality connections are likely to yield greater well-being.

A number of interventions to increase happiness involve an emphasis on relating well to others:

- Spending money on other people yielded happiness dividends both for the spender and for the recipient (Aknin, et al., 2013).
- Doing small good deeds (e.g., holding the door, carrying an item) and giving small gifts (e.g. paying for parking, writing a kind card) boosted joy, optimism, and life satisfaction (Pressman, Kraft, & Cross, 2015).
- After people were prompted to help their colleagues at the office, the helpers showed increases in well-being and reductions in depressive symptoms (Chancellor et al., 2018).
- Volunteering is associated with higher well-being, and that this may especially be true in older adults (Greenfield & Marks, 2004; Morrison, Tay, Jebb, & Diener, 2018).
- People who help others, rather than indulging themselves, showed more positive emotion and flourishing, and fewer negative emotions over several weeks (Nelson, Layous, Cole, & Lyubomirsky, 2016). The authors of this study concluded with this sage advice:

"People who are striving to improve their own happiness may be tempted to treat themselves to a spa day, a shopping trip, or a sumptuous dessert. The results of the current study suggest, however, that when happiness seekers are tempted to treat themselves, they might be more successful if they opt to treat someone else instead." (p. 859)

Physical Happiness

While attention to psychological aspects of life, such as happiness, are important there is no denying that food, shelter, safety and other physical aspects of life merit attention. Bodily well-being influences psychological well-being, and both are policy relevant. In this, we are informed, in part, by Groppel and Wiegand (2013), who described the ways that the body is relevant to business performance. In their white paper on the topic, they argue that frequent walking and healthful eating are associated with better creativity and energy across the workday.

Perhaps the most obvious physical approach to enhancing well-being is exercise. The effects of mild to intense aerobic exercise has been studied extensively. Results from research converge on a single conclusion: exercise is beneficial not only to health, but to cognitive functioning and happiness. Ensari and colleagues (2015) found that 20-30 minutes of exercise, including cycling, resistance training, and yoga, was associated with lower rates of anxiety. Similarly, Gillison and colleagues (2009) found that healthy people reported higher quality of life when they engaged in exercise, and that this effect lasted up to a year. Kramer and his colleagues have found that physical exercise not only improves life satisfaction (e.g., McAuley et al, 2000), but also cognitive functioning, especially executive control (Kramer & Erickson, 2007; Colcombe & Kramer, 2003), which allows planning and self-control.

Listing and Labelling Interventions

There has been a recent emphasis on the so-called "quantified self." With the advent of mobile technology people are increasingly able to track their movement, feelings, and interactions. Such measurement can be an important launch-pad to change because measurement offers a baseline for goal setting, a means of tracking progress, and an understanding of when a goal is reached. Readers will be familiar with the old business adage, "You cannot change what you do not measure." Indeed, checklists and similar measures are becoming increasingly accepted for their benefits.

The field of positive psychology often has stressed creating lists and tallies as a mechanism to promote well-being. For example, Otake, et al. (2006) found that "counting kindnesses" led to boosts in happiness. Similarly, Seligman, Steen, Park, & Peterson (2005) found that writing "three blessings" each day or identifying a list of five personal strengths promoted happiness and decreased symptoms of depression over several months. This finding was replicated and extended by Chancellor and colleagues (2015), who found that people who recounted "3 good things at work" were happy and engaged in more physical movement. Researchers are uncertain about the specific reasons that this approach boosts happiness. It may be that lists direct attention to positive events and thereby create a positive view of life, that lists create a favorable sense of identity, or that lists motivate activities likely to boost happiness.

Regardless of how listing interventions cause change, we describe them because they seem to have such high return on investment. Creating a list once a day is relatively easy in that it requires little effort, time, and materials to be successful. Potentially, people could track a wide variety of positive content such as times they offered a compliment, instances in which they faced a fear, or times they actively listened to others.

Case Study: *Enhance*

With our colleagues at universities in Canada and the United States, we created and tested a program called ENHANCE (Heintzelman, et al., 2018). The program is in some ways similar to well-being interventions developed and tested in the past. However, it improves and extends this earlier work by employing the features described below.

ENHANCE is a well-being intervention program that can be delivered in-person using facilitated workshops or scaled for on-line administration either on the Web or on mobile devices. In either case, the program is 11-12 weeks in duration and focuses on multiple channels for intervention:

- **Education.** Learning about the principles of happiness. This learning provides the foundation for behavioral change.
- **Goals.** Examining one's goals in reference to one's values, and making concrete plans to reach these goals.
- **Behavior.** Engaging is specific activities intended to apply the principles of happiness.
- **Habits.** There is an emphasis on *developing* new habits that will continue to promote well-being even after the conclusion of the program.

The Enhance program frames the pursuit of happiness as a learnable set of skills and encourages participants to develop a skills development mindset; a mindset that is critical to the success of these interventions (Lyubomirsky, Sheldon, & Schkade, 2005). This is especially true of behavior change programs that focus on making only small modifications and monitoring progress (Lutes & Steinbaugh, 2010).

ENHANCE is a comprehensive program. Intuition suggests that anyone wanting to improve her well-being would need to attend to several areas of life, not just a single one. For this reason, ENHANCE offers 10 related but distinct thematic learning modules. These modules are further grouped by their relevance to the "core self," the "experiential self," and the "social self" (see Table 2.). The metaphor of training at the gym is instructive. You would be skeptical if a person returned to the gym day after day to build only the muscles in her forearms. Your instincts tell you that true fitness must include balance, flexibility, and cardiovascular capacity, as well as strength across the body. Just as athletes direct their attention to many aspects of fitness, so too does the ENHANCE program include many different aspects of living a happy life.

The ENHANCE Program

To give a more specific idea of the content of the Enhance modules, we describe several of the skills that participants develop during the social theme. Participants are guided to practice various social skills on a daily basis. These include:

- **Compliments.** Today, focus on noticing what others do well. Give more compliments today.
- **Gratitude.** Today, focus on noticing how others do things that are beneficial for you, both large and small. Express appreciation for these deeds.
- **Good news.** Today, focus on good news and events, and not just on bad news. When you interact with others, share good news. This could include a sports win, a personal achievement, a description of a fun event, or something positive from the news.
- **Active Listening.** Today, pay attention when others speak with you. Ignore your inner monologue and listen, instead, to what they are saying. React in a supportive manner.
- **Showing interest.** Today, make the other person (instead of yourself) the center of attention. Ask them questions about their goals, their relationships, and their activities.

Although many of these skills may appear mundane, the results of the ENHANCE program are quite positive. In one study, we were able to recruit 155 Canadians and Americans to participate in a randomized controlled trial of this program (Heintzelman, et al., 2018). Our participants ranged in age from 25 to 75 years old. We

Table 2. Overview of the ENHANCE PROGRAM

Skills and Habits Taught in ENHANCE	
The Core Self	**Sample Activities Covered in these modules**
Values	Exercise and adequate sleep
Goals	Strengths, intrinsic motivation, and virtues
Strengths	Creating concrete goals and plans to reach them
The Experiential Self	
Mindfulness	Savoring
Negativity	Stress reduction
Savoring	Behavioral activation
The Social Self	
Relationships	Expressing gratitude and compliments
Gratitude	Active listening
Social interactions	Being sociable
Giving	Prosocial helping activities

exposed participants either to an on-line learning condition, to a workshop condition in a classroom setting, or to a wait-list control group. We collected measures at the beginning and at the end of the program, and then again three months after the program ended. Our outcomes included measures of positive and negative emotions, pleasant and unpleasant memories, self-esteem, motivation, life satisfaction, meaning in life, and physical health.

Compared with people in the control group the ENHANCE participants showed higher life satisfaction from the beginning to the end of the program. These gains lasted through the three-month follow-up period. In addition to the psychological increases in well-being, the ENHANCE participants also showed improvements in health. For example, body mass index (BMI) was assessed across the study. Although people in the ENHANCE program had higher initial BMI scores, their average weight dropped during the program, and continued to drop thereafter. In contrast, members of the control group showed slightly increasing BMI across the months. Enhance participants also reported fewer sick days, and in another study they showed improved cognitive performance on a neuropsychiatric battery, which measured characteristics such as attention and memory.

The ENHANCE findings indicate that well-being skills can be taught. The modular aspect of ENHANCE offers the potential to revise and re-mix content to suit local needs. This allows the program to be modified for use by healthcare agencies, mental health programs, and other policy stakeholders with a well-being mission. Additionally, we discovered that both in-person and on-line administrations are effective. This is particularly important for geographic regions whose culture or infrastructure might make easier one delivery mechanism over the other. Furthermore, electronic delivery of the programs makes it inexpensive to deliver.

Table 3. Improvements in well-being produced by ENHANCE

Improvements in Well-Being Produced by ENHANCE
Higher life satisfaction and enjoyment
Lower rates of depression and stress
Fewer sick days
Increased physical activity
Increased self-esteem
Mental improvements such as enhanced attention and memory

Part Two: A Guide to Using and Implementing Well-being Interventions

In this section, we offer a practical guide to well-being intervention. This includes 1) Increasing stakeholder buy-in, 2) Implementing successful programs, and 3) A case study to illustrate key points. It is important to note that currently there are no established "best practices" for well-being intervention. This is not to say that existing interventions are ineffective. Indeed, research suggests that they are effective in improving health and longevity (Diener, Pressman, Hunter, & Delgadillo-Chase, 2017; Lambert, Moliver, & Thompson, 2015), education (Seligman & Adler, 2018), and the workplace performance (Mills, Fleck, & Kozikowski, 2013; Tenney, Poole, & Diener, 2016). Rather, it is difficult—if not impossible—to point to standard practices because new interventions are rapidly being developed and also because policy is so local. Well-being interventions may have to be adapted depending on the level of government (neighborhood, municipal, state, or federal), the intended participants, and depending on factors such a religion and cultural norms for expressing emotions. Comprehensive programs such as ENHANCE can serve as the foundation for interventions and be tailored to the needs and culture in that place.

Benefits of Well-Being Interventions Beyond Happiness

The first task in creating a well-being policy or program is creating a compelling reason for intervening. An initial, and often convincing, point to make is that well-being has many downstream outcomes that everyone considers to be important. For example, happy people live longer, have better cardiovascular and immune functioning, and engage in better health habits than do unhappy people (Cohen, Doyle, Turner, Alper, & Skoner, 2003; Diener & Chan, 2011; Kim, Kubzansky, Soo, & Boehm, 2016). In the Table 4, we draw on four studies for each predictor that show the association of each of the health variables with greater longevity. Although gains from any factor will depend, in part, on other influences, these studies indicate that well-being can be a very important influence on health and longevity.

Happiness also appears to be associated with better work performance (DeNeve et al., 2019;

Table 4. Happiness and Longevity

	Average Years Gained	Range Across 4 Studies
Exercise	3.0	2.1 – 4.5
Not Smoking	6.8	2.3 – 11.5
Subjective Well-Being	7.6	6.0 – 9.0

Warr & Neilson, 2018). Researchers find that happy workers, on average, are more innovative, receive better performance evaluations, earn higher incomes, and show less absenteeism that un-happy workers. Furthermore, happy people have stronger and lasting social relationships and are more responsible citizens. Taken as a whole, the research on the benefits of happiness should catch the eye of policy makers because these outcomes dovetail so well with other major goals of government. We would also like to point out here that happiness is a worthwhile focus even in the absence of health, work, and other desirable outcomes. That is, happiness is a pleasant and positive state, and is desirable in itself. However, the downstream benefits of happiness make it an even higher priority target for government policies and programs.

Table 5. Benefits of Happiness

Benefits of Happiness
Higher life expectancy
Health behaviors such as wearing seat belts and exercising
Better immune system functioning
Better organizational citizenship behaviors
Better supervisor and customer ratings
Earning higher incomes
Longer and healthier marriages
Donating more money to charity and volunteering
Social activism to solve societal problems
Resilience — bouncing back more quickly from stress and adverse events

Well-being interventions likely are more effective when they are delivered in a culture that accepts them. Researchers have collected data from a wide range of international samples (Diener, Seligman, Choi, & Oishi, 2018; Diener, Diener, Choi, & Oishi, 2018; Biswas-Diener, Vittersø, & Diener, 2010) and have tested interventions on a wide range of cultural groups (Layous, Lee, Choi & Lyubomirsky, 2013; Nelson et al 2015). For example, Lambert and colleagues (Lambert, Passmore, Scull, Sabah, & Hussain, 2018) tested well-being interventions with a sample of students in Kuwait and another diverse sample living in the UAE (Lambert, Passmore, & Joshanloo, 2018). In both instances, the researchers found that simple interventions could yield gains in well-being such as lowering the experience of distressing emotions, and these changes endured over time. Notably in this case, the researchers included interventions that were not culturally problematic. For instance, in the Kuwait study one of the lessons encouraged participants to "plan a great day." When framed in this way, the intervention allowed for local cultural understandings of what constitutes a great day.

We recommend that people interested in using standard well-being interventions, such as those in the ENHANCE program, should feel empowered to modify the activities to make them culturally appropriate. To do so, we recommend attention to cultural norms (Biswas-Diener & Lyubchik, 2013). For example, identifying and using personal strengths is a culturally universal phenomenon (Biswas-Diener, 2006) and a common positive psychology intervention (Seligman et al., 2005). Although the results from a number of studies suggest the potential benefits of strengths-based approaches, this topic can be difficult to introduce in cultures with strong norms for humility. This includes societies, such as Japan, where humility norms prevail, as well as in nations where the "tall poppy syndrome" discourages people from standing out from the group. In such places, people are often reluctant to speak openly about talents or successes because they fear being seen as arrogant. To avoid being distasteful to intervention participants we recommend positioning strengths not as "an opportunity to shine" but, instead, as "an opportunity to contribute." In our experience, people hailing from cultures such as those of South Korea, Japan, Australia, and Singapore find that attention to local culture enhances the likelihood of intervention success.

Based on our experience working with coaches, businesses, the health sector, governments, professional associations, and other groups, we discovered that interventions are more effective when they contain multiple elements including an educational component, a skills component, and a reflection component. Not surprisingly, this is aligned with the most effective teaching practices in general (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013; Benjamin & Tullis, 2010).

1. Measurement

Nearly two decades ago, Diener (2000) proposed that nations create national accounts of well-being. Measuring well-being provides rich information to policy makers and government leaders. For example, the "Arab Spring" uprisings in Egypt could not be predicted by income levels, which were rising at the time. By contrast, measures of well-being were rapidly declining prior to the "Arab Spring." Thus, people's predictions about their own future well-being might allow leaders to anticipate and plan for potential problems.

Well-being measurement does more than just chart change and track progress. To be certain, measurement is crucial to determining the relative success of interventions; but measurement, itself, can enhance well-being. By way of analogy, people who track what they eat may be better able to maintain a healthy diet. In the same vein, a number of studies emerging from positive psychology suggest that simply assessing positive topics can enhance well-being. For example, in a placebo-controlled study conducted by Seligman and colleagues (2005), people who used a measure to identify their top strengths enjoyed boosted levels of happiness over time. It may be that repeated measurement improves attention to quality of life issues and aids people in directing resources to boost their own happiness. Certainly, this idea has received recent support from research by Ludwigs and colleagues (2018), in which people who merely measured their own happiness enjoyed boosts in happiness. DeNeve and colleagues (this volume) review case studies showing that simply measuring workers' moods over time led to an

improvement in their moods. Importantly, it should be noted that measurement – especially baseline measurement – allows for the revision of interventions so that they are more directly individualized to those they intend to serve.

2. Education

Everyone, regardless of age, culture and other characteristics, intuitively seeks his or her own happiness. Unfortunately, people often make errors as they go about the business of trying to find the good life. For instance, people routinely mis-predict how long their happiness will endure after a desirable event such as the election of a favored political candidate (Gilbert, Pinel, Wilson, Blumberg & Wheatley, 1998). Similarly, people often invest in strategies that are less likely to produce happiness, such as excessively valuing money and sacrificing other values to a large degree (Diener & Biswas-Diener, 2002). As a result, we recommend that interventionists include didactic instruction around the definition, nature, and research regarding the causes of sustainable happiness. This can help citizens cultivate a better understanding of how to pursue well-being in effective ways. An example of this can be seen in the "wheel of well-being" web site created as part of a lottery-financed public mental health campaign in London. It is worth noting that educational web sites are relatively easy to create, scalable, and cost effective. They are also potentially good vehicles for collecting data and sharing experiences.

3. Skills

At its heart, the pursuit of well-being is a process. As a result, teaching well-being requires a set of learnable skills. Skills that are widely accepted as important to sustaining well-being include emotional intelligence, mindfulness, social skills, and health habits (Tov, 2018). Links to further information and programs related to these skills can be found in the Appendix.

4. Reflection

The development of skills, requires not only practice but also time for reflection, which provides the opportunity for people to understand how to apply a skill broadly across many aspects of life (McDaniel & Donnelly, 1996). It can also be crucial to understanding the extent to which the skill is being used effectively and how it might need to be modified to be employed more effectively (Benjamin & Tullis, 2010). At the simplest level participants can be led to reflect on skills by inquiring about the degree to which they are employing them.

Individual Engagement and Retention

One problem that commonly confronts intervention programs is the difficulty in recruiting, engaging, and retaining participants. Here, we describe ways that interventionists can use to attract participants, and retain them throughout the course of the treatment:

a. Incentives
People sometimes will be attracted to participate in interventions if they receive rewards, whether these be money, recognition, or release time from work. For example, people might receive discounts on health insurance if they participate in a well-being program. Similarly, businesses might allow employees flexible time that allows participation in well-being interventions, even during work hours. In both cases— for health insurers and employers—there is a strong rationale for making these types of changes based on the likely return in health cost savings and increased productivity.

b. Dashboards and monitoring
If people can map their progress by being given clear (even real-time) feedback about their performance and progress on the well-being scales, this can encourage future effort.

c. Social activities
One of the most effective ways to involve people and keep them engaged and accountability is to place interventions in a group setting. In this way, friends and neighbors can reinforce each other for participation. In some cases, parties or meetings where people discuss their progress could help program retention.

d. Reminders
When people are learning skills over time, frequent reminders about doing the activities and skills can be useful, by encouraging participants to not forget the skill activities.

e. Convenience and not time-consuming
In the modern world, people are often very busy. Thus, making the intervention treatments and activities easy to perform and not overly time-consuming is important.

f. Targeting specific populations

When interventions are advertised as improving "happiness" they will attract only a select few who are interested in activities of this nature. It is possible to make well-being programs more widely appealing by positioning them as they relate to specific groups. For example, a program might target the well-being of grandparents and use language and examples that are of direct interest to them. When labelled and designed in this way, participation may be much higher because people in those groups are more likely to be attracted to an intervention that focuses on the lives they lead and on a group with which they identify.

g. Collaboration

Just as people can be encouraged by participating with a group of friends, they can also be attracted to a group to which they already belong, such as civic organizations, faith communities, or sports clubs. The advantages of existing groups such as these are that they can recruit people more easily, and the social aspect can help reinforce completion of the intervention.

Table 6. Considerations for Well-being Interventions

Considerations for Well-being Interventions
Leader and citizen acceptance and input
Cultural appropriateness
Language that appeals to the target group
A strategy for measurement and evaluation for progress and success
Clear target populations for intervention
Targeting specific groups so that social influences help attract and retain participants for the intervention
Mode of delivery (classes, information campaigns, digital)
Possible revision and improvement over time

Case Study: Blue Zones Interventions

The "Blue Zones" are geographic areas in which residents enjoy unusually healthy lifestyles and extreme longevity (Buettner, 2018). By reverse engineering many of the healthiest habits, interventionists recreate Blue Zones successes in other locales. These healthy habits include increasing one's social network by connecting with new friends, walking on a regular basis, using checklists in the home to promote healthier eating and sleeping, attending self-improvement workshops, and receiving a life expectancy and body mass index screening.

These interventions are targeted at the municipal level, and towns and cities who are interested can receive Blue Zones Certification. To do so, leadership must enact at least 8 policies related to areas such as healthy eating, active living, and reducing tobacco use. They also need to implement 65% of the recommended policies, procedures, and designs that support widespread behavior change. These recommendations are specific to institutions that serve as key partners in health: schools, stores, restaurants, grocery stores, and places of worship. Recently, the city of Fort Worth, in Texas, received its Blue Zones Certification. The changes associated with the new policies include a 7% average drop in body mass index. Blue Zones estimates that the changes produced by the program will yield approximately 250 million US Dollars in health care savings ((D. Buettner, personal communication, October 19, 2018).

To date, the most high-profile case study for the Blue Zones is the project conducted in three neighboring cities in Southern California: Redondo Beach, Hermosa Beach, and Manhattan Beach. Changes in health and well-being policies across partner organizations led to:

- An increase in children walking to school (from 1% to 30%)
- The creation of 200 miles (321 km) of bike paths
- 7,500 residents attended workshops on purpose in life
- The passing of laws prohibiting smoking, even outdoors
- A 28% reduction in smoking
- A 15% drop in average body mass index

- A 11% increase in healthy eating
- A 12 % increase in reported well-being

How were these cities able to accomplish these remarkable gains? The Blue Zones follows a simple set of guidelines to create pilot programs:

1. **Readiness for change:** The Blue Zones organization waits to be invited into a community. They are not looking to force unwanted change and they similarly recognize the perils inherent to promoting change before people are ready for it. Blue Zones focuses on partnering with cities that have an explicit interest in well-being policy and have either tried and failed or are looking for additional input.
2. **Leadership investment:** Blue Zones requires a pledge from an array of leaders. Typically, this means the mayor, city manager, members of the city council, the superintendent of schools, and the local chamber of commerce. The pledge is simply an opportunity to establish a clear and cross-cutting mandate to promote health as a worthwhile goal.
3. **Organize a 5-year steering committee:** This step is crucial in that it emphasizes long-term commitment as well as engages local resident in investing in their own community well-being.
4. **Funding:** The funding model changes based on government structure, location, and other factors. Typically, the Blue Zones requires between 5 and 35 full-time staff members to advise on policy, facilitate workshops, and other support functions. In the past, one successful avenue for funding has been partnering with local insurance companies and hospitals, based on the cost savings they will enjoy.
5. **Create a strategic plan:** This plan typically articulates short and long-term objectives and identifies metrics to be used to create baseline measures, track progress, and evaluate success.
6. **Staffing:** Hire and deploy a team to oversee the 5-year change.

Conclusions

There are now a variety of focused interventions, as well as broad multi-component interventions, for raising well-being, with research to support their effectiveness. Some major important directions now for further action are:

A. **Dissemination and attention:** It is up to policy makers and other stakeholders to promote and disseminate well-being interventions. This includes not only a commitment to well-being over the long-term but also an opportunity to collaborate across government functions and public/private partnerships.

*B. **One size does not fit all.*** One of the major insights gleaned from research on treatments for mental illness is that certain specific therapies are much more effective for certain problems and not effective for others (Barlow, et al., 2013). Generalizing this to intervention with non-clinical populations, we encourage modification of interventions so that they are culturally appropriate and individualized. The future of well-being interventions will likely see a proliferation of treatments that are targeted toward specific individuals and groups with particular needs.

C. **Commit to tracking and research:** Research on the well-being interventions is an absolute necessity and should be continuous. Interventions, for example, should be contrasted and tested against each other for specific populations and needs.

Ultimately, well-being intervention is a valuable pursuit. Interventions, such as the ENHANCE program, can be delivered effectively using digital media, which has the advantage of being relatively low cost and easy to deliver. The proven and impressive effectiveness of both Enhance and Blue Zones in raising both well-being and health indicate that these interventions can be effective in improving quality of life. Governments that invest in such programs, whether they are digital or in person, stand to benefit from the myriad downstream costs savings to healthcare and justice systems, and from better performance at work and school. Most importantly, the prospect of a happier citizenry is a great benefit in itself.

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Chapter 6 **Appendix**

Emotional Intelligence

Simply put, emotional intelligence is learning to understand, recognize, and manage emotional states. Unlike math or language arts education, most schools do not provide an orientation to the basic and universal process of feeling and managing emotions. This is somewhat surprising in that emotional control and emotional intelligence are associated with lower rates of depression (Erbas, Ceulemans, Lee Pe, Koval, & Kuppens, 2014), higher rates of well-being (Kashdan, Barrett, & McKnight, 2015) lower rates of aggression (Pond et al., 2012) and higher academic success (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006). To some extent, the conspicuous absence of emotion education in schools may be due to the prejudice that feelings "are not academic" or the notion that people naturally improve at controlling their own emotions. Indeed, most of us adults do not throw a tantrum when they are denied something. Even so, building a robust emotional vocabulary, improving in the ability to identify and differentiate emotional states, gaining the ability to accurately read emotional expressions in others, and improving one's understanding of how emotions can be used effectively are all crucial to life success.

Web Site: This is a link to the educational unit on *Emotional Intelligence* at the Noba Project, an open educational resource for psychology. The unit is authored by Marc Brackett and his colleagues from Yale University. http://nobaproject.com/modules/emotional-intelligence

Book: Goleman, D. (1995). *Emotional Intelligence*. New York, NY: Bantam

Education: Marc Brackett's "RULER" program teaches emotional intelligence skills to students. http://ei.yale.edu/ruler/

Meditation

Many people think of meditation as a religious practice associated with monks and Eastern traditions. Although this is historically accurate, meditation can also be practiced in a secular way that is no different than taking a yoga class or enjoying an inspiring view. At the heart of mindfulness is the idea that people can broadly benefit from paying attention to their own thinking. All people interpret daily events through the lens of their own values, culture, and experience. Mindfulness practices help people notice their interpretations and understand when these interpretations may exaggerate negative emotional experiences. For example, it is common for people to mentally continue arguments long after the argument has finished, and the parties involved are no longer arguing. We often engage in this style of thinking because our mental arguments allow us to craft responses that are clever, vengeful, or suggest that we are the hero of our stories. Unfortunately, these fantasies often serve to maintain anger or irritation. Mindfulness practice can shift attention away from the argument and to the present moment—talking to our neighbor or grocery shopping, for example—where the argument does not exist.

Mindfulness

Simply put, mindfulness is a mental state of focused attention and conscious awareness. Mindfulness originally emerged from the Hindu/Buddhist religious traditions, but it has become widely employed as a secular psychological technique. The practice of mindfulness typically involves sitting still and making observations while, at the same time, trying to be aware of the many evaluative and judgmental thoughts that are associated with such observations. For instance, a person might observe sensations in her body, her own breathing, or her visual field. When she experiences intrusive thoughts such as "that is a cute bird" or "My legs ache; I probably should not have exercised so hard" she simply accepts that these thoughts have occurred and attempts to focus her attention back to a neutral observation.

Ultimately, the resulting awareness of our mental evaluations can provide the basis for well-being. This is because some portion of a person's distress comes from the mental stories they tell about their circumstances. For example, when a romantic couple gets into an argument it is common for both to become emotionally aroused (e.g., irritated and angry). Frequently, these distressing emotions continue long after the fight has ended. In large part, this is because the person is continuing to think about the fight, replaying it or revising it mentally, even though it is in the past. In a similar fashion, people often

inadvertently enflame their own distress by mentally clinging to past problems, exaggerating current difficulties, or inflating potential future woes.

Web site: Mindfulness-based stress reduction (MBSR) programs are available in many cities. This approach to managing daily distress has received research scrutiny and is widely believed to be helpful in non-clinical stress as well as some forms of clinical problems. https://en.wikipedia.org/wiki/Mindfulness-based_stress_reduction

Books: For decades, Dr. John Kabbat-Zin, a professor at University of Massachusetts Medical School, has been a leading champion of secular approaches to mindfulness. https://www.mindfulnesscds.com/

Other: A first person account of a mindfulness program written for the Guardian newspaper. https://www.theguardian.com/lifeandstyle/2014/jan/11/julie-myerson-mindfulness-based-cognitive-therapy

Social Skills

Like emotional intelligence, the ability to navigate social relationships is crucial to success. These are the skills that parents typically try to instill in their children: expressing appreciation to others, being polite, being helpful, and listening well. Interestingly, well-being is cultivated, in part, by investing in others. This includes expressing gratitude, of course, but it also includes charitable work, donating money, and extending kindness.

Research: A Creative Commons licensed, open chapter from the Noba Scholar web site is written by Helliwell and his colleagues (Social Capital and Prosocial Behavior as Sources of Well-being). It reviews the research suggesting that helping others pays back happiness dividends. https://www.nobascholar.com/

Research by Otake et al. (2006) describes the benefits of a simple intervention in which students in Japan kept track of small acts of kindness toward others. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1820947/

Example volunteer programs:
United Kingdom—National Citizenship Service (ages 15-17) https://www.ncsyes.co.uk/

United States of America—Americorps, the corporation for national and community service https://www.nationalservice.gov/programs/americorps

International—Habitat for Humanity https://www.habitat.org/volunteer/long-term-opportunities/international

Chapter 7

Happy Cities Agenda

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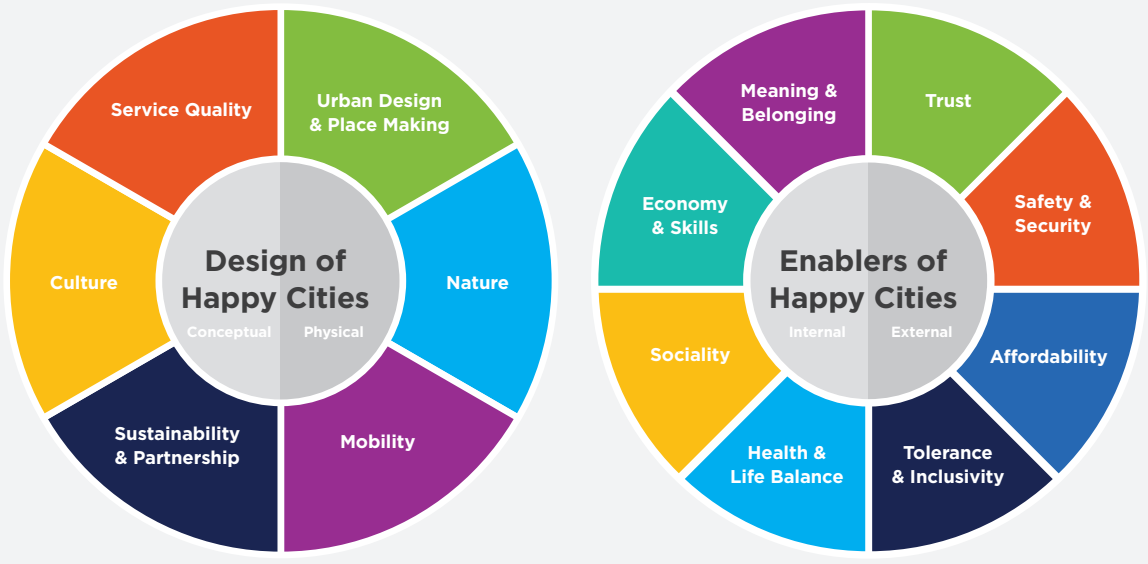
1. Executive Summary

This chapter looks at how to Creating and maintaining a happy city, is the topic of this chapter. It builds on last year's chapter, and, once again, considers technology as an enabler of action rather than a central focus of work. The research draws on a diverse set of examples from cities across the world.

This chapter emphasises some foundational concepts, such as the notion of a smart city to be one that is '**socially smart**', where the focus is on maintaining efficiency and sustainability in achieving happiness. This chapter elaborates two sets of themes, presented in the form of a practical tool for city makers. The first set of themes looks at how happiness is associated with the **design** of a city – in terms of the physical, processes, and flow that form the more tangible fabric of the city. The second set lays out the **enablers** of happiness in the city, that are often associated with the outcomes of actions and policies.



Note: These themes have no intended hierarchy, and are not mutually exclusive. Many initiatives, such as those discussed, touch on several of these areas.

Designing Happy Cities

***Action**-oriented **tangible** interventions; physical and conceptual.*

These themes look at the fabric of city: both the **physical** and the community fabric. The physical aspects of the city can be seen and touched: streets, piazzas, buildings, cycle-paths, and parks. In contrast, the **conceptual** aspects, though tangible, are more symbolic and relational. They include city culture, community partnerships, and services.

1. **Urban Design & Place Making**, city planning & design, connected space and place.
2. **Nature**, contact with nature, including green/ blue space, positively influences well-being.
3. **Mobility**, the arteries of flow of people in a city are critical to the value of a city.
4. **Sustainability & Partnership**, leading to sustainable change and improved well-being.
5. **Culture**, giving a valuable sense of uniqueness and meaning to the city itself.
6. **Quality of Service**, making genuinely citizen-centred services easier and accessible.

To illustrate the physical aspects of designing the city for well-being, three major examples are given. The first is concerned with the physical attributes of a public place that were found to positively influence the well-being of people visiting it. This example of a small park in Manchester (UK) shows how providing adequate seating, providing items of interest like a mural and small outdoor exhibit, as well as WiFi, helped people interact with each other more, were more active and engaged more with their surroundings. While another example showed how a small town in Florida was able to imbue a strong sense of community by ensuring the provision and enforcement of a simple set of design criteria in the town and the homes within it. These criteria were intentionally focused on making the town inhospitable to cars, and hospitable to people and provided lots of places in the town that allow ad hoc lingering. They also ensured that the design of the homes and streets promoted easy exchange between neighbours and passer-by, which encouraged interactions and a sense of community. However, it's also important to acknowledge the important and positive role that nature plays in enhancing well-being. Examples were therefore given of how urban places were reclaimed in favour of providing green spaces for people to enjoy passively, as well as places to visit deliberately.

However, since mobility plays a critical role in the city, it was important to show an example of how some cities, like Seville, have been able to address mobility demands while at the same time increase health and environment benefits in the city, and changing cultural norms. This example shows how a city of negligible cycling activity was able to raise the use of bicycles to 9% of mechanical travel in the city, and achieve high ranking in the global cycling city index.

In addition to the physical, on the conceptual aspect of the city, culture in terms the arts is also important for well-being, and an example was given of how a well-established city like Vancouver has reclaimed a disused industrial area as a centre of culture, as well as the example of a fledgling centre in Dubai, becoming a significant cultural destination for artisans and citizens.

Enabling Happy Cities

***Intangible** Policy **outcomes**; requiring active engagement, or sensed passively.*

These themes enable happiness in the city, and are the outcomes of policies and initiative. There are two categories. The themes within the first category tend not to require any direct input from the residents of the city in order to gain the benefits, and so they might be seen as passive or external to citizens, and are '*about the city*'. These include safety (i.e. it's a safe city), tolerance & inclusivity, and affordability. The second group may be seen as **active** enablers (or '**internal**' to the person), and are '*about the person*'. These require people to actively engage with them and take self-responsibility in order to gain their benefits, such as sociality, health and life balance.

1. **Trust**, a key aspect of well-being, may be gained by engagement & transparency.
2. **Safety & Security**, a fundamental need which is a basic requirement of well-being.
3. **Affordability**, lack of affordable housing is a major detractor from happiness.
4. **Tolerance & Inclusivity**, social & economic inclusion and tolerance of others has positive well-being and economic value, and is ethical.

5. **Health & Life Balance**, a holistic view of city life & activities promoting balance, physical and mental health.
6. **Sociality**, people need people, and ways to increase and improve relationships with other people.
7. **Economy & Skills**, a primary reason for people to move to a city is for economic opportunity including education and continuous learning.
8. **Meaning & Belonging**, people need a sense of meaning and coherence in their lives, including a sense of purpose and belonging.

Many cases were discussed to showcase the above enablers. One example was related to how the city of Melbourne increases the sense of trust in the city by conducting an annual week-long festival of many activities and cultural programmes. However, though there are lots of fun activities, the festival is actually about engaging its citizens and involving them in choosing the future of their city. However, city managers must also work towards making their cities affordable to diverse segments of society, and some examples were shown of how Montreal pioneered the Grow Home concept, which allows low-income buyers a chance to live in the city, by being able to buy basic homes that are designed to be expanded and developed by the owner, as resources become available. While another example of affordable homes was illustrated, more suited to developing countries, where only the core of the home is built, still providing basic utilities, and giving the owner the opportunity to finish the home as they live in it, thereby giving them safe shelter.

Inclusivity was also discussed, and another example from Melbourne was shown, where the city conducts open innovation events that are geared towards using city data to help people with disability access services in the city more readily, and participate in all aspects city life.

However, regarding enabling themes that are 'about the person', examples were given on how cities can help people improve their own health and life balance. In particular, the Ciclovia cycling event of Bogota was discussed, where the city was successful in creating a weekly event where the city closes streets on Sunday, in favour of one million people taking to the streets on their bicycle. Similar events were subsequently seen around many cities around the world, with direct health and social benefits. Also, mental health was also addressed by showing the way that city organisations, such as a New Zealand firm that has worked to maintain its business interests, yet still give its employees opportunities to create better life balance, by changing their working week to four days, whilst still paying them for five, allowing them more time with their families.

Activists in the city are also city makers, and many work to make the city happier. One example is the Binners' Project in Vancouver (people who earn a living by collecting recycling materials from bins), where volunteers aim to help a minority group to improve their working conditions, remove the associated social stigma, as well as provide tangible and visible benefits to the city. This project allows these workers to maintain their dignity, while also improving the city image for all.

Finally, two examples were given about how city managers have created sociality initiatives to support citizens in their relationships with others. First was the examples from Denmark, where the city provided counselling sessions to parents who have difficulties with their children, as well as sessions for divorced parents to maintain a cohesive family. Also, in Denmark, the city created initiatives to help elderly people to engage with society, and alleviate their loneliness. The second example was Vancouver's Hey Neighbour initiative, which was about finding out what made good neighbourly buildings and communities, and disseminating the findings across the city to improve the social fabric of the city.

2. Checklist

The Happy Cities Agenda proposes that city custodians and managers increase happiness in the city by adopting a data-driven approach towards a socially smart city, and enhancing the themes listed in this document, as summarised in the following checklist.

A- Designing happy cities.

1. **Urban Design & Place Making**, ensure that good city planning & urban design guidelines are promoted and encouraged, for example mixed-use, transit-oriented development, and take steps to increase a sense of community

and follow guidelines to enhance place-making in public spaces.

2. **Nature**, increase the amount of green and blue spaces, of all scales, including small spaces such as rooftops, and increase the chances that residents have contact with nature.
3. **Mobility**, make sure that residents and visitors have multi-modal transport options, and reduce the reliance on cars, and improve live information about the flow of all city transport.
4. **Sustainability & Partnership**, in order to achieve long-term and sustainable improvements in levels of happiness in the city, city managers must try to partner with interested organisations that will benefit from the chances, such as private sector, as well as community groups.
5. **Culture**, city managers must actively promote cultural activities, directly – for example by organising events, and indirectly – for example by helping organisations to develop specialist eco-systems.
6. **Quality of Service**, city managers must ensure that the quality of citywide services, digital and others, are made to be user-centric and aim for the highest usability and accessibility standards.

B- Enabling happy cities.

1. **Trust**, enhance institutional trust in city organisations by increasing engagement & transparency.
2. **Safety & Security**, improve actual and perceived feelings of safety and security by increasing visibility of safety initiatives, more open and well-lit places.
3. **Affordability**, provide affordable housing for all segments of society by increasing options of housing styles and funding methods.
4. **Tolerance & Inclusivity**, ensure all the people in the city are not disadvantaged in terms of inclusion, and are able to participate in society and the economy, by ensuring equal opportunities and access for all.
5. **Health & Life Balance**, promote healthy activities and lifestyles in the city, such as active travel, as well as encourage a balanced life, e.g. between work, leisure and family life.
6. **Sociality**, support people to connect and improved their relationships with each other, at all scales; e.g. family and community, by provide more opportunities for people meet and share interests, or actively fighting loneliness.
7. **Economy & Skills**, help people to be actively involved in the economy of the city by providing skills training and education, as well as employment and business initiatives.
8. **Meaning & Belonging**, promote shared values, experiences and meaning at the community and city scale, e.g. using cultural events, as well as ensuring new residents and migrants are integrated and included into the society.

3. Introduction

People move to cities for various reasons and 55% of the global population is now urbanised (UN, 2018). This number is growing fast: estimates predict 75% of the world will live in cities by the end of this century, with 43 mega cities (with populations over 10M) by 2030 (UN, 2018).

A good deal of data from around the world show that cities can be a stressful environment (Litman, 2017) (McCay, Suzuki, & Chang, 2017) . And so moving to a city does not guarantee greater happiness. Perhaps the opposite. Recent data from Canada, for example, shows a “robust differences in life satisfaction between and across urban and rural communities”, where people are happier, mainly associated with a greater sense of community belonging, in rural and small-town settings (J. Helliwell, Shiplett, & Barrington-Leigh, 2018). And so in an ever more urban world it is increasingly important to find ways of improving the well-being of city dwellers (Florida, Mellander, & Rentfrow, 2013).

In making choices and decisions to improve well-being, it is important to ensure that policies and interventions are evidence-based as much as possible. However, gathering such evidence can be challenging, particularly in determining causality and attribution of intervention success “when researchers attempt to evaluate community-wide interventions or city-wide policies. Establishing appropriate comparison groups is difficult in such research, and isolating the influence of interventions or policies from the

multiple other ecological influences on observed outcomes can prove difficult." (APA, 2005). In such cases, researches may turn to other research methods, such as 'quasi-experiments to make rough comparisons, rather than rely on strict experimental controls, (Anderson, Ruggeri, Steemers, & Huppert, 2016).

Having a clear conceptual framework setting out the linkages between aspects of the city and well-being, along with a common terminology, is important too, though not always straightforward. Some organisations have developed their own frameworks. The Conference Board of Canada and DIALOG, produced a framework for defining and evaluating the built environment's contributions to community well-being. The framework was conceptualized based on the definition of community well-being, which encompasses the essential domains related to the "social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfil their potential." (Markovich, Slovinec D'Angelo, & Dinh, 2018). Another approach is to organise well-being activities and interventions in the city based on the smart city ranking dimensions (which also acknowledges technology)(CRS/EU, 2007), as used in the previous Global Happiness and Wellbeing Policy Report : economy, mobility, living, governance, people & society, and environment (Global Council for Happiness and Wellbeing, 2018).

3.1 Socially Smart

Redefining 'smart', efficiency and sustainability of resources in achieving a happy city.

It is arguable that cities have always been smart: many city managers have long sought to be efficient with their resources. However, ICT now offers a promise of much more through an explosion of data, processing power and possibilities for automation. of the ITU define a smart sustainable city as "an innovative city that uses information and communication technologies and other means to improve quality of life, efficiency of urban operation and services with respect to economic, social, environmental and cultural aspects." (ITU-T FG-SSC, 2014). On the face of it, this definition seems adequate for the purpose of this chapter. However, the reference to ICT as a central precept, may be a distraction. Such concerns have been voiced by many (Mason, 2015; Picon, 2015), warning of the excessive focus on technology, and asking about who controls it, and for what motive. Nonetheless, although technology is here to stay, and accelerating in complexity and ubiquity, "the most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it." (Weiser, 1991). It is therefore, more useful to think about the ends, rather than means, and focus on the outcomes a smart city is trying to achieve. Ultimately, a city is about the people and so the outcomes of a smart initiative should align with well-being, such as in Dubai, where the Smart City Office's vision aims simply to "make Dubai the happiest city on Earth" (Al-Azzawi, 2019). A 'socially smart' city is therefore a more appropriate and useful term. However, though this term has been used by some cities, like the smart city of Bhubaneswar in India, in this chapter a socially smart city is one where **a feedback loop operates to optimise social benefits, whilst minimising resources use**; measuring, analysing/processing, and adjusting, as appropriate.

3.2 Data as a Tool

Data, in various formats & sources, play a critical role in managing city well-being.

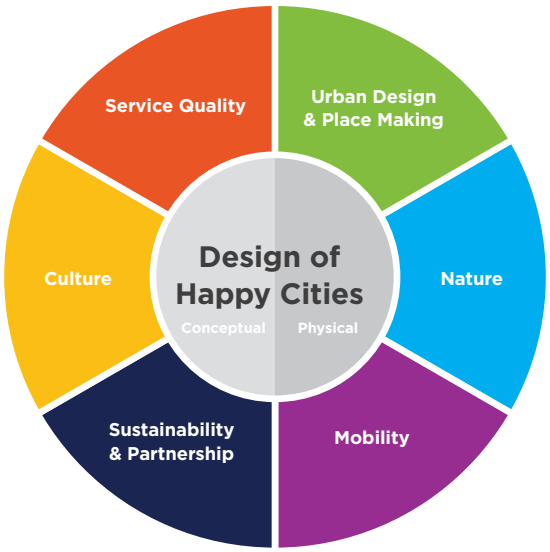
City data are not the end-point, they are a means to an end, and have been used in many ways to help improve city life. Today, there are many city data platforms that try to give value from analysing such data. Some cities create publically available dashboards, like Boston's CityScore, which is used to monitor overall city KPIs. Many cities have organised data hackathons like London's City Data Hack, to tackle challenges as diverse as employment, travel planning, and social isolation. While Dubai, with its Happiness Hack, uses data from its Dubai Pulse platform to seek to improve well-being. Some have explored novel ways of analysing the city as a whole, for example its "urban city rhythm" and finding ways to use such insights to improve the well-being of the citizens (Nevejan, Sefkatli, & Cunningham, 2018). There are though concerns around the ownership and privacy of such data (Forburkerrådet, 2016). In Toronto for example, Sidewalk Labs (one of the Google family of firms) is developing a water-front area and have stated their top metric to be quality of life. Yet they found that many people

raised strong concerns about the data-centricity of the development, in terms of data privacy, security and ownership.

The rest of this chapter builds on these considerations, and proposes a Happy City Agenda, in the form of a tool that a city can use when considering policies, activities and interventions to enable happier city.

4. Design of Happy Cities

Action-oriented **tangible** interventions; physical and conceptual.



These themes are design directions and actions that can lead to happiness in the city. They relate to direct **actions**, projects or initiatives and fall within two categories: *physical* and *conceptual*. The **physical** aspects of city-designing, is the built-environment: streets, piazzas, buildings, cycle-paths, and parks. In contrast, the **conceptual** aspects that are more symbolic and relational, such as city culture, community partnerships, and services.

1. **Urban Design & Place Making**, city planning & design, connected space and place.
2. **Nature**, contact with nature, including green/blue space, positively influences well-being.
3. **Mobility**, the arteries of flow of people in a city are critical to city life.
4. **Sustainability & Partnership**, leading to sustainable change and improved well-being.
5. **Culture**, giving a valuable sense of uniqueness and meaning to the city itself.
6. **Quality of Service**, making genuinely citizen-centred services easier and accessible.

These themes have no intended hierarchy, and are not mutually exclusive. Many initiatives, such as those discussed below, touch on several of these areas.

4.1 Urban Design & Place Making

Urban Design & Place Making, city planning & design, connected space and place.

The design of the urban landscape and the built-environment influences well-being (Ministry for the Environment, 2005). However, urban design occurs at many scales, and each of these scales has its own challenges, constraints, and ways to ensure improved well-being. For example, the Happy Homes Toolkit lists many ways that multi-family homes can better support social connections (Happy City, 2018). A few key elements of the toolkit highlight specifics, such as a maximum of 8 units should share an entrance, and approximately about 12 units should share semi-private spaces, also, units should share useful amenity spaces, such as storage or a place to fix bikes.

On a larger scale, improving access and use of public transport reduces congestion, and improves commute times. The most effective way to encourage high transit ridership is to allow compact development around transit stations, but in many city, the zoning codes around many stations—often a hold-over from a previous era—remains highly restrictive. One city instituted a broad-based reform that allows this kind of compact, transit-oriented development across the city, while also encouraging sustainable design. Therefore, in order to improve commuting and discourage urban sprawl, the Municipality of Quito launched two years ago the Eco-Efficiency Tool (EET) (City of Quito, 2017a). It allows developers to build higher (up to 100% higher) that the height stipulated in the Land Use Plan. But in order to be allowed to build higher, projects have to (1) be located within walking distance (approx. 400 meters) of a public transport, and (2) fulfill strict requirements for

water and energy efficiency, and other impacts on the city.

Since the release of the EET Resolution, 16 building projects have been approved, and another eight projects are under evaluation. The new buildings are, for instance, able to catch and retain on-site storm water that otherwise would could flood the sewage system , and can treat and reuse grey and rain water. The EET also takes into consideration the energy used by commuter vehicles; therefore, some parameters of the EET require space for bikes to be parked and reduced car parking. Sustainable materials; debris and solid waste management plans; green roofs and façades, are among the other parameters evaluated under the EET.

Well-being is also improved by social connections, and place making promotes such outcomes, and there are many ways to improve a space in this regard. Researchers in the UK developed a quasi-experiment to assess the impact of urban design changes on the well-being of a neighbourhood in Manchester (Anderson et al., 2016). In their study, they identified two similar areas within the city (with.one acting as a 'control'). Their work began by conducting workshops with residents to assess their thoughts on possible designs changes. They also took advantage of well-known methods to improve place-making and interaction between people, like triangulation, where two strangers are more likely to talk, when something else happening around them in a public space (Whyte, 1980). The interventions that followed included a 'bug hotel' outdoor exhibition, showcasing local endangered invertebrates, a mural by a local artist, as well as seating, high-speed WiFi, and new plant pots and grass. The researchers then monitored activity in both areas, observing how people connected to each other, their physical activity, or just whether they took notice of their surroundings. All three behaviours significantly increased after the intervention, and there is evidence that these behaviours are drivers of well-being (Aked, Thompson, Marks, & Cordon, 2008). In other words, simple changes to the physical design of the surroundings of a part of the city can positively influence well-being, and interventions identified and co-created by the community can have more impact.

Photo 1: Public parks are an effective way to increase social by using various place-making techniques. This park in Toronto offers something for everyone; angled benches to encourage interaction, children play area, park gym, playful fountains, and grass to sit on.

A "sense of community" is a psychological construct that is positively linked to well-being (Unger & Wandersman, 1985). However, how does one design a city for it? A study on the town of Seaside (Florida) reported some important factors about the town – known for its strong sense of community, even though not all its inhabitants are permanent residents (Plas & Lewis, 1996). First, Seaside was intentionally designed to be "hospitable for people and inhospitable for automobiles", and to minimise the "thoroughfare mentality conducive to automobile traffic." The architects followed the idea that automobile traffic was the "single most significant factor in the destruction of the urban environment.", and ensured the town was not split by roads convenient to cars, thereby discouraging and reducing fast, noisy and unsafe traffic. Other factors were planning rules that emphasised the importance of porches, including their size and distance to the sidewalk. The architects ensured that the town's Urban Code for the town had these specific measurements, designed to allow neighbours to be able to talk across their porches, whilst people on the porch could also maintain their privacy should they wish. The height of fences was standardised to be low enough for people to have spontaneous "neighbourly exchanges.", though the code also stipulated that houses must not repeat the same pattern of the picket fence. In this way the street had an "air of individuality and flavor." Therefore, effective interventions for social connections,

require both privacy and exposure. Other factors included several town-square type areas which allowed people to linger and chat, and the study found this to be true of temporary and permanent residents. Combined, these simple elements of design seem to help contribute to Seaside's high levels of social connection.

These design elements and philosophies have since been used by other architects wishing to achieve the same outcome regarding the sense of community. For example, Pinewell-by-the-Bay (Norfolk (VA)), and Newpoint (SC), where its architects have also included maximum limits between neighbours, and ensured they also have porches, and have emphasised that "[we don't] sell privacy ...we sell neighbourhood."

Photo 2: Walkability can be achieved in warm environments by providing shaded sidewalks, as seen here in New Town Kolkata.

Another important aspect to urban design in terms of well-being is walkability. Walkable cities are deemed healthy cities, physically and socially (Speck, 2012), and many architectural firms actively promote and design for walkability, where "walking positively transforms a city's health, economic productivity, and ecological outlook. For us as individuals, it influences how we connect with family, friends, work, and nature." (Arup, 2016b). There have been many attempts at measuring walkability, like the innovative London StreetScore, that uses city data and images to calculate an comparable score across the city (StreetScore, 2018). Another useful measure is the "20-minute neighbourhood" concept, which is another way to describe "walkable environments, vibrant neighbourhoods, complete communities-highly integrated and diverse places." (City of Portland, 2009). The concept is used to create a heatmap visual representation overlay on a city map, showing areas that conform to this concept. In this way, city managers and residents can use this information to assist in decision making, like choosing a residence or designing a new real-estate development. However, some cities face challenges, for example in terms of the weather being too hot, as is the case in tropical and sub-tropical cities. Much work has been carried out, offering ways to alleviate and address these challenges (Arup, 2018; O'Hare, 2006). Therefore, since walkability makes a city more liveable, encouraging such an activity has a positive influence on well-being.

4.2 Nature

Nature, contact with nature, including green/blue space, positively influences well-being.

There is plenty of research about the benefit of nature, and specifically the availability of green and blue spaces, within cities. In a comprehensive study of 44 cities in the USA, researchers show "the percentage of city area covered by public parks was among the strongest predictors of overall wellbeing, and the strength of this relationship appeared to be driven by parks' contributions to physical and community wellbeing." (Larson, Jennings, & Cloutier, 2016). Other research has also shown that proximity to green spaces is a predictor of reported general health (Maas, Verheij, Groenewegen, de Vries, & Spreeuwenberg, 2006) and recovery from medical procedures (Ulrich, 1984).

Arup's research on the benefits of increasing the use of vegetation on and around buildings in the city, also known as "Green building envelopes", identified three main benefits: *noise reduction* by as much as 10 dB(A); better *air quality* with a significant reduction in concentration particulate matter; and reducing *urban heat-island* effects can lead to as much as a 10° C drop in temperature (Arup, 2016a). The report also emphasises the nature's positive impact on well-being, and there are many cities around the world that have been active in promoting urban greening programmes for healthier cities, as seen in some cities in Ethiopia (Gebreselassie, 2018).

However, reclaiming space away from cars, and towards green and public spaces has been seen

in many cities, like Vancouver and Toronto, with their common practice of repurposing parking spaces into 'parklets' (small public spaces), and has been generally a particular hallmark of Melbourne. Chronicling and critiquing the manoeuvring between the various forces that have shaped the successful and dramatic urban transformation of Melbourne into one of the world's most liveable cities, the authors of "Urban Choreography", highlight "the intermeshing of social, economic, political, environmental and aesthetic forces that drove and constrained these [design] changes." (Dovey, Adams, & Jones, 2018). This has been largely due to turning urban space for cars and railyards into space for people, most often, a green space. More recently, Melbourne has published its plan to transform the city into an urban forest, by greening rooftops and walls, amongst other initiatives (City of Melbourne, 2017).

Photo 3: Parklets of different designs in Toronto, being reclaimed from cars to provide ubiquitous small places for social contact and relaxation, and some provide support for smart technologies.

converted into a cultural public space and trail. These types of interventions can face challenges, e.g. limited budgets, or public perception. One way of addressing these challenges is to make temporary 'urban experiments', like pop-up installations, or a time-limited change of use in public spaces such as car parks or town squares. Such experiments have been successful in many towns, like the transformation of the Aarhus town square into "The Forest", a collaborative effort by Aarhus Festival, The Aarhus Municipality and the architect firm, Schønherr (Franco, 2016). In this temporary installation, the cobbled town square was covered by undulating floor of moss and grass, and covered by hundreds of trees. The forest promoted well-being by inviting play, reflection, relaxation, and socialisation. Interestingly, the local police reported zero incidents, in a place that normally witnesses regular crime. The important lesson from such experiments, is that they provide a relatively easy way to engage the public, developers and politicians to see and feel tests of future plans, without the need for permanent and expensive investments, and are therefore more likely to get permits.

Photo 4: The Forest intervention in Aarhus town centre, showing before (left) and after (right) the completion of the temporary installation. Source Schønherr.

Many cities are also reclaiming obsolete infrastructure to create public space. New York City's High Line, is another creative example. This elevated linear park, built on a 1.45-mile stretch of a disused rail line, has proved popular since its opening in 2009, drawing locals and visitors to a variety of activities along the park. The successful re-use of obsolete infrastructure has inspired many other cities to consider a similar approach, like The Bentway in Toronto. Though this space is a discarded space under an expressway, rather than an obsolete space, it was nonetheless

However, the development of green spaces can be challenging in some areas. For example, arid environments pose a challenge with regards to the availability of water to support such developments. In this regards, *xeriscapes* have been used to overcome such challenges, as a more sustainable way to green arid environments. Xeriscapes are design approaches that are noted by "the use of plant material and practices that require less water, fertiliser and pesticides, the use of native and locally-adapted plants and minimal grass cover." (Arup, 2018, p. 86).

4.3 Mobility

Mobility, the arteries of flow of people in a city are critical to the value of a city.

An important aspect of city living is being able to get around, and congestion has a negative influence on well-being. Also, there is no doubt of the stress caused by long commute times, which are certainly negatively associated with well-being (Stutzer & Frey, 2008). Conversely, active travel can improve physical health and bring psychological benefits (Martin, Goryakin, & Suhrcke, 2014). These benefits, along with improved air quality and reduced cost of travel, have led cities around the world to promote cycling, and cities like Cape Town, the organisers of cycling event like OpenStreets, consider ways of embedding such activities to be more common and relevant to daily life (Open Streets, 2018).

However, it is possible for cities to make rapid progress on implementing comprehensive cycle networks. In 2006, the city of Seville, Spain, had negligible bicycle infrastructure and few cyclists. By 2011, it had built a complete minimum grid protected bikeways, which generated a 6-fold increase in the number of cyclists. They accomplished this feat by undertaking a large scale project to improve cycling infrastructure in 2006, and then in 2007 approved their Bike Masterplan to extend and improve the quality of the infrastructure and promote cycling. Initially the plan was for a cycling network of 120 km, which was eventually increased to 164 km in 2013. The plan included guidelines to ensure the bike network allowed for : *segregation* from motorised traffic; *connectivity* between main destinations in the city and the residential areas; *continuity* across the network without gaps; *homogeneity* in pavement and design; and *bi-directionality* (Sillero, 2011). A deliberate strategy was to ensure that the network was actually safe, was perceived to be safe, so that the designers were attending to the "needs of potential cyclists [rather] than the needs of actual cyclists." (Martin et al., 2014). This emphasis is due to them recognising that existing cyclist are happy to cycle without improvements, so they needed to target the potential cyclist who had concerns, or needed persuading. Further, the plan thought about the wider cycling eco-system, for example creating 5,000 cycle parking places around the city, including at public transport stations and workplaces. The University of Seville played a role too, providing long-term bike loan for its students and parking spaces within campus. In this context, universities make a contribution to the cultural change required for success, as they target new generations. The city instigated a bicycle sharing system, allowing people to experiment with cycling habit. This was a great success, reaching a membership of some 60,000 users within just over 2 years. At its peak, each bicycle of the 2,650 bicycles, were used an average of 10 times a day across 260 stations.

Between 2006-2011, Seville experience a rapid growth in cycling: bicycle use rose 6 fold, from fewer than 2% to 9% of total mechanical trips. Moreover, cycling was three times safe in 2011 than in 2006, largely because of the new well-connected cycle network, that segregated cyclists from motorised traffic. The city is now ranked 14th on the global index for cycling cities (copenhagenizeindex.eu). A significant lesson from Seville is that unconnected and unsafe cycle lanes do not get used.

4.4 Sustainability & Partnership

Sustainability & Partnership, leading to sustainable change and improved well-being.

City partnerships *per se* are not unique, and usually have economic motivations. However, partnerships are also an important way for cities to sustainably improve well-being. Such arrangements will not only sustain improvements, but may also improve social capital if stakeholders feel they are collaborating towards common goals. These partnerships might engage businesses in a citywide initiative, such as London's Clean Air Technology ecosystem, undertaken between Johnson Matthey and Future Cities Catapult (Future Cities Catapult, 2018b). The initiative aims to monitor, test and improve air quality in schools and the city at large. Other partnerships can create benefits at a different scale. In the city of Amaravati (India), a land-pooling scheme was devised to create new communities, in order to overcome the excessively sub-divided agricultural plots that limit the chances of developing a coherent land that can be the basis of organised and efficient infrastructure (Andhra Pradesh CRDA, 2017). Under this unique program, citizens were given the option of voluntarily pooling their land, in exchange for a plot in the city, skills training and various financial incentives such as an interest-free loan for entrepreneurs. Thus,

both social benefits and social safety nets were created for the landowners, leading to improvements in individual and community well-being. The program was successful, acquiring more than 34,000 acres of land from nearly 24,000 land owners.

Interestingly, a different kind of partnership can be gained through engagement when a community takes an active role in decisions affecting them. Such initiatives give people both a sense of responsibility and increase their sense of belonging. A good example comes from Halifax (Canada), where City Councillors invest $94,000 each year in community infrastructure. Many Councillors now apportion that funding using an innovative approach to participatory budgeting (Halifax South, 2018). Community groups setup a booth at an event and tell residents their proposals. Residents can vote for their favourite five proposals (avoiding exclusive bias towards projects with personal interest), when they are there in person and participation tends to be very high, with hundreds of people attending. The format offers a number of valuable benefits:

- It creates awareness about what is happening in the community. Many participants are surprised about how much volunteers are doing.
- It incentivizes community groups to work on the priorities of their community, rather than the priorities of major funders or government bureaucracies.
- It creates other opportunities for funding. Sometimes people donate their own money to worthy causes.
- It connects volunteers to opportunities. Often, people learn about a great initiative and want to help out themselves.
- It builds social capital. It brings people together from a wide spectrum of interests.

The Brazilian city of Porto Alegre also employs participatory budgeting, though at a far grander scale. They apportion $200 million annually towards construction and services through a participatory budgeting process, which attracts tens of thousands of participants annually.

4.5 Culture

Culture, giving a valuable sense of uniqueness and meaning to the city itself.

Cities cultures are made by many distinctive patterns; visual, lights, arts, sounds, climate, diurnal changes, people's behaviour and attitude. Their physical structures also contribute to their culture, sense of place and soul, where "Every house or building encloses multiple stories. Every road or pathway is a narrative" (Lappin, 2015). The New Urban Agenda acknowledges that "culture and cultural diversity are sources of enrichment for humankind and provide an important contribution to the sustainable development of cities, human settlements and citizens, empowering them to play an active and unique role in development initiatives." (Habitat III, 2016). Moreover, some cities have shown they can be successful at creating their own unique authentic culture (Tate & Shannon, 2018). However, culture is a constantly evolving notion, how do cities nurture culture and its surrounding communities? Granville Island in Vancouver began its transformation in the 1970's from an industrial wasteland into a thriving cultural and living community. The trust that operates the area has a mission to "steward this public land for meaningful urban and social experimentation among diverse, creative, cultural, and business models, engaging local First Nations and communities while welcoming the world." This strong ethic of engagement and ground-up support is key to its success. Today, there are 50 independent restaurants, 300 businesses employing 3,000 people, and many of Canada's best artists and designers can be found there. There are many cultural venues with performing arts and cultural festivals year-round. As such, Granville Island contributes significantly to the well-being of citizens in the city. There are also other similar successful examples, such as Amsterdam-Noord, which is a thriving hub of creativity (e.g. NDSM-wharf), experimentation, and urban innovation.

Culture can also spontaneously grow from smaller beginnings to impact a city. Dubai's Alserkal Avenue is a vibrant cultural district nestled in an industrial area, spread across half a million square feet, comprising 91 warehouse spaces housing home-grown entrepreneurs across creative fields (film, theatre, music, community, culinary) alongside prominent art galleries and not-for-profit art museums.

This cultural district had humble beginnings. Established by a local philanthropist in 2007 it

has since doubled in size through an extension, in what used to be an old marble factory in 2015. Alserkal Avenue is a neighbourhood of risk-takers, innovators, and makers that became a stepping stone for the city's creative economy. And it has become a magnet for creative talent to move to Dubai, which has a relatively new cultural scene. It also helped to produce a skilled workforce to animate public and private spaces, to incubate disruptive art projects, and to create close-knit communities. In the course of ten years, it has led to more than 3000 cultural events open and free to the public, engaging first time audiences and forming a diverse local community. The number of visitors increased to 460,000 in 2017 from less than 10,000 annually a decade ago.

There is no doubt that this cultural hotspot has contributed to the well-being of the city in various ways, giving the community an opportunity to contribute to the development of their city and providing the citizens of Dubai with an enhanced sense of identity and cultural richness.

Culture can also be created out of simpler structures. Some cities, like Melbourne with its famous laneways, and Vancouver with its extensive reclamation of more than 240 alleyways, have converted these space into coveted public spaces, to the point of a destination in their own right, like the Pink Ally, with over 2 million YouTube views, and countless selfies and social media engagement. These kinds of interventions repurpose mundane city structures into richness and details that engage people and have a measured positive outcome on well-being.

Photo 5: Melbourne's famous laneways act as a way for resident artists to express themselves (left), and Vancouver's many alleyways have become tourist destinations, like Pink Alley (right).

4.6 Quality of Service

Quality of Service, making genuinely citizen-centred services easier and accessible.

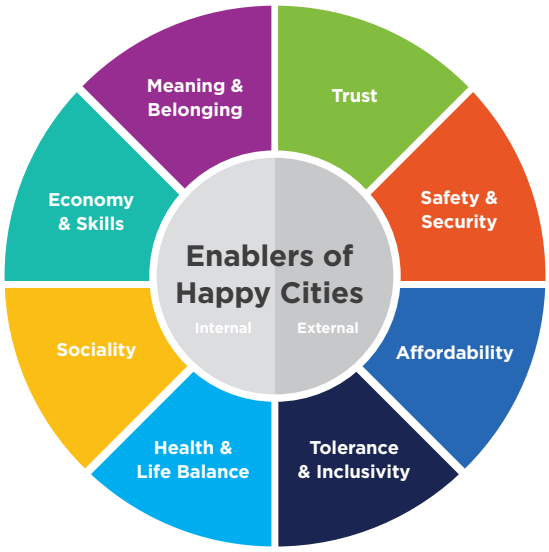
An important factor into experiencing the city, is the quality of experience of services within the city, be they general services like obtaining permits, or having waste collected. Today, many services are mediated by technology, and therefore city managers must also ensure that resident's experience of technology must be maintained at high quality, and relevant factors must be supported, such as usability (Al-Azzawi, 2013; ISO-9241-11, 1998), and accessibility, including digital accessibility (W3C, 2018).

In Quito, a lack of maintenance of transport facilities, vandalism, and the bad location and misuse of bus stops, resulted in a bad experience for public transport users. To improve the quality of public space and urban furniture (e.g. public seating), as well as public transport, the Municipality of Quito entered into a public private partnership. In exchange for the renewal and maintenance of bus stops, the private partners can advertise around the bus stops and in public space, thus increasing the quality urban furniture that improves the user experience of public transport.

The locations of the new bus stops were selected using data. The data used for the analysis of the first 414 bus stops, included the demographics of the surroundings, bus routes, vehicle load, the characteristics of sidewalks, universal accessibility, protection against weather, and their contribution to security and social cohesion, etc. It is important to note that in addition to maintaining the bus stops, the private partner is obliged to improve the sidewalks in which the new furniture is placed.

5. Enablers of Happy Cities

Intangible Policy **outcomes**; requiring active engagement, or sensed passively.



These themes enable happiness in the city, and are the outcomes of policies and initiative. There are two categories. The themes within the first category tend not to require any direct input from the residents of the city in order to gain the benefits, and so they might be seen as passive or external to citizens, and are '*about the city*'. These include safety (i.e. it's a safe city), tolerance & inclusivity, and affordability. The second group may be seen as **active** enablers (or '**internal**' to the person), and are '*about the person*'. These require people to actively engage with them and take self-responsibility in order to gain their benefits, such as sociality, health and life balance.

1. **Trust**, a key aspect of well-being, may be gained by engagement & transparency.
2. **Safety & Security**, a fundamental need which is a basic requirement of well-being.
3. **Affordability**, lack of affordable housing is a major detractor from happiness.
4. **Tolerance & Inclusivity**, social & economic inclusion and tolerance of others has positive economic value, and is ethical.
5. **Health & Life Balance**, a holistic view of city life & activities promoting balance, physical and mental health.
6. **Sociality**, people need people, and ways to increase and improve relationships with other people.
7. **Economy & Skills**, a primary reason for people to move to a city is for economic opportunity including education and continuous learning.
8. **Meaning & Belonging**, people need a sense of meaning and coherence in their lives, including a sense of purpose and belonging.

These themes have no intended hierarchy, and are not mutually exclusive. Many initiatives, such as those discussed below, touch on several of these areas.

5.1 Trust

Trust, a key aspect of well-being, may be gained by engagement & transparency.

The OECD defines trust as "a person's belief that another person or institution will act consistently with their expectations of positive behaviour." (OECD, 2017). In this document, this definition is used to illustrate how this important concept is used in the context of well-being in the city. The OECD's manual on measuring trust, also highlights differences in trust, in terms competency (e.g. reliability), and in terms of values (e.g. corruption). Trust has been shown to be a correlate of well-being (J. F. Helliwell, Huang, & Wang, 2016), and transparency and engagement including co-creation can improve trust in government institutions.

Consultations, when well designed, can increase trust (because people get a sense of being part of a transparent process), and provide community members an opportunity to meet and forge stronger social connections. The Melbourne Knowledge Week (MKW) festival takes this principle to a new level. Visitors to the (MKW) website are reminded that "this event takes place on the land of the Kulin nation [native Australian]; we pay respect to them and their cultures; and to Elders both past and present." This declaration is very much in the spirit of MKW, where the City of Melbourne acknowledges and engages the inhabitants of the city to build a shared vision. In its tenth anniversary, and through seven days of interactive events, workshops, dinners, and performances, MKW explores what these changes might mean for the city. The festival is a chance for the Melbourne community to be inspired

about the future of city living, technology, food, work, health, sports, and art.

Though the event may feel like a festival, it is actually a citizen engagement and consultation exercise, designed to explore the challenges facing the city, and to ensure that the citizens, as well as visitors, are heard. The 2018 MKW saw more than 100 events, with over 22,000 attendees who "tackled the urgent, the everyday and the obscure issues facing our future. With lectures, performances, urban expeditions, games, workshops, conversations, labs, maker spaces and parties, it was a celebration of Melbourne's residents, professionals, businesses, scientists, artists, designers, questioners, thinkers and everyone who is dreaming out loud." (MKW, 2018).

The successful programme has served many purposes over the years, including: building a cultural heritage that has become a part of the identity of the city; events generating direct economic value; and public engagement in planning the city's future. The city managers use the material collected during the event to help guide city planning by setting priorities and exploring ideas discussed during the week. This participation – and transparency – in turn builds more trust between city managers and its residents. This is underscored by elected councillors, who set priorities based on citizen's needs that are handed to the smart city office as operational priorities.

One challenge in public administration is that it is at times difficult for the larger teams to grasp the difficult trade-offs cities must make in decision making, to consider all variables. Helsinki's city managers have created a novel way to engage their staff and make them aware of the balances a city needs to make, leading to increased understanding of city management and enhancing trust. The 'Participation Game' Is a board game that helps city employees understand "how operations and services could be planned in even better co-operation with the residents. At the same time, it helps introduce Helsinki's participation model and build a concrete participation plan with contributions from the entire personnel." (City of Helsinki, 2018). The initiative was successful, where the game was played by over 2,000 city employees in 2018. Such games could potentially be extended to citizens, when used in the context of local engagement activities.

5.2 Safety & Security

Safety & Security, a fundamental need which is a basic requirement of well-being.

Feelings of safety and security are important to well-being and mental health (Maslow, 1987), and the most dangerous streets are those with no one on them. Strategically-located businesses can attract residents and encourage them to spend time there, providing "eyes on the street" as Jacobs would have suggested (1961), and increasing safety. In New Town (Kolkata, India), the city managers took an innovative view on this, where they are addressing women's safety by providing all night coffee shops. The plan is for opening all night cafeteria with glass walls (for better visibility of the exterior) in zones where women commute late at night after work. Other initiatives include subsidized licensing for creating cafes in residential zones (Chowdhury, 2018).

Some cities have undertaken more comprehensive initiatives to improve safety. For example, the Municipality of Quito is working to empower citizens as key partners in the safety of their neighborhoods (City of Quito, 2017b, p. 52). Quito faces several challenges regarding citizen safety, including damage from volcanoes, regular seismic activity, floods and fires.

Through the analysis of quantative and qualitative data, the Municipality has created a baseline to guide actions to work with the most vulnerable neighborhoods in Quito. These actions are aimed at damage prevention, citizen participation, social cohesion and peaceful coexistence. A municipal team then visits each selected neighborhood to meet the residents, and workshops are subsequently held to foster community organization and citizen participation in the design of joint solutions to local challenges. The community learns how to act in risky situations and how to take care of public spaces. From 2014 to 2017, around 15,000 people – of all age groups - participated.

The recovery and appropriation of public spaces, such as small squares and parks, is also promoted through joint work between the municipality and the community. Using participatory tools, neighbors work on designing revitalized public spaces and infrastructure, such as playgrounds, green areas, lighting and urban art. From 2014 to 2017, 258 community "mingas" (working parties) were

carried out, with an estimated participation of 10,450 people. The mingas involve joint work between neighborhoods, and undertake projects such as cleaning public spaces, taking care of green areas, planting trees, building work or improving roads. In addition, to ensure and preserve the safety of citizens, 1,201 community alarm systems have been installed, benefiting 28,824 persons. These alarms allow the community to support itself internally against a threat, while obtaining the support of the national police.

5.3 Affordability

Affordability, lack of affordable housing is a major detractor from happiness.

Shelter is a primary need for well-being (Maslow, 1987). Having privacy within that shelter is important too. Ensuring adequate provision of private homes, either owned or rented, is therefore a high priority for city managers. In 1989, an increasing need for affordable homes in Montreal, led staff at the School of Architecture at McGill University to find ways to construct such homes. In 1990 they built the first of the award-winning Grow Homes (Friedman, 2001; World Habitat, 1999). In this model, instead of selling houses as finished product, the builder sells at a much lower cost, by leaving sections of the home unfinished, such as basements or upper floors. This can cut initial costs by as much as a two third, and offer young buyers a way to enter the housing market. They can invest later in completing the home. Leaving the internal space un-partitioned, is a significant factor of cost reduction. It also gives them the option to use their own "sweat equity" to finish the house. Most buyers take this option, and choose to continue the build with friends and neighbours (Friedman, 2000), while having a warm and safe place to live.

The Grow Home project has been a success, spawning many variants and improvements, including 'greener' designs (Canada Mortgage and Housing Corporation, 1994). Within 9 years of the prototype build, 6,000 homes had been built in Montreal, and an estimated further 4,000 across Canada and the USA. Since winning the UN Habitat Award in 1999, another 20,000 were built in Montreal, and the concept has spread around the world, including to Mexico and parts of Europe. More recently, a Dutch company has addressed the need for affordable housing in Nijmegen by offering the modular flat-pack house design in kit-form (Alter, 2013).

A similar concept to the Grow Home, is 'core housing', where the home is incomplete at the time of purchase. This idea has been popular in developing countries. The business model "links several strategic partners into a unique value chain, resulting in a newly built basic house on a family's existing property." (OMJ, 2014, p. 39). In this model, the bare minimum, or core, meets government standards including access to basic services. The owners incrementally build on as their resources permit. By reducing costs, it allows homes to be provided to far more people. Residents, in turn, gain access to shelter and clean water, allowing them to improve their economic position and to improve and expand their home when they are able to.

5.4 Tolerance & Inclusivity

Tolerance & Inclusivity, social & economic inclusion and tolerance of others has positive well-being and economic value, and is ethical.

There are many cities around the world that actively work towards including all segments of society in city life, especially through the provision of services, as well as ensuring equity, tolerance and justice for all (Fainstein, 2010; Hambleton, 2015). Some initiatives take a holistic view, including citizens every step of the way, from inception and encouragement of ideas, all the way to supporting the resulting innovations to be independent, with real tangible and sustainable outcomes in the city. In the first half of 2018, the City of Melbourne ran an Open Innovation Competition on Accessibility that aimed to make cities more accessible for people with a disability. The competition asked for submissions from innovators, entrepreneurs, businesses and the community. The team worked closely with the City of Melbourne's Disability Advisory Committee to establish the main areas of opportunity:

- **Participation**: Enhancing the provision of information to help people with a disability participate in all aspects of life within a city
- **Access**: Making sure the people and places of Melbourne better addressed the access needs of people with a disability.

Using the city's Open Data Platform with more than 200 open data sets, submitters were encouraged to incorporate data-driven and

technology-enabled approaches into their submissions which addressed issues such as accessible parking, footpath navigation and wayfinding.

The top five solutions were pitched at an event during Melbourne Knowledge Week in May 2018, and the winning entries received support from the City of Melbourne and partners to test and bring the solutions to life in Melbourne. The winning team from 2018 was *Melba* (Melbourne's Smart Assistant). This entry paired the city's Open Data with smart assistants such as Siri, Google Assist and Amazon's Alexa to provide up-to-date information via voice, text and screen. Melba is a scalable solution that the smart city team have continued to work with on. This example shows how collaboration can allow a city hall to be the catalyst for change in ways they could not do if they were limited to their own resources.

Another example is #QuitoTeConecta, which is a Municipal initiative lead by Conquito, aiming to bring free access to internet, incentive the use of public space and shorten the digital gap within Quito´s citizens through digital inclussion (City of Quito, 2014). However, inclusivity can also address the needs of elderly people. The aim of Project CityZen is to develop a novel, citizen-centric digital platform that matches the needs of older people in the city, with responsive products and services provided by the city and healthcare providers, increasing efficiency for the providers and increasing the quality of care for those in need (Future Cities Catapult, 2018a). Still, some global initiatives focus on the needs of other segments of society, like 880cities.org, who target a wider population, aiming to make cities good for people aged 8 to 80.

5.5 Health & Life Balance

Health & Life Balance, a holistic view of city life & activities promoting balance, physical and mental health.

The prospect of designing healthy behaviour as part of everyday life (WHO Europe, 2006), is attractive at many levels, and therefore an urban development approach that works towards such healthier and active cities, is to be encouraged. An active city is one that "provides conditions for an active lifestyle represented by high levels of active transport (cycling and walking) and high levels of active sports participation." (Daumann, Heinze, Römmelt, & Wunderlich, 2015). Such design approaches can be activated in many ways, for example by promoting active transport, as was done in Seville's cycling infrastructure, described earlier, or by specialised initiatives and events, that get people involved in physical activities. Such events, can temporarily block car-traffic for long sections of streets can also remind residents how much of the city are devoted to cars, and how great it feels to have more space to walk, cycle, and play.

One good example of mobilising a whole city into organised physical activity is Ciclovia: a weekly bike ride involving one million people in Bogota (Jenkins, 2015). Established as an official city event in 1976, it has become part of the city culture, and has spread to many cities around the world. The benefits are many. Physical activity is a major one, but the socialising aspect is also important as people go out in groups, clubs, and families. Importantly, the event is also a social equaliser, and people from all walks of life share the same space on equal terms. This can enhance social cohesion in the city. Further, the act of removing motorised traffic and opening the streets to cyclists is an act of reclaiming public space, and reminds all of how much space was taken by cars, how good it feels to cycle, walk and play, and in fact the city is for all.

Ciclovia's success has spread across the world in many cities, under a variety of names. For example, in Rosario (Argentina) it's called *Calle Recreativa*, and in Albuquerque (NM) it is annual event with other civic programs. In Cambridge (MA) it a Sunday event during the summer, and in various cities in India - under the name of *Raahgiri*, or 'Happy Streets' – it has become more like a social movement of car-free days (Kohli, 2016). These successes have spawned support projects like OpenStreetsProject.org, which is an advocacy project in North America, providing strategy and planning advice to develop successful interventions similar to Ciclovia, e.g. openstreets.org.za (Cape Town).

Physical activity is not the only way to improve a sense of balance. In order to improve the well-being of employees, and increase the sense of balance in their lives, the CEO of a law firm in New Zealand announced that the company would run a six-week trial "You will be working

four days a week, and you will be paid for five." (Perpetual Guardian, 2018). The trial was a success and the "employees all reported greater productivity, better work-life balance and lower stress levels from working one less day a week." (Yeung, 2018). The four-day working week in New Zealand, showed no downside to productivity, with "just over half of staff (54%) felt they could balance their work and home commitments, while after the trial this number jumped to 78%." (Ainge Roy, 2018). The company board has now signed off on the change, and all expectations are for continued success, as the company reconfigures its work culture for more life balance amongst its employees (Delaney, 2018; Harr, 2018). This recognition of the need to have more balanced life is not exclusive to the private sector in cities, but some governments have also joined the trend. For example, Japan's Ministry of Economy, Trade & Industry has recently started to encourage organisations, starting with itself, to allow its staff to have a lie-in on one Monday in every month. (McCurry, 2018). Another example comes from the city of Copenhagen, which has 45,000 public employees. In 2017 the city council agreed to implement flexible working hours for all employees (with no budget extension). This initiative increased job satisfaction and reduced absenteeism due to illness, saving the city millions of Kroner (Municipality of Copenhagen, 2017). Three quarters of the employees cited flexibility in working hours as an important part of their job satisfaction. The above examples clearly show the possibility of having more balanced life, with regards to working hours, at different types of work in the city, for both private and public sector.

City managers can therefore play a more proactive role in promoting balance in people's lives. They can also design cities, services and facilities to use people's natural biases to nudge them towards better behaviour to promote happiness. Such nudging can be done by choice architecture and the way defaults are presented in the design of cities and services, and can also be enhanced by gamification where people are incentivised towards better choices by offering feedback data and rewards, e.g. Biko app that encourages bicycle use.

Just as some cities and organisations offer deliberate choices to enhance well-being, as shown above, some choices have been left to chance, or incorrectly organised, leading to negative outcomes. This can also be the result of deliberate acts, as presented by the Norwegian Consumer Council in their report *Deceived by Design*, revealing that some tech companies use "dark patterns" to discourage people in exercising their rights to privacy (Forburkerrådet, 2018). Therefore, rather than inadvertently creating a sedate society full of loneliness, city managers can promote active, ethical and social nudges that can lead to happier lives, building communities that support behaviour conducive to good health and city happiness, away from the "Attention Merchants" who are constantly innovating to distract people and sell their attention to the highest bidder, without regard to people's well-being (Wu, 2016) (see also humanetech.com).

5.6 Sociality

Sociality, people need people, and ways to increase and improve relationships with others.

City managers are often reminded that the "city is but its people", and this quote from Shakespeare emphasises the centrality of people's relationship to each other, and that the social fabric makes the city. Therefore, these social relationships are key atomic components at the core of the city, and this sociality must be nurtured. Sociality is the "tendency of groups and persons to develop social links and live in communities...the quality or state of being social" (CollinsDictionary.com). The following examples show how city managers take responsibility towards their role in enabling sociality, rather than leaving it entirely up to the individuals.

Recognising the importance of sociality, and specifically the family unit, towards well-being in the city, the municipality of Ringkøbing-Skjern in Western Denmark focused on strengthening family ties as foundations for happiness. The municipality instituted two policies to provide free counselling to families. Both achieved positive impact. The first aims to help parents who are experiencing difficulties in the relationship with their children under the age of 18. The municipality provides five free relationship counselling sessions for the parents with a therapist of their choice. The second policy helps divorced parents maintain a good relationship. These parents are offered a free counselling course in sustaining strong family ties, for the

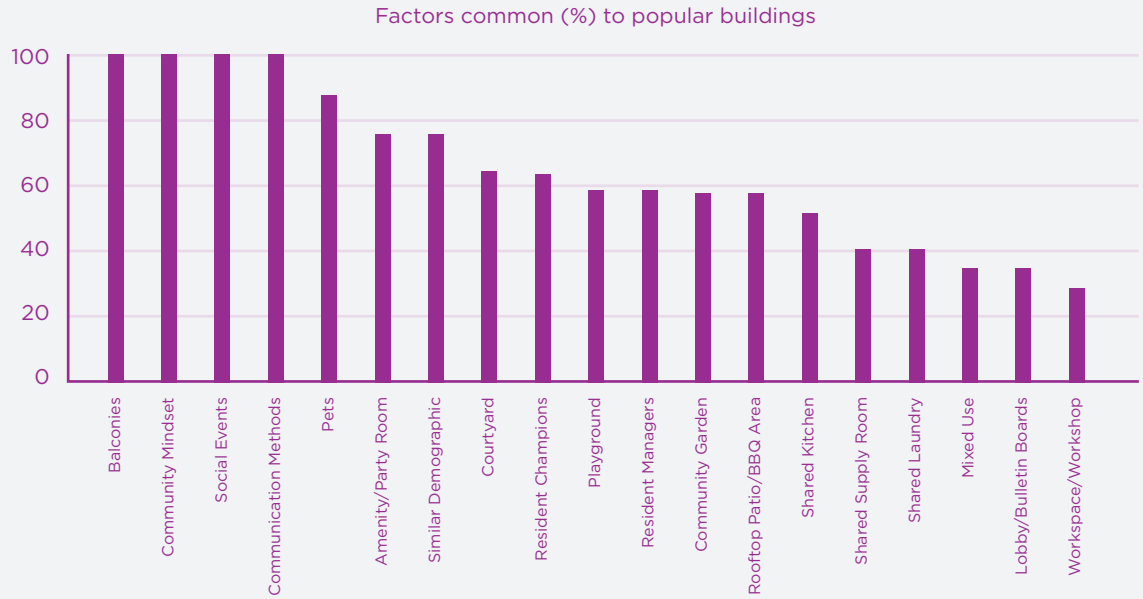
sake of their children. The course helps the parents work together after their divorce to create the strongest possible family for the children and to create stability in their lives, and within the community.

As a result of implementing the first policy, the number of divorces dropped by 17%. This result shows that it was possible to create policies that create stronger social ties in the family, leading to happier lives, or at least reduce unhappiness. However, there were wider benefits: divorce is also often expensive for the city, where the municipality has to find housing for both sides of the family, and can lead to additional support and help for children who might be struggling in school because of the changes.

Another example of policy actions aimed at improving sociality comes from the city of Dragør east of Copenhagen in Denmark. In 2013, the municipality started a project to measure the happiness of residents (Happiness Research Institute, 2013). The Mayor recognised that paying attention to happiness as a development factor in the city would make it easier to increase well-being for the people living there. The study looked at the drivers of happiness and found that the happy citizen was on average either younger than 30 or older than 50. These segments had strong relationships with their spouse, and played an active role in the civil society. The report recommended some interventions to further increase happiness in the city. One idea was to facilitate people to 'eat together', since 15% of the citizens felt lonely. Volunteers would arrange to share dinner, and the city council provides rooms and some economic support for doing that. Another initiative saw the city creating a volunteer organisation for lonely elderly people to act as a 'bonus grandmother'. These volunteers would act as a grandmother in families with small children to play a significant and continuous role in their lives. This initiative was especially helpful for families with busy lives and when the real grandparents were absent. This initiative not only helped families create balance in their every-day life, it also gave meaning and social relations for the elderly people volunteering.

In an initiative called "Hey Neighbour!", Vancouver city managers ran a study in 2017 to find ways to improve neighbourhoods, acknowledging their influence on the physical and mental well-being of residents. The study focused on exploring how

Figure 1. Factors common to popular buildings, described by the Hey Neighbour Report (City of Vancouver, 2018).



different multi-unit building configurations (low, medium and high-rise), can affect how sociable and desirable they are, as places to live (City of Vancouver, 2018).

The study considered 16 buildings that were rated as highly liveable. Each building was assessed according to many criteria, and the data analysed to find the drivers for their success. The results show that both design and programming were important. Some factors that were found to increase sociality and were common to all buildings were; regular social events (once a year, to weekly), communication methods (e.g. Facebook, or elevator notice boards) and community mindset, and having a balcony. Other aspects that were common to most were: resident managers and champions who were passionate individuals or groups of residents; the availability of pets, an amenity/party room. Also, 76% of these buildings were found to be housing people of similar demographics.

It is important to note that this study was conducted in a developed Western, cosmopolitan city. Results may well differ in other cultures and circumstances.

5.7 Economy & Skills

Economy & Skills, a primary reason for people to move to a city is for economic opportunity including education and continuous learning

One informal economy in Vancouver sees people collecting recyclable material from city bins, like glass bottles and metal cans, and earning an income from claiming the refund. The binners, as they are known, use any available transport system, like bicycles and shopping carts, to transport the material around the city. However, this activity has social stigma associated with it, and the value the binners bring to the city, by diverting recyclable material away from landfills, is unknown to most citizens. The Binners' Project aims to change all this, and help binners work more efficiently and maintain their dignity in their community. They are working towards "binning that works for binners, businesses, community" (BinnersProject.org).

The project has worked to improve the social image of the binners, by creating awareness of the value they bring, and by creating a sense of structure around their work. The project website allows citizens to book a pick-up service, or a back-of-house waste sorting service. There is even a binners' hook, where citizens leave recycling material in pre-determined and easy locations for pick-up. Further, the project team organise weekly binners' meetings,. Binners typically use strollers, recycling bins, shopping carts, and other containers to move the material they collect. However, based on input from the binners themselves, the project has prototyped a cart that is more fit-for-purpose and easier and safer to use, minimising the chances of physical injury to the operator. They have now moved beyond the pilot project, and now considering how to create a cart sharing system, like bike sharing.

Though the awards winning project is volunteer-based with support from some organisations and donations, it has had much success and support from both the binners themselves and the wider community. Importantly, the project has already shown how negative social perceptions of an informal economy can be changed, and the physical and mental well-being of those who participate in it can be enhanced.

5.8 Meaning & Belonging

Meaning & Belonging, people need a sense of meaning and coherence in their lives, including a sense of purpose and belonging.

Though this theme is somewhat a mix of other themes discussed earlier, it is however, worth addressing separately. Meaning has been described as "belonging to and serving something that you believe is bigger than yourself" and has been shown to be key to well-being (Seligman, 2011, p. 17). While a sense of belonging has also been shown to be important for mental health (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992), and according to the UK Government's Egan Review, "a sense of community identity and belonging" is important to positive well-being within a community (ODPM, 2004, p. 20).The absence of the sense of belonging is detrimental to well-being, and plays a role in depression (Choenarom, Williams, & Hagerty, 2005). For example, positive feelings of belonging have been revealed to be critical for immigrants integrating and feeling welcome in their new homes (Kitchen, Williams, & Gallina, 2015).

Many of the examples given in this chapter involve elements of belonging and meaning. For example; designing towns like Seaside Florida to

improve the sense of community (urban design), encouraging people to cycle as a community across cities like Bogota (health and life-balance, conducting citywide engagements like the Knowledge Week in Melbourne (trust); helping minority workers to feel more dignified (economy and skills), participatory budgeting in Halifax, and ensuring people with disability are able to access all services in the city (inclusivity). All these examples highlight ways in which *meaning and belonging* can be created when people have opportunities to share experiences related to something "bigger" than themselves.

It is therefore important for city makers to give special attention to these activities, and to focus on supporting and making it easier for all citizens to participate in, and co-create their own happy city.

6. Conclusion

This chapter has been concerned with exploring the ways cities are made happier. The approach taken was a practical one, and is based on two tasks. First, the academic literature was explored for over-arching themes, along with successful practices and activities in cities across the world. The findings were then conceptualised into a tool to relate the themes to each other, in order to make them easier to discuss and understand at a holistic level. The second task was focused on finding examples across the world to illustrate each theme of the tool, so that each can be explained in a practical sense, and focus on specific activities that are undertaken, and how they drive well-being in the context of the theme.

The result of these two tasks was the tool presented above, and it relates *Design*-oriented activities (physical and conceptual), as well as *Enablers* of happiness (external and internal). How does this tool help city managers in thinking about well-being, and prioritising related activities and policies? One useful aspect about the framing of the tool, is that it also highlights two timescales; short/medium term, and long-term. The themes associated with the design category lead to more short/medium returns, that are quickly visible, and allowing earlier benefits towards people's well-being. This is with the exception of culture, where the visible part and some benefits maybe immediate, though the deeper and more embedded benefits are delayed.

On the other hand, the enabling category is much more about deeper changes in the city that modify the cultural fabric of society, and in this way the methods are sensitive to differences in cultures around the world. Ultimately, happiness is a choice, and people must engage to get the benefits. Hence, this category is about enabling. The city management should make this notion clear to the citizens, and help with making it easier for them to take advantage of the external enablers, and get actively engaged to make internal changes in attitudes and perceptions. One way this can be done is by designing cities with the better choice architecture, and good defaults. The *Happy Cities Agenda* is about planning for, and acting on, both short/medium and long-term policies. Therefore, cities must invest in all scales in order to achieve a holistic and sustainable outcome.

But what are the general lessons gained, that can lead to sustainable changes? The examples that were explored have also provided general lessons to be used in developing new initiatives and policies. One of the main lessons was about the effectiveness of empowering people to take responsibility, as was shown for example in the Halifax participatory budgeting, and the Melbourne Open Innovation challenge that gave people a chance to co-innovate with the city, and the cultural centres in Vancouver and Dubai, being supported by citizens' appetite to contribute to their own city's culture. Such examples show the sustainability of initiatives when they engage and build on ideas and input from the citizens themselves. Addressing their direct needs has a greater chance of social impact. These examples also underscore the successful approach advocated by influential urbanists, like Jane Jacobs (1961), which is very much a mix of both top-down and ground-up approach to build successful communities. In this way, City Hall is very much the catalyst in the 'city project.'

Once City Hall enables the city, by providing for example safety and organising events such as the Ciclovia cycling days, it opens up the opportunity for people to appropriate the space and make it their own, leading to spill-over benefits like richer culture and economic growth, as was also seen by Melbourne's long term investment in reclaiming the streets away from cars, back to the citizens, by creating more green and pedestrian places. Some cities, such as

Quito, actively used a variety of city data to make these transformations, as shown in the way they reorganised some aspects of the transportation system.

Ultimately, though, many examples illustrated the importance of sociality as a primary enabler. This theme was visible in many examples; the design parameters of Seaside Florida, the Hey Neighbour community initiative in Vancouver, the family focused counselling in Denmark, the park re-design in Manchester UK, that helped people interact more with each other, even the Ciclovia event in Bogota, which had a strong social element to augment the benefits from the physical activity. City managers should focus on getting people together, and catalysing their interaction. Some of these examples underscore the *Socially Smart City*, by using data and innovative methods to attend to the social needs of the city, and ultimately people's happiness.

7. Appendix: Evaluation Tool

Many city managers know of the importance of undertaking projects and initiatives that will further progress their city's happiness and well-being agenda and strategy. However, the question soon arises, regarding how such projects may be effectively and correctly prioritised, based on the resources available, and other criteria. To this end, the Smart Dubai Office collaborated with the University of Oxford and the Gallup Organization to develop the *Smart Happiness Index* (SHI). Derived from analysis of quantitative data collected by Gallup, the compound index provides a link between happiness and the six dimensions of a smart city, as used to rank smart cities [ref], which are the basis of Smart Dubai 2021 Strategy: economy, people & society, governance, mobility, environment, and living. Once this idea of linking people's reported ratings on aspects of city dimensions, with their overall happiness was validated, the project was then taken to its next phase, which is to develop a decision tool called the *Smart Happiness Project Evaluation* tool (SHAPE).

Using data from a representative sample of over 4,300 Dubai residents (from all segments of society, including resident expats and citizens), the tool takes into account the various KPIs within the six dimensions of the city strategy, and allows a weighting based on the correlation of these KPIs with the happiness of the sample. The tool also takes a number of other factors into account when calculating the index of each project. One such factor is adaptation, whereby the tool considers how long the benefits will last and the speed and extent to which people get used to new projects or improvements in services. Finally, based on the cost of the project being evaluated, the tool provides a cost effectiveness ratio, which represents the projected happiness gain per currency unit spent.

Users simply enter answers to a set of structured questions via a simple online interface, and the tool provides the SHAPE score and SHAPE cost effectiveness ratio, and allows them to view these in comparison to other projects. This gives the user a sense of the relative meaning of the figures, rather than being too arbitrary. These outputs provide data-driven insights regarding the extent to which their project contributes towards the happiness and well-being vision of the city. This allows project managers to adjust and improve their projects to make them more effective.

The use of the tool also helps support the planning and decision-making process in the public and private sectors, by allowing organisations to adjust projects for maximum longevity and impact on happiness (and will include policies in later versions). Thus, aiming for sustainable long-term well-being in a smart city, while avoiding a focus on short-term gains in well-being and happiness.

Though this tool has been developed specifically for Dubai and uses the data from Dubai residents, it is shared to a wider audience in order to show the general method and principles that may be used to prioritised projects for happiness and well-being. Further information is available on smartdubai.ae/happinessagenda.

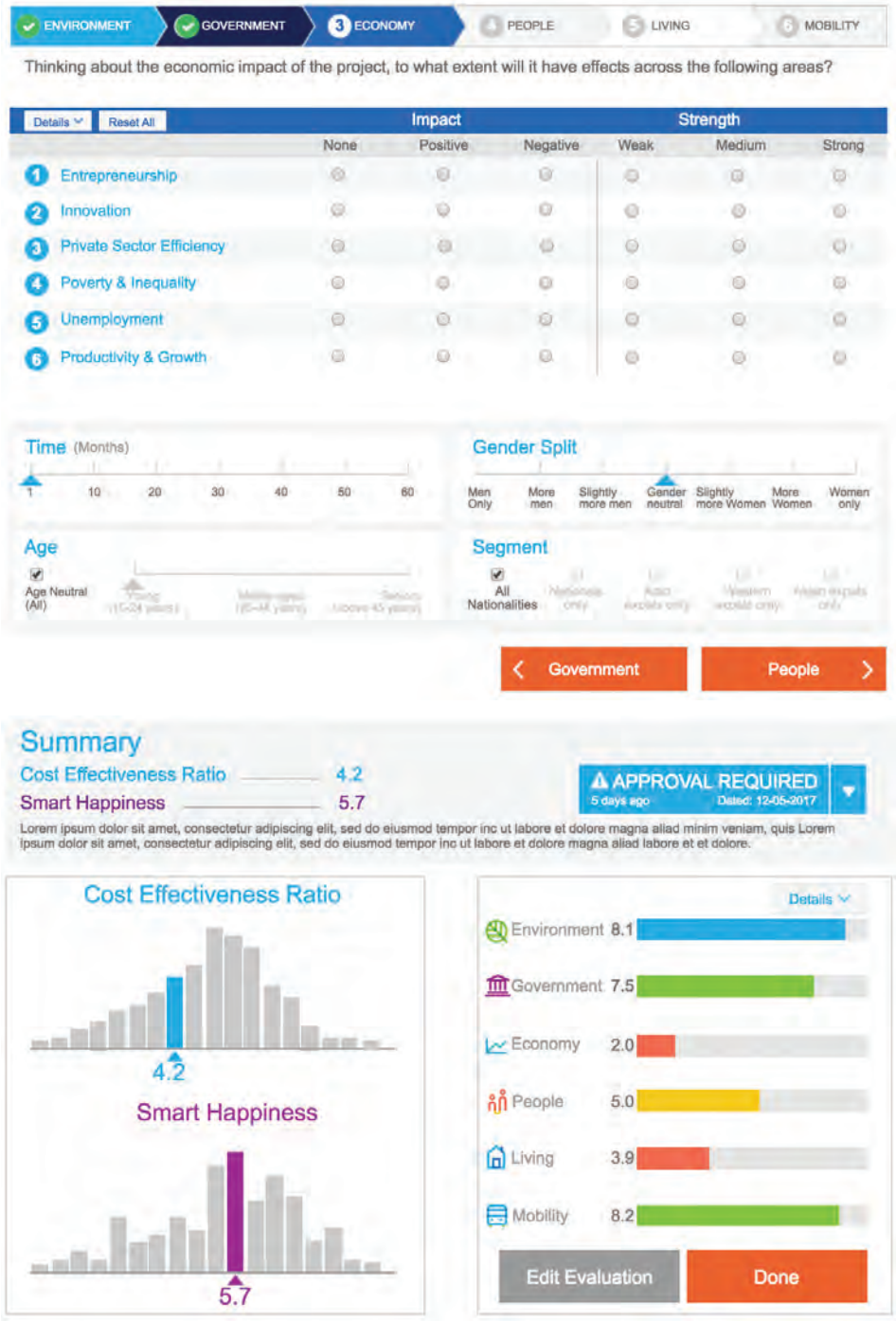


Photo 6: Example screenshots of the SHAPE tool, showing one of the data entry screens (top), and the final result of the evaluation (bottom).

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Chapter 8

Adopting a Well-Being Approach in Central Government: Policy Mechanisms and Practical Tools

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Chapter prepared with the support of Marco Mira D'Ercole, Joshua Monje-Jelfs and Michal Shinwell (OECD). This chapter has also benefited from insights shared by an OECD expert group on the policy uses of well-being metrics, convened in Paris in June 2018, and featuring representatives from the national governments of Colombia, Finland, Germany, Italy, New Zealand, Scotland, Slovenia, Sweden, and the United Kingdom, as well as the European Commission, the Carnegie Trust, and OECD colleagues from the Economics Directorate, Environment Directorate, Public Governance Directorate, and Statistics and Data Directorate.

Executive Summary

Putting people's well-being at the heart of policy requires better data, but this alone is not enough. It also requires building well-being into the machinery of government, and the tools used to take decisions. Several national governments have taken steps towards this. This includes integrating dashboards of well-being indicators into budget decision-making and national development strategies; using legislation to lock an outcomes-based approach into government processes; and creating new institutions or government posts with responsibility for well-being.

Deepening this further requires looking "under the hood" and adapting the methods through which policies are formulated, appraised and evaluated. This includes greater use of well-being metrics in shaping how policy priorities are determined, as well as how policy options are assessed (e.g. through regulatory impact assessment, cost-benefit analysis and other screening tools, or post-hoc evaluations).

Achieving this requires investment, including building civil service capacity and shifting cultures of practice within institutions; the development of a well-being evidence base articulating the linkages between high-level outcomes and the policy levers and outputs that can drive them; mainstreaming well-being as a "whole of government" approach rather than sitting in its own policy silo; and hitting the right balance between the added complexity of a multidimensional well-being approach and the constraints of governments' analytical capacity and resources.

These investments will only be made if leaders are convinced they will result in better policy decisions and thus better outcomes for people. This means carefully evaluating existing efforts to integrate well-being measures, to show the circumstances under which the benefits are worth the costs. It also means identifying areas of policy where a focus on economic efficiency will not be sufficient to produce good results. The most promising test cases for developing a well-being approach are therefore likely to be complex areas of policy making where there are many well-being trade-offs to manage, and different sets of winners and losers to consider.

1. Introduction

A large number of countries are now routinely collecting and publishing national dashboards of well-being indicators (for examples, see Durand, 2018). Simply making available information about people's well-being, its distribution, and changes over time can serve to reshape policy in several ways, from informing public debate to highlighting priority areas for action. Yet it is not sufficient to rely on the adage "what gets measured gets done", since in several cases, national efforts to measure well-being remain largely disconnected from policy practice. So, what practical examples and guidance exist for those wishing to strengthen the link between well-being initiatives, and how national and whole-of-government policy is made? For example, in how a Treasury makes decisions about funding priorities, a Prime Minister's office provides long-term strategic policy direction, or how a Ministry for Transport assesses options for major infrastructure projects? Providing such guidance requires climbing inside the policy process, to examine the decision-making that takes place at the heart of government.

This chapter examines how evidence on well-being has been integrated into the business of decision-making, from individual policy formulation, advice and analysis, through to major strategic planning decisions. It begins by exploring some of the general mechanisms that have been adopted to stimulate greater use of well-being evidence – from informing budget discussions to creating new institutional structures. These are largely steps that senior government leaders, whether civil servants or legislators, would instigate. By contrast, the second half of the chapter adopts a more micro perspective, exploring what a well-being approach might mean for policy analysts working within central government departments. It considers issues such as problem framing, needs identification and agenda setting, as well as tools such as regulatory impact assessments, other policy screening methods, and new approaches to cost-benefit analysis.

This chapter largely relies on examples from current practice in central (national) government. This is not to deny the important advances that have been made on well-being policy in local government (e.g. OECD, 2014), which can in turn inspire change at the national level. Indeed, an

analysis of the policy impacts of "Beyond GDP" indicators, prepared under the European Union's Bringing alternative indicators into Policy (BRAINPOoL) project, concluded that some of the strongest evidence of uptake is at the local government level (Whitby, Seaford and Berry, 2014). National governments, therefore, arguably have some catching up to do – although as described below, there have been some significant steps taken in just the few years since that report was written.

In all of the country examples cited in this chapter, well-being is understood as a multidimensional construct, such as the one presented in the OECD's *How's Life?* framework (OECD, 2017). This framework comprises both objective and subjective aspects of current well-being outcomes (e.g. income, jobs, housing, skills, environmental quality, social connections, safety, subjective well-being…) as well as resources and risks for future well-being (related to stocks of natural capital, social capital, economic capital and human capital). An emphasis on how outcomes are distributed in society – rather than just average results – is also central to the well-being measurement approach (OECD, 2017; OECD 2018a).

Most central government well-being initiatives are at a relatively early stage of development, and it is often difficult to provide a full and fair evaluation of their benefits at this point. Greater evaluation of these initiatives will be needed in future to help share good practice, and identify where the greatest returns on investment are likely to be found.

2. Broad mechanisms for integrating a well-being approach

The first edition of the *Global Happiness Policy Report* set out the case for greater use of well-being metrics in public policy (Durand, 2018). So what options are available to those governments wishing to put this into practice? The following section examines five broad mechanisms that have been used to integrate well-being metrics and frameworks in a more systematic way into various government processes and procedures.

2.1. Shaping budgeting decisions

The allocation of public spending is a major lever for achieving policy objectives. The budget process has therefore been targeted by several efforts to broaden decision making "beyond GDP". This includes monitoring a dashboard of well-being indicators to frame (ex ante) the budget discussion, and to complement the standard economic and fiscal reporting that typically accompanies the budget - a practice which has been adopted in France since 2015 (the "New Wealth indicators", led by the Prime Minister's Office); in Italy since 2017 (the "Economic and Financial Document", led by the Ministry of the Economy and Finance) and Sweden also since 2017 ("New Measures for Well-being", also led by the Ministry of Finance).

A more ambitious step is to assess budget proposals for their expected impact on well-being, as part of the decision-making process typically coordinated by the Treasury or the Ministry of Finance. For example, in the Italian Economic and Financial Document 2017, a subset of four indicators (household disposable income; the inter-quintile income share; labour underutilisation[1]; and emissions of greenhouse gases) were selected, together with GDP, for deeper analysis. Notably this included an experimental forecasting exercise for the next 3 years, with a baseline (no new policy) scenario, contrasted against a predicted scenario of the aggregate impact of the new policy measures introduced in the budget on the key outcome indicators selected (Italian Ministry of the Economy and Finance, 2017).

At a more granular level, and to support the 2019 "Well-being Budget", the New Zealand Treasury have developed their cost-benefit analysis template for departmental submissions of spending proposals to explicitly include well-being considerations (see also Section 3.4). This template requires departments to identify and quantify how their proposed initiative is expected to impact on people's well-being across 12 domains, as well as the four capitals that sustain well-being over time (New Zealand Treasury, 2018a). In addition, the high-level Ministerial priorities for the 2019 Well-being Budget have been informed by an assessment of well-being evidence, including the Living Standards Framework dashboard of indicators compiled by the Treasury (2018b).

The funding formulae sometimes used to allocate resources in government can also take on a broader set of well-being parameters. One example is the European Union's proposed budget for Cohesion Policy 2021-2027 (European Union, 2018). In order to mirror the evolution of economic and social cohesion in Europe since the financial crisis, the EU Directorate General for Regional and Urban Policy (DG REGIO) proposed modifying the method for the allocation of funds across European regions. This followed a series of discussion papers, considering how the fund could be redesigned around a broader range of needs (e.g. Vandermotten and Van Hamme, 2017; Bachtler, Mendez and Wishlade, 2017). Under the proposal, eligibility for the Cohesion Fund would continue to be based on those member states whose Gross National Income (GNI) per capita is below 90% of the EU average, with income also playing a considerable role in how funds are allocated within those states. However, the proposal also includes new criteria for all regions receiving the funds based on factors such as youth unemployment, levels of education, the reception and integration of migrants between 2014 and 2017, and carbon emissions.

Commensurate with their role in focused policy discussion, the well-being dashboards introduced in budget deliberations often involve only a limited number of indicators (10 in France, 12 in Italy, 15 in Sweden). This represents a small subset of the extensive and more "diagnostic" well-being indicator sets typically produced by National Statistical Offices (such as Italy's 130 indicators) or to support National Development Strategies.[2] The process for selecting this subset of indicators has varied across countries: in France, it was the product of wide-ranging public consultation; in Italy, decisions were made by an expert committee established by the Prime Minister; while in Sweden, the government tasked Statistics Sweden with the development of the framework, in consultation with government offices (see Durand, 2018, for details). Regardless of the selection methodology, the indicator set should have legitimacy, credibility and priority with the key decision-makers, Parliament, and the electorate – since if they are seen as politically motivated or cherry-picked to tell a particular story, this could diminish their impact.

Timing can be another important factor for dashboards of indicators to have the desired impact. Last year in France, the 2017 report on the "New Wealth Indicators" was published in February 2018, 4 months after the Parliamentary discussions on the budget that took place in October 2017. On the one hand, this suggests that, despite the change in administration since 2015 when the reporting was first introduced, the exercise has been "institutionalized". On the other, although the task has been fulfilled, its original purpose of informing the budget discussions and voting by Parliament was not achieved (Pagnon, 2018).

Reporting on a dashboard of well-being indicators adds contextual richness to budget processes and adds a layer of accountability – providing some indication of whether the government's policy settings, on aggregate, appear to be moving national well-being in a positive direction. Nevertheless, a dashboard does not in itself necessarily produce a shift in how policy-makers arrive at their decisions, since dashboards can be easily ignored. By contrast, assessing individual spending proposals, ex-ante, for their anticipated well-being impacts - rather than simply their economic and fiscal impacts – would represent a more fundamental shift, and one that can elucidate critical trade-offs and win-wins among well-being outcomes. Taking this a step further would mean developing mechanisms to assess overall spending, not just the marginal spending shifts that take place with each budget.

A major challenge for deeper integration of well-being in budget decision-making will be developing the evidence base and tools for assessing well-being impacts of proposals. This includes in particular methods of cost-benefit analysis, as well as projections of different policy scenarios - which in Italy have so far only been applied to a limited set of indicators where the greatest knowledge currently exists. The analytical burden introduced by this additional assessment also needs to be weighed against the benefits of the exercise - although as discussed later, requiring a well-being impact assessment can also support the quality of civil service policy advice by requiring the development and articulation of a clear intervention logic. Furthermore, there is the potential to make value for money savings through reconciling conflicting bids and/or consolidating those bids that should produce strong synergies in terms of outcomes, and by being able to look across a number of

bids originating from different sources that all impact on the same well-being outcome(s) and choosing the one(s) associated with the largest effect sizes.

2.2. Ensuring continuity and accountability through legislation

Legislation is one possible lever to secure long-term change in government process and procedure, and (potentially) to garner cross-party political support for initiatives. Thus, in several countries, specific legislation has been used to "lock in" certain aspects of the well-being approaches adopted. Laws such as the Scottish Community Empowerment Act 2015[3], the French 2015-411 law (also known as the "Sas" law after its main author, the Member of Parliament Eva Sas) and the Italian Budget Law which entered into force in 2016, all place a duty on government to regularly report on a set of well-being indicators. However, in all cases, the intent is to encourage policy makers to consider a broader set of outcomes, rather than to require the use of a specific indicator set – thus allowing for priorities to shift as circumstances shift. For example, in Scotland there is a duty on Scottish Ministers to consult on, develop and publish a new set of National Outcomes for Scotland, and to review them at least every five years. The outcomes themselves are then ultimately for the government of the day to determine.

In New Zealand, the government is currently consulting on possible mechanisms to embed well-being in the Public Finance Act 1989 (New Zealand Treasury, 2018b). The proposed revisions would introduce requirements for: i) the government to set out how its well-being objectives, along with its fiscal objectives, will guide its budget decisions; and ii) the Treasury to report on well-being indicators, alongside macroeconomic and fiscal indicators. Under the proposal, it would be for the government to select their own well-being objectives, but the issue of who decides what Treasury reports was left relatively open (with several options on the table, ranging from being closely specified in the Act, to being left to the discretion of Treasury officials).

In Wales, the Future Generations Act 2015 (Welsh Government, 2015) targets all levels of the policy cycle. Informed by a large-scale 12-month public consultation[4], the main provisions of the Act came into force two years ago, and require all public bodies to place seven well-being goals[5] at the centre of their decision-making. The Act can therefore be seen as a legally binding common purpose, overseen by the Future Generations Commissioner for Wales, who monitors and reports the extent to which the different public bodies are setting and reaching their well-being objectives, and reviewing them accordingly. The review is then published and shared with Welsh Ministers.

One key benefit of a legislative approach is that it provokes debate, discussion, and a degree of consensus forming; legislation cannot usually be passed if a majority of lawmakers do not support it, and proposals can be refined through a process of amendments to ensure broad-based support. Legislation is also a relatively long-term measure; future administrations must amend or repeal the legislation if they wish to end it – thus requiring further debate and discussion. One challenge, in a well-being context, is to make the legislation flexible enough to accommodate new priorities, while at the same time purpose-driven enough to ensure that it has teeth, and actually leads to an improvement in the quality of policy-making. National accountability mechanisms can be used for this purpose - for example, in Wales, both the Auditor General and the Future Generations Commissioner help to ensure that government is held to account on its performance regarding the Future Generations Act's requirements.

2.3. Strategic planning and performance frameworks

Well-being indicator dashboards are usually developed to reflect the way a country thinks about progress and what it means to have a good life. Strategic development planning is, in turn, a method through which specific priorities for national progress in the medium- and long-term are set out. Countries that have explicitly introduced well-being frameworks and indicators into their strategic development planning include Colombia (through "Presidential Dashboards" developed by the Ministry for National Planning), Ecuador (via the policy goals included in the Nationals Plans for Buen Vivir, carried out by the Ministry of Planning), Paraguay (which has adopted the Social

Progress Index as a well-being monitoring tool in its National Development Plan 2030) and Slovenia (in the Slovenian National Development Strategy 2030, adopted by the Slovenian Government in 2017).

The Scottish National Performance Framework is a further example of clarifying the government's strategic objectives through a wide-ranging set of well-being, inclusiveness and sustainability indicators.[6] In Finland, the strategic debate in government is supported by the Strategic Government Programme Indicators, which use a variety of data including well-being metrics, a selection of which is presented during government sessions every fortnight. To some extent, the 2030 Sustainable Development Goals and targets, which were adopted by all United Nations member states in September 2015, can also be seen as a form of development planning and performance monitoring, organised around a set of multidimensional well-being objectives with specific targets and indicators.[7]

National Development Strategies are often the result of extensive consultative processes in order to gain support from different sectors of society on the priorities and goals. In Slovenia for instance, various stakeholders were invited to shape the process, both in the initial stages (e.g. participating in situational analysis and horizon scanning) all the way through to commenting on the strategy in a series of surveys and topical debates towards the end of the process.[8] Ensuring the ongoing commitment of a wide range of government agencies, partners and civil society, as well as cross-party political support, should help development strategies to survive through election cycles and new administrations. Having an agreed (institution-alised) set of well-being indicators collated by the National Statistical Office also provides a backstop, removed from the political realm. In some cases, the requirement to formally state a set of strategic objectives for the government has also been embodied in legislation (see Section 2.2, above) – meaning that while new governments can set new priorities, they have a duty to clearly state and consult on these within a fixed timeframe.

Because of their consultative character, development strategies are often associated with wide-ranging dashboards of goals, orientations and indicators, reflecting multiple voices. For example, the UN 2030 Agenda consists of 17 Sustainable Development Goals, underpinned by 169 targets, and an agreed set of 232 indicators for global monitoring purposes. These indicators are, in turn, a mixture of outcomes, inputs, outputs, "means of implementation", policy commitments and more. On a more compressed scale, the current Presidential Dashboards in Colombia are composed of 170 indicators and 21 strategic targets; and Scotland's 2018 National Performance Framework includes 11 strategic outcomes and 81 indicators. Narrowing down and summarising these dashboards for concise communication on progress and results can be challenging, but it is essential if they are to be picked up and used. In Slovenia's National Development Strategy 2030, therefore, just 30 performance indicators were selected to cover 12 goals, summarised as six strategic priorities. This narrowing promotes more focused communication with stakeholders, but also critically makes it easier for policy-makers to grasp, with a clear vision and sense of priorities.

2.4. Creating new institutional structures

Creating new institutional positions or structures to promote the use of well-being evidence in government provides a very visible way to show a break from the status quo. Examples of existing practice range from creating specific high-level roles (e.g. designating a Minister for Happiness in the United Arab Emirates); new accountability mechanisms (e.g. appointing the Future Generations Commissioner in Wales); to creating a new government department (e.g., the Buen Vivir Secretariat in Ecuador); or forming a separate agency (e.g. the What Works Centre for Wellbeing in the United Kingdom). New responsibilities can also be assigned as part of reforms to existing structures, such as giving the Treasury or Ministry of Finance a cross-cutting responsibility for well-being or sustainability (Whitby, Seaford and Berry, 2014), as has happened to some extent in New Zealand under the new Minster of Finance appointed in 2017.

The creation of an independent "watchdog", resourced to conduct research and regular reporting, can be a way to hold governments to account for their well-being commitments. It is also a way to ensure the existence of an effective champion who remains politically neutral, and

who is able to build independent relationships with stakeholders and the media. The Parliamentary Commissioner for the Environment in New Zealand is one such post; the Hungarian Ombudsman for Future Generations, established in 2008, is another. In Wales, the Future Generations Commissioner has a crosscutting role within Government, as illustrated by the "Art of the Possible" programme, which supports other public bodies to transform their work on daily basis, and to meet the well-being goals set out by the Future Generations Act 2015.[9]

The creation of new political roles or government ministries offers another way to raise the profile of well-being issues across government. In the United Arab Emirates, the Minister of State for Happiness and Well-Being (appointed in 2016) is attached to both the Ministry of Cabinet Affairs and the Future, and the Prime Minister's Office, and leads the National Programme for Happiness and Productivity.[10] In 2013, the Ecuadorian government created the "State Secretariat for Good Living" ("Secretaría Nacional para el Buen Vivir"). The institution lasted for just under four years, and was allocated a budget of approximately 12 million USD – but was disbanded after a change of government (see Durand, 2018).

The United Kingdom What Works Centre for Wellbeing offers a different model, where the capacity-building function is taken outside central government, and instead led by an external agency supported, on a time-limited basis, through research grants and contributions from government departments. The Centre provides a mechanism for bringing academic expertise and knowledge into decision-making, with a focus on both building the evidence base on well-being and how it is likely to be impacted by policies and programmes, as well as providing practical guidance and training courses for analysts within government and beyond.

One common feature of these new institutional structures is their crosscutting and integrating nature. Since the multidimensional well-being approaches adopted so far in countries tend to take a whole-of-government view, identifying a single departmental lead can be challenging (or perhaps even unhelpful). Cabinet Offices or Prime Ministerial Offices often have a coordinating role, particularly for top government priorities, but may lack the sustained analytical capability needed for some of the changes implied by a well-being approach. The Treasury or Ministry of Finance is another possible home, typically with strong analytical capability, and a whole-of-government perspective when it comes to budgetary considerations – though not necessarily when it comes to consideration of the wider impacts of policy decisions (beyond economic and fiscal impacts). An alternative, then, is to create a separate role or entity, responsible for providing leadership and guidance to all departments on well-being issues.

Much as new institutional structures give visibility to initiatives, this visibility comes with risks – since the corollary is that any new incoming government seeking to show change may subsequently choose to disband them. Another challenge is the extent to which, by creating a new structure, there is actually *less* pressure on the rest of government to consider a broader range of well-being outcomes in their work. This could lead to patchy uptake, rather than the transformational change sometimes sought. For example, Whitby et al. (2014) argue that to promote greener models of the economy, "creating new 'green' ministries – however well designed – can never be the whole solution" since this effectively silos off consideration for sustainability, rather than integrating it across all aspects of policy making.

2.5. Capacity building and guidance for public servants

There is often a sizeable gap to bridge between monitoring a set of well-being indicators, and identifying the policy levers that can improve performance on those indicators. Articulating and evidencing the intervention logic that can connect policy levers to outputs and subsequent outcomes is crucial in order to make the concept of well-being operational for policy. This role typically falls to civil servants, who may have little prior knowledge or training in well-being metrics and their application. As such, several of the well-being initiatives led by national governments have included a component of civil service capacity-building, for example through guidelines and training. This might include providing analysts with the practical advice on the difference well-being can make in the way their tasks are carried out, and critically, how it can improve the quality of their advice.

As one of the guardians of economic analysis within government, the job of explaining how well-being affects policy appraisal and evaluation has sometimes fallen to the Treasury, or the Ministry of Finance. In the United Kingdom, for example, Treasury guidance (the *Green Book*) has been further updated to enhance the pre-existing guidance on well-being analysis (HM Treasury, 2018). The *Green Book* highlights several steps for using well-being as a lens for policy-making: providing a rationale for intervention; listing options for reaching objectives in terms of delivery and funding; using economic appraisal techniques for narrowing down these options to a "short-list"; identifying the preferred option and finally monitoring and evaluating it before, during and after its implementation. The *Green Book* methodology also shows how, where monetary valuations are difficult to ascertain, direct measures of well-being can be used for cost-effectiveness analysis.

The United Arab Emirates' *Happiness Policy Manual* (National Programme for Happiness and Wellbeing, UAE, 2017), commissioned by the Ministry of Cabinet Affairs and the Future, aims "to introduce the 'science of happiness' to the policy-making process, proposing innovative ways to incorporate it into current and future public policies and then evaluating their effect on the happiness and wellbeing of society".[11] As a capacity building mechanism, it first sets out a vision to place national happiness at the centre of public policy whilst articulating the policy actions that might be needed to achieve it; and second it urges all departments across government to align their policies via a set of tools that can help to quantify and evaluate their impact on several different aspects of subjective well-being.[12]

A well-being approach has implications for the way that policy options are developed, assessed and evaluated (see also Section 3). It also represents a culture change within the civil service that will likely take decades to embed. Ten years after the introduction of the first National Performance Framework for Scotland, officials are still grappling with how to make it a daily reality throughout public service design and delivery. In the New Zealand Treasury, the Living Standards Framework that has been developed since 2011 has taken a long time (and strong Ministerial impetus) to become a core feature of the 2019 Budget, and the Treasury is still in the relatively early stages of developing support for more widespread use of the framework in policy advice.

To fully engage with a well-being approach, and make the long-term resource investments necessary to make it a reality, civil service managers need to be convinced that well-being is more than a passing fad. Crucially, they also need to be able to see how well-being will help them to solve policy problems and produce better quality advice. Providing public servants with a vision, and a roadmap, is important, but the most effective tools will probably be those co-designed with civil service managers and analysts themselves. This is also more likely to lead to uptake across the service, alongside other outreach and training activities. Closer links with academic research, as afforded through mechanisms such as the UK What Works Centre for Wellbeing, also help take some of the evidence-gathering burden off the shoulders of government analysts. Meanwhile, the curricula offered at schools of government, and other civil service training programmes, could be enhanced to include methods for introducing a well-being lens in policy.

3. Bringing a well-being lens into specific tools of policy analysis

3.1. The policy analyst's tool-kit: what difference does a well-being approach make?

One common reaction unearthed by Whitby et al. (2014) was that many experts felt a well-being approach offered nothing new – since policy making already incorporates a wide variety of different economic, social and environmental statistics. This makes it important to clarify how adding a well-being lens represents a shift from the status quo for those providing policy advice to governments. The first contribution is through fostering a more holistic and integrated approach, where policies right across government would be assessed for their multidimensional well-being impact - rather than parallel processes in which economic statistics are mostly used to assess economic policies, social statistics mostly for social policies, and environmental statistics mostly for environmental ones, *etc.* The ambition

here would be to use well-being as a structured organising framework, particularly for making explicit the trade-offs between different well-being dimensions, and over time. The second is in considering aspects of people's lived experience – such as subjective well-being, work-life balance, leisure, job quality, social connections, trust and other forms of social capital - that have typically been missing from more traditional analyses. Finally, a strong emphasis on the distribution of current well-being outcomes, particularly at the individual and household level, also contrasts with standard practice that often only considers impacts in the aggregate (e.g. for the total economy, rather than for different groups of people) or only considers the distribution of income rather than of other well-being outcomes.

This section takes a deeper look at a selection of policy tools, applied to support government decision-making, and how a well-being approach could potentially reshape them. The tools reviewed are situational analysis and the development of an intervention logic; regulatory impact assessment and other policy screening tools; and cost-benefit analysis, which can be applied in both the ex-ante appraisal stage of policy, and the post-hoc evaluation stage. These represent only a selection of the possible mechanisms that could be adapted to include well-being metrics. Importantly, for example, well-being measures can also be used in policy monitoring and evaluation beyond cost-benefit analysis methods, to examine "what works" to deliver better well-being outcomes for people.

3.2. Identifying needs and setting the agenda: Situational analysis and developing an intervention logic

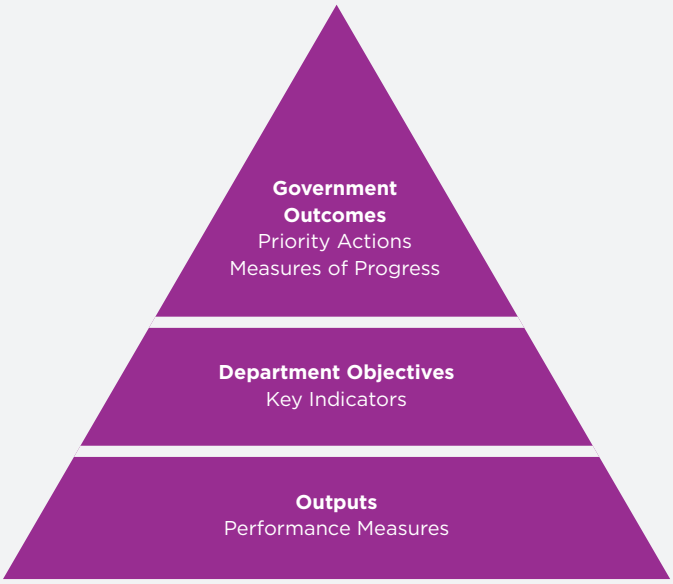
One advantage of multidimensional well-being indicators is in providing both a more holistic and a more granular picture of people's lives. The wide-ranging dashboards of well-being indicators typically developed by National Statistical Offices (see Durand, 2018) can be particularly useful to provide a "situational analysis" (i.e. an assessment of strengths, weaknesses, trends, and inequalities across the full spectrum of well-being dimensions) in the more strategic phases of policy formulation. This includes steps such as identifying needs, and determining priorities for policy action (i.e. which issues and who to target, and with what intervention). In contrast to some of the budget dashboard examples considered earlier, policy formulation is a time when a relatively large dashboard of indicators is likely to be needed, since the aim is to conduct fact-finding and identify areas of concern that may not be well known in advance. Nevertheless, as discussed, these will need to be carefully curated and, at times, heavily simplified if they are to have an impact with some types of decision makers.

At the highest and most abstract level, situational analysis can be used to support setting the government's long-term agenda (e.g. in the context of a national development strategy, see 2.3 above). For national priority-setting, a situational analysis of well-being can be used to inform high level discussion aimed at identifying areas for government action, or bottlenecks for development (such as the approach adopted in the OECD's Multi-dimensional Country Reviews, e.g. OECD 2018b). This discussion can take place in government (e.g. dedicated cabinet meetings), parliament (e.g. through committees or in parliamentary debates) as well as in the public domain through the media or workshops and roundtables for public-private-third sector exchanges, including with academic and other experts.

At the more concrete and policy-specific level, a well-being lens could be used to understand the various ways in which well-being disadvantages manifest themselves for vulnerable groups in society, which is important when designing policies to support them. The New Zealand government's Child and Youth Wellbeing Strategy, a requirement under the Child Poverty Reduction Bill, is one such cross-departmental initiative, coordinated under a newly established Child Wellbeing Unit in the Department for the Prime Minister and Cabinet (DPMC).

Outcome-based well-being dashboards place the focus firmly on the ultimate objectives of government (i.e. improving the living conditions of people in a sustainable manner), which is valuable for strategic thinking. Nevertheless, an important challenge then becomes linking those outcomes to the levers actually available to policy makers. This will be a critical step if the dashboard is to become a practical tool for widespread engagement of policy professionals.

Figure 1. Alignment of Growing Victoria Together and Departmental objectives and outputs



Resource Management Framework

High level broad government desire outcomes that inform long-term goals, whole-of-government initiatives and priorities for the next budget cycle.

Departmental objectives consistent with government's desired outcomes. Endorsed by government as part of annual, corporate strategic planning process.

Outputs link to departmental objectives explicitly. Expected impact of the output iniative is to be specified.

Source: Adams, D. & Wiseman, J, (2003) Navigating the Future: A Case Study of Growing Victoria Together, Australian Journal of Public Administration, Vol.62 (2), pp.11-13, June 2003.

In the case of *Growing Victoria Together*, the State Government of Victoria in Australia developed an outcomes-focused well-being framework, partly motivated by a recognition that the existing performance management structure (which featured 150 outputs across departments, and over 1,800 measures of performance) was "neither designed for nor capable of being used as a whole-of-government strategic planning framework" (Adams and Wiseman, 2003). However, after developing a vision statement, a set of 11 "Important issues for Victorians", and 32 progress measures, it was then necessary to align the *Growing Victoria Together* framework with the existing output and performance reporting systems of the government, thereby enabling government departments to incorporate them into corporate and business planning (Figure 1, above). Similarly, the purpose statement, values statement, and 11 high-level outcomes of the Scottish *National Performance Framework* have been mapped across to 81 National Indicators.

For a well-being dashboard to be operationally useful, then, policy-makers need to be able to draw a clear and well-evidenced line of sight between the inputs, outputs and systems that fall under their remit, and the indicators and outcomes specified as being the ultimate policy goals. In several cases, this may require a significant research agenda, drawing on evidence produced both inside and outside government - for example through harnessing the knowledge of networks (think tanks, academia, or interest groups) who are already active in championing evidence-informed policy. To limit the analytical burden and ensure take-up among policy analysts and decision-makers, an initial step might be to start on a case-by-case basis, for example according to the priority needs identified and the most situation-critical outcomes to be addressed. So if, for example, a situational analysis highlights that job quality is deteriorating, or is performing poorly by international standards, then priority is given to mapping policy levers to job quality outcomes.

3.3. Formulating and testing policy options: Regulatory impact assessment and other policy screening tools

When it comes to formulating and testing policy options, well-being frameworks can be used to prompt analysts to think broadly about interdependencies among outcomes – which is important when developing the intervention logic for a particular policy route, as well as in anticipating both positive and negative externalities. A well-being lens can also be applied to understand specific policy challenges from a multidimensional perspective. Examples include the OECD's forthcoming work on well-being and digitalisation, which uses well-being as a way to understand the various threats and opportunities that digitalisation poses (OECD, forthcoming); and climate mitigation, where a well-being approach has been used to broaden the assessment of how climate mitigation actions could impact on people's lives, beyond their expected effects on GDP (OECD, forthcoming). A well-being approach has also been used to examine the topic of migration policy in New Zealand (Fry and Wilson, 2018).

An important motivation for using a well-being framework in this way is to make the trade-offs inherent in any set of policy choices more open and transparent – with the winners and losers more clearly identified. A well-being framework cannot necessarily reconcile those trade-offs; this is still the task of policy-makers, and of the democratic process. But it does mean that, if adopted at the very early policy formulation stage, policy design can subsequently incorporate strategies to minimise negative externalities and maximise positive ones, or feature some form of additional support to compensate those most badly affected (i.e. those who lose out). Consideration of policy spillovers has always been core to high-quality policy analysis, but using a well-being framework offers a highly structured and systematic approach, focused on how people's lives are affected.

One policy tool that has obtained widespread use in the last 20 years is Regulatory Impact Assessment (RIA). RIA is now a formal requirement in almost all OECD countries for the development of both primary laws and subordinate regulations - although few of those countries require RIA for *all* regulations (reflecting a proportionate approach) (OECD, 2018c). RIA involves reviewing and assessing in a systematic way the potential impacts of proposed or existing regulations. It will often include a quantification of the costs and benefits of implementing a regulatory measure, assessing its likely effectiveness in achieving its goals, and examining alternative policy options.

RIA has sometimes been criticised for focusing on economic costs of regulation in particular, rather than on the social or environmental benefits that regulation might deliver. Yet this is a limitation in how the tool is implemented, often resulting from a paucity of quantifiable evidence of the effects of regulation in social and environmental domains, rather than an inherent design feature. A well-functioning RIA system could be used to make explicit the broader consequences of regulatory proposals, clearly illustrating the inherent trade-offs within regulatory proposals, and showing the distributional outcomes of regulation - as well as where reducing risks in one area may create risks in another (OECD, 2018c). Deighton-Smith, Erbacci and Kauffmann (2016) for example, describe how OECD countries report that they are progressively expanding the number of outcomes (and population groups) on which impacts are explicitly assessed, beyond economic concerns such as how regulations will affect the budget, public sector costs, competition, market openness, and trade. For example, while 29 OECD countries report that they integrate impacts on budget into RIA conducted on all primary laws, 23 report always considering impacts on the environment, and 14 say that they always consider impacts on income inequality (Figure 2).

Nevertheless, several aspects of people's well-being, such as health and educational outcomes (and their distribution), are notably absent from Figure 2 – or subsumed in a general "social goals" category (Deighton-Smith et al., 2016). What is also not explicit in these findings is the extent to which these novel impact assessments are being applied in practice in a holistic, cross-sectoral way. In the United Kingdom, for example, powerful cross-government processes exist to reduce regulatory burdens on business, which particularly constrain environmental policy making (Whitby et al., 2014). This rather implies that there should be a cross-governmental quid-pro-quo to ensure that environmental

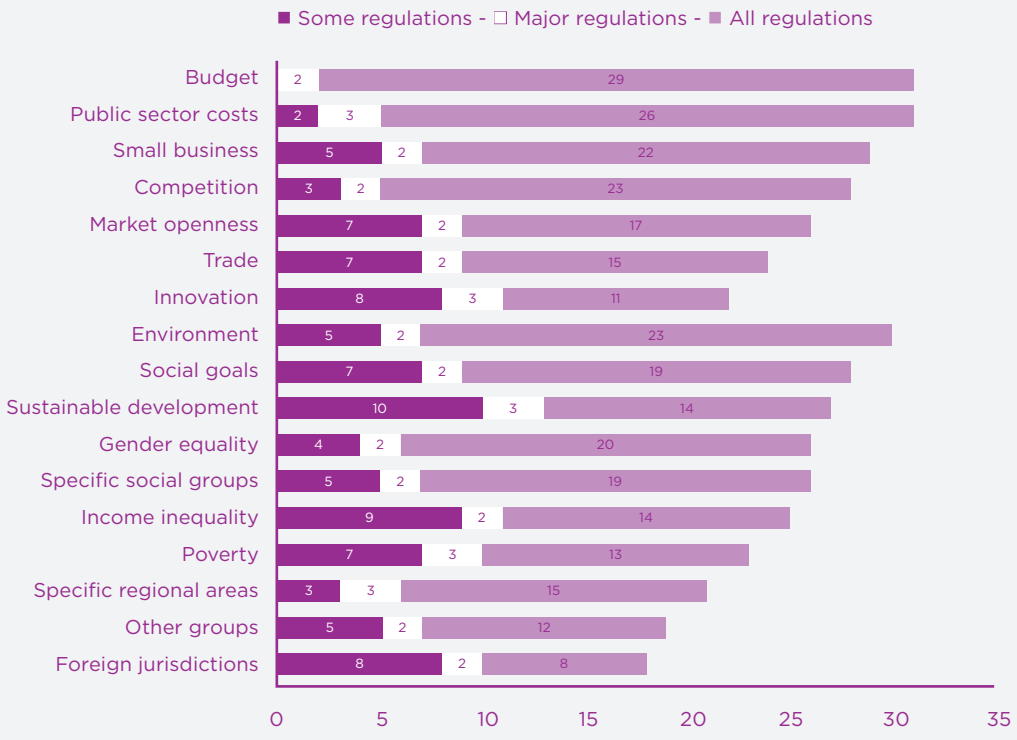
considerations are taken into account when all economic policy is formulated.

Whitby et al. (2014) also note the risks of creating separate impact assessments (e.g. for the environment, or for social impacts) which sit alongside economic analyses, rather than being fully integrated within them. In addition, there is often a gap between guideline requirements and actual practice on RIA in OECD countries (OECD, 2018c; Deighton-Smith et al., 2016). Some reviews suggest that even when environmental and social impacts are assessed, they are often not quantified, which may reduce their relative weight in the course of decision making (Bäcklund, 2009; Wilkinson et al., 2004).

Other policy screening methodologies have also been developed for use in policy formulation and testing, often going beyond the sphere of regulation. *Multiple Criteria Analysis* describes a family of techniques developed to recognise the "irreducible multi-dimensionality of decision-making, and to make the process of deciding how trade-offs are made an explicit and transparent part of the methodology" (Whitby et al., 2014). Several different formats exist, ranging from a simple performance matrix, where options are assessed against a set of criteria, to more complex structures in which scores are assigned to criteria and then weighted across them.

One example of Multiple Criteria Analysis is the government of Bhutan's policy screening tool, which covers the nine domains seen as the key ingredients of Gross National Happiness: living standards, education, health, environment, community vitality, time use, psychological well-being, good governance, cultural resilience

Figure 2. Different types of impacts integrated into RIA conducted on primary laws in OECD countries (2014)



Note: Based on data from the 2014 OECD Regulatory Indicators Survey results, from 34 countries and the European Commission. Answers to the survey are self-assessments provided by public officials in centres of government.

Source: Adapted from OECD (2015) OECD Regulatory Policy Outlook 2015, OECD Publishing, Paris, https://doi.org/10.1787/9789264238770-en

and promotion (Karma Ura, 2018). When government ministries are developing new policy proposals, they submit a concept note to the Gross National Happiness Commission, which then gathers experts to apply the screening tool (Centre for Bhutan Studies & GNH, 2018). These assessors provide a qualitative judgement about whether the proposed policy is expected to have a negative (scored 1), uncertain (2), neutral (3) or positive (4) effect on the various GNH domains.

In a similar vein to the Bhutan screening tool, the Happiness Policy Manual developed for use by the United Arab Emirates government proposes a Happiness Impact Assessment Tool (National Program for Happiness and Wellbeing, 2017). This involves a qualitative assessment of a given proposal's impact in six key policy domains: economy, health, education, culture and society, government services and governance, and environment and infrastructure. Policy proposals must pass the screening test before they can be presented to the Cabinet.

While the Bhutanese and United Arab Emirates examples cover a wide range of well-being impacts, other screening tools have targeted specific issues identified as key government priorities. For example, in 2014, the United Kingdom government introduced the *Family Test*, the objective of which was to "introduce an explicit family perspective to the policy making process, and ensure that potential impacts on family relationships and functioning are made explicit and recognised in the process of developing new policy" (Department of Work and Pensions, 2014). Government guidance indicates that policy analysts within all government departments should test new proposals for government policy or legislation against five family impact questions, prior to Ministerial agreement (Department of Work and Pensions, 2014). Similarly, the Ministry of Social Development in New Zealand have created a Child Impact Assessment Tool, which aims to help government and non-governmental organisations assess whether policy proposals improve the well-being of children and young people (New Zealand Ministry of Social Development, 2018).

One clear issue in the application of such Multiple Criteria Assessment methods is their often strong reliance on qualitative scoring methods, introducing an element of expert judgement and subjectivity that makes them unattractive to those who emphasise replicable, quantitative methods (Whitby et al., 2014). In reality, however, all policy making includes a degree of judgement, and these methods do have the benefit of making those judgements explicit. Another issue concerns the extent to which the findings of the various screening tools are published and open to public scrutiny, or able to inform the wider public debate. For example, concerns about transparency and the uneven implementation of the United Kingdom's *Family Test* across departments have led to two Private Members Bills (proposed in 2015 and 2018)[13], seeking to put the test on a legislative footing, with the most recent proposing to require all departments to publish *Family Impact Assessments*. In 2015, the then Minister for Employment rejected the first Bill, arguing that requiring departments to publish their findings would reduce the *Family Test* to a "tick-box exercise" (Coleman, 2018). By contrast, other groups have argued that "without seeing the results of the *Family Test* it is impossible to know whether it is being applied in an appropriate way, or what influence it is having on policy" (Relate, 2015). Indeed, one way to strengthen Multiple Criteria Assessments would be to use them explicitly as a tool to foster dialogue among stakeholders, which could in turn also help to guard against some of the biases that may otherwise shape the subjective judgements often implicit within them (Whitby et al., 2014).

In applying RIA and other policy screening tools, a crucial area of tension emerges in terms of how many elements of well-being impact can and should be considered, and in which cases. Bhutan's GNH Policy Screening Tool emphasises consideration for all GNH dimensions, to ensure a holistic approach. Yet one of the considerations emphasised by Deighton-Smith, et al. (2016) is the burden on the public service introduced by requiring additional analyses, which is a cost that must also be justified. Deighton-Smith et al. therefore encourage applying the principles of proportionality and materiality - i.e., that the additional analysis be applied only where the impacts are of greatest significance. This is likely to be more acceptable to policy makers managing limited resources, but can be difficult to know *a priori*. This is especially be the case when considering aspects of people's well-being that

have typically been ignored in most forms of policy analysis (e.g. social connections, trust, etc.) - and where the significance of impacts is not likely to be known without conducting some analysis. As Whitby et al. (2014) note, civil servants are typically only encouraged to innovate "inside the box".

Keeping the costs and burdens of the analysis manageable and proportionate to the benefits gained thus implies the need for some robust methodological guidance on how to select which well-being outcomes to include, without "cherry-picking" outcomes to tell a particular story. Whitby et al. (2014) call for the development of new heuristics and simplifying assumptions for well-being analysis – recognising that, through a strong focus on economic growth and efficiency, current policy practice already involves some very strong simplifying assumptions.

One useful first step might be to try and specify the *bare essentials* of what is needed to qualify as a "well-being" approach – i.e., to define a universal (and relatively loose) structure that could be tailored for use across all policy domains, so that within that structure there is flexibility for analysts to select the most salient indicators or outcomes. For example, McGregor (2018) has suggested that a universal framework should always include some consideration of material conditions, subjective well-being, and relational well-being – although to this, many would perhaps add inequalities and the environment. As an alternative heuristic, the six policy areas included in the United Arab Emirates' Happiness Impact Assessment Tool were selected on the basis of research emphasising their role in driving subjective well-being outcomes.

The minimum set of outcomes required for conducting a well-being impact assessment is not simply a conceptual question, however; it is also an empirical one, in terms of where the greatest marginal gains are to be made from adding each layer of complexity. This is a critical area for further research – gradually building up a set of priority headline outcomes that can each be shown to add complementary information, "beyond GDP", and ultimately lead to better policy decisions.

One final consideration is the development of the evidence base upon which these analyses can draw, and how this can be best stimulated, and then harnessed, by government. The United Kingdom's network of *What Works Centres* (see section 2, above) present one model: a group of institutions set up for the purposes of gathering and disseminating evidence to policy makers, linking them to the wider academic research base. New Zealand's Social Investment Agency, and the linked administrative and survey and data sets made available by Statistics New Zealand through the Integrated Data Infrastructure, are other examples.[14] More generally, an obligation could be placed on very large public programmes to themselves produce the type of (well-being) evidence needed to assess their impacts, in the process creating a rich research resource that could also serve the wider public good.

3.4. Making decisions and evaluating their consequences: Cost-benefit and cost-effectiveness analysis

A commonly used tool for supporting decisions on the allocation of government resources is Cost-Benefit Analysis (CBA) – which often forms one part of a Regulatory Impact Assessment, but is by no means limited to examining regulatory policy proposals. CBA is used in order to quantify the costs and benefits associated with the outcomes of a policy intervention or a project. In its purest form, CBA relies on converting the impacts of the policy intervention into a single common currency (typically monetary units), so that the net positive and negative impacts can be summed into a single number, and then compared with the total expected cost. When conducted in a uniform way, the ratio of benefits to costs can then be compared across different policy options, to select those delivering the greatest returns on government investment.

The conversion of impacts into a common currency poses many challenges, particularly since many of the policy impacts that governments seek (such as better health, improved personal safety, or environmental goods) are not traded in markets and therefore have no prices that can be readily adopted in the analysis. Standard techniques for estimating non-market values include stated preference methods (i.e., asking people about their willingness to pay to receive a benefit, or avoid a cost) and revealed preference methods (i.e., observing people's behaviour in

order to infer the value they place on a given good). However, both the stated preference and revealed preference methods have been challenged by behavioural economists on the grounds that people often have difficulty predicting what is likely to maximise their future well-being (e.g. Kahneman and Tversky, 2000; Sugden, 2005). In willingness-to-pay scenarios, people are often asked for their opinion about hypothetical scenarios of which they have no direct experience (Dolan, 2009). Furthermore, people's willingness to pay in order to evaluate the worth of a non-market good or services can be seriously impacted by people's different income levels, thus reflecting the relative worth, rather than total worth, of a given good.

To overcome some of these challenges, an alternative approach based on subjective well-being (typically, life evaluations[15]) has been proposed (Fujiwara and Campbell, 2011; Dolan et al., 2011; Fujiwara and Dolan, 2016; Layard, 2016; Wright, Peasgood and MacLennan, 2017; Clark, Flèche, Layard, Powdthavee and Ward, 2018; OECD 2018d). Under this set of methods, survey data on subjective well-being are either used to estimate monetary values for non-market factors (based on equivalent income), or are used as the common currency itself, so that policy options are examined as the monetary cost per unit of improvement in subjective well-being.

A key advantage of these subjective well-being techniques is that they rely on people's lived experiences, rather than people's reactions to hypothetical future scenarios. So, for example, the subjective well-being impact of living with a particular health condition can be directly observed, on the basis of large population-representative samples, rather than asking a small subset of people to imagine how much they would pay (or what they would trade) to avoid living with that condition (see the chapter in this volume: *Priority Setting in Healthcare Through the Lens of Happiness*, by Peasgood, Foster and Dolan, 2019). The potential for strategic responding (i.e. intentionally over- or under-estimating the value of a good due to personal interests) is also reduced, since respondents are not directly asked how a good, service or condition impacts their well-being - rather, it is inferred through regression analysis. In addition, subjective well-being survey questions are generally cost- and time-effective to administer to large samples (Fujiwara and Campbell, 2011).

The United Kingdom Treasury's *Green Book on Appraisal and Evaluation in Central Government* (HM Treasury, 2018) offers a detailed overview of methods to assess and evaluate policy options. The guidance contains various options for assessing non-market values in CBA, and includes subjective well-being as one option, as well as revealed preference methods and willingness to pay. This is complemented by two recent publications by the What Works Centre for Wellbeing (Layard, 2016; and Wright, Peasgood and MacLennan, 2017).

Data availability, sensitivity, and assessing the duration of well-being impacts remain important challenges. Subjective well-being represents only one element of the multidimensional approach to well-being adopted by most OECD governments, and the more policy weight that is placed on a single metric, the more issues of measurement error and noise begin to matter. Analyses based on cross-sectional data can produce particularly misleading results, due to the challenges of correctly identifying complex causal pathways. When used in (ex-post) policy evaluation, it is possible to design pre- and post surveys that enable subjective well-being impacts of a given intervention to be observed, though the sensitivity of subjective well-being to small policy changes may be weak, requiring large samples for detection, and ongoing surveys over long time periods to assess the duration of impacts.

Due to the challenges of accurately estimating the relationship between income and subjective well-being (see OECD, 2013, 2018d), the monetary estimates obtained from the subjective well-being valuation method (when monetisation is used) are often implausibly large, and reducing the value of non-market goods to a list of prices can also damage public acceptability of the analysis (Corry, 2018). Cost-effectiveness analysis (describing costs incurred per unit improvement in subjective well-being) removes the need to use money as the common currency for describing impacts, while still focusing on how policy impacts people's happiness, and could be used alongside more traditional approaches to CBA valuation to broaden out the range of policy impacts that can be quantified.

3.5. Hybrid methods: Bringing the different

tools together

To harness the relative advantages of each method, a hybrid approach that combines situational analysis, CBA and Multi Criteria Analysis can be applied. In broad terms, this is the approach taken by the New Zealand Treasury to support the 2019 Wellbeing Budget (New Zealand Treasury, 2018a). As a first step, well-being evidence has been used to set Ministerial budget priorities, in consultation with both experts (e.g. Government Science Advisors) and the Cabinet. This has been supported by a Living Standards Framework dashboard of indicators (New Zealand Treasury 2018c). At the operational level, the budget guidance to individual departments then specifies twelve current well-being outcomes and four capitals (natural, human, physical/financial and social capital) against which all spending proposals should be systematically assessed. The benefits and costs of each proposal should be quantified (where possible) through the CBA template, and can include a monetised approach, where appropriate and useful (see Box 1).

4. Conclusions

National governments still face many challenges in moving from well-being measurement to policy application. A good share of the initiatives discussed in this chapter are essentially about bringing well-being monitoring efforts closer to policy-makers, by producing shorter and more communicative dashboards of indicators, timed to coincide with strategic decisions. This is without doubt an important first step – to raise

Box 1. CBAx: A New Zealand Treasury tool for improving the consistency of Cost Benefit Analysis

One barrier to the harmonised use of any type of CBA is that different teams of analysts may base their assessments on different sets of assumptions. To support analysts working across diverse government departments, the New Zealand Treasury has developed a spreadsheet tool called CBAx. A key goal of CBAx is to support consistency and transparency of methods: it requires users to spell out clearly their assumptions, such as those made about effect sizes, as well as the valuations applied to different goods and services, so that these can be compared across different analyses. Through adoption of a 50 year time horizon, it also aims to encourage long-term thinking. The use of CBAx is, however, strictly optional.

The CBAx tool can accommodate a variety of methods for generating monetized values, including values inputted by departments themselves. There are currently over 200 values provided by the Treasury in the CBAx Impacts Database. In 2017, the Treasury purchased a license to use around 60 values estimated using the subjective well-being method, as compiled by the Australian Social Value Bank, and adjusted using New Zealand income levels.

A recent evaluation (New Zealand Institute of Economic Research, 2018) found that agencies have made significant improvements in the quality of their analysis of budget initiatives since the CBAx tool was introduced. However, that evaluation also highlighted that the added complexity of CBAx may not pay off in all cases – thus, it is important to identify those instances where its added value is greatest. One particularly important advantage identified in the approach was in focusing analysts on being very clear about the intervention logic – something that can enhance CBA, whether or not the logic is presented in monetised or quantified form.

Source: New Zealand Treasury (2018d), CBAx Tool User Guidance https://treasury.govt.nz/publications/guide/cbax-tool-user-guidance

awareness, and shape the public policy dialogue. But it remains largely in the measurement domain, rather than representing a more fundamental shift towards integrating well-being evidence in policy decisions.

Perhaps it was in this measurement domain that it was most urgent to first address the need to go "beyond GDP". While economic statistics have dominated discussions of countries' progress, policy-making is a much more nuanced practice that has long taken a broader perspective – with significant priority given to supporting objectives such as health, education, poverty-reduction, personal safety and security. Nevertheless, there are important components of people's well-being (e.g. social connections, subjective well-being, trust, natural capital, job quality) which have been poorly measured and therefore inadequately accounted in policy decisions, or marginalised as a result of making economic growth the primary objective that trumps all others. Putting people's well-being at the centre of the analysis requires an improved evidence base, but also a change of culture and practice in how policy making is done.

To move beyond measurement, some of the most promising avenues are those which draw well-being indicators into the heart of policy analysis. For example, to help assess spending proposals as part of budget bids; to examine the wide-ranging impacts of global trends that require a coordinated policy response (from digitalisation and the future of work, to climate change); to help in the formulation and development of policy options; to use them in their appraisal, ex-ante; and to monitor and evaluate the impact of policies and programmes, ex-post.

Countries are still experimenting with their well-being approaches, so it is too early for sweeping conclusions about the correct path to take. Nonetheless, it is clear that putting well-being at the centre of policy analysis requires supporting conditions and the development of new infrastructure: a well-developed and accessible evidence base; civil servants with the training, tools and capability to conduct the analyses and interpret the findings; and perhaps most crucially leaders (both political and managerial) who demand greater use of well-being evidence in order to arrive at their decisions. These leaders will only make these demands if they can see that the quality of the advice, subsequent decision-making, and ultimately people's lives improve as a result of adopting a well-being lens. This means honestly evaluating the methods being developed, and continuing to share knowledge and lessons among practitioners.

Most important, perhaps, is to identify the particular types of policy problem that a well-being approach can help to solve. In all likelihood, some of the assessments and decisions taken by government will not require an extensive well-being analysis – or will not be sufficiently changed by a well-being approach to make the added investment worthwhile. On the other hand, policy decisions that embody multiple trade-offs (or synergies), complex networks of stakeholders, and high risks of creating both winners and losers, are likely to benefit the most from being assessed through a well-being lens.

There are several open questions that those developing techniques for well-being policy analysis will need to address. Key issues that demand more urgent attention include how to integrate consideration for both current well-being and resources for future well-being, and the relationship between them – since there can be trade-offs between maximising current well-being today, and ensuring that sufficient investments are made in resources for the future. Another concerns support for policy analysts in developing their intervention logic around well-being. Dashboards of well-being indicators (rightly) tend to focus on high-level societal outcomes (such as life expectancy) but there are usually several intermediate steps that need to be mapped out to link these back to the policy levers available to central governments. And broad societal outcomes are nearly always affected by the work of multiple government departments. The OECD's Inclusive Growth framework for policy action (OECD, 2018a) provides one example of this kind of mapping, identifying levers that governments could use to raise well-being on a more inclusive basis.

Another set of critical issues for well-being policy analysis concern parsimony and proportionality. The burden of evidence gathering and assessment is a cost to the public purse that should not outweigh its own

benefits. All of the well-being frameworks that have been introduced in national government contexts are multi-dimensional. It is this multidimensionality that perhaps offers greatest value to policy analysis, since it helps to cut across the traditional policy silos of government. But how many well-being outcomes do you need to consider, in order to be confident of capturing the most significant trade-offs, spillovers and synergies, without over-burdening the analysis? When is subjective well-being here-and-now a valuable summary measure that can capture a wide variety of the non-market factors of interest - and when does the analysis need to be broadened out to consider additional economic and environmental factors/ resources for future well-being that are not reflected in how people feel about their lives today? Or that could even be negatively related in the short-term, such as savings (Qasim and Grimes, 2018)?

Flexibility needs to be built into monitoring, evaluation and analysis efforts to ensure that analysts can select the most relevant and pertinent outcomes for assessment – yet there needs to be some sort of backstop in place to avoid either accidental or wilful neglect of important spillovers. One solution might be to offer a flexible well-being framework (or template), accompanied by a mechanism for challenging analyses and for supporting capacity development (e.g. by Treasury, or an independent watchdog). Another might be that when a major new policy proposal is developed, a joint analysis across departments could be required – in which the Education Ministry advises on likely educational impacts, the Environment Ministry advises on likely environmental impacts, etc. Public consultation provides another backstop and accountability mechanism – particularly if evidence is widely sought from academic and research institutes. None of these are particularly new policy innovations, and none of them necessarily require invoking well-being. But well-being can offer a systematic framework against which to assess trade-offs and synergies.

Well-being metrics can support better policy making by providing feedback on whether long-term high-level policy objectives are being achieved. The widespread adoption of well-being measurement initiatives, often accompanied by large-scale public consultations, have raised expectations about the emphasis these measures will be given in policy. But metrics do not, in themselves, provide a complete policy intervention logic: knowing that exposure to air pollution is a problem does not tell you the most cost- and well-being efficient way to reduce that pollution. To know if policy choices will deliver better lives, then, they need to be assessed for their well-being impact. This means bringing well-being into the heart of decision-making, not just the heart of national statistics. Embedding this practice needs strong leadership and champions of the approach, action at the centre of government (for a holistic view), and further development of analytical tools and capacities.

Endnotes

1 Defined by ISTAT as the percentage of unemployed people aged 15-74, plus part of the potential labor force aged 15-74 (persons who are inactive not having looked for a job in the past 4 weeks but willing to work), divided by the total labor force aged 15-74, plus part of the potential labor force aged 15-74 (persons who are inactive not having looked for a job in the past 4 weeks but willing to work).

2 An exception is the New Zealand Treasury Living Standards Framework dashboard, which serves as a more complete diagnostic by including a larger variety of measures, as well as disaggregations across key population groups.

3 The Community Empowerment (Scotland) Act 2015 means the « outcomes » approach continues, regardless of the political party or parties in government : https://beta.gov.scot/policies/community-empowerment/

4 See http://archive.cynnalcymru.com/national-conversation-wales-we-want

5 These goals are as follows: a prosperous Wales, a resilient Wales, a healthier Wales, a more equal Wales, a Wales of cohesive communities, a Wales of vibrant culture and thriving Welsh Language and a globally responsible Wales (Welsh Government, 2015[22])

6 In Slovenia, 30 indicators were selected to cover 6 strategic priorities, and in Scotland 81 indicators covering 11 strategic outcomes. See http://nationalperformance.gov.scot/ (Scotland) and http://www.vlada.si/en/projects/slovenian_development_strategy_2030/ (Slovenia)

7 Although designed for different purposes, there is a strong consistency across the 17 goals and the central elements of the OECD's *How's Life?* well-being framework (OECD, 2017).

8 See: http://www.vlada.si/fileadmin/dokumenti/si/projekti/2017/srs2030/en/Slovenia_2030.pdf

9 See https://futuregenerations.wales/get-inspired/

10 See https://government.ae/en/about-the-uae/the-uae-government/government-of-future/happiness

11 See https://www.mocaf.gov.ae/en/media/news/he-ohood-al-roumi-uae-has-developed-world-s-first-happiness-policy-manual

12 Idem. More specifically, the manual addresses four core aspects of subjective well-being: "Evaluative Happiness, Affective Happiness, Eudemonic Happiness, and happiness (satisfaction) related to public policy domains, including economy, education, health, society and culture, government services, and environment and infrastructure"

13 Private Members' Bills are introduced by MPs and Lords who are not government ministers (and therefore not acting on behalf of the Executive Branch of the government). Only a minority of Private Members' Bills become law but, by creating publicity around an issue, they may affect legislation indirectly.

14 https://sia.govt.nz/assets/Documents/Beginners-Guide-To-The-IDI-December-2017.pdf

15 For example, life satisfaction, based on a question such as: *Overall, how satisfied are you with your life nowadays?* Respondents are asked to reply on a scale of 0 to 10, where zero means you feel "not at all satisfied" and 10 means you feel "completely satisfied".

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