Original Articles and Reviews

Growing Up in Digital Europe (GUIDE)

A Comparative Longitudinal Study for Child Well-Being

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Abstract: Growing Up In Digital Europe (GUIDE) is Europe's first comparative longitudinal birth cohort survey, which will be an essential evidence base for child well-being policy-making across the UK and Europe for decades to come. It will provide data on a representative sample of babies and children from most European countries, following them up to the age of 24. This will make GUIDE one of the largest European social science Research Infrastructures. GUIDE was included on the 2021 iteration of the European Strategy Forum on Research Infrastructures Roadmap in recognition of its importance for the future. The GUIDE project is set to continue up until the 2050s when the younger cohort will be aged 24. The research design of GUIDE is centered on an accelerated cohort structure, with the first cohort being 8-year-olds and the second cohort being 9-month-old babies. Nationally representative samples of respondents from participating countries will be used with sufficiently large numbers to be able to cope with anticipated attrition rates. The research instruments are input harmonized to facilitate comparative analysis and the fieldwork processes are common for all participating countries. The questionnaire content for the first waves of data collection focuses on the participants' demographic and socio-economic context, as well as family life, parenting and psychological measures, for the main career questionnaires and general family life, feelings, well-being, and educational measures for the 8-year-olds. Subsequent data collection waves will include a range of repeated measures and new measures.

Keywords: GUIDE, longitudinal study, child well-being, Europe

Growing Up In Digital Europe (GUIDE) is Europe's first comparative longitudinal birth cohort survey of children and young people's well-being. The aim of the GUIDE project is to track children's personal well-being and psychosocial development, in combination with key indicators of children's homes, neighbourhoods, and schools, across Europe. These measurements will enable researchers from multiple fields to analyze how children's well-being develops in response to children's experiences of growing up in different European countries. The harmonized design will create the first internationally comparable, nationally representative, longitudinal study of children and young people in Europe. As a recognized European Research Infrastructure, GUIDE will be an important source of evidence in developing social policies for children, young people, and families across Europe for many years to come.

The GUIDE consortium comprises a team of experts in survey methodology, child and youth development and well-being, demographic science, economics, psychology, and sociology. GUIDE has developed through a series of projects funded by the European Commission, including Measuring Youth Well-Being (MYWEB, GA 613368), the European Cohort Development Project (ECDP, GA 777449), the Cohort Community Research and Development Infrastructure Network (COORDINATE, GA 101008589), and Growing Up in Digital Europe Preparatory Phase (GUIDE PREP, GA 101078945).

The GUIDE Survey is co-created by children, policy makers, and scientists. Child-centric approaches are the foundational basis of GUIDE. As such, children have been placed at the center of GUIDE's ongoing work from the beginning, during the preparatory stages of the research design. Once the survey results become available, children and young people will also be key stakeholders in their interpretation. The direct involvement of children in the project, alongside policy makers, scientists, and other stakeholders, contributes to the co-production of relevant policies for lasting social and economic benefit.

A prime driver of GUIDE has been the belief that when policy makers take decisions which affect children and young people, they should have the best possible data available to them (Pollock et al., 2022). By making policy based on high quality evidence, the expectation is that positive impact is more likely (Nutley et al., 2007). The multidimensional character of the concept of well-being renders it to be understood in a variety of ways. For GUIDE, subjective measures of well-being are the priority as these are only measurable using direct questioning. By asking people to

reflect on their experiences, beliefs, thoughts, and attitudes one is arguably better able to assess their subjective well-being. Moreover, asking people about the same themes over the course of their lives helps us to understand how things change over time and allow us to test hypotheses as to why these changes occurred.

Unique to GUIDE is the ambition to have input-harmonized longitudinal data across Europe on child well-being. Such a survey has never before been attempted and this brings with it challenges that need to be addressed and resolved. The challenges can be broadly divided between those which relate to scientific issues and those which relate to sustainability. For the data to be truly comparable, questionnaire translation, sampling strategies, and data collection fieldwork processes need advanced planning, clear processes, and involvement of all national scientific teams. Sustainability, on the other hand, requires an ongoing and significant engagement with funding bodies at national and supra national level. While there has never been a comparative longitudinal birth cohort survey to date, there are two important cross-national longitudinal surveys that provide valuable experience on how GUIDE can proceed in relation to these challenges. The Survey of Health Ageing and Retirement in Europe (SHARE) and the Generations and Gender Program (GGP) have both shown that different models of cross-national longitudinal surveys are possible (Emery et al., 2019).

Research Design

GUIDE was developed through a series of European Union (EU) funded projects led by a team based in Policy Evaluation Research Unit (PERU) at Manchester Metropolitan University (MMU). In 2014, the EU put out a call for proposals to do a feasibility study entitled "Towards a European longitudinal childhood and youth survey". Funded by the EU's Framework 7 research program, the Measuring Youth Well-Being (MYWEB) project undertook this study and concluded that a European longitudinal survey on child well-being was both feasible and desirable among scientific, policy, and practice communities (MYWEB, 2016). A priority of the MYWEB project was to use a balanced approach, considering both scientific and policy imperatives. It also included child centric elements through child and youth advisory boards. A "Delphi" survey was distributed to a panel of 334 international experts drawn from policy, practice, and academia across Europe, who explored, examined, and suggested different options regarding research design (Ozan et al., 2018). The resulting proposed research design was that of an accelerated longitudinal cohort survey using two parallel nationally representative samples (MYWEB, 2016). The first cohort was proposed to comprise 8-year-olds and their main carers, and the second cohort the carers of 9-month-old infants. It was recommended for each cohort to be followed every 3 years until the age of 24.

Longitudinal cohort development analysis facilitates analysis of age, period, and cohort. The parallel cohorts allow for a comparison of different cohorts from the outset. This approach allows for early analysis of age effects. Using a range of cohorts does not fix the survey to a single point in history, which gives partial control over acute period effects. Policy relevant information is generated across several cohorts of young people and enables policy makers to compare life cycle changes and policy impact across different cohorts within waves and as time progresses, within same age cohorts across time. Accelerated longitudinal surveys help identify transition and intervention points and may make policy design more efficient and interventions more effective. The wealth and complexity of data allows researchers to make multi-dimensional comparisons and enables macro-level program process evaluation and policy adjustment for subsequent waves. Using accelerated longitudinal cohort surveys allows for efforts in specific policy areas (such as, education, childcare provision, and family welfare) to be compared across different regions in EU members states.

MYWEB was followed by the European Cohort Development Project (ECDP), a "Design Study" funded by the EU under the Infrastructure Development program. The three aims of ECDP were:

(1) to build support from key national policy makers across Europe who work in child well-being as well as from national funding agencies tasked with infrastructural spending on science and survey data collection;
(2) to develop a scientifically excellent research design for a pan-European, longitudinal survey of children and young people on the topic of well-being; and
(3) to establish a robust operational framework that would ensure the logistic integrity of GUIDE (ECDP, 2019).

ECDP also initiated an innovative child centric infrastructure, which included a Child and Youth Advisory Group, producing a systematic instrument to ensure GUIDE is effectively a child-centered study at all levels and stages of the research. ECDP further established a common survey methodology, including a common approach to sampling and fieldwork.

The sample was planned to be selected by strict random probability methods at all stages. It was decided for every member of the GUIDE target population in a country to have a larger than zero probability of being selected into the sample with this probability needing to be known for

each child selected. The probability of selection for each sampled child was proposed to be recorded and retained in a file of sample design data (Lynn, 2019). It was proposed that wave 1 minimum sample size should be set at 10,000 for the birth cohort (Cohort 2) and 8,000 for the childhood cohort (Cohort 1), with a waiver for the smallest countries, where demographic data will inform effective sample sizes. For these smaller countries, it was recommended that the effective sample size should not be smaller than 5,000 for the birth cohort and 4,000 for the infant cohort. Population registers and birth registers, alongside health service registers, school rolls, and education registers were proposed to be ideal sampling frames to achieve the desired coverage. The sample design could vary between countries and cohorts, to recognize national variation while adhering to common principles and parameters.

Three input harmonized questionnaires were drafted for the first wave of GUIDE (Szymczyk et al., 2019). These included the initial instruments for Cohort 1 wave 1 (child and carer), as well as for Cohort 2 wave 1 (carer). The content plan for the recommended questionnaires was informed by a foresight planning exercise. The following themes were proposed for the carer questionnaire in wave 1:

(1) Household Information;
(2) Socio-Demographics;
(3) Childcare, Parental Support, and Parenting [Cohort 1]/Childcare and Parental Support [Cohort 2];
(4) Child's Education [Cohort 1]/Child Functioning and Relationships [Cohort 2];
(5) Child's Activities [Cohort 1]/Baby's Development and Habits [Cohort 2];
(6) Pregnancy and Birth;
(7) Child's Health and Well-Being [Cohort 1]/ Baby's Health and Nutrition [Cohort 2];
(8) Health and Well-Being;
(9) Employment and Socio-Economic Conditions;
(10) Housing, Neighbourhood, and Community.

The following themes were proposed for the child questionnaire in Cohort 1 wave 1:

(1) Psychological Well-Being;
(2) Emotional Well-Being;
(3) Physical Well-Being;
(4) Social Well-Being;
(5) Family and Home;
(6) Friendships;
(7) School;
(8) Neighbourhood;
(9) Material Conditions;
(10) Activities;
(11) Health;
(12) Children's Rights and Voice.

Where available, the data collected by GUIDE were proposed to be merged with national registry-based data, biological samples (at later waves), as well as digital follow-up data (such as wellness and activity apps). Children are surveyed from the age of 8 until the age of 24. Parents are surveyed from the birth of the child (at the age of 9 months) until the children reach the age of 17 (Pollock et al., 2021).

When selecting survey items, several existing surveys were consulted to identify appropriate items, ensuring the concepts measured aligned with survey objectives (Szymczyk et al., 2019). Items were drawn from established comparable European surveys, such as European Social Survey (ESS), Survey of Health, Ageing and Retirement in Europe (SHARE), and Generations and Gender Program (GGP); as well as items included in longitudinal studies, such as Children's Worlds (ISCWeb), Millennium Cohort Study (MCS), Growing Up in Scotland (GUS), Understanding Society (UKHLS), and the Three-City Study (3C Study). In some cases, desired concepts were not covered by any of the existing surveys. In such cases, new items were produced. Following the selection of questionnaire items, the first draft of the GUIDE survey questionnaires was produced. To check on the Anglo-centric tendencies in the design and to ensure conceptual comparability, a partner consultation was undertaken. The project partners were asked to review the draft questionnaires, rate the importance of each item on a 4-point scale (*essential*, *desirable*, *potentially useful*, *unimportant*), and to provide any comments or further notes on each of the items included. Furthermore, the partners were asked to provide general feedback on the questionnaire content and identify any important gaps. Following the partner consultation, the questionnaire content was adapted, and a second draft of the questionnaires was developed to consider partner feedback. Following a final review of the drafts by the questionnaire team, the questionnaires were further refined to ensure consistency, such as standard formatting, basic routing notes and standard questions and response formats (Szymczyk et al., 2019).

The culmination of ECDP was the creation of an infrastructural platform with a commitment from key stakeholders across Europe. ECDP mapped out the subsequent stage for GUIDE: submission to the 2021 ESFRI roadmap. In Summer 2021, GUIDE was included in the 2021 ESFRI roadmap and hence received a recognized status as a developing European Research Infrastructure (ESFRI, 2021a). The submission to ESFRI included an anticipated timetable for data collection with Cohort 1 wave 1 planning to start in 2027 and cohort 2 wave 1 in 2029. ECDP was followed by project "Cohort Community Research and Development Infrastructure Network for Access Throughout Europe" (COORDINATE), which started in 2021 and will run until

2025 (COORDINATE, 2021). The aim of COORDINATE is to bring together scientists and policy makers, to facilitate access to existing data resources, to facilitate comparative analysis of survey data, and to initiate an important new Europe wide birth cohort study. Within COORDINATE, a pilot study for GUIDE was carried out in Croatia, Ireland, Finland, France and Slovenia in 2023, and a substantial amount of work is taking place in aiming to secure national funding for GUIDE. In 2022, a further grant was awarded by the EU under the Infrastructure Development programme to support GUIDE in embedding itself in the scientific infrastructure landscape. This project, named GUIDEPREP, complements and continues the funding related activities of COORDINATE so that the prospective 2027 Cohort 1 wave 1 data collection process can be implemented (GUIDEPREP, 2022).

Content

The importance of child well-being rests on its impact on a range of positive outcomes in adulthood, including better health, academic success, more stable and satisfying relationships, better performance at work, better functioning, higher self-esteem, healthy behaviors, better learning, as well as more creative and holistic thinking (Adler et al., 2017; Bogg & Roberts, 2004; Hoyt et al., 2012; Proctor et al., 2010; Rowe et al., 2007; Seligman et al., 2009). There are two different methodological approaches in measuring child well-being: objective and subjective measures. Objective measures of social reality are those which are not filtered by perceptions and are independent from personal evaluations, such as gross domestic product (GDP), household income and wealth, the proportion of children in education, life expectancy, and crime rates. On the other hand, subjective measures are supposed to explicitly express subjective states, such as perceptions, assessments, and preferences (Noll, 2013). There is growing consensus among researchers in support of considering both subjective and objective well-being indicators as a rounded picture of well-being (Children's Worlds, 2019; Guillén-Royo & Velazco, 2006; Stiglitz et al., 2009). This approach, also known as the "holistic approach" (see Goswami et al, 2016), is used to measure children's well-being in GUIDE (Pollock et al., 2021). Since the holistic approach gives equal emphasis to both measures of well-being, it allows researchers to estimate more comprehensively how changes in children's and young people's lives affect both their objective and subjective well-being as they grow up.

GUIDE takes a child-centric approach insofar that it considers children as active agents in society and incorporates their perspective throughout the research process (Pollock et al., 2021). From the onset, children were placed at the center of GUIDE, including the preparatory stages of the research design. They have also been proposed to be key stakeholders in the interpretation of the survey results once they become available, thus contributing to the co-production of relevant policies for lasting socioeconomic benefit. As previously mentioned, since the MYWEB feasibility study, children were involved not only as participants, but also as advisors on well-being and participation in research projects, with the consultation involving 440 children and young people aged from 9 to 24 across 11 countries (MYWEB, 2016). Children and Young People's Advisory Groups were also set up for the ECDP (2019) project in two countries (UK and Croatia) and 20 "Community Reporters" comprised of children, young people, and parents of very young children were recruited and trained in the same countries (10 per country). The GUIDE questionnaire is child-centric not only because it includes children and young people's perspectives in the development of concepts and frameworks, but also because it gives primacy to the voice of the child when it comes to reporting on well-being-related issues (Pollock et al., 2021).

Multi-disciplinarity is at the heart of GUIDE, both in the topics it addresses as well as in the development of alliances across a wide range of professionals. While GUIDE's main scientific domain is sociology, the data generated by GUIDE questionnaires will also contribute to the fields of public policy, health sciences, economics, demographic science, family studies, psychology, education, and archive studies. Professionals working for GUIDE have been trained in diverse academic disciplines, including sociology, criminology, economics, epidemiology, linguistics, and political sciences. They work in a variety of different sectors, including academia, non-governmental organizations, research institutes, and inter-governmental organizations, in research, managerial, and administrative roles. GUIDE contributes to cross-cultural research and brings together scientists and professionals from all over Europe, all employing varied modes of working, interacting, and thinking. The work conducted by GUIDE is thus enriched by both the diversity of the academic disciplines it covers as well as by the wide-ranging backgrounds and positions of the international professionals it collaborates with.

As elaborated in the previous section, the GUIDE questionnaires cover a range of themes and topics related to youth and child well-being. However, these themes and topics will not be covered in each wave and in all the questionnaires distributed to children and their careers. Given the limited interview time and expected respondent fatigue, it was deemed impractical and undesirable for all the questions to be repeated in each wave (Szymczyk et al., 2019). It was considered sufficient for certain questions to be asked only once and certain questions would only be relevant

once the child reached a particular age. Furthermore, given that GUIDE takes a child-centric approach, it was regarded as important to gather information about the children directly from the children as soon as they were old enough to do so. This long-term plan guarantees comparability between the cohorts since it ensures that the same questions are asked for each age. Table 1 presents a plan of which categories will be covered in each cohort and wave. However, this is a preliminary plan and subject to change as the survey develops or new unanticipated topics become relevant in the future (Szymczyk et al., 2019). As it can be seen from Table 1, GUIDE core themes (i.e., themes that will be covered at each wave) include the following: Household Composition; Socio-Demographics; Housing, Neighbourhood, and Community (for parents); and Health and Well-Being (for children). Moreover, certain themes, such as Values and Attitudes; Self-Concept; and Aspirations will only be introduced at later stages and are not covered in the first few wave(s).

The GUIDE team has developed rigorous and detailed guidelines for the translation of the questionnaires, which are listed in the Translation Protocol in Section 5 of ECDP Deliverable Number 8.3 (see Szymczyk et al., 2019). The GUIDE translation process is in line with the TRAPD guidelines (translation, review, adjudication, pretesting, and documentation). These guidelines follow a "team approach", which allows for multiple translations to be presented for discussion, different translation versions to be exchanged, and alternate to be suggested (Survey Research Center, 2016). This approach controls for regional variance, translator error, and subjective interpretations. While investing in a rigorous translation process can be costly, a translation of poor quality is highly detrimental to the quality, impact, transferability, and usefulness of the study (Harkness, 2005). This means that the benefits of investing in a high-quality translation process outweigh the costs. GUIDE will use translation software similar to The Translation Management Tool (TMT), which is useful to document the translation process, securely store translations for future reference, and allow for the translations to be shared and easily accessed. Four large-scale surveys have been available on the TMT since 2017: the European Social Survey (ESS), the European Values Study (EVS), the Generations and Gender Program (GGP), and the Survey of Health, Ageing and Retirement in Europe (SHARE). Software such as TMT can facilitate the "team approach" used by TRAPD, which requires multiple versions of translations to be worked on simultaneously by numerous translators (Martens, 2017). TMT allows for different roles to be defined in the TMT: manager, translator, reviewer, and viewer (Martens, 2017).

The data generated by the GUIDE project will be used to first display descriptive and comparative statistics on key indicators of family and child well-being within and across European participating countries. Exploratory and confirmatory factor analysis will be run on each sub-section of the questionnaire for each country to determine the validity and reliability of the surveys employed by GUIDE. Pearson's correlations, multiple regressions, logistic regressions, analyses of variance (ANOVAs), structural equation modeling, time series analysis, and cross-lagged models will be some of the analytical techniques that will be used to explore the links and pathways between parental, family, and environmental health and well-being, and child outcomes. The input variables will include aspects related to parental psycho-social well-being, housing, family material well-being, as well as neighbourhood and community cohesion and safety. The output variables will include aspects related to child's education, child's health and well-being, as well as child's activities. Multilevel and hierarchical models will be run to account for the fact that the measurements are carried out repeatedly within the individual and cohort level.

Challenges

The two categories of challenge GUIDE faces are scientific related and finance related. GUIDE is currently in its "preparation phase" as described by the ESFRI lifecycle of a research infrastructure (ESFRI, 2021b). What this means is that it has successfully demonstrated that it is a worthy scientific ambition and that it has achieved sufficient backing from scientific teams and national funding bodies for it to be given EU funding to develop the project further and secure a significantly higher level of funding for the project to enter the next phase: its "implementation". For GUIDE, the implementation phase is the first waves of data collection for each cohort, respectively 2027 (cohort 1–8-year-olds) and 2029 (cohort 2–9-month-olds). While all longitudinal surveys face a long-term challenge to get funding far into the future, we will focus here on specific challenges in reaching the implementation phase. Once the implementation phase has been successfully reached, all the main challenges will have been resolved to a certain extent, and the further phases will be more concerned with the novelty of the project rather than with demonstrating the value of the data which is being collected.

Funding from the EU has enabled the resolution of many of the scientific challenges as described above. While questionnaire content and translations are an ongoing process, the development and translation infrastructure has been created and shown to work. Similarly, fieldwork protocols, incorporating ethical approvals, data processing protocols, and privacy requirements have been pilot tested. The

Table 1. Long-term plan for GUIDE Parent and Child Questionnaires (retrieved and adapted from Szymczyk et al., 2019, pp. 26–29)

Child's Age	9 m	2 y 9 m	5 y 9 m		8 y 9 m		11 y 9 m		14 y 9 m		17 y pm	20 y 9 m	23 y 9 m
Cohort 1 Wave					1		2		3		4	5	6
Cohort 2 Wave	1	2	3		4		5		6		7	8	9
Theme	Parent	Parent	Parent	Child	Parent	Child	Parent	Child	Parent	Child	Child	Child	Child
Household Composition													
Household Grid	X	X	X		X		X		X	0	0	0	
Non-Resident Biological Children	X	X	X		X		X		X				
Life Event Grid													
Significant Life Events		X	X		X	0		0		0	0	0	
Socio-Demographics													
Marital Status	X	X	X		X		X		X	0	0	0	
Nationality and Citizenship	X	X	X		X		X		X	0			
Language and Communication	X	X	X		X		X		X	0			
Childcare, Parental Support, and Parenting													
Childcare and Out-of-School Care	X	X	X		X		X		X				
Parental Support	X	X	X		X		X		X				
Parent-Baby Relationships	X												
Parental Stress	X		X		X				X				
Parenting Styles		X			X			0					
Pregnancy and Birth													
Pregnancy and Pre-Natal Care	X				X								
Delivery and Physical Development at Birth	X				X								
Multiple Babies	X				X								
Education													
Education Level	X				X						0	0	0
School			X	0	X	0	X	0	X	0			
Parental Involvement			X		X	0	X	0	X	0			
Perception of Performance and Aspirations					X	0		0		0			
Learning Difficulty							X		X	0			
Bullying				0	X	0		0		0			
Activities, Lifestyle, and Time Use													
Play	X	X	X	0	X	0	X						
Outings and Events				0	X	0	X	0	X	0	0	0	
Technology Use and Social Media		X	X	0	X	0	X	0	X	0	0	0	
Parental Restrictions		X	X		X	0	X	0	X				
Volunteering and Participation								0	X	0	0	0	
Family Activities		X	X	0		0		0					
Substance Use	X				X			0		0	0	0	
Hobbies						0		0		0	0	0	

(Continued on next page)

Table 1. (Continued)

Child's Age	9 m	2 y 9 m	5 y 9 m	8 y 9 m		11 y 9 m		14 y 9 m		17 y pm	20 y 9 m	23 y 9 m
Cohort 1 Wave				1		2		3		4	5	6
Cohort 2 Wave	1	2	3	4		5		6		7	8	9
Theme	Parent	Parent	Parent	Child	Parent	Child	Parent	Child	Parent	Child	Child	Child
Participation in Physical Sports				0	X	0		0		0	0	0
Health and Well-Being												
Food and Eating	X	X	X		X	0		0		0	0	0
Health and Use of Health Service	X	X	X	0	X	0	X	0	X	0	0	0
Mental Health	X	X	X		X	0	X	0	X	0	0	0
Subjective Well-Being	X	X	X	0	X	0	X	0	X	0	0	0
Exercise		X	X	0	X	0		0		0	0	0
Safety				0		0		0		0	0	0
Employment and Socioeconomics												
Employment	X	X	X		X		X	0	X	0	0	0
Socio-Economics	X	X	X		X		X		X	0	0	0
Initial Conditions	X				X							
Material Deprivation	X	X	X	0	X	0	X	0	X	0	0	0
Housing, Neighbourhood, and Community												
Housing	X	X	X	0	X	0	X	0	X	0	0	0
Local Area	X	X	X	0	X	0	X	0	X	0	0	0
Community	X	X	X		X	0	X	0	X	0	0	0
Children's Rights												
Children's Rights				0		0		0		0		
Relationships												
Friends		X	X	0	X	0	X	0	X	0	0	0
Romantic Relationships	X	X	X		X		X	0	X	0	0	0
Non-Resident Biological Parent	X	X	X		X	0	X	0	X	0		
Extended Family				0		0		0		0	0	0
Pets						0		0		0	0	0
Conflicts	X	X	X	0	X	0	X	0	X	0	0	0
Values and Attitudes												
Environment						0	X	0		0	0	0
Values and Social Attitudes						0	X	0		0	0	0
Political Socialization						0	X	0		0	0	0
Self-Concept												
Personality										0		
Body Image						0		0		0	0	0
Gender Identity and Sexuality						0		0		0	0	0
Aspirations												
Imagining the Future						0		0		0	0	0

GUIDE pilot survey will also include the creation of a data archive for both the storage and distribution of survey data to the research community with a view to an architecture for building up a longitudinal database. Important scientific challenges still remain, including a robust approach to sample the ensure statistical comparability, the mode of data collection, the ability to link the survey data to nationally administrative data, and the tracking of survey respondents across country borders.

Existing cross-national surveys have already developed strategies to deal with differential availability of lists from which sample members can be drawn (Scherpenzeel et al., 2017). Although none of these surveys have dealt specifically with sampling children and babies, the strategies that they have developed can be adapted for GUIDE. Our starting assumption is that nationally representative samples are possible in all GUIDE countries. If this assumption does not hold in any specific country, then there is no reason to proceed any further in that country as this would undermine one of GUIDE's central priorities. While different types of lists from which samples will be drawn are anticipated, there is a need for sufficient information which allows for selection probabilities to be known and for the computation of sample weights where there is non-response and attrition in future data collection. Population level data is collected in all European countries but its availability to researchers cannot be assumed. Concerns about privacy tend to require searching questions on the need for contact information and adherence to strict procedures to prevent the public identification of any individual through the analysis of available data. There is a need for negotiation with the keepers of sample list information and the provision of assurances that the research complies with both national and Europe wide privacy standards. Through GUIDE working alongside other recognized cross-national surveys, especially longitudinal ones (Emery et al., 2019) this challenge is addressed.

At a time when the speed of digital technological change is swift, the breadth of digital media is wider and the personal preferences for completing questionnaires face-to-face are in decline, it is no surprise that there is a lively debate as to what the future of survey data collection will be (Das & Emery, 2023). GUIDE is looking to the future. It was envisaged that the first wave data of each cohort would be collected via face-to-face interviewers using a Computer-Assisted Personal interviewing (CAPI) system with a desire to "push" to web-interview mode in future waves. The idea was that in order to maximize the initial response rate and to develop a rapport with interviewees, face-to-face, in-person contact was the best strategy. Since COVID and the success of the Quebec Study (Berthelot et al., 2020), which initiated its first cohort online, we can now conjecture a fully remote data collection. Face-to-face, in-person may yet work, but we already know that in some countries initial contact can be done via Computer Assisted Web Interviewing (CAWI) and that data collection agencies can advise against in-person data collection (Grimaccia et al., 2023). The GUIDE pilot included a fully CAWI mode in Finland which proved successful. While the CAWI instrument is not the same as CAPI, as there are instructions and wordings that are not the same, the resulting data is the same. As well as the main wave data collection, there are other innovations that need to be explored. In England, the Child of the Twentieth Century birth cohort survey is pioneering the use of an app which facilitates parents of babies collecting information between main data collection waves (COTS, 2023).

The need for subjective well-being data collected through direct questioning is a priority for GUIDE, but the importance of objective data to contextualize these experiences and attitudes is also crucial. The GUIDE questionnaires contain much of this important contextual information in the form of household structure and the socioeconomic position of the family. In addition, many more possibilities to provide further context through linking the survey data to national administrative data such as health, education, crime, tax, and social security. These so-called registry related data sets are increasingly used across Europe for scientific purposes. The fact that these data already exist renders them attractive to scientists as they do not contain the same shortcomings as surveys can in relation to, for example, response and attrition rates. Although they are not primarily collected with scientific analysis in mind, they are potentially powerful data sets on their own merit, or in conjunction with survey data able to capture more nuanced, subjective and hypothesis led analyses. The GUIDE design aims to facilitate this as it adds significant value to national analysis and can be a strong argument for national funding. The aspiration to link survey data to administrative data requires forward planning to ensure that data privacy is secured. This can take a number of forms but, in general, it requires adherence to ethical principles and protocols which safeguard individuals' privacy. GUIDE has piloted the use of explicit consent to data linkage with a view to assessing participation and its potential to result in a full interview refusal. A key challenge to data linkage is the ways in which permissions are managed at a national level and therefore the need for a mapping of these in order to develop an approach that works in each participating country. An associated technical challenge is the way in which any departure from the standard CAPI/CAWI system represents a threat to the harmonized methodology.

A different form of data linkage which GUIDE is exploring is where respondents move from one country to another. Typically, such an event results in a drop-out, sample attrition, a data loss. In this day and age migration is a

fairly routine activity, which needs to be captured in order to adequately represent population experiences. Failing to retain migrants within a cross-national survey not only reduces sample representativity but also raises further sampling related data management questions related to exactly how migrants ought to be included in analytic data sets. Should they be retained in the country of origin, relocated to the country of destination, or be available to both? Perhaps the largest challenge here, however, relates to the problem of identification. The low numbers of survey migrants means that they are easily known and a secure means to prevent disclosure needs to be in place.

The viability of GUIDE requires that a group of countries invest in the first data collection waves. Hitherto, there is no instance of an internationally comparable birth/child cohort study with a common research design and methodology. Initial and ongoing funding from national sources, therefore, represents the principal challenge for the future of GUIDE and is an area of considerable work in the run up to our planned first wave of data collection in 2027. The business case for GUIDE was developed as part of ECDP (Ecchia et al., 2021) and details the costs of both the central hub (HQ), of the scientific teams, and data collection in each participating country using a methodology, which takes into account national population statistics and GDP measures. Up until now, most of the funding for GUIDE has been provided by the EU in recognition of the need to support an excellent idea and position it to leverage support from national governments. Data collection at the scale required for GUIDE is what makes it a research infrastructure rather than a project. The benefit to wider society is in the value of the data which will be able to support policy making in order to allow for efficient service provision and contribute to savings in public expenditure (Ecchia et al., 2021). The mechanisms by which national funding is secured is, however, uneven across Europe and requires effort from both national GUIDE teams as well as the central hub to respond to national policy, political, and scientific funding systems and cycles. In an ideal world, GUIDE would secure national funding across Europe for the first waves of the first two cohorts after which it would be clear that an ongoing investment is worthwhile. In practice, we anticipate that this is highly unlikely and that we will achieve full wave funding in a group of countries where they see the value of GUIDE and where the policy, political, and funding cycles are in a beneficial position. While not ideal, there is a template in place for countries which are not part of the first wave of data collection, to subsequently join with a suitable age-based cohort. These data will initially be slightly out of synchronization with the rest of the data, but as the survey matures this will become less of a problem. As with any large infrastructural survey, there is a need for pragmatism to accommodate those times when it is not possible for a country to participate. Missing a data collection wave will not mean full withdrawal. The door will always be open for a return.

Discussion

The motivation to improve the lives of children across Europe is what has driven the GUIDE team over the past 10 years. A shared belief that Europe as a whole, but national administrations in particular, will benefit from an input harmonized longitudinal study of children keeps the focus on addressing a series of challenges which need to be overcome prior to reaching our goal. In 10 years, much as been achieved and in 2023 we can point to significant success in the development of both the scientific instruments and the business case. The first project answered the questions of its desirability and feasibility in the affirmative and the cross-national pilot surveys in the latest project provide concrete evidence of the feasibility. There is now a need for the European policy makers to follow through on the desirability of GUIDE by providing the funding required for the first waves of data collection. While appearing substantial in magnitude, the funding for these waves is modest by comparison with the vast public spending focused on supporting children and families. The value of cross-national survey data has been fully demonstrated by SHARE, the data from which is routinely used by national governments as well as the EU in relation to social policies and public spending on people from the age of 50 onwards (EU-MIMF, 2021).

GUIDE has received explicit support from UNICEF and from EuroChild, both of whom are valued members of the international advisory board and who recognize the importance of a comparative longitudinal approach. Studies such as PISA, PIRLS, HBSC, and ISCWEB have all shown the value of comparative survey data focusing on children. The limitation of the cross-sectional approach, only being able to show a snapshot in time for any child requires that there be systematically collected comparative longitudinal survey data. Only this way will policy makers be able to trace antecedents and consequences. Only then can the dynamics of child well-being across Europe be made apparent. While cross-sectional data can tell us about the situation at one point in time, it is not able to show what happens next. National longitudinal studies have shown the importance of models which consider time and can help to fine tune social policies to target specific groups in a specific way. With GUIDE's comparative longitudinal data, it will be possible to test hypotheses as never before, taking into account contexts at different levels, in particular national, as well as tracing experiences over time.

GUIDE is recognized by the EU as an important developing research infrastructure through its inclusion on the 2021

ESFRI Roadmap. Within the ESFRI ecosystem, GUIDE joins two established Survey research infrastructures: SHARE and ESS as well as the GGP which is at a similar level of development. Together, these surveys represent an observatory of social life across Europe. The data each survey provides is complementary and, in relation to SHARE, GUIDE and GGP represent the full life course, from birth, through family and working life, to retirement and, ultimately, death. It is a realistic aspiration for Europe to support GUIDE as the initial phase of a European life course observatory – mapping out how children and young people well-being exist. Only then can it be known what the situation is in different regions, and questions can be raised about policy responses and interventions.

The growth in the use of administrative data to pursue policy related analysis of child well-being is likely to continue. Such data is, however, unable to substitute for, nor replace the direct questioning of children and young people when it comes to the desire to understand subjectivities of well-being. Rather, there is a need to innovate when it comes to the modes of data collection and seek methods which fit more suitably with contemporary lifestyle. Instead of expecting respondents to conform to past paradigms, GUIDE is already exploring, along with its Youth Advisory Boards – fora across Europe – alternative processes and methodologies which can be tested, but which must also be able to deliver on the priority of producing harmonized data.

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