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Chapter 7

Measuring Happiness amid the COVID-19 Pandemic

Thematic group: Well-being Measurement for Public Policy

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The COVID-19 pandemic has caused more than 4.7 million recorded deaths worldwide as of late September 2021, and has cast phenomenal impacts on all aspects of life. As part of the national and international responses to COVID-19, governments, private organizations, and institutions across the globe have made various efforts to measure and track the well-being of people as the pandemic evolved. This chapter has three objectives. First, we summarize current measures of happiness initiated by public and private sectors across the globe and the innovation in the data collection during the COVID-19 pandemic. Second, we present how happiness was affected during the pandemic using various types of data from different sources. We try to answer the following questions: was happiness resilient to the shocks of COVID-19 and government responses? Are there differences across regions or countries? Did the measurements from different sources yield consistent results? Lastly, we discuss the policy implications.

We start with an overview of the national statistics of well-being during the COVID-19 pandemic in major economies, most of which followed or were consistent with the *OECD Guidelines on Measuring Subjective Well-being* published by the Organisation for Economic Co-operation and Development (OECD).¹ As countries under investigation were affected differently by COVID-19 and the mitigating measures, they also made efforts of various degrees in tracking the well-being of residents. We then present other sources of happiness measures, including international and national surveys conducted by private companies and academic institutions, as well as information extracted from social media and big data.

We find that different surveys give largely consistent results. In general, happiness in Europe and North America was fluctuating substantially during the pandemic, yet many Asian countries show happiness resilience in 2020. The difference in coping strategies and the outcomes of pandemic response across countries and regions may help to explain the difference in dynamics resilience.

Our analysis is limited by the type, frequency, and scope of data available. We call for more

coordinated measuring efforts across countries, using consistent survey questions and collecting data with a higher frequency. Moreover, we find that the surveys and big data on happiness are mostly from developed nations in Europe and North America. We thus call for more measurement efforts in developing nations, and more collaboration between universities, research institutions, governments, and private sectors in tracking people's happiness during the pandemic and in more normal times.

Happiness Measures from Governments and International Organizations

Before COVID-19 struck, many countries, especially the OECD member states, had developed frameworks to measure human well-being.² In particular, the OECD introduced a national and multidimensional framework for measuring well-being, which includes indicators of quality of life and material conditions.³ Among the national well-being indicators within these frameworks, special attention was paid to the collection of comparable happiness indicators by national statistical offices, which was supported by the *OECD Guidelines on measuring subjective well-being*.⁴ Three dimensions of happiness metrics and related question modules designed for routine surveys of national statistical offices were included in the *Guidelines*: life evaluation, affect and eudaimonia, which capture the assessment of life, feelings or emotional state, and the meaning and purpose of life of people respectively. Most national statistical offices of the OECD countries (34 out of 35) were collecting data on life evaluation, and some were also collecting data on affect and eudaimonia.⁵

Continuing Measurements

The collection and publishing of happiness data in many countries were made difficult by the pandemic and lockdowns across the globe. The less frequent happiness surveys in some countries also hampered the timely measurements necessary for tracking well-being changes due to the COVID-19 pandemic. However, we still observe great and ongoing efforts from governments in

continuing to measure happiness during the pandemic. National statistical offices in many OECD countries continued to routinely collect and publish national statistics on happiness at various frequencies. The *Annual Population Surveys* carried out by the Office of National Statistics (ONS) in the UK have, since 2011, provided annual and quarterly estimates for well-being evaluated on a scale of 0 to 10 by overall life satisfaction, happiness and anxiety yesterday, and meaningfulness and purpose of life of adults aged 16 years and over. To further assess the impact of the pandemic on life in the UK, ONS also converted a monthly omnibus survey, *Opinions and Lifestyle Survey*, into a weekly survey. ONS has been reporting well-being estimates based on these weekly data since May 2020.⁶ Similarly, France has reported quarterly estimates of well-being in dimensions of life evaluation, emotional well-being and eudaimonia since 2016, using data from a module on “Well-being of households” in the consumer confidence survey carried out by Institut national de la statistique et des études économiques (INSEE) every March, June, September, and December, and this was continued throughout the pandemic.⁷ Some other national statistical offices also collected and published annual measurements of happiness. For example, Statistics Netherlands (CBS) managed to carry out its annual survey on social cohesion and well-being in 2020 by conducting interviews via the internet and telephone.⁸ The statistical offices of Mexico and Hungary recently published their estimates on happiness measured by overall life satisfaction, domain satisfactions, affect and eudaimonia from 2020 and/or 2021.⁹ At the European Union (EU) level, although the *EU Statistics on Income and Living Conditions* (EU SILC) had only published data on life satisfaction from an ad-hoc module which is available for 30 countries in 2013 and 2018, with the amendment of the EU Regulation for EU SILC, from 2021, the question of the overall life satisfaction will be asked annually for all countries that participate in the survey.¹⁰

New Initiatives during the Pandemic

A few national statistical offices and international organizations also started to carry out new surveys, in particular online surveys, for more timely evaluation of the impact of the COVID-19 pandemic on people’s well-being. The Central Statistics Office of Ireland (CSO), for example, conducted in April/August/November 2020 and February 2021 the *Social Impact of COVID-19 Survey*, which includes personal well-being for a sample of individuals aged 18 years and over living in private households selected from the original *Labour Force Survey* sample.¹¹ Questions on overall life satisfaction with responses on a scale from 0 to 10 were asked in the surveys, following the *OECD Guidelines*. Statistics Austria conducted the *COVID-19 Prevalence Studies* in April and May 2020 which examined two questions from the WHO-5 mental well-being index as well.¹² In March 2020, Statistics Norway (SSB) also conducted a national survey on *Quality of Life* for the first time, asking life evaluation, affect, and eudaimonia questions.¹³ New Zealand’s national statistics office (Stats NZ) included a set of well-being questions as part of a supplement to the quarterly *Household Labour Force Survey* (HLFS) from June 2020 to the March 2021 editions, allowing for non-face-to-face interviews.¹⁴ Overall life satisfaction (scale 0-10), happiness yesterday (scale 0-10), loneliness in the past four weeks, how worthwhile life was (scale 0-10), and mental well-being were asked to HLFS respondents aged 18 or over. These new well-being measurements helped track the changes in well-being due to the pandemic and can be compared to the *General Social Survey* (NZGSS) in previous years. Statistics Canada carried out the *Canadian Perspectives Survey Series* (CPSS) survey, which is an experimental project aiming to collect data on important social issues.¹⁵ The surveys were fielded online over a period of one year, starting from January 15, 2020, until March 15, 2021, with different topics of focus. In particular, the June CPSS survey provided information on people’s happiness during the pandemic, measured by overall life satisfaction (scale: 0-10). At the EU level, three rounds of the *Living, Working and COVID-19 Survey* (LWCS) were implemented by the European Foundation for the Improvement

of Living and Working Conditions (Eurofound), a tripartite European Union Agency.¹⁶ The survey was conducted online in April/May 2020, June/July 2020 and February/March 2021.¹⁷ The surveys included questions on life satisfaction (scale: 1-10) and happiness (scale: 1-10) as well as WHO-5 mental well-being index, based on the Eurofound's *European Quality of Life Survey* (EQLS) and *European Working Conditions Survey* (EWCS) and other sources, such as the EU SILC.¹⁸

The efforts of public sectors to measure well-being are growing as COVID-19 continues to spread, so our study is at best a subset of the ongoing measurements of happiness by governments across the globe. In addition, initiatives by public health institutions were largely neglected in this chapter. For example, national health surveys conducted by centers for disease control in many countries (e.g., United States) include variants of well-being measures, such as depression and anxiety.¹⁹ However, this chapter still provides an overview of the continuous and new efforts in measuring happiness by national statistics offices during the COVID-19 pandemic, most of which are available in OECD and other developed countries, yet largely missing in governments of developing countries.

Dynamics of Happiness Measured by Governments and International Organizations

This section presents the happiness dynamics prior to and during the COVID-19 pandemic for overall life satisfaction and three affect indicators in some of the surveys discussed in the previous section. To mitigate the limitations in the comparability of measures, frequencies, and survey modes, we only compare the dynamics of happiness evaluated on the same scales with the same survey questions.

Dynamics of Happiness in the EU

We begin our analysis using several surveys carried out across a large number of European countries (The happiness survey during the pandemic is *LWCS*. For happiness in the pre-COVID period, we use the EQLS 2016, and EVS/WVS 2017-2021 for EU member states, which

were collected between 2017 and 2020.²⁰) The different surveys used the same question on life satisfaction: "All things considered, how satisfied would you say you are with your life these days?" Life satisfaction is measured on a scale of 1 to 10, where 1 means very/completely dissatisfied and 10 means very/completely satisfied. For each individual country, its mean value of life satisfaction from EQLS 2016 or EVS/WVS 2017-2021 is used as the baseline of happiness before the COVID-19 pandemic, while the measurements of life satisfaction from *LWCS* in 2020 and 2021 track the trajectories of happiness during the pandemic.

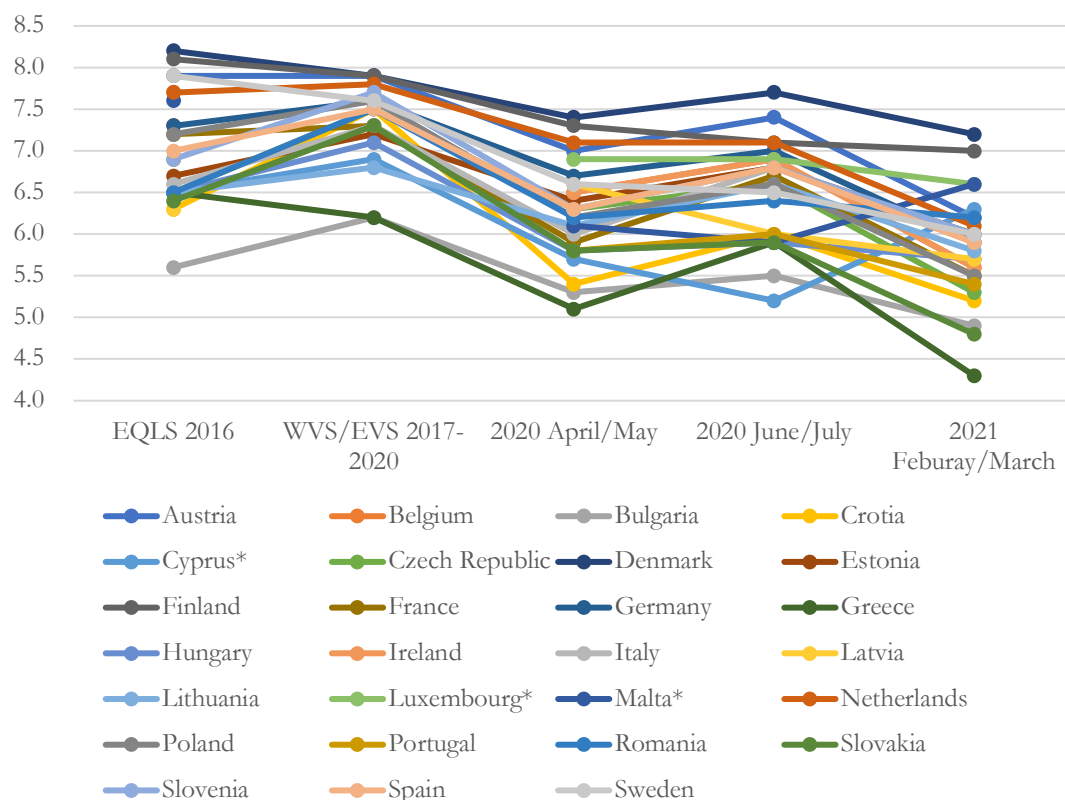
Notes: 1. European Quality of Life Survey (EQLS 2016) was carried out with face-to-face interviews in 2016 and 2017. The data refer to the population aged 18 and over and are weighted to account for unequal selection probabilities at primary sampling unit, household and respondent level, and unequal response in different groups in terms of region, urbanization, age, gender, employment status and household size.

2. Joint European Value Study/World Value Survey (EVS/WVS 2017-2021) was carried out between 2017 and 2020 for the countries under analysis. Most countries had the fieldwork between 2017 and 2018. Portugal is the only country with fieldwork conducted during the pandemic and is treated as missing values for the purpose of this chapter. Survey modes in EVS/WVS include CAPI, CAWI, PAPI, Mail and Post. Data refer to the population aged 18 and over, and are weighted to be representative of each respondent's country's demographic profile in terms of age, gender, region and education.

3. The three rounds of *Living, Working and COVID-19 Survey* were online surveys, carried out in April/May and June/July 2020, and February/March 2021. Low reliability (*) in June/July 2020 and February/March 2021 for Luxembourg. Low reliability (*) in June/July 2020 for Cyprus, Malta. The data refer to the population aged 18 and over. All individual responses were weighted to be representative of each respondent's country's demographic profile in terms of age, gender, region and education.

We find that compared with pre-COVID levels, lower overall life satisfaction was recorded in 26 out of 27 EU member states (except for Latvia) in April/May 2020, when most member states

Figure 7.1: Life Satisfaction in Europe (LWCS compared to EQLS & WVS/EVS)



Notes:

1. European Quality of Life Survey (EQLS 2016) was carried out with face-to-face interviews in 2016 and 2017. The data refer to the population aged 18 and over and are weighted to account for unequal selection probabilities at primary sampling unit, household and respondent level, and unequal response in different groups in terms of region, urbanization, age, gender, employment status and household size.

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Data source: 1. Eurofound (2017, 2020) and EVS/WVS (2021).

were in their first lockdowns. The EU average of life satisfaction was rated at 6.3 on a scale of 1 to 10 in the first round of LWCS, while it was rated at 7.0 in EQLS 2016 and even higher in EVS/WVS for most countries. It is noteworthy that direct comparison between pre-COVID mean life satisfaction with the online survey results during the COVID-19 pandemic is difficult due to changes in survey mode and sampling methodology, which we will discuss later.

However, remarkable improvements in overall life satisfaction were observed in the EU member states as economies started re-opening and mobility restrictions were eased in June/July 2020. The average life satisfaction score at the EU level increased to 6.7 in summer 2020. 21 out of 27 countries reported higher overall life satisfaction than their ratings in April/May 2020, and the increase is statistically significant in 16 countries, among which France, Greece, and Italy experienced the largest improvement of 0.7.²¹ Nonetheless, the improvement was short-lived. The most recent life satisfaction measurement in LWCS showed a more dismal change in the well-being of European residents by March 2021. After about one year of social distancing, restrictions on economic activity and mobility, and a series of national lockdowns in a few countries, on top of successive waves of COVID-19, most Europeans saw declines in mean life satisfaction levels.²² 25 out of 27 EU member states reported lower ratings of life satisfaction in February/March 2021 than in summer 2020 and 23 of them had lower mean life satisfaction than their first measurement in April/May 2020. Czech Republic, Slovakia, and the Netherlands are among the countries with the largest declines since April 2020.

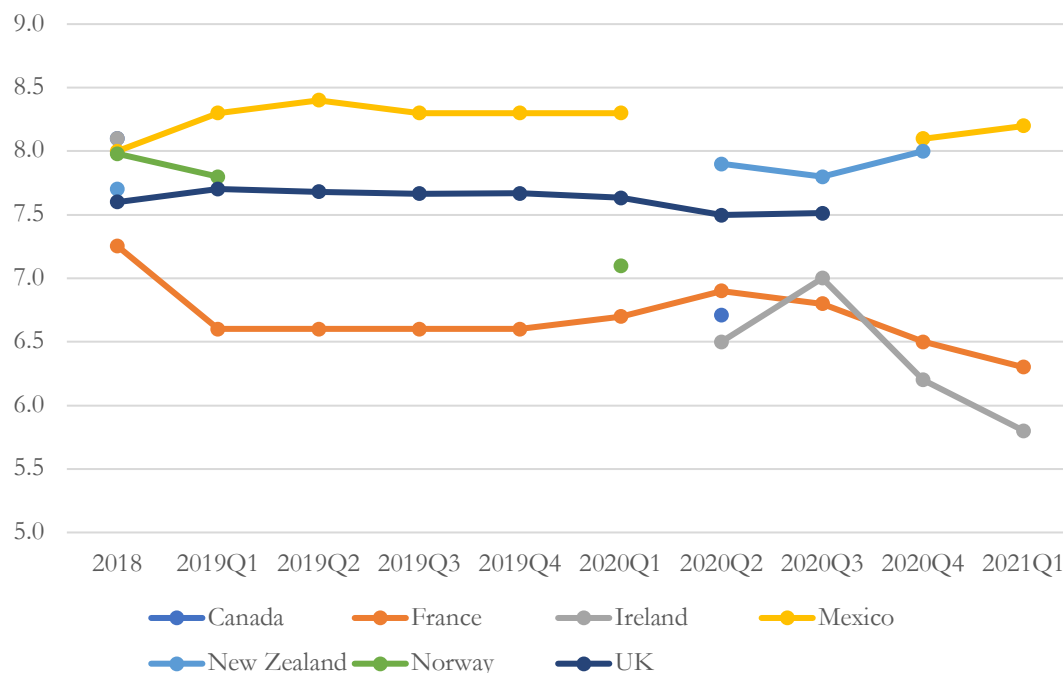
Dynamics of Happiness in the UK, France, Ireland, New Zealand, Canada, Mexico and Norway

We now turn to some OECD countries, namely, the UK, France, Ireland, New Zealand, Canada, Mexico, and Norway. These nations vary in, culture, COVID-19 infection and government responses to the pandemic, but had harmonized national happiness measurements largely consistent with the *OECD Guidelines on Measuring Subjective Well-being*.²³ For happiness before

and during the COVID-19 pandemic, we rely on national surveys or statistics from individual countries, which collected and reported overall life satisfaction in 2019, 2020, or 2021 at varying frequencies. For happiness pre-COVID, we utilize annual life satisfaction data from the year 2018 compiled by the OECD in *How's Life? 2020* f based on multiple surveys.²⁴ In general, these countries reported estimates of life evaluations, and some of affect and eudaimonia aspects, however, we focus on overall life satisfaction measures in order to facilitate comparisons between surveys, countries, and over time. The question on life satisfaction utilized in these countries is in general as follows: "Overall, how satisfied are you with your life nowadays?", with a response scale ranging from 0 to 10, where 0 means completely dissatisfied/very dissatisfied/not at all satisfied and 10 means completely/very satisfied. We show the dynamics of happiness in these countries using 2019 or 2018 as the base year, depending on data availability. These countries also differ in the frequency and timing of the collection of happiness data, but all countries under analysis except Norway and Canada had more than two measurements during the pandemic.

For France, the UK, and Mexico, which reported happiness estimates quarterly, the mean levels of life satisfaction remain quite stable in 2019 before the pandemic and in the early days of the pandemic.²⁵ However, in the UK, with the beginning of the first COVID-19 lockdown, the average ratings of life satisfaction declined to 7.50 in the second quarter (April to June) of 2020, a 1.8% fall from the average rating of 7.63 in the first quarter (January to March) and a 2.3% decrease compared with the same quarter in 2019.²⁶ There was no significant improvement in life satisfaction of UK residents in the third quarter (July to September) of 2020 and average ratings of life satisfaction were 1.95% lower than the third quarter of 2019. In contrast, France reported better national happiness in the first two quarters of 2020, and in particular a jump in life satisfaction in June 2020, reflecting a similar increase of happiness as in LWCS. However, in the first quarter of 2021, this indicator fell sharply, indicating wear and tear in the morale of the French²⁷ and worsening of happiness as the

Figure 7.2: Life Satisfaction in Selected OECD Countries (various national surveys)



Notes:

1. The pre-COVID base year refers to 2018 for Canada and Ireland, and to 2019 for France, Mexico, New Zealand and UK. Data refer to the population aged 18 and older in Mexico; 15 and older in Canada, and New Zealand; and 16 and older in all other cases. Data are (weighted to be) nationally representative of the target population.

2. For the year 2019, 2020 and 2021, data refer to the population aged 18 and older in Ireland, Mexico, New Zealand and Norway; 16 and older in UK; 17 and older in France; 15 and older in Canada. Data are (weighted to be) nationally representative of the target population, except that Mexican data are representative of 32 major cities of the Mexican Republic (national-urban).

Data source: 1. The 2018 data are from OECD's *How's Life? 2020*. <https://doi.org/10.1787/9870c393-en>. OECD and national statistical office calculations, based on the European Union Statistics on Income and Living Conditions 2018 (EU SILC 2018), <https://ec.europa.eu/eurostat/data/database>; the Canadian Community Health Survey; the Mexican National Survey of Household Income and Expenditure (Socioeconomic Conditions Module) and New Zealand General Social Survey.

2. The happiness data of the year 2019, 2020 or 2021 are from the Canadian Perspectives Survey Series (online), <https://www.statcan.gc.ca/eng/survey/household/5311>; the French Monthly Consumer Confidence survey (Well-being of Households Module), <http://www.cepremap.fr/en/bien-etre-travail-et-politiques-publiques/well-being-observatory/a-quarterly-survey-of-well-being-in-france/>; the Social Impact of COVID-19 Survey of Ireland, <https://www.cso.ie/en/statistics/socialconditions/socialimpactofcovid-19survey/>; Mexican National Survey of Consumer Confidence (MÓDULO DE BIENESTAR AUTORREPORTADO, Self-reported Well-being Module, face-to-face), <http://en.www.inegi.org.mx/investigacion/bienestar/basico/>; New Zealand Household Labour Force Survey (face-to-face and telephone), <http://datainfolplus.stats.govt.nz/item/nz.govt.stats/b7c39358-aa03-446f-a27d-91c37caac35d/92/#/nz.govt.stats/95ce07e3-7810-406c-9aa8-0821658551ef/28>; European Union Statistics on Income and Living Conditions 2019 (for Norway only, EU SILC 2019); the Norwegian Quality of Life Survey 2020, <https://www.ssb.no/en/sosiale-forhold-og-kriminalitet/artikler-og-publikasjoner/life-quality-in-norway-2020>; Annual Population Surveys of UK (face-to-face and telephone), <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/personalwellbeingintheukquarterly/april2011toseptember2020>.

pandemic entered another year. In Mexico, on the other hand, the average ratings of life satisfaction in January 2020, October 2020, and January 2021 remained high and stable, relative to the previous year. Norway was among the happiest countries in the world; however, their first quality of life survey revealed a significant drop in life satisfaction from 7.8 in EU SILC 2019 to 7.1 in March 2020,²⁸ a larger deterioration in happiness than the results shown in *World Happiness Report 2021*.²⁹

Compared with their mean life satisfaction levels in 2018, Canada and Ireland also experienced worsening of overall life satisfaction among the general population during the pandemic, while overall life satisfaction remained high in 2020 among New Zealanders. In particular, the Canadian CPSS in June 2020 recorded the lowest life satisfaction (6.71 on a scale of 0 to 10) over the period between 2003 to 2020 with comparable data, which represents a decline of 1.38 from the average life satisfaction in 2018 (8.09).³⁰ The national statistics on happiness from Ireland showed similar trends as in LWCS. The average overall life satisfaction rating decreased from 8.1 in 2018 to 6.5 in April 2020, when COVID-19 control measures were first introduced in Ireland. The mean overall life satisfaction bounced back to 7.0 in August when mobility restrictions were lifted, but further dropped to 6.2 in November 2020 and 5.8 in February 2021, the lowest rating recorded since 2013.³¹ On the contrary, in New Zealand, the average overall life satisfaction rating was 7.9, 7.8, and 8.0 on a scale of 0 to 10 in the second (June), third (September), and fourth (December) quarter of 2020 respectively, which is slightly higher than the rating of 7.7 recorded in the 2018 New Zealand General Social Survey.³²

Alternative Measures

Emotional well-being is also an important dimension of happiness. To bolster our analysis on the happiness dynamics during the pandemic, we provide evidence on changes in three indicators of affect from the Eurofound's EQLS 2016 and LWCS: WHO-5 mental well-being scale, loneliness, tension, and depression. The WHO-5 well-being scale measures positive affect based on five statements of positive feelings over the past two weeks, including "I have felt cheerful and in good spirits", "I have felt calm and relaxed", "I have felt active and vigorous", "I woke up feeling fresh and rested", "My daily life has been filled with things that interest me". The WHO-5 well-being scale ranges from 0 to 100, and a score of 50 or lower is considered at risk of depression. For the negative affect measures, we show the fraction of people reporting feeling lonely/tense/depressed for "all of the time" or "most of the time".³³

A comparison between EQLS 2016 and LWCS reveals a similar trend of emotions among European residents, measured by positive and negative affect. For most EU member states, positive affect (WHO-5 mental well-being scale) declined, and negative affect (feeling of loneliness, tension, and depression all or most of the time) increased during the first lockdowns, with a recovery of emotional well-being during summer 2020, followed by a further deterioration into spring 2021.

Figure 7.3a: WHO-5 Mental Well-being Scale

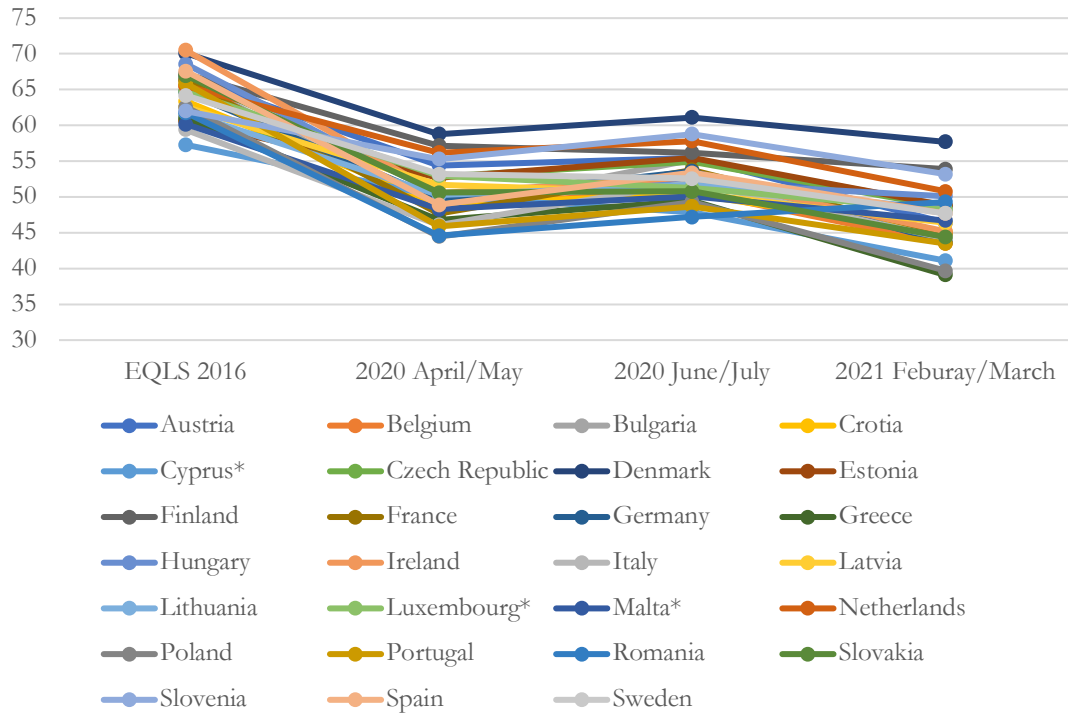


Figure 7.3b: Loneliness

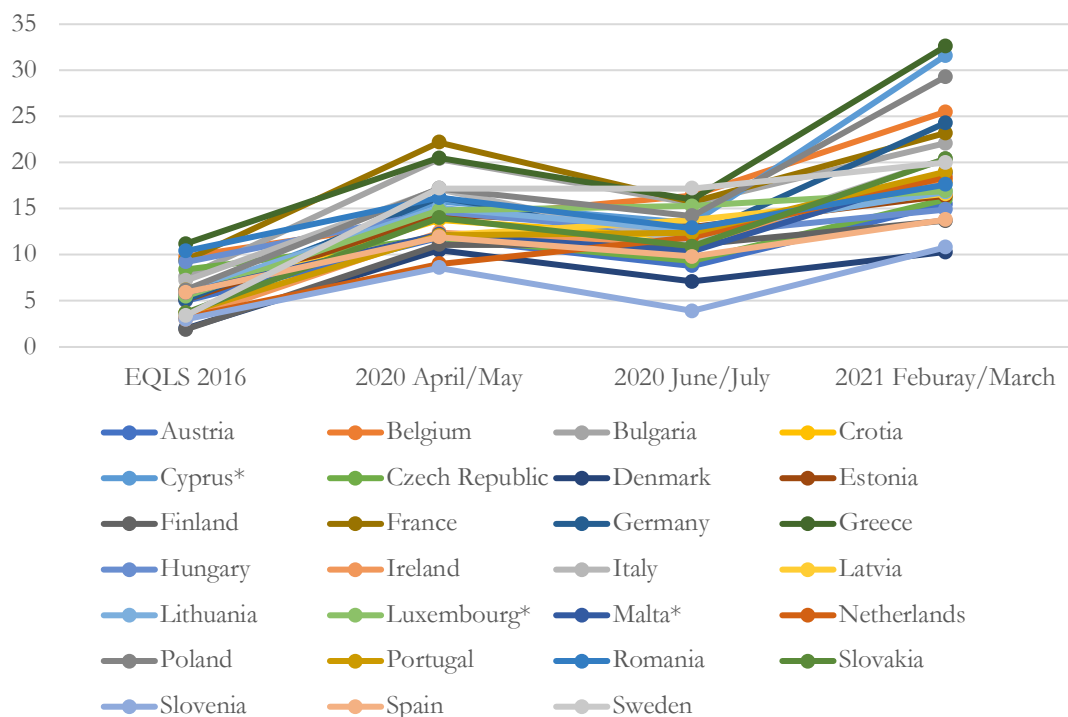


Figure 7.3c: Tension

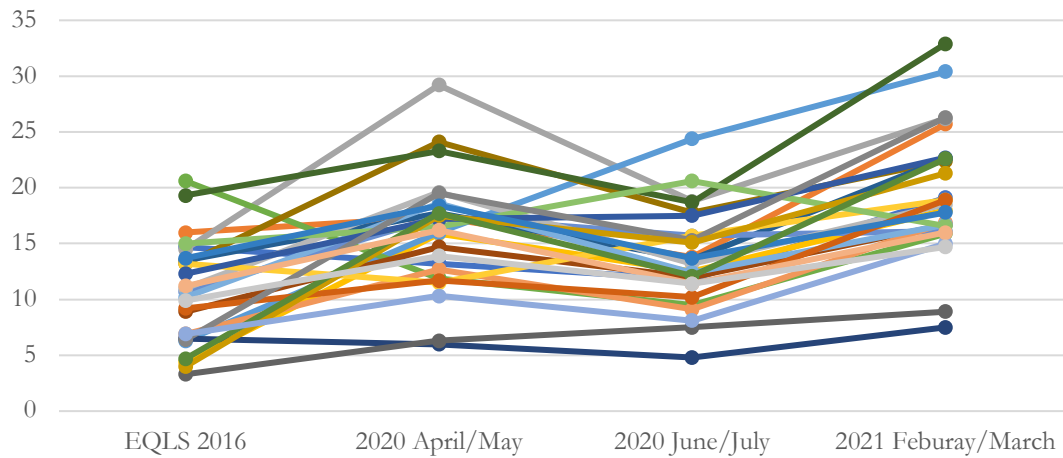
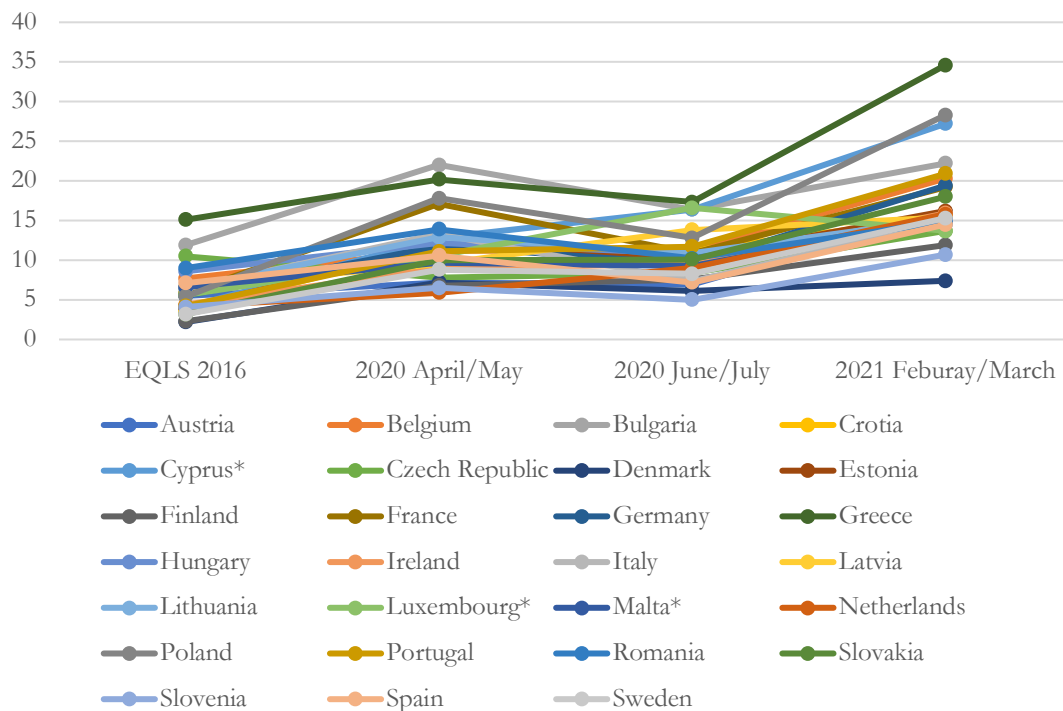


Figure 7.3d Depression



Notes:

1. The pre-COVID base year refers to 2018 for Canada and Ireland, and to 2019 for France, Mexico, New Zealand and UK. Data refer to the population aged 18 and older in Mexico; 15 and older in Canada, and New Zealand; and 16 and older in all other cases. Data are (weighted to be) nationally representative of the target population.

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Happiness Measures from Non-government Sources

Many non-government organizations, such as universities, research organizations, and survey companies, have been measuring and tracking happiness both before and during the COVID-19 pandemic.

Surveys Conducted by Research Organizations

Labor panels in a few developed countries now contain survey questions on life satisfaction. They are the *German Socio-Economic Panel* (GSEOP), the *Korean Labor & Income Panel Study* (KLIPS), the *Korea Welfare Panel Study* (KoWePS), the *Swiss Household Panel* (SHP), the *British Household Panel Survey* (BHPS), and the *National Longitudinal Survey* (NLS) and the *Health and Retirement Study* (HRS) from the United States, the *Russia Longitudinal Monitoring Survey* (RLMS), and the *Household, Income and Labour Dynamics in Australia* (HILDA). Their surveys conducted in 2020 could be good sources for studying happiness during the pandemic.

Happiness has also been measured periodically by international surveys covering many countries. For example, the *European Values Study* (EVS) is a large-scale, cross-national, repeated cross-sectional survey with happiness measures, covering European countries.³⁴ The *World Values Survey* (WVS) grew out of the EVS and had been conducted between 1981 and 2020 at five-year intervals, measuring the affective happiness and life satisfaction of about 1,000 individuals over 100 countries.³⁵ The two organizations agreed to cooperate in joint data collection from 2017. The data collected were constructed as the EVS/WVS 2017-2021 Dataset.³⁶

The Human Flourishing Program of Harvard University introduces 12 flourishing questions in five domains: happiness and life satisfaction, mental and physical health, meaning and purpose, character and virtue, and close social relationships.³⁷ The survey covers a broader set of questions on people's well-being. The survey was conducted both before the pandemic (January 2-13, 2020) and during the pandemic (May 28-June 10, 2020) in the US when participants were recruited and

surveyed via *Qualtrics Online Panels*.³⁸

There are many other surveys conducted by researchers aiming to examine the impact of COVID-19 on happiness, in Germany³⁹, Sweden⁴⁰, and in Switzerland⁴¹.

Surveys Conducted by Polling Companies

There are surveys covering happiness before and during the pandemic, conducted by polling companies, such as The *Gallup World Poll* (GWP) and *IPSOS's Global Happiness Study*⁴². GWP is an annual global survey conducted by Gallup Inc. covering over 150 countries/regions in the world starting from 2005.⁴³ The study surveys approximately 1,000 nationally representative residents aged 15 or over per country. The main happiness survey measure is the Cantril ladder, to evaluate the quality of their lives on an 11-point ladder scale running from 0 to 10, with 0 being the worst possible life for them and 10 being the best possible. In addition, GWP includes several questions covering both positive (enjoyment, laughter) and negative affect (anger, sadness, worry). The responses to these affective measures are binary, indicating whether each emotion is felt a lot by the respondent on the previous day.

There has been a mode change in some countries from personal to telephone interviews due to surveying difficulties caused by the pandemic. Research shows that the answers to well-being questions are subject to very small mode effects. For example, recent UK national survey shows that life satisfaction is only 0.04 points lower with in-person than telephone interviewing.⁴⁴ However, the shift from personal to phone interviews may change the pool of respondents in some countries, which might pose challenges in comparing happiness in 2020 with that in previous years. Note that the mode change does not affect the developed countries since most of them have already been surveyed by telephone in previous waves.

IPSOS's Global Happiness Study has accumulated annual happiness data in over 20 countries since 2011. Its happiness measure is given by the question: "Taking all things together, would you say you are: very happy, rather happy, not very happy, or not happy at all?" The 2020 survey

sample consists of 19,516 adults aged 18-74, via Ipsos' Global Advisor online survey platform from July 24 – August 7.

Joint Efforts

Research organizations and private polling companies have made joint efforts in tracking happiness. For example, the Department of Politics and International Studies of Cambridge University launched a joint research center, the YouGov-Cambridge Centre for Public Opinion Research, in collaboration with a polling company, YouGov. They report on a weekly basis the past week's mood of about 2,000 residents in England, Scotland, and Wales since June 2019.⁴⁵ YouGov- Imperial College London's *Covid-19 Behaviour Tracker* surveyed the Cantril ladder question in 39 countries from late April 2020, in collaboration with the World Happiness Report team.

Dynamics of Happiness Measured by Non-governmental Sectors

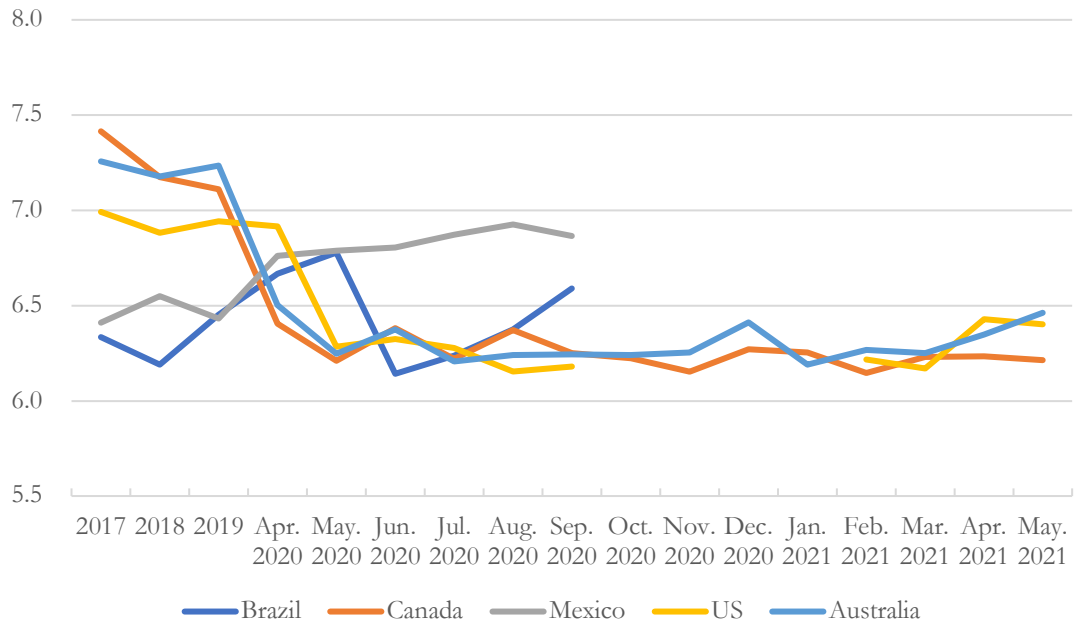
This section discusses happiness dynamics in surveys conducted by survey companies and academic institutions. We use the same measures to compare happiness before and during the pandemic to increase comparability. We focus on 26 countries during the pandemic, using happiness measures from *COVID-19 Public Monitor*, a survey jointly implemented by Imperial College London's Institute of Global Health Innovation and YouGov, an international research data and analytics group headquartered in London. The main objective of the *Monitor* is to track how the public's behaviours and attitudes in relation to COVID-19 are evolving over time. The happiness measure was introduced into the survey in late April 2020, in collaboration with the Sustainable Development Solutions Network (SDSN) and the World Happiness Report editors. The happiness measure is the Cantril ladder, asking individuals to rate themselves on a scale of 0-10, with 0 representing the worst possible life and 10 being the best. The 29 nations included in the happiness survey include Australia, Brazil, Canada, China, Denmark, Finland, France, Germany, Hong Kong, India, Indonesia, Italy, Japan,

Malaysia, Mexico, Netherlands, Norway, Philippines, Saudi Arabia, Singapore, South Korea, Spain, Sweden, Taiwan, Thailand, United Arab Emirates, UK, US, and Vietnam. Surveys are nationally representative with sample sizes of approximately 1,000 individuals per survey per week (ranging from 500 to 2,000), except that samples are only representative of the online population in China and the urban online population in India. We produce monthly averages to show the dynamics.

The first average happiness data is available in April 2020, and the last average is either in September 2020 or in May 2021 (the most recent data available when conducting this study). For happiness in the pre-COVID period, we use the *Gallup World Poll (GWP)* collected during 2017–2019. The GWP is a nationally-representative annual survey covering over 150 countries in the world. The three panels of Figure 7.4 show the happiness dynamics in 2020 in comparison to the GWP annual averages in the pre-crisis period, in the Americas and Australia, Asia, and Europe respectively.

Figure 7.4a shows the trends in Australia and four countries in the Americas. Compared to pre-COVID happiness in 2017 to 2019, lower overall life satisfaction was recorded in Canada (from April 2020), Australia (from April 2020), the US (from May 2020), and Brazil (in June 2020), but not in Mexico. The drop in Canada from 2019 to April 2020 was large, 0.71 points on a scale of 0 to 10. There was no significant recovery in Canada until May 2021, though some mild temporary recoveries were observed in June and August 2020. The dynamics in Australia are very similar to those in Canada, with mild temporary recoveries in June and December 2020, and an upward trend since early 2021. The drop in the US from April and May 2020 was also very big (0.62 points). There was no recovery in the US till September 2020. There were no data between October 2020 and January 2021, we thus are not able to tell the dynamics during the period, however, there was a mild recovery after April 2020. Brazil documented a big drop (0.64 points) from May to June 2020 but then had a mild recovery till September. Mexico's averages in the few months in 2020 remained rather stable.

**Figure 7.4a Cantril ladder in America and Australia
(ICL-YouGov ICL-YouGov compared to GWP)**



**Figure 7.4b Cantril ladder in Asia
(ICL-YouGov ICL-YouGov compared to GWP)**

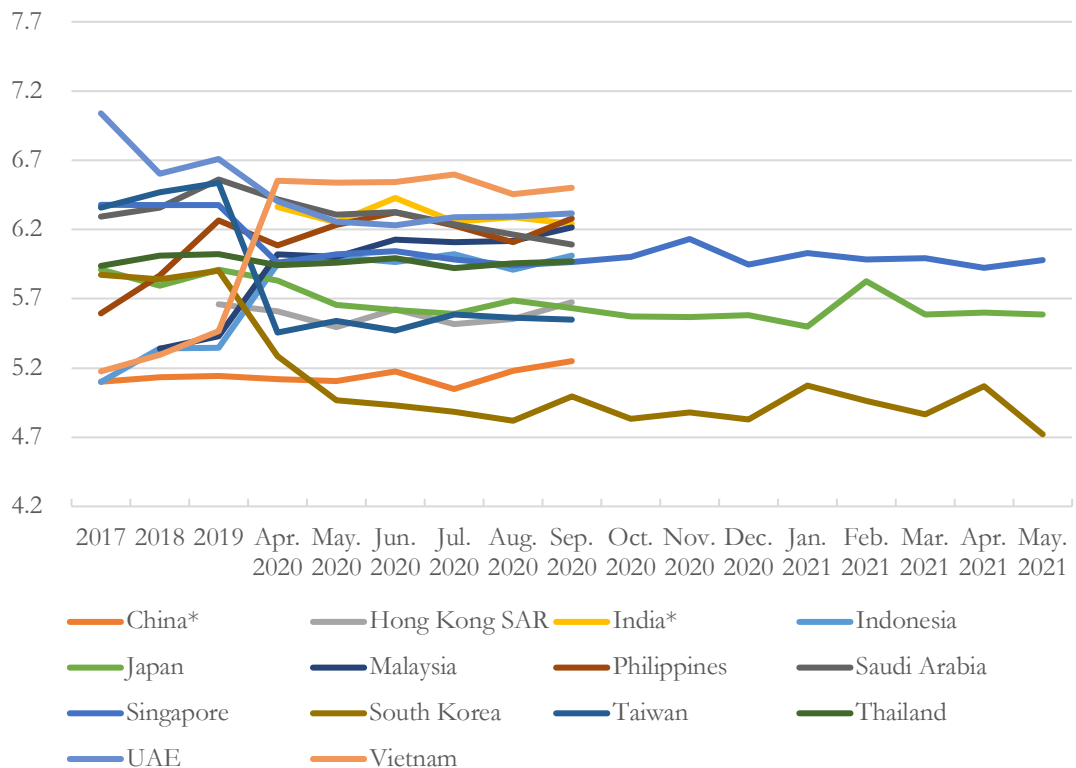
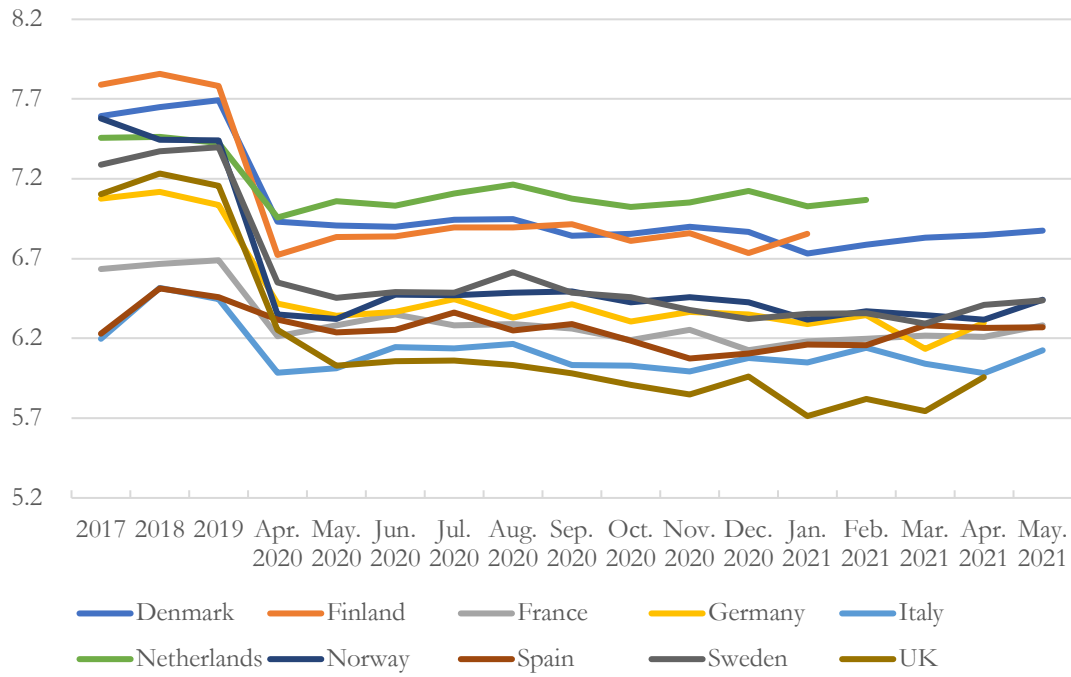


Figure 7.4c Cantril ladder in Europe (ICL-YouGov ICL-YouGov compared to GWP)



Notes:

1. COVID-19 Public Monitor was conducted by ICL-YouGov online. They are nationally representative except for China and India.
2. Gallup World Poll was collected all over the world by Gallup Inc. Their samples are nationally representative.

Figure 7.4b shows the trends in 14 countries or regions in Asia. They can be roughly categorized into three groups. The first group shows a drop in happiness from 2019 to 2020. There was either no recovery or only mild temporary recovery in 2020. Singapore, South Korea, and Taiwan experienced big drops in happiness (0.42, 0.61 and 1.08 respectively) in April 2020 compared to that in 2019. A small recovery was observed in October 2020 in Singapore. Korea's average happiness further decreased to 4.97 in May 2020, and then fluctuated around 5 for a year. There was no significant recovery in Taiwan till September 2020. Japan's happiness did not drop much in April, but the level in May 2020 is 0.25 points lower than that in 2019. Saudi Arabia shows a continuous but mild decline till September 2020. The United Arab Emirates shows a similar trend as Saudi Arabia, except for a small recovery since June 2020. The Philippines experienced a small decrease in April 2020 (0.18 points), but recovered in May and June, before another drop and recovery later. The second group shows an increase in happiness from 2019 (or 2018) to 2020, including Hong Kong SAR, Indonesia, Malaysia, and Vietnam. Happiness remains largely stable in 2020. The third group comprises Thailand and mainland China, where happiness was relatively stable from 2019 to September 2020, though China's happiness showed a small increase after July 2020. India is excluded from the three groups since its happiness cannot be compared with the pre-crisis level due to different sample representativeness. Its happiness shows a mild decrease in 2020 except for a small bump in June.

Different from the divergent pattern observed in Asia and America, the happiness dynamics in the 10 European countries all show sharp decreases in happiness from 2019 to April 2020, indicating a big shock from the pandemic in the beginning. The decrease ranged from 0.14 (Spain) to 1.06 (Finland). Mild temporary recoveries were documented in a few countries such as Finland, France, Netherlands, and Italy from May, and Germany, Norway, Spain, Sweden, and the UK from June, and Denmark after July 2020. The recovery ranges in size from the UK (0.03) to the Netherlands (0.2). Among these countries, the recovery from the first wave of infection and

lockdown generally reached its peak around August 2020. France is the only country that peaked in June 2020, where the second COVID shock wave came earlier than in other countries. These patterns are largely consistent with the results from governmental survey data. A second wave of decrease is generally shown around November and December. Spain has been most affected in the second wave.

Happiness Measures from Social Media

Furthermore, researchers have extracted data from social media platforms or search engines to assess real-time happiness of people without requiring survey questionnaires. *Twitter* and *Facebook* are two large international platforms that have been used by many researchers. *Google Trends* and its local equivalents are also valuable data sources for happiness measurement.

Twitter, Facebook and Their Equivalents

Twitter and *Facebook* have been widely used by international researchers to extract sentiment, or overall scores of positive and negative emotion.⁴⁶ Two types of methods have been applied to extract sentiment: word-level methods and data-driven methods.⁴⁷ Word-level methods (e.g., Linguistic Inquiry and Word Count and Language Assessment by Mechanical Turk) involve the use of predetermined or annotated dictionaries that are expected to represent positive and negative emotion and count the frequency of words appearing in the dictionary. On the other hand, data-driven methods involve the use of machine learning to identify the association between the linguistic information contained in the text and its emotional content. The prediction of emotional content in the data-driven methods is based on sentences/documents rather than words in isolation. Comparing *Twitter*-based happiness measures with those from public-opinion surveys, researchers generally find data-driven methods offer performance improvements over word-based methods for predictive problems.⁴⁸ One recent study on COVID-19 derives the Gross National Happiness Index from *Twitter* through a data-driven method (Natural Language

Processing) and investigates the relationship between lockdown and expressed happiness in South Africa, New Zealand, and Australia.⁴⁹ Since *Twitter* is generally not accessible in mainland China, similar research on mainland China uses data from *Sina Weibo*, the largest social media platform in mainland China and known as the Chinese equivalent of *Twitter*⁵⁰ (Wang et al., 2020).

Nevertheless, *Twitter*-type data have a few limitations: First, although the messages are geo-tagged, there are some possibilities of “migration bias”: a statement from the message about a specific location could be sent from a completely different location and different time; Second, there can be a problem of sample selection since *Twitter* users may be significantly different from general populations in terms of some demographic and socioeconomic characteristics, such as age, income, gender, and access to mobile phones.

Google Trends and Its Equivalents

A number of recent studies on the changes in happiness during the COVID-19 pandemic have used data from *Google Trends*.⁵¹ *Google Trends* provides an unfiltered sample of search requests made to *Google* and an index for search intensity (or relative popularity) by topic or term over the time period requested in a geographical area. The index of relative popularity of each topic/term ranges from 0 to 100, where 100 indicates the peak popularity for that topic/term over the time period, and 0 means there was not enough search volume for the topic/term in a given time period. A search term query on *Google Trends* provides searches for an exact search term, while a topic query includes related search terms in any language. Data for topics were more widely used than those for terms because they not only provide more comprehensive information on search interests but also take into account language differences across countries/regions.

The relative popularity of several topics of negative affect, such as apathy, boredom, frustration, fear, irritability, and sadness, has been found to be a good proxy for the corresponding negative mood state. A “negative affect search index” can be derived by taking the simple

average of the relative popularity of topics of negative affect. On the other hand, the data on topics related to positive mood states, such as happiness, well-being, optimism, and contentment, have been found to be poor proxies for positive emotional states based on both qualitative and quantitative investigations into the related queries of each search topic query.⁵²

Even though *Google* has maintained around 90 percent share of the global search engine market from 2010 onward, *Google* is not the dominant search engine due to political or linguistic issues in some countries such as China, South Korea, and Russia.⁵³ Therefore, there are also equivalents of *Google Trends* in those countries, including *Baidu Index* from China, *Yandex’s Keyword Statistics* from Russia, and *Naver Trends* from South Korea.

Dynamics of Expressed Happiness from Social Media

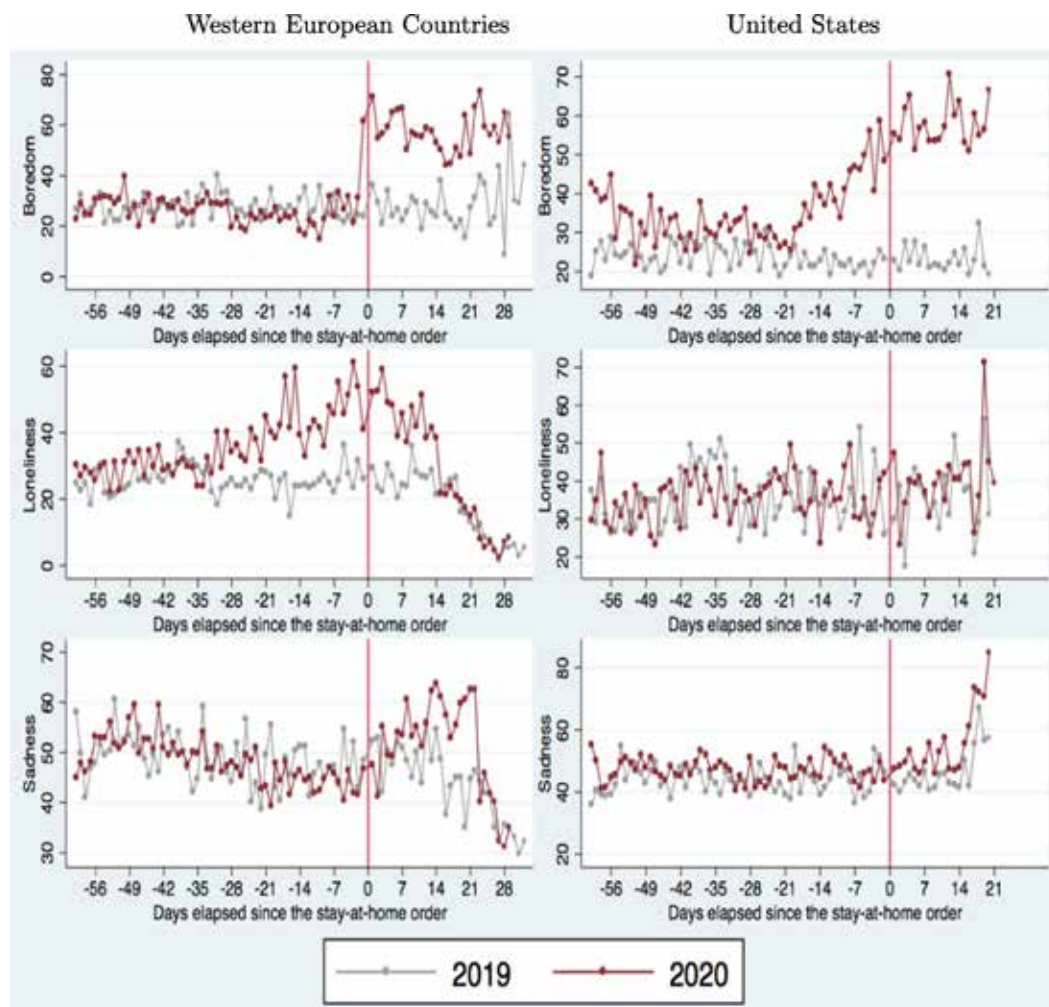
Social media data show that people in different countries have had different emotional reactions during the first wave of the COVID-19 pandemic. One of the recent studies, using *Google Trends* data over the period January 1, 2020, to April 10, 2020, and the same period in 2019, finds that the searches for the topic of sadness did not increase significantly during the pandemic (compared with the same period in 2019) in 9 Western European countries, including Austria, Belgium, France, Ireland, Italy, Luxembourg, Portugal, Spain, and the UK, nor in the United States (Figure 7.5).⁵⁴ However, searches for the topic of boredom significantly increased during the pandemic and the effects did not disappear throughout their study period (i.e., 3 or 4 weeks after the lockdown in each country) in either the Western European countries or the United States. An increase in searches for loneliness during the first wave lasted about 7 weeks in the Western European countries while the searches did not increase in the United States. Another recent study derives a “negative affect search index”⁵⁵ from *Google Trends* for 8 English-speaking countries, including the United Kingdom, Ireland, Canada, Australia, the United States, New Zealand, India, and South Africa, and covers the

period from June 30, 2019, to June 21, 2020.⁵⁶ The authors observe that, in each of these countries, there was a sharp increase in the “negative affect search index” before the lockdown as the pandemic accelerated, followed by a steady decrease after lockdown measures were put in place.

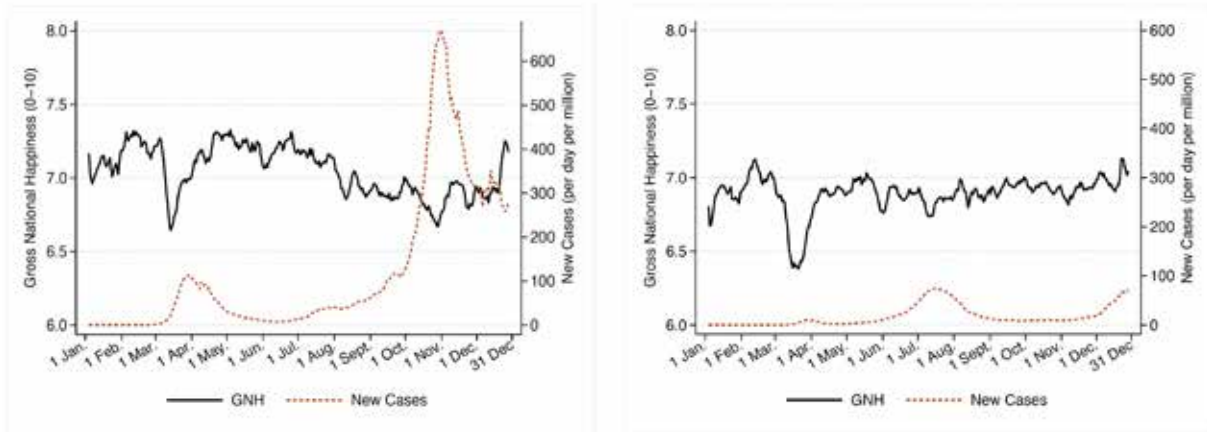
Studies using data from *Twitter* also suggest the negative shock of the pandemic and subsequent recovery. The Gross National Happiness (GNH) Index derived from *Twitter* shows that, in Australia, New Zealand, and South Africa, the level of happiness sharply decreased and then recovered within about a month during the first wave of the

pandemic.⁵⁷ A more recent study looks further into the Gross National Happiness Index during the second wave of the pandemic and finds that the index declined slightly and recovered afterward in the three countries (Figure 7.6).⁵⁸ The study shows that for 7 European countries, including Belgium, France, Germany, Great Britain, Italy, Luxembourg, and Spain, the GNH index dipped in correspondence with the two pandemic peaks of March and November 2020. During the first wave, the GNH dropped suddenly and recovered quickly afterward. In comparison, during the second wave when there was a slow but steady increase in the number of new cases,

Figure 7.5: Google Trends in boredom, loneliness, and sadness



Notes: This figure is Figure 1 of Brodeur et al. (2021). The vertical axis shows the average searches (on a scale from 0 to 100) in the days before (negative values) and after (positive values) the stay-at-home order was announced (set equal to day zero) in 2020 (red dots) and the same date in 2019 (grey dots) for 9 European countries (left) and 42 US States (right).

Figure 7.6: Gross National Happiness and New COVID-19 cases per day in 2020

(a) Average daily data across seven European countries.

(b) Average daily data across Australia, New Zealand and South Africa.

Notes: This figure is Figure 2 in Sarracino et al. (2021). GNH and new cases are presented using seven-day (centered) moving averages.

the GNH declined steadily, culminating with a sharp fall at the beginning of November when infections reached a second peak. It then gradually recovered. Generally speaking, in Australia, New Zealand, South Africa, and 7 European countries, even though happiness levels changed with the number of new cases during the study period, we could still observe some people's resilience for two reasons. First, the level of happiness went relatively quickly back to the level before the pandemic right after the pandemic peaks. Second, although the second wave was much more severe than the first one in these countries, the drops in happiness during the second wave were much smaller. Using data from *Baidu Index*, one recent study on China finds that the searches for several negative keywords, such as depression, scare, fear, anxiety, and stress, increased substantially from the outbreak of the pandemic in Hubei Province but started to decrease in about ten days.⁵⁹

Conclusions and Policy Implications

This chapter shows similar trends in happiness during the pandemic, using data from various sources. For most European countries, we observe a significant decline in average life evaluations (either measured by life satisfaction or Cantril ladder) and emotional well-being among the general population in the second quarter of 2020, when those countries started to be affected by the pandemic and related restrictions and lockdowns were first introduced. It was then followed by a short-lived recovery in happiness with varying magnitudes across countries in the summer with lower new infection rates, easing mobility restrictions, and the re-opening of economies. The results from social media, which mainly focused on the first half year of 2020, show similar results to surveys. A further drop in life evaluations and emotional well-being was observed in the fourth quarter of 2020. On average, deterioration in happiness during the pandemic was prevalent in these European countries in 2020, which persists into the year 2021 in many of them. Australia, Canada, and the US show a similar pattern to European countries. The failure to control the pandemic in those countries not only hurt the economy, but also has severe happiness implications.

Our findings of lack of resilience in national happiness in Europe and North America stand in contrast with the World Happiness Report 2021 and a recent report by *The Lancet's* COVID-19 Commission Mental Health Task Force, which report notable signs of resilience in life satisfaction across the globe.⁶⁰ For example, the Task Force cited data from 34 countries surveyed by the Eurobarometer showing very small changes in life satisfaction in July-August 2020 compared with September – December 2019. However, as our analysis covers a longer time span in 2020 and early 2021 and collect more frequent measurements of life satisfaction during the pandemic, our results indicate more fluctuations and varying degrees of resilience of happiness at different stages of the pandemic. Yet we find some evidence in the resilience of happiness in some countries. For instance, overall life satisfaction in New Zealand and Mexico, as well as Cantril ladder responses in China, Hong Kong SAR, and Thailand remained largely stable in 2020 compared to the previous years. Cantril ladder responses in Indonesia, Malaysia, the Philippines, and Vietnam remained largely stable in 2020, and the levels were even higher than in previous years.

The resilience in some countries might depend on the pandemic control in the study period. It shows that country-specific pandemic severity was the major contributor to the increases in negative emotions, and lockdowns, in contrast, were beneficial for mood overall. Other factors that contribute to people's resilience in some countries include an increase in generalized trust. We shall also point out that several inconsistencies in the happiness measurements prior to and during the COVID-19 pandemic warrants caution in interpreting the happiness dynamics shown in this chapter. First is the change of survey mode in many countries or surveys from mainly face-to-face interviews to mainly telephone, mail, or online surveys (e.g., EU member states in the *LWCS*, the Netherlands, UK, New Zealand, Ireland, Canada). There is some evidence for very small effects of survey mode (in-person vs. telephone) on responses to well-being questions, as shown by data in 2019 from *Annual Population Survey* of UK where average life satisfaction from face-to-face interviews was slightly lower (0.04

on a scale of 0 to 10) than that from telephone interviews. We shall still be cautious since there is thus far a lack of systematic analysis on the possible impact of online survey mode on well-being measurements. In addition, shifting from face-to-face interviews to telephone/mail/online surveys may have also changed the composition and representativeness of the sample. To cope with the problem, our analysis of survey data is mainly based on nationally-representative samples with consistent happiness measures. Nonetheless, there remains the possibilities of selection bias that might not be adjusted for by weighting techniques. Therefore, the comparison between happiness measured before and after the pandemic is less precise than the dynamics of happiness ratings during the pandemic when the survey mode is fixed.

Despite the unprecedented challenge of tracking well-being during the COVID-19 pandemic, we still observe great and ongoing efforts from both government and non-government sectors in continuing happiness measurement during the pandemic. National statistical offices in most of the OECD countries still routinely collected and published national statistics on happiness, and a few national statistical offices and international organizations (e.g., Eurofound) initiated new surveys to promptly evaluate the impact of the pandemic on people's well-being. These initiatives from the public sector include measurements of life satisfaction, emotional well-being, and eudaimonia as suggested by the OECD *Guidelines on Measuring Subjective Well-being*, and some have been measured with high frequency during the pandemic (e.g., UK, France, and Eurofound). The availability of these happiness metrics makes it possible for governments to make more informed and timely decisions in implementing anti-COVID interventions and re-opening policies. In addition, non-government sectors, including universities, research institutes, non-profit international research programs, and survey companies, also maintained their efforts in collecting happiness data during the pandemic.

The inconsistency of happiness measures in our analysis points out that the most important problem in measuring happiness is that residents' happiness has been insufficient in terms of scope, comparability, and frequency. Limited

happiness statistics have been reported in developing countries. More efforts are needed from developing countries to measure and track happiness during the pandemic and in normal times. This may involve the collaboration between government and non-government sectors and guidance from developed countries or international organizations.

Even among more developed countries with happiness measurements, lack of comparability in the survey question and survey mode across countries and over time has impeded meaningful and comprehensive comparison of subjective well-being trajectories before and during the COVID-19 pandemic. Infrequent measurements of happiness by many governments throughout the pandemic might also mask important fluctuations in national well-being that call for policy interventions.

Although a growing number of researchers have obtained data from social media to measure, track, and compare people's expressed happiness across time and space, the data have not been utilized by policymakers or governments yet. Compared to the traditional survey instruments for measuring happiness, social media data and big data analytics not only offer a broader and international coverage but also enable researchers and policymakers to assess real-time happiness

of people. However, happiness measures from social media data do have limitations, including, for instance, only providing information on people's emotional states, and potentially lacking national representativeness. Despite the potential limitations, expressed happiness measures from social media data could complement the happiness measures from conventional surveys and act as valuable measures for emotional states. Further, under certain emergency circumstances, such as pandemics and natural catastrophes that may prevent policymakers from tracking people's well-being through other channels, social media data would be able to provide timely information.

In addition to life evaluations, emotions, eudaimonia, and expressed happiness from social media, we should evaluate the cost of government response to the pandemic in a more commensurable way. We should consider new metrics and approaches for assessing the overall well-being of nations. For example, Layard et al. (2020) proposed to use the number of Wellbeing-Years (WELLBYs) as a single metric for evaluating the net benefit of lifting lockdowns and times to facilitate policy decisions. The WELLBYs metric provides a general framework for comparing the impact of multiple factors, such as income, unemployment, mental health, and national well-being, helping in public policy decisions.

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Endnotes

- 1 See OECD (2013).
- 2 See Durand (2018).
- 3 See OECD (2011).
- 4 See OECD (2013).
- 5 See Durand (2018).
- 6 See ONS (2021).
- 7 See CEPREMAP (2021a).
- 8 See CBS (2021a, b).
- 9 See INEGI (2021) and KHS (2021).
- 10 See Statistics Austria (2020).
- 11 See CSO (2020a).
- 12 See Austria Statistics (2020).
- 13 See SSB (2020).
- 14 See Stats NZ (2020a, b, c).
- 15 See Statistics Canada (2020).
- 16 See Eurofound (2017).
- 17 See Eurofound (2020).
- 18 See Eurofound (2020).
- 19 For example, see National Center for Health Statistics (2021).
- 20 See EVS/WVS (2021). These surveys are collected by research organizations. More details are introduced in the later section “Surveys Conducted by Research Organizations”.
- 21 See Eurofound (2020).
- 22 See Eurofound (2021).
- 23 See OECD (2013).
- 24 See OECD (2020).
- 25 See CEPREMAP (2021b).
- 26 See ONS (2021).
- 27 See CEPREMAP (2021b).
- 28 See Kristina Strand Støren, Elisabeth Rønning og Karin Hamre Gram (2020).
- 29 See Helliwell et al. (2021).
- 30 See Helliwell et al. (2020).
- 31 See CSO (2020b, 2020c, 2021).
- 32 See Stats NZ (2020a, 2020b, 2020c).
- 33 See Eurofound (2020).
- 34 <https://europeanvaluesstudy.eu/>.
- 35 <https://www.worldvaluessurvey.org/wvs.jsp>
- 36 See EVS/WVS (2021).
- 37 See VanderWeele (2017) and the website of Harvard Flourishing Program: <https://hfh.fas.harvard.edu/measuring-flourishing>.
- 38 See VanderWeele et al. (2021).
- 39 See Zacher and Rudolph (2020).
- 40 See Kivi, Hansson, and Bjälkebring (2021).
- 41 See Macdonald and Hülür (2021).
- 42 <https://www.ipsos.com/en/global-happiness-study-2020>
- 43 The World Happiness Report always use the GWP Cantril ladder averages for their global ranking of happiness (e.g. see Helliwell, Layard, & Sachs, 2012; Helliwell et al., 2021).
- 44 See Coates and Aston (2021).
- 45 See Foa, Gilbert, and Fabian (2020).
- 46 See Curini et al. (2015), Kramer (2010), Luhmann (2017), Mitchell et al. (2013), Miura et al. (2015), Nguyen et al. (2016), and Settanni and Marengo (2015).
- 47 See Jaidka et al. (2020), Mitchell et al. (2013), and Quercia et al. (2012).
- 48 See Devlin et al. (2018) and Schwartz et al. (2013).
- 49 See Greyling et al. (2021).
- 50 See Wang et al. (2020).
- 51 See Brodeur et al. (2021), Foa et al. (2020), and Ma et al. (2021).
- 52 See Foa et al. (2020) and Ma et al. (2021).
- 53 See Jun et al. (2018).
- 54 See Brodeur et al. (2021)
- 55 The “negative affect search index” takes average mentions from the list of possible negative states, including sadness, apathy, frustration, stress, boredom, loneliness, and fear.
- 56 See Foa et al. (2021)
- 57 See Greyling et al. (2021)
- 58 See Sarracino et al. (2021)
- 59 See Kim and Zhao (2020)
- 60 See Aknin et al. (2021)