TALLINNA ÜLIKOOLI RAHVUSVAHELISTE SOTSIAALUURINGUTE KESKUS

RESEARCH DESIGN OF THE ESTONIAN LONGITUDINAL STUDY OF YOUTH (ELSY)

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The YouthLife project aims to strengthen research on youth transitions from a life course perspective through a partnership with Tallinn University (TLU) and three internationally leading research institutions with complementary methodological expertise and experience: University of Bamberg (UNI BA), University of Southampton (SOUTHAMPTON), and the Netherlands Interdisciplinary Demographic Institute (NIDI). YouthLife is a three-year twinning programme to bridge qualitative and quantitative approaches to life course research to introduce methodological innovations and provide new insights into youth transitions to adulthood.

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Executive summary

Young people are the most valuable asset of Estonian society, as they represent its hope for the future in economic, cultural and societal terms. However, long-term processes such as economic globalization and international political destabilization, as well as momentous events with a global reach, such as COVID-19 and the war in Ukraine, have made the future of this young generation increasingly uncertain. The Estonian Longitudinal Study of Youth (ELSY) is developed to help us understand how Estonian young people make their transition to adulthood, which challenges they face and what factors increases their resilience in the face of uncertainty.

ELSY is going to answer questions of great societal and scientific relevance, such as:

- How do the educational and employment trajectories of Estonian young adults unfold? How do young people make sense of their trajectory and how do they view their future?
- How much diversity is visible in these educational and employment trajectories and how can we explain it? What are the views of young adults themselves?
- How do educational and employment trajectories interact with trajectories in the social relationships domain? What do young adults themselves expect of their future life course in these domains?
- How do the different trajectories affect young people's well-being? What do young people themselves feel that is important for their well-being?

In summary, we answer questions about how young people integrate in the world of education and work and how this affects other important issues in their lives, like relationships and well-being. This will allow for a holistic view on what it implies to become adult in current Estonian society.

To answer these questions, ELSY applies a unique longitudinal mixed-methods approach. We combine information from registers, surveys, in-depth interviews and focus groups to understand both what goes on in young adults' lives and how these young adults shape their life course and react to challenges. Our approach is rich in terms of the breadth and depth of information that we gather on young people. At the same time, it is very cost-effective, as we make use of existing register data and only collect new information that is absolutely essential. We do so, by involving young people themselves and other stakeholders and by putting participant confidentiality and privacy as our top priority.

This Blueprint outlines:

- Why we need ELSY and what its key research questions are (Chapter 1);
- What theoretical frameworks inspires ELSY (Chapter 2);
- How we will apply the mixed-methods longitudinal design (Chapters 3 and 4);
- How privacy and confidentiality will be assured (Chapter 5); and
- How we will generate maximum societal and scientific impact (Chapter 6).

1. Introduction: Why Estonia needs a Longitudinal Study of Youth

In the present day, a notable degree of uncertainty characterizes many developed societies. In recent decades, technological advancements, such as digitalization and automation, concerns about environmental degradation, as well as demographic changes, including mass migration, decreasing birth rates and the ageing of societies, have all contributed to this increase in uncertainty. More recent crises, such as the COVID-19 pandemic and the Ukrainian war, along with the emerging artificial intelligence (AI) revolution, have accelerated the level of unpredictability even more. All age groups within society are affected by these trends, but transitioning to adulthood is particularly challenging, as young people have to make far-reaching decisions about their future in the context of uncertainty (Billari & Liefbroer, 2010; Buchmann & Kriesi, 2011). The transition from youth to adulthood is characterized by a series of sometimes overlapping crucial events, including the completion of schooling, labour market entry, leaving the parental home, union formation, and parenthood. These life events typically occur within a relatively short period of time. During this critical and condensed phase, young people encounter multiple opportunities and challenges, and have to make decisions with far-reaching consequences. In times of crises and unpredictability, young people's daily lives, their social networks, and their future expectations towards work and family may be affected (Buchmann & Kriesi, 2011). Individual agency, which is young adults' capacity to realize their aspirations in the transition to adulthood, is severely put to the test in these circumstances.

Estonia has undergone significant societal and economic changes since the twentieth century. Like many countries, it has seen a rising level of uncertainty due to recent crises. Under these circumstances, the transition to adulthood has become particularly challenging. Recent statistics reveal that in 2022, 10% (Statistics Estonia, 2022a) of young people (aged between 18 to 26), who are not continuing their studies, have only basic education or an educational level below that. Additionally, the dropout rate is high, approximately 20%, among those who entered secondary schools. The transition from school to labour market is also problematic. The unemployment rate among young people aged 15-26 (14.2% in 2022) is notably high (Statistics Estonia, 2022b), and so is the share of neither in education, employment, or training (NEET youth), reaching 10.5% (Statistics Estonia, 2022c) within the same age group. Therefore, we need a better understanding of the opportunities and challenges that young people in Estonia face, the patterns of trajectories that they take, and how they navigate different pathways during times of uncertainty.

To address these concerns and gain insight on how young people in Estonia transition into adulthood amidst uncertainty, a crucial first step is to have high-quality data. Such data should allow not only a wide coverage of the diversity in the transition to adulthood, but also an in-depth exploration of the experiences of young people themselves to understand how the diversity comes about and how young people themselves interpret their pathways. The Estonian Longitudinal Study of Youth (ELSY) is a multidisciplinary longitudinal mixed-methods study that aims to provide unique and representative data on the youth population in Estonia. The longitudinal mixed-methods design of ESLY enables researchers to study the educational and employment trajectories

of young Estonians, with special emphasis on how these trajectories unfold during young adulthood. It also allows us to understand how diversity in these trajectories is linked to (a) young people's aspirations and resources (micro-environment), (b) their position within the multiple interactive contexts of family, school and workplace (meso-environment) and (c) institutions, policies, social norms and societal events (macro-environment). Finally, our approach allows to study the consequences of these experiences, aspirations and pathways for their future life course. In line with this, the key research questions that ELSY sets out to answer include:

- How do the post-compulsory educational and employment trajectories of Estonian young adults unfold? How do young people make sense of these unfolding educational and employment trajectories and how do these affect young people's views of their future?
- How much diversity is visible in these educational and employment trajectories and how is this diversity related to micro-, meso- and macro-level factors? How do young people interpret their trajectories in the light of these factors?
- How do educational and employment trajectories interact with trajectories in the social relationships domain? How do young people view this interplay and what do they expect of their future life course in these domains?
- How do the different trajectories affect young people's well-being and how does young people's well-being in turn affect these trajectories? How do young people assess their well-being and what is their view on the importance of their educational, employment and social relationships trajectories in this regard?

To answer these research questions, ELSY is designed with three key features. First, ELSY uses a *mixed-methods design* to understand both how the transition to adulthood unfolds and how it is experienced and interpreted by young adults. A mixed-methods design combines the generation and analysis of large-scale patterns and in-depth processes and understandings, to allow for richer insights into the diversity of the transition into adulthood. The quantitative element allows for a wide exploration of the patterns regarding the transition into adulthood, while the qualitative element provides an in-depth understanding of how these patterns come about and how young people interpret them. Second, ELSY will *link data from several registry sources*, which allows for a full coverage of the educational and employment trajectories of the whole youth population born in 1996-2006. Third, ELSY is a longitudinal study that aims at *following a key cohort born in 2006 over time, starting at around age 18* to understand the diversity in the educational and employment trajectories of the young adults, the consequences of this diversity for other life domains, as well as the determinants of youth transitions at micro-, meso- and macro-levels. The longitudinal design enables us to study the transition to adulthood from a life-course perspective. Substantively, following the 2006 cohort is important as it experienced the COVID-19 pandemic while studying in basic education. The consequence of the COVID-19 pandemic on young people's transition to adulthood is unknown. On the one hand, school lockdowns strongly limit young people's opportunities for face-to-face peer interaction, thus hampering their development

of friendships and avenues for exploration. On the other hand, young people may also thrive during the lockdowns as they can avoid school bullying and benefit from reduced commuting time. Additionally, students who are confident in their abilities and have effective time-management skills may excel in independent learning, experiencing a more personalized and focused educational approach. This cohort also faced potential challenges due to the war in Ukraine while they were making their transition into upper-secondary education and some may already have started their school-to-work transition. New challenges and potential opportunities are also emerging such as the AI revolution. Currently, its consequences are largely unknown, but these consequences may be potentially far-reaching for young people, as it will affect their educational, work and relationship practices. AI will likely change the structure of the labour market and other institutions. Pragmatically, following the 2006 cohort is a useful choice as it is still at the start of the transition to adulthood and this allows us to collect data on important determinants of this process at an appropriate age. Additionally, this cohort constituted the sample for the 2022 wave of the PISA (Programme for International Student Assessment) survey. For those in the ELSY cohort who also participated in PISA, we can therefore enrich ELSY with PISA data via data linkage. In short, the longitudinal mixed-methods design of ELSY bridges the divide between qualitative and quantitative research methodologies and promotes the use of mixed methods to examine youth transitions from a life-course perspective. It enables the generation and analysis of information and insights into young people's pathways through education and employment over time that may be missed by utilizing only one research design. By doing so, ELSY will provide valuable insights into the patterns and determinants of youth transitions at micro-, meso- and macro-level, making substantial contributions to both scientific and policy discussions.

In the next chapters, we will outline how ELSY is designed. In Chapter 2, we will introduce the theoretical framework that guides the conceptual design of ELSY as well as the content of its instruments. In Chapter 3, we will present the main components of the design of ELSY, how they are interlinked, and how they are spaced in time. Chapter 4 will focus on key methodological choices made in relation to the different facets of ELSY. The data management plan, addressing data protection, privacy on the one hand, and transparency on the other, is outlined in Chapter 5. Finally, Chapter 6 delves into the societal and scientific impact of the study, including strategies to disseminate key findings to stakeholders.

2. Theoretical framework

In this Chapter, the theoretical framework that underlies ELSY is presented. In section 2.1, we will briefly discuss the life-course approach that provides the theoretical framework for ELSY, with a focus on understanding the transition to adulthood. In section 2.2, the conceptual model that is central to ELSY is introduced.

2.1 Life-course approach

The theoretical framework of ELSY draws on the life-course paradigm (Elder, 1994; Mayer, 2009). This paradigm suggests that individual life courses evolve according to (1) individual aspirations and abilities (agency), (2) earlier experiences in life (biographical time), (3) the networks of which one is part (linked lives), and (4) the societal context (historical time). In order to study the transition to adulthood in Estonia, it is key to focus on the interdependencies between macro-, meso- and micro-levels. Macro-level contexts shape the opportunity structure in which individuals are embedded (Blossfeld & Blossfeld, 2023). Given the opportunities as well as constraints that they are facing, individuals plan and make decisions regarding life-course transitions. How well people can navigate and make strategic planning under certain macro-level contexts depends on their agency, which includes individual aspirations, resources and restrictions (Hitlin & Elder, 2007; Sánchez-Mira & Bernardi, 2022). Individual agency links the macro-level contexts with their life-course outcomes (Hitlin & Elder, 2007).

Societal crises, like the COVID-19 pandemic, generate macro-level events, such as school closures and lockdowns, that drastically change educational opportunities and labour market structures, making it hard for adolescents to develop agency in general (Blaskó & Schnepf, 2020; Yagil & Cohen, 2022). School closures and lockdowns can directly affect the resources young people can accumulate in their early lives (Blanden et al., 2021), making it difficult to transition to adulthood in the future. Crises and an increase in uncertainty can also impinge on the capabilities of young people to plan and make decisions regarding education transitions or labour market entry. Uncertainty management theory (Brashers, 2001) suggests that if people cannot achieve predictability in their lives, they will try to change the way they make decisions (e.g., by planning for the more immediate future rather than for longer-term goals). This may possibly lead young people to focus more on short-term goals and to delay adulthood, at the expense of long-term goals that may enhance their life chances in the long run. Recent empirical evidence on the COVID-19 pandemic has shown that young people's academic achievement deteriorated (Hammerstein et al., 2021; Zierer, 2021), and that financial uncertainty affected the ability of youth to plan for the future (Yagil & Cohen, 2022).

The transition to adulthood is strongly socially stratified (Billari et al., 2019), with large differences in the occurrence, timing, order and interpretation of events by gender, socio-economic background and ethnic or migrant background (Nisén et al., 2022; Schwanitz et al., 2021). The influence of macro-level events on individuals can be moderated by their immediate environment

at the meso-level, including schools, families, and workplaces (Werner & Woessmann 2021; Agostinelli et al., 2022). For example, school closures during the pandemic are found to mainly negatively affect the education opportunity of young people from socioeconomically disadvantaged families, resulting in an increase in educational inequality (Andrew et al., 2020; Blaskó et al., 2022).

The life-course perspective also stresses that events and experiences in one life domain can have consequences for other life domains (spill-over effects) (Mayer, 2009). Changes in the timing and occurrence of events in one domain can have a profound impact on those in other domains (Brzinsky-Fay & Solga, 2016; Van Wijk et al., 2021). Previous research has highlighted recent changes in the education and work domain for young people (Edwards & Weller, 2010; Helemäe, 2018). Young people nowadays are more likely to postpone leaving the parental home, finishing school and transitioning from school to work (Billari & Liefbroer, 2010; Buchmann & Solga, 2016). These changes have consequences on other aspects of life, including their social relationships and well-being (Buchmann & Kriesi, 2011). This in turn may lead to potential delays in reaching independence or variations in the transition to adulthood (Buchmann & Kriesi, 2011; Edwards & Weller, 2010). Rising uncertainty, due to various crises and technological revolutions, makes it even more challenging for young people to achieve financial and residential independence and to acquire a satisfactory level of social and mental health (Edwards & Weller, 2010; Schwanitz et al., 2021). For example, during the pandemic, young people are found to experience higher rates of anxiety, depression, and stress (Jones et al., 2021; Meherali et al., 2021), which may make it even more difficult to make educational transitions or school-to-work transitions. It is therefore important to examine how different aspects of life interrelate during times of uncertainty.

2.2 The conceptual model of ELSY

We apply the life-course approach to the specific research questions of the ELSY study. Figure 1 synthesizes these insights into a conceptual model of ELSY. ELSY aims to examine the process of transition to adulthood at the individual level. The transition to adulthood is usually viewed as comprising of status changes in the educational, employment and social relationships domains, as well as how they are interrelated with each other (Buchmann & Kriesi, 2011; Mayer, 2009). Therefore, although the domains of education and work are central to ELSY, what goes on in these domains needs to be understood in relation to transitions in the social relationships domain. These three domains are represented centrally in Figure 1. In the *educational domain*, we focus on educational trajectories. Educational trajectories refer to the unique and dynamic paths that individuals follow in their educational journey over time. These trajectories encompass various stages and transitions, including early childhood education, primary, basic, upper secondary schooling and tertiary education, but also beyond formal education, e.g. by participation in non-formal education. We also include education-related geographical mobility, such as studying abroad. It is important to recognize that educational trajectories can exhibit diverse patterns. Some individuals may follow rather a linear path, while others may experience detours and disruptions (Brzinsky-Fay & Solga, 2016). Moreover, some individuals may simultaneously pursue parallel

tracks, by combining work and education. In the *work domain*, we focus on the transition from school to employment as well as on the subsequent employment trajectories. Employment trajectories include job mobility, i.e., vertical mobility such as changes in occupational title and earnings, as well as changes in career paths, such as changes in industry or contract type. Spells of unemployment, inactivity and return to schooling are included as well, to capture the diversity in young people's career pathways (Mattijssen & Pavlopoulos, 2019). Finally, the *social relationships domain* includes leaving the parental home (and returning to the parental home), partnership formation, such as dating, cohabiting, marriage and break-ups, and parenthood.

Following the life-course approach (Elder, 1994; Hitlin & Elder, 2007), the trajectories within each life domain are affected by individual agency, which is based on young people's aspirations on the one hand, and the resources they have available on the other. In Figure 1, aspirations and resources are viewed as individual-level elements affecting what transpires in the educational, work and social relationships domains. *Aspirations* include specific aspirations, preferences and expectations concerning education, work and social relationships, but also more general feelings, values and attitudes that guide young people's orientation towards the future (Schoon & Parsons, 2002). Examples of the latter include feelings of economic and general insecurity about the future and opinions about what they value in life. *Resources* (or forms of 'capital') are tangible and intangible assets that young people have at their disposal to try to achieve their aspirations (Hobfoll, 2002). It includes financial and educational resources, but also social, physical and psychological resources. Although our focus is on how aspirations and resources affect what goes on in the educational, employment and social relationships domains, the two arrows in Figure 1 emphasize that this is a reciprocal relationship, as what transpires in these life domains will also lead to adaptations in young people's aspirations and to increases or decreases in their available resources.

Furthermore, young people's trajectories in the three central life domains will have consequences for their well-being (Goswami, 2012; Trzcinski & Holst, 2008). We use an encompassing concept of *well-being*, that includes not only young people's physical health situation, but also other aspects like mental health, loneliness and sense of meaning (Eckersley, 2011). Again, our focus is on the consequences of trajectories on well-being, but we acknowledge that this relationship is reciprocal, with well-being influencing young adults' educational, employment and social relationships trajectories as well (Trzcinski & Holst, 2008). In addition, it is likely that resources may have a direct impact on well-being, and vice versa. However, since our focus is on young people's trajectories in three life domains (education, work and social relationships) and how that may affect their well-being, Figure 1 only depicts the indirect influence of resources on individual well-being that is working through life trajectories in these domains.

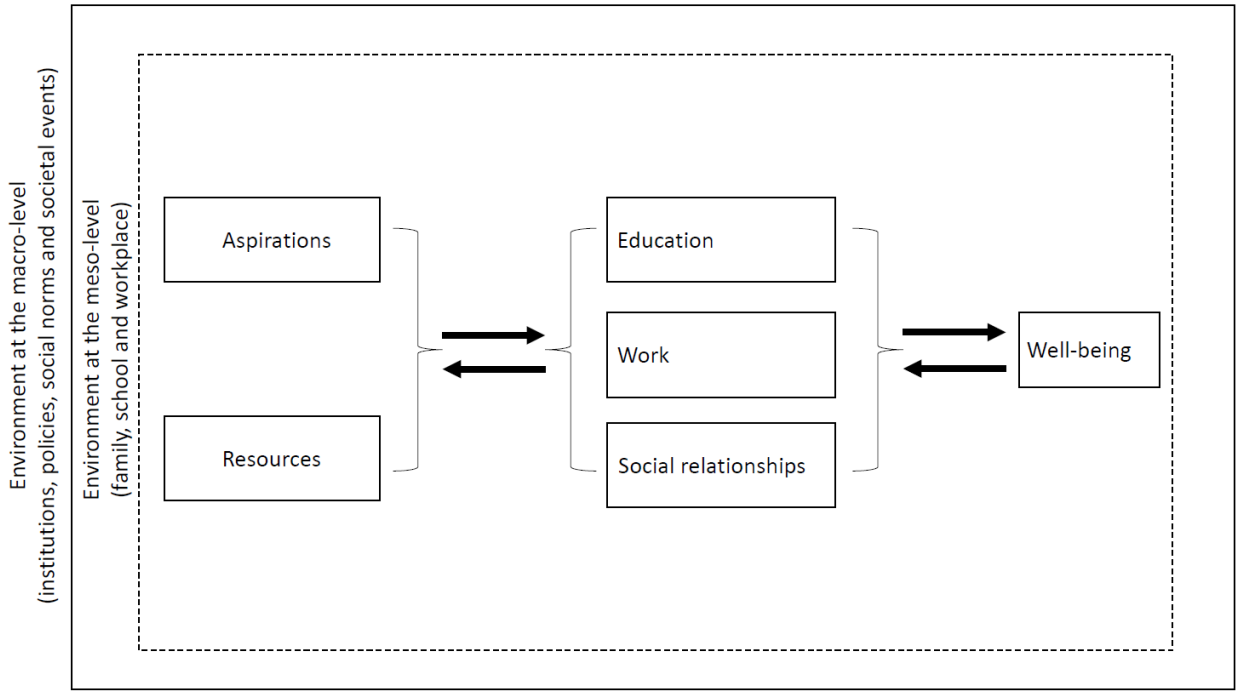


Figure 1. The conceptual model of ELSY

The individual-level processes depicted centrally in Figure 1 are influenced by young people's meso- and macro-contexts, depicted on the left-hand side of Figure 1. These contexts attest to the fact that the transition to adulthood is socially stratified (Berrington et al., 2016; Billari et al., 2019). Family members will influence both the aspirations young people have and the resources they have available to realize these aspirations (Buchmann & Kriesi, 2011). However, school and peers also constitute relevant contexts (Stearns & Glennie, 2006). Aspirations and resources depend on educational orientation individuals choose and whether it is a general or vocational one, and on the peer networks they are enrolled in (Hegna, 2014). But aspirations and resources are also influenced by societal factors related to the socioeconomic and sociocultural situation in Estonia. For example, rapid digitalization and the development of online platforms may lead more young people in Estonia to pursue careers in advanced tech industries. We may therefore observe changes in aspirations over time.

3. Research Design of ELSY

In this Chapter, we will discuss the key features of the design of ELSY. ELSY has a mixed-methods and longitudinal design. In section 3.1. we will discuss the mixed-methods aspect and introduce the data sources on which ELSY will draw. In section 3.2. we will introduce the longitudinal panel aspects of the design. In section 3.3, we will focus on the content of the information that will be collected, taking Figure 1 in Chapter 2 as our point of departure. In section 3.4, we will comment on the logic and potential of our mixed-methods design. Finally, in section 3.5, we will provide the time-line of ELSY.

3.1 Mixed-methods design

The research questions of ELSY (see Chapter 1) focus on the life-course trajectories of young adults in Estonia. These questions focus on what goes on in these trajectories, how differences in these trajectories can be explained and what the consequences of different trajectories are for the well-being of youth. To answer these questions, ELSY will draw on multiple, different but interlinked, data sources. The choice of these sources results from theoretical considerations (what is the best way of collecting data on this issue?) and from practical ones (what data is already available, what is the most cost-efficient data-collection approach?).

First, the educational and employment trajectories that young adults experience are central to ELSY. Factual information on these trajectories is available in the Estonian *registers*. We can describe the diversity in these trajectories combining data from various registries. To understand how the diversity in these trajectories comes about, what the outcomes of different educational and employment pathways are, and how recent crises may exacerbate existing inequalities, we decided to follow one birth cohort. This cohort will consist of young adults born in 2006. In Chapter 1, we outlined the reasons for the choice of this cohort. In the registers, the transition to adulthood of the 2006 birth cohort will be followed and compared to that of the preceding birth cohorts. Next, the 2006 birth cohort will be followed using *web surveys*. Web surveys allow us to collect information that is difficult to obtain from the Estonian registers. This includes both factual data, such as when young people left the parental home and their living condition, as well as subjective data, for instance on employment aspirations and feelings of insecurity. The panel design of the web surveys will enable us to study the consequences of the diversity in the educational, employment and social relationships trajectories for young people's well-being, and how well-being may further lead to various transitional practices. In addition, among cohort members that grant permission, we will link their information to results from the *PISA* (Programme for International Student Assessment) *survey*, which will improve our information on educational achievement. To understand how young people perceive these transitions and how they make sense of the transition to adulthood in times of uncertainty, we will also follow the 2006 birth cohort using *qualitative longitudinal biographical interviews* and *in-depth case studies*. Below, we will discuss all data sources that will

be used in ELSY. In section 3.3, we will further elaborate how data sources relate to each other and how we plan to integrate the use of different data sources.

3.1.1 Focus-group interviews

ELSY focuses on the life course of youth in Estonia. Therefore, we consider it crucial to establish the relevance of ELSY to Estonian youth before commencing our systematic data collection. Focus-group interviews serve as a valuable tool for this purpose. Through these interviews, our goal is not only to achieve relevance but also to actively engage young adults. The focus-group interviews aim to map their interests and relevant topics concerning their post-compulsory educational and employment transitions, as well as youth's aspirations and goals in other life domains such as social relationships and family formation. Additionally, we seek to understand their readiness and preferences for participating in such a longitudinal study, as well as their motivation to remain involved for a decade or more. In conjunction with the longitudinal design for the data collection process in ELSY, the focus groups will be consulted repeatedly. This iterative process ensures that the voice of youth is considered in preparing the sub-studies for data collection, interpreting the results of integrated analyses of data collected with different methods, and maintaining the relevance of ELSY to young people during dissemination activities.

3.1.2 Estonian registry databases

Much factual information on young adults' educational trajectories and on their occupational and labour market transitions are available in registers, which allows for a detailed description of the educational and employment trajectories of all young adults from these cohorts residing in the country. In addition, registers also contain relevant information on other concepts that are central in Figure 1. Several registers are vital in this respect. First, the Population Register provides standard information on the socio-demographic characteristics and marital or registered cohabitation status. Information on parents' occupation and education, ethnic origin and language is available, which can be used to measure the socioeconomic background of the young adults. Moreover, individual contact details, such as phone numbers, governmental email address and home address, are available in the Population Register. This information will be used for recruiting respondents for the web survey. Second, the registry of the Estonian Education Information System includes information about all individual educational transitions as well as marks of final exams. It allows tracking the educational trajectories of young adults. This Registry also collects data on school characteristics, including the type of school, the main language of instruction (Estonian or Russian), and the total number of students. Next, data from the Employment Register includes information on employment status that allows us to analyse employment stability, and on occupational grouping that allows us to study occupational mobility of young adults. In combination with the registers on unemployment and employment services such as agencies that help find employment, we can obtain information on the unemployment spells and ways of searching for a job. Table A1 in the Appendix presents an overview of the factual information relevant to ELSY in the different Estonian register databases.

Using data from the registers has a number of advantages. First, it contains information on all young adults from the selected birth cohort residing in Estonia, evading the potential selective non-response bias that is inherent in surveys. Second, by including all young adults, the resulting dataset is large, allowing for a richer description of diversity in trajectories than would be possible with survey data only. Third, register data on trajectories does not suffer from recall bias that is often apparent in surveys in which retrospective questions on educational and employment trajectories are included.

In Chapter 1, we outlined that this information will not only be compiled for the 2006 birth cohort that is central in ELSY, but also for the 1996-2005 birth cohorts. By doing so, we can compare how the transition to adulthood for our target cohort differs on key dimensions from the transition among cohorts born somewhat earlier and that are more advanced in their transition to adulthood.

However, register data are not without its limitations. The quality of the data depends on the timeliness and completeness of the data provided by educational institutions, by employers and by citizen themselves. In addition, the set of information is limited, and many of the variables used to examine precursors and consequences of these trajectories cannot be deduced from the information in the registers. This is why we need to make use of web surveys and in-depth interviews in addition to the registry data.

3.1.3 Web-based panel survey

Information on precursors and consequences of educational and employment trajectories, as well as data on these trajectories that are not available in the registers, will be collected via a web survey. Availability of registry data will significantly reduce the amount of background and socio-demographic data collected within the scope of the survey, as will be clear from the overview of data available in the registers in Table A1. The web survey will, therefore, focus on young adults' current school and work pathways and experiences, social relationships, aspirations, attitudes and values, resources, well-being, as well as uncertainties, crises and concerns for the future among young adults. The aim is to have relatively brief questionnaires per wave (20-25 minutes).

The ELSY survey will be web-based for a number of reasons. First, a web-based approach enables respondents to complete questionnaires conveniently on their computer, tablet, or mobile phone at a moment that suits them best. Second, given the almost universal digital literacy and the widespread accessibility to digital devices among Estonian youth, this approach is well-suited to the life of young adults. Third, because no interviewers are involved, it is much less costly than face-to-face or telephone interviewing. One known problem with the web survey is its low response rate. Incentives will be used in the ELSY survey to increase the response rate, as will be discussed in Chapter 4.

For the web surveys, our sampling frame will be all young adults from the 2006 birth cohort living in Estonia, for whom contact information is available in the Registers. Based on experiences in the Estonian Generations and Gender Survey, which is a web survey and is designed as a quantitative three-wave longitudinal survey on individuals aged 18 to 59 living in Estonia, we expect a 30% response rate, leading to approximately 4,500 respondents. Registry data will be used to examine selectivity of non-response and to calculate appropriate weights to allow drawing valid conclusions from this sample. The ELSY team will be in charge of the development of survey questions and format, including the design of a survey platform that is tailored precisely to our requirements. Operational aspects of the survey, such as participant outreach and carrying out of the survey, will be subcontracted to an experienced survey company. Details on the methodology of the web-based survey are provided in Chapter 4.

3.1.4. PISA survey

To understand diversity in the pathways into adulthood, information on the skill sets of young adults while still in basic school is extremely important. Data from the 2022 wave of the PISA (Programme for International Student Assessment) survey provide detailed measurements of the respondents' cognitive skills at the end of their compulsory schooling, along with detailed background characteristics. This information is available for approximately half of the 2006 birth cohort. In the web survey, respondents will be asked whether they participated in PISA, and if so, for permission to link their PISA data to the web-based survey and register data we have available on them. Upon respondents' permission, PISA data will be linked to other data available on the ELSY cohort.

3.1.5 Qualitative longitudinal biographical interviews

Subjective facets of young people's lives and experiences are equally important for our understandings of how the social world works as objectively defined facts or pathways. Qualitative longitudinal approaches enable a rich exploration of the micro-dynamic nature of people's lives – providing diachronic insight into how they unfold over time in a contemporary world of rapid social change (Neale, 2019; 2021). For ELSY, it will generate material beyond a breadth focus on concrete events, changes and transitions in young people's lives to address the depth of young people's agency in these processes, the understandings that underpin them, the strategies that young people use to make sense of the past and navigate the present and the future. Biographical interviews solicit in-depth accounts of people's lives, and are open-ended, led by the participants within certain parameters (Edwards & Holland, 2023). Participants are invited to look back across the course of aspects of their life that they consider relevant to their educational and employment pathways. The strength of a biographical approach is that it is unambiguously centred on the point of view of the ELSY interview participants, and holds a clear commitment to looking at the process of and unfolding of inter-related events in their lives.

3.1.6 Qualitative case studies

Cases are units of analysis that enable a detailed and contextualised exploration of the complexity of the substantive topic under investigation; units that hold the promise of intensive and holistic insight into features of social processes and meanings in context. Case studies are a flexible research approach focused on the particular rather than the general (Merriam, 1988; Stake, 1995). While the qualitative longitudinal biographical interviews are focused on individuals, the case studies are more collectively framed, enabling exploration of how local cultures give shape to people's lives. Pursuing case studies in this research will enable understanding of particular sub-population groups residing in specific settings, and is underpinned by systematic and critical inquiry and the context provided by findings from the other methods of data generation. These bounded case studies enable a focus on social features and processes – how and why a specific phenomenon is taking place, along with the influences and factors at play. This can be achieved through selecting cases that are typical or that stand out as unusual or that can act as a comparison with each other to generate fresh insights (Stake, 2005).

Identification of which groups and settings to pursue for ELSY case studies is dependent on outcomes from the ongoing analysis of the registry and survey data, as well as the relevant biographical interviews, and thus cannot be identified in advance. However, indicative examples of potential cases to explore include comparison of young people in, respectively, a typically affluent area and a poor area, or 'bucking the trend' cases of young people who reside in a rural area or minority ethnic youth in an inner city area who stand out as high achievers as against affluent young people in a particular area who are NEET.

The case study material will be subject to a grounded analysis (e.g. Flick, 2018), where meaning is inducted from the specifics of the data in as open a way as possible, before moving into an iterative process of categorising, selective coding and conceptualisation. The grounded analysis will enable the understanding and abstraction of how social and cultural processes work in specific context to shape young people's pathways through education and employment.

3.2 Longitudinal design

To answer the research questions outlined in Chapter 1, it is necessary to follow youth in Estonia during their transition to adulthood. This requires a longitudinal design. Such a design has a number of advantages over a cross-sectional design. First, it allows to examine changes in trajectories and changes in perceptions and evaluations over time. Young people will try to realize their aspirations, but will also adapt their ideas and strategies if faced with adversity. A longitudinal design allows the examination of such processes of adaptation. All data sources, except the PISA data and case studies, will be involved in this longitudinal design.

- Register data will be regularly updated to reflect the progress in the educational and employment trajectories of the entire youth population in Estonia. This update will at least occur every three years, in preparation of the new wave of the web-based survey. Ideally,

this occurs yearly, to more precisely track the status and possible changes experienced by young adults in their educational and employment trajectories.

- Focus-group interviews will be repeated every three years in preparation of a new wave of the web-based survey. These aim to review whether the topics that are central to ELSY still relate to young adults' interests and identify emerging topics during the transition to adulthood.
- The web-based survey on the 2006 birth cohort will be repeated every third year. An interval of three years is chosen, as, on average, a sufficient level of change (in trajectories, in aspirations and resources) is expected in a three-year period. Each new wave will consist of a base set of questions that remains the same across waves and a supplementary set of questions that will change depending on the phase of the transition to adulthood and changing challenges that young adults face.
- The qualitative biographical interviews will also be repeated every third year. As for the web-based survey, three years is deemed an optimal interval to allow for sufficient change in the lives of Estonian young adults. After three years, it will be very important to see how they interpret changes that have occurred in their lives, both in relation to earlier aspirations, their age peers and in relation to societal changes occurring in Estonia. The topic list of these interviews will be a mix of recurring themes and new themes appropriate to the life stage of respondents.
- Qualitative case studies will generally not be repeated with the same respondents on a regular basis. However, every three years a new topic will be chosen for the qualitative case studies, based on challenges and issues arising from the analysis of the quantitative and qualitative longitudinal data.

3.3 Content

A key feature of ELSY is that both quantitative and qualitative information will be collected and analysed jointly. Quantitative data will be collected via registers, the web-based panel survey and the PISA study. Qualitative information will be collected via the biographical in-depth interviews, focus-group interviews and in case studies. Decisions on which information will be collected will be guided by the research questions presented in Chapter 1 and the conceptual model, presented in Figure 1 in Chapter 2. However, the level of detail of the information will vary, depending on data collection practices in quantitative and qualitative research. For the quantitative data to be collected, we have drawn up a list of clusters of variables that are used to tap into the key concepts of the ELSY study. For the qualitative data to be collected, we have drawn up a list of topics to be discussed with participants in the biographical in-depth interviews and how these topics will be developed in the interviews themselves. We will discuss both in turn.

3.3.1 Concepts and variables to be derived from quantitative data sources

Table 1 presents an overview of key concepts and the resulting clusters of variables to be measured in ELSY. It also signifies from which data source or sources the cluster of variables is derived.

The key sources are the Estonian registers and the web-based panel survey. In addition, some data will be obtained from the 2022 PISA survey. For information derived from the registers, Table A1 in the Appendices provides a more detailed overview of which register accessed for which variable(s).

Table 1. An overview of the key concepts and clusters of variables in ELSY and the data sources from which they are derived

Key concepts and clusters of variables in ELSY				
		Registers	Web survey	PISA survey
Concept	***Cluster of variables***			
Education trajectories				
	Educational pathways and transitions	✓		
	Reasons discontinuing education and training		✓	
	Participation in non-formal education		✓	
	Participation in informal learning		✓	
Employment trajectories				
	Employment pathways and transitions	✓		
	Occupational pathways and transitions	✓		
	Information about employment (type of employment, contract, employer, job title etc.)	✓		
	Salary	✓		
	Intention to change job		✓	
	Reasons for changes in employment/occupation		✓	
Social relationships				
	Leaving parental home		✓	
	Partnership history and current status	✓	✓	
	Household	✓	✓	
	Children	✓		
	Union formation intention		✓	
	Fertility intention		✓	
Aspirations, values and attitudes				
	Education/training		✓	✓
	Work		✓	
	Combining work and personal life		✓	
	Values and attitudes towards the future		✓	
			✓	
Uncertainties, crises, and concerns for the future				
	Crises and uncertainties		✓	

	Global and national security		✓	
Resources				
	Social capital (own)		✓	
	Cultural capital (own)		✓	
	Financial situation		✓	
	Cognitive skills			✓
	Grades/exam results	✓		
Well-being				
	Health and well-being		✓	✓
	Social integration[1]		✓	✓
	Living conditions		✓	
	Life satisfaction		✓	
Background				
	Gender	✓		
	Age	✓		
	Ethnicity and mother tongue	✓		
	Migration	✓	✓	
Meso-level environment				
School characteristics				✓
	Language of instruction			
	Type of educational institution			✓
	School location			✓
	Number of students			✓
Parental family				
	Parental Family climate		✓	
	Socio-economic origin	✓		✓
	Economic capital (family of origin)	✓		✓
	Cultural capital (family of origin)			✓
	The index of economic, cultural and social status (ESCS)[2]			✓
	Parents' involvement[3]			✓

Below, we elaborate on the information mentioned in Table 1.

[1] Student's social integration test in PISA survey includes six questions: "I feel like I belong at school", "I make friends easily at school", "Other students seem to like me", "I feel like an outsider (or left out of things) at school", "I feel awkward and out of place in my school" and "I feel lonely at school". In addition, information on experience with school bullying is available in PISA.

[2] ESCS is a measure of students' access to family resources (financial capital, social capital, cultural capital and human capital) which determine the social position of the student's family/household.
The measure of socio-economic status in PISA: a review and some suggested improvements. Available from: https://www.researchgate.net/publication/341978879_The_measure_of_socio-economic_status_in_PISA_a_review_and_some_suggested_improvements [accessed Nov 15 2023].

[3] Parents' involvement in PISA is measured through three questions: "My parents encourage me to be confident", "My parents support me when I am facing difficulties at school", "My parents support my educational efforts and achievements".

- Regarding *educational trajectories*, information on educational pathways and transitions will be derived from the registers. This includes for each educational spell information on the starting and ending dates, type of schooling and curriculum, and whether students graduated. In addition, information on student loans, scholarships and grants is available. Information on reasons for discontinuing education, as well as on participation in non-formal and informal education and training will be collected in the web-based survey.
- Regarding *employment trajectories*, information on employment and occupational pathways and transitions will be derived from the registers. This includes for each employment spell the starting and ending dates, information on type of employment, type of contract, employer, job title and salary. In addition, information on unemployment status, job search activities and participation in labour market training is available from the registers. Information on reasons for changes in employment and occupation and on intentions concerning job change will be collected in the web-based survey.
- Regarding *social relationships*, the information that can be gathered from the registers is relatively limited. In particular, information on household composition is often not very accurate in the registers, as individuals do not have a strong incentive to report changes of residence. Therefore, the registers will mainly be used for information on legal marital status including marriage and registered partnership (starting and ending dates) and the timing of childbirth. The web-based survey will be used to collect information on leaving the parental home, dating and cohabiting relationships, and on intentions concerning union formation and fertility.
- Regarding *aspirations, values and attitudes*, the data will be mainly collected in the web-based survey. This includes aspirations concerning specific life domains such as aspirations concerning education and work (what do young people want to achieve, at what age?), and on combining work and personal life (work-life balance). In addition, the survey focuses on youths' perceptions of the value of education in preparing for the future and assesses attitudes towards employment prospects, economic stability, and financial planning in the context of a dynamically changing global economy and society. We will also inquire how young people are oriented towards the future and their attitudes towards equality, inclusivity and diversity.
- Regarding *uncertainties, crises, and future concerns*, the web-based survey will explore the impact of COVID-19 and the global economic situation on youth, considering factors like inflation and rising costs. Additionally, it will delve into participants' awareness and concerns about climate change, investigating its long-term consequences. The survey will also touch upon attitudes towards national defense capabilities and NATO, perspectives on geopolitical tensions, and the general sense of security.
- Regarding *resources*, most information will be collected in the web-based survey. This holds for social capital, cultural capital and financial capital. Cognitive skills can be derived from the PISA study, whereas information on educational capital is available from the registers.

- Regarding *well-being*, most information will be collected in the web-based survey, with some additional information from the PISA study. In the survey, information will be gathered on health and general well-being, life satisfaction, living conditions and social integration. From PISA, additional information on well-being in adolescence and social integration will be added.
- Regarding *general background*, information on age, gender, ethnicity and educational migration can be used from the registers. Additional information on other types of migration will be collected in the web-based survey.
- Regarding the *school environment*, most information will be collected via PISA. This holds for school location, number of students and the language instruction of the school.
- Regarding the family environment, information will come from a variety of sources. Information on family climate will be collected in the web-based survey, whereas information on the socio-economic origin and economic capital of the family of origin is available from the registers. Finally, PISA also includes some information on the parental family, e.g. regarding parents' involvement, their cultural capital and their socio-economic status.

3.3.2 Concepts and topics to be discussed in qualitative data sources

The qualitative longitudinal element of ELSY will run alongside the survey waves, operating separate from it, but coordinating and interacting with them, sharing topics and concerns so that the companion studies and their findings speak to each other. To take advantage of the strengths of a mixed-methods approach, the biographical interviews and case studies will not replicate directly the preformed education and employment questions of the quantitative survey focus in a qualitative format. Rather. the biographical interviews will focus on *perceptions*, *values*, *aspirations* and *strategies* over time as defined and understood by the participant. The focus of the case study enquiries would be to *understand the particular typical or unusual situation, asking people about their lives and understandings of their circumstances, resources* and *how they were, are, and can be accessed* and applied in the context in which they live their lives, considering challenges and opportunities, retrospectively, presently, and prospectively for young people within the context of the local cultures in which they live their lives. We will discuss how the key concepts and topics will be developed in biographical interviews and case studies.

Concept-developing in qualitative longitudinal biographical interviews

The starting point for the biographical interviews will be a graphic elicitation and open-ended discussion of a generated life chart or timeline. These are visual displays of a biography, involving the participant drawing a straight or winding line representing time passing, along which they mark significant events and aspects of their experience over the period in question (Edwards & Holland, 2013). Life charts or timelines will be collected in sections in the ELSY study, with a section on personal and family life including upbringing; another for school and employment noting key moments, continuities and turning points; a third for friends and social networks noting

continuities and changes; and a fourth for hopes and expectations with an anticipated life chart or timeline in the upcoming future. Participants mark the important people and events in their lives, which they regard as critical in having shaped where and who they are at the time of the interview. The biographical interviews are not inventories of the participants' life, but rather provide insights into which events and people are seen as particularly important at the time of the interviews. It is the conversation that the life chart or timeline generates that provides key insights for the analysis. The first qualitative longitudinal biographical interviews for wave one will cover the participant's life up to the time of the interview, with subsequent waves of interviews focusing on the period since the last interview and hopes for the future.

The qualitative longitudinal biographical interviews will be subject to time-aware analytic strategies to identify social meanings, subjectivities, events and activities, and processes. For the ELSY study, understanding of participants' own priorities, understandings and behaviours in their education and employment pathways will be enhanced by adopting a combination of two time-aware analytic methods: thematic and narrative. The advantage of this mixed-analytic approach is that different strategies can be used to explore different facets of the data to reveal their complexity; new insights can be generated and there is the potential for escape from stereotypical and stale analytic perspectives (Coffey & Atkinson, 1996). Thematic analysis (e.g. Braun & Clarke, 2021) involves the identification and reporting of recurrent, manifest or latent, themes in the data discussion of the content of life charts or timelines. This analysis involves segmenting and classifying parts of the interviewing transcript, and then linking and refining related categories within a single interview and longitudinally across waves. Narrative analysis (e.g. Andrews et al., 2013) focuses on stories told by participants to illustrate or account for aspects of their experiences and actions as they discuss what they have included in their life charts or timelines, and which have significance for themselves. Narrative analysis is rooted in the idea that much of our communication with each other is through stories that convey our understandings and behaviour. It looks at how research participants construct and sequence the stories they tell in their biographical interviews to throw lights on their experiences, interpretations and rationalisations, within a single interview and across waves to trace how these stories may shift over time and why.

Concept-developing in qualitative case studies

Methods used in these case studies could include individual and group interviews with young people identified according to their typical or unusual features. This approach enables us to trace, describe and explain the ordering of social processes exhibited and the understandings of those processes and circumstances by the case participants, along with the local cultural resources, attitudes, beliefs and values that shape them. Vignettes are especially useful for accessing these issues (Edwards & Holland, 2013). Vignettes are short stories with a purpose, about characters facing fictitious but realistic circumstances and dilemmas, and in ELSY these will be concerned with education and employment choices and outcome patterns that are relevant to the particular case-study context and enable the consideration of how local cultures may shape pathways. Case

study interviewees either individually or in groups are asked to comment on the vignette situation, involving characters living in a similar sub-population group and location to themselves: what advice they may give to the characters in the face of the dilemmas and options represented and why. The case study investigations can also utilise 'where will I be in …' accounts, where participants reflect on where they hope to be in the upcoming years, what will enable them to end up there, what difficulties they may need to overcome, again with a focus on local cultural resources, attitudes, beliefs and values.

3.4 The logic and potential of the mixed-methods design

A strong methodological backbone is provided for this study by a quantitative-qualitative longitudinal mixed-methods approach. A mixed-methods design combines the generation and analysis of large-scale patterns and in-depth processes and understandings, to allow for richer insights into the phenomenon being studied. It enables the generation and analysis of information and insights into young people's pathways through education and employment over time that may be missed by utilizing only one research design. A gold standard longitudinal study that has adopted a mixed-methods breadth and depth data generation approach to following pathways similar that proposed here for ELSY is the Future of Families and Child Wellbeing Study (https://ffcws.princeton.edu/).

The mixed-methods framework is built into both data collection and data analysis stages of ELSY, involving two 'breadth' quantitative approaches: administrative data linkage and a web-survey panel, and three 'depth' qualitative approaches: longitudinal biographical interviews, focus-group interviews and case studies. As has long been recognized (e.g. Greene et al., 1989), strengths in combining quantitative and qualitative research are that there can be multi-dimensional and holistic sets of analyses that run across and between the four forms of data generated. Illuminating mixed-data generation and data analysis that is enabled by ELSY's mixed-methods strategy involves:

- *Expansion*. Extending the breadth and range of enquiry by bringing different methods together, taking advantage of the particular strengths of each and how they can address different facets of research issues – notably for ELSY, large-scale patterns and distributions through administrative and survey data, and in-depth meanings and processes through qualitative longitudinal biographical interviews, focus groups and case studies.
- *Development*. Using one method and its results to inform another. Examples in ELSY include the use of focus-group interviews with youth to inform our research questions and the ways to approach the participants of the study. Additionally, ELSY's registry and survey data, along with biographical interview findings are employed to identify case studies for further investigation.
- *Complementarity*. Enhancing, clarifying or illustrating one set of findings with another – in particular administrative and survey data provide a context for discussion in biographical

interviews, focus groups, and case studies, while the biographical interviews and case study data provide examples for the administrative and survey material.

- *Triangulation*. Enabling corroboration and correspondence between different forms of data to confirm each other – involving synergy between administrative data, survey data, qualitative longitudinal biographical interview data, focus groups and/or case study material.
- *Initiation*. Identification of paradoxes and contradictions between findings from different sources of data that allows for the development of new perspectives – for example, the case study data may throw an entirely different light on findings from the survey.

3.5 Timeline

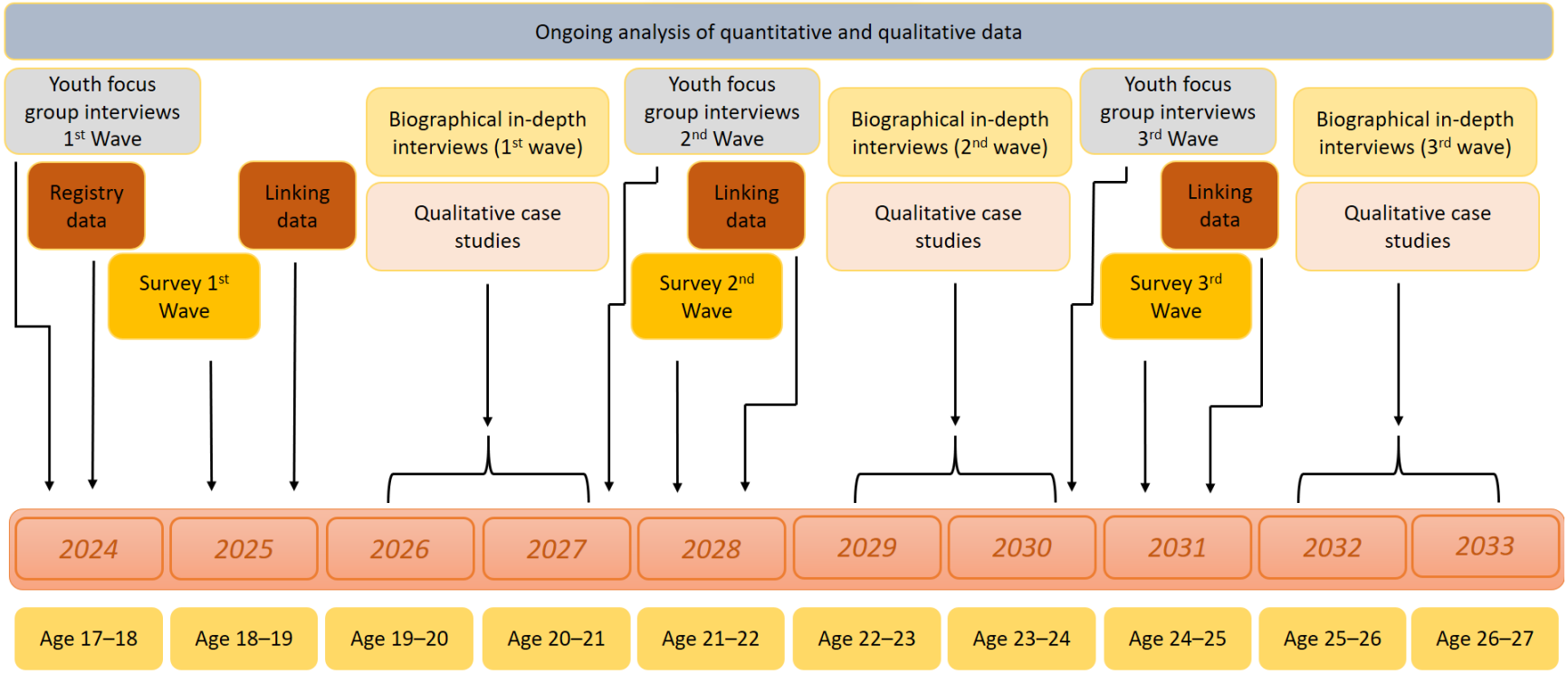
The multiplicity of data collections on which ELSY draws asks for a well-designed sequential data collection strategy. Figure 2 presents this strategy. The lower bar shows the biographical age of the ELSY cohort as time goes by. The bar above it shows the calendar year that corresponds with this age. The part above the calendar year shows the timing of the different data collections. Meanwhile, ongoing data analyses of the quantitative and qualitative data collected are essential for updating the research design and content as argued in Chapter 3, which is shown at the top of the figure. We will briefly comment on the most notable features of Figure 2.

- In 2024, we will start with the focus-group interviews. Results from these interviews will feed into the preparation of the questions and design of the web-based survey. These focus-group interviews will be repeated before the start of the second and subsequent cycles of data collections. Also in 2024, preparatory work for the analysis of register data will commence. Relevant information will be identified and a linked dataset for the analysis of the ELSY cohort, as well as for relevant comparison cohorts, will be prepared. Work on register data will be an ongoing activity during the project, as updated register data, data from the web-based survey and PISA data will be linked and analyzed within the secure access environment of Statistics Estonia.
- In 2025, the first wave of ELSY's web-based survey will be conducted. Participants are aged 18 or 19 at the time of this survey, which makes the survey ideally suited to analyze young adults' life conditions, feelings of insecurity and future life plans as they start transitioning into adulthood, as well as how these conditions, feelings and plans vary across relevant subgroups of young adults. Subsequent survey waves will be planned in every third year to track the changes in aspirations and attitudes over time.
- In 2026, the longitudinal in-depth study will start. These biographical interviews will allow the articulation of young people's own views on the challenges in their transition to adulthood, and about factors that might facilitate or hamper this transition. The biographical interviews will also be conducted every third year to study how young people interpret changes in their personal lives in relation to the societal context.
- In 2027, a first qualitative case study will be performed. As with the in-depth biographical interviews, a purposive sample will be drawn from the participants in ELSY's web-based survey. The topic of this first qualitative case study will be decided based on the analyses

of the web-based survey and register data. Every third year, we will conduct case studies to tackle pressing issues at the time and target specific groups that are shown to be more marginalized based on data analyses.

- In 2028 to 2030, a second cycle of data collection will be conducted, with focus-group interviews conducted at the end of 2027, the second wave of the web-based survey fielded in 2028, the second wave of the in-depth biographical interviews in 2029 and a new qualitative case study in 2030.

Figure 2 Timeline of data collections and operations within ELSY



4. Methodology

In Chapter 3, the central features of the ELSY research design were presented. In it, we discussed the different aspects of our mixed-methods longitudinal approach. We also presented the content that will be collected in the different modes of data collection and the overall timeline of ELSY. In Chapter 4, we will present the more practical aspects of the methodology undergirding ELSY. In section 4.1, we will discuss our sampling strategy, in section 4.2 our incentive strategy, whereas our strategy to retain respondents in the sample will be elaborated in section 4.3.

4.1 Population and sampling for ELSY

ELSY will follow persons born in 2006 who are residing in Estonia on the 1st of January 2025. Sampling will take place in three stages, following the temporal logic outlined in section 3.1.

4.1.1 Step 1: Recruiting focus group participants

The main aim of the focus groups is to acquire input from those who make up the target group on both the topics of ELSY and its design. For that reason, we will approach young adults born in 2006 from a number of different socio-economic backgrounds, genders and language groups. We will organize two focus groups, one for young individuals with an Estonian background and one for young individuals with a Russian background. This will allow us to explore similarities and differences in their respective views on the issues.

4.1.2 Step 2: Register data

The register data enables the study of the whole population of the ELSY cohort. It is expected that around 14,000 persons born in 2006 are residing in Estonia on 1 January 2025. In our analysis of register data, they will all be included, allowing a detailed description of their educational and employment transitions and trajectories across the transition to adulthood. In addition, their trajectories will be compared to those of birth cohorts 1996-2005.

4.1.3 Step 3: Sampling for ELSY's web-based survey

Response rates in surveys have decreased in the last few decades. As people are becoming less willing to participate in social science research, a large overall sample is needed to achieve a sufficiently large realized sample. For ELSY, an additional reason to start with a large overall sample is the need to counteract attrition across panel waves and the need to have sufficient respondents for detailed subgroup analyses.

Based on recent response rates in youth studies and other sample surveys in Estonia, we anticipate a response rate for the first wave of the web-based survey of approximately 30%. Given this low

response rate, we plan to invite the whole population of persons born in 2006, residing in Estonia on 1 January 2025. We will invite everyone to participate for whom we have personal contact information (email address, telephone number, or home address) available in the population register. If 30% of these approximately 14,000 persons would participate, this would lead to a realized sample of approximately 4,200 respondents in the web-based survey.

Recruitment will follow a stepwise strategy. First, sample members will be contacted via self-reported email addresses available in the population register or via the ID-code-based official email address created by the state administration. We will proceed with at least two rounds of email reminders. Subsequently, an invitation letter will be sent to home addresses available in the population register. Finally, telephone numbers will be used to reach out to sample members who did not respond to the call for participation in ELSY sent via email or by post. Those sample members will be called or (if they cannot be reached) phone messages with a link to the survey will be left behind on their device.

An advantage of using the register as the sampling frame for the ELSY survey is that one has extensive information, both on participants in the survey and on non-participants. This will allow a detailed analysis of non-response patterns, increasing our understanding of the causes of non-response and the potential biases introduced by non-response. In addition, this information will allow the construction of post-stratification weights that will enhance the representativity of the survey data for the whole Estonian population born in 2006.

4.1.4 Step 4: Sampling for ELSY's biographical in-depth interviews

Following the research design discussed in Chapter 3, we will use purposive sampling techniques for the biographical in-depth interviews, sampling from the participants in the ELSY web-based survey. We draw the sample for the biographical interviews based on what we know from previous research on youth and Estonian society about the key individual characteristics, such as gender, ethnicity and educational attainment, that can contribute to differential pathways among young people. Previous research generally shows that certain groups of young people, i.e., ethnic majority youth and youth with higher socio-economic parental backgrounds have better educational outcomes (Tire et al., 2023), achieve higher levels of educational attainment (Lindemann & Gangl, 2020; Helemäe et al., 2021) and experience a better school-to-work transition such as shorter job searching period, better first job etc. (Lindemann, 2014), leading to an accumulation of advantages in later life stages (Saar & Helemäe, 2017). By purposefully interviewing people from different groups and comparing their narratives and interpretation of their life experiences, we can explore the underlying mechanisms that lead to the variation in young people's pathways by those individual characteristics. We aim at 60 interviewees in wave 1. It is expected that this allows us to retain sufficient participants in wave 2.

4.1.5 Step 5: Case studies

As discussed in Chapter 3, sampling for the participants for the ELSY case studies depends on outcomes from the ongoing survey data and the relevant biographical interviews, thus cannot be identified beforehand. In line with the indicative examples of potential cases that may be particularly vulnerable, we propose using the principle of extreme case sampling (Creamer, 2018). For example, cases can be selected on the basis of socio-economic criteria (e.g., focus on marginal or in some other sense interesting groups), or based on significant specificities in the experiences or trajectories of youth, that stand out in earlier analyses within ELSY. Approximately 30-40 personal semi-structured face-to-face interviews are planned per case study.

4.2 Strategy for sample response and retention

Developing a robust strategy for recruitment and sample retention is crucial for the design of ELSY. Previous research on survey participation generally shows that young people are less likely to participate in surveys than others (Mindell et al, 2015; Fan & Yan, 2010). Web surveys also have a lower response rate compared to face-to-face surveys (Fan & Yan, 2010). As ELSY will target the youth population and utilizes a web-based survey to collect some key information. It is crucial to have a well-developed sample recruitment and retention strategy. Only in this way we will be able to realize a large sample size at the baseline wave and maintain a sufficiently large sample size for follow-up waves.

Four common strategies to enhance respondent participation and retention over an extended period employed in longitudinal studies can identified: *barrier-reduction*, *community-building*, *follow-up/reminder*, and *tracing* (Teague et al., 2018). We will use these four strategies collectively in ELSY to mitigate attrition, ensure the continued participation of study subjects, and maintain the integrity and validity of longitudinal study data over time.

Barrier-reduction involves providing young people with various opportunities to participate in surveys and qualitative research, minimizing obstacles and challenges that participants may face in engaging with the study. For the quantitative component of ELSY, a key feature of the web-based survey is its compatibility with multiple devices, allowing participants to complete it on a PC, laptop, tablet, or mobile phone. For face-to-face interviews in longitudinal biographical studies or qualitative case studies, respondents can choose between different locations (respondent's home or workplace, university premises, or public spaces like cafeterias) for participation. If needed, transportation costs will also be covered. If, due to unforeseen circumstances, meeting in person is not possible, online interviewing will be considered.

Community-building will be integral to all the planned sub-studies for data collection in ELSY, whether using qualitative methods or web surveys. The objective is to cultivate a sense of belonging and commitment among participants by fostering a positive and supportive environment. This will be achieved through regular communication via email, the ELSY webpage, and social media accounts. The communication channels will be chosen and designed taking into

account the preferences of youth themselves, which will be explored during the first round of focus group interviews. Via these electronic channels participants will receive feedback on the study's progress, insights into its results, and recognition of their contributions. Additionally, participants will receive printed leaflets with ELSY results and cards with seasonal greetings at their postal addresses. The goal is to ensure that all participants feel valued and connected to the study.

Follow-up/reminder is an important strategy for sample recruitment at the beginning of each substudy, but in longitudinal studies it also serves as a way to reinforce their commitment in the longer perspective and reduce the likelihood of dropouts. During the web survey waves, the reminders will be sent either as an email or a text message, or the participants are contacted by phone. Similarly, the participants recruited for qualitative studies (focus groups, biographical interviews, case studies) will be reminded of the interview time and place before the interview takes place.

Tracing involves actively searching for participants who have participated in the study but are not responsive during subsequent waves. Reasons for non-responsiveness may include relocation, changes in contact information, or other challenges in locating them. To locate and re-engage participants, we will employ additional contact methods, such as reaching out through social media or using alternative contacts provided by participants during the initial stages of the study. Additionally, we may contact their parents or other household members whose contact information (home address, email, phone number) is linked to the respondent and available in the Population Register.

In addition to these four commonly used sample response and retention strategies, we will also use incentives to assist sample response and to mitigate attrition. Due to restricted funding, which prevents us from distributing incentives to the entire sample, we will develop a targeted incentive scheme. Drawing upon insights from existing survey-methodology literature (Stoop et al., 2010) and the experience of the Estonian Generations and Gender Survey, our approach will involve strategically targeted partial incentives. For the web survey, we will use a lottery incentive conditional on survey completion. For the in-depth interviews, focus groups and case studies, we will offer all participants a small token (e.g. cinema voucher, supermarket or bookstore gift card etc.) as a gesture of our appreciation.

5. Data management plan

In this Chapter, the data management plan of ELSY is presented. It consists of three parts. In section 5.1, the overarching ethical principles guiding ELSY are presented. The general behaviour of the researchers involved in ELSY are outlined in this section. In section 5.2, the way personal data are processed and protected are described. In section 5.3, we outline the FAIR principles and how we apply these in the context of a complex study like ELSY, that combines data from multiple data sources.

ELSY is an innovative longitudinal mixed-methods study that collects a wealth of information on young people's lives over time. Our central concern is the data that is provided by participants is stored safely, and that participants will be made aware and can exercise all their rights related to privacy and data handling and removal granted to them by national and international regulations. In addition, arrangements have to be put in place that allow fair, anonymous and secure sharing of research data among scientists. The terms of this data management plan are designed to safeguard these rights of study participants and research scientists.

5.1 Ethical principles

In preparing and carrying out ELSY, all data collection, storage, treatment and publication will strictly comply with the relevant national, EU and international legislation, including the standards in research ethics set out in the Estonian Code of Conduct for Research Integrity, the Charter of Fundamental Rights of the European Union, the European Charter for Researchers, and the European Convention on Human Rights and its Supplementary Protocols. Particular attention will be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection.

The study will follow the main principles, regulations and guidelines of research integrity and good research practice in general (incl. intellectual property issues) as described in the European Code of Conduct for Research Integrity (ALLEA, 2023, p. 5) which stipulates:

- reliability in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources;
- honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full, and unbiased way;
- respect for colleagues, research participants, research subjects, society, ecosystems, cultural heritage and the environment;
- accountability for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider societal impacts.

In order to maintain confidentiality, minimize power dynamics and prevent potential harm to participants, the research team will have the appropriate training, qualifications and experience to apply the following ethical guidelines during the project:

a) For obtaining informed consent, great efforts will be made to explain to participants the purpose of the study, the potential benefits and risks, and the participant's right to withdraw from the study at any time. Given that this is a study among young people, researchers will make sure to use age-appropriate language and methods to facilitate understanding, and to ensure that young people have the opportunity to ask questions.
b) All participants are handled with respect and care and protected from any potential harm arising from this research. The research team will make every effort to avoid any discrimination based on age, disability, gender, sexual orientation, social class, ethnic origin, culture and atheism/religion of participants. All efforts will be made not to compromise participants´ physical and mental health, safety and dignity, both during the research and as a long-term consequence of the research. Participants will be provided with contact information of potential support systems to which they can turn in case of need.
c) No participant will be pressured to participate in any of the sub-studies of which ELSY is comprised, and participants will be provided with an option to withdraw their participation at any time. In sub-studies that involve face-to-face interaction, participants will be able to voice their opinions freely without any form of external coercion. Any stored data collected from participants will be made available to the participant, or deleted from all databases and not used for further analysis upon request.
d) The data will be analysed only at the aggregate level and findings will be made public only in personally non-identifiable format. Participants' confidentiality will be guaranteed by using pseudonyms or codes in transcriptions. If quotations from interviews are used in publications, additional attention will be paid to secure that contextual information cannot disclose the source of the quotation.

5.2 Personal data and its processing

Processing of information relating to identified or identifiable natural persons will be conducted in full compliance with the Estonian Personal Data Protection Act and the European General Data Protection Regulation (GDPR).

According to the principle of "data minimisation", personal data collection will be limited to what is directly relevant and necessary to accomplish the specified purposes of the study. Directly identifying personal data (name, contact information and ID code) will only be used for sample recruitment and maintenance. In addition to ordinary personal data, special categories of sensitive personal data distinguished in the GDPR and defined by the Estonian Data Protection Inspectorate (like social welfare data, and information on mental health) will be collected and analysed. Collection and usage of such personal data will only start after approval from the Ethics Committee of Tallinn University has been acquired.

5.2.1. Informed consent

The project will follow the key principles of voluntary participation, anonymity and strict confidentiality with regard to the collection, treatment and processing of data (contact, survey and qualitative data) gathered during this project.

Voluntary consent to take part in any of the non-register-based sub-studies of ELSY is obtained from each participant on the basis of an informed consent form which will be specific and unambiguous with adequate and appropriate information about the research purposes, data processing rules, anticipated consequences and participants' right to withdraw consent anytime. As the primary data collection will involve respondents aged 18 and over, consent of parents or legal guardians is not required.

The informed consent for participating in the web-based panel survey will be asked from survey respondents on the web-based survey platform at the beginning of the questionnaire via clicking a button. If it turns out that signatures are needed for informed consent, participants will be presented with a choice between different modes for digitally signing the consent form (including ID-card via the DigiDoc3 program or in the DigiDoc Portal, Mobile-ID, Smart-ID, and Adobe e-sign). The formulation of the consent for participation in the longitudinal study will include consent for recontacting during the subsequent survey waves. The informed consent information will be securely held in password-protected repository on a secure server of the Institute of International Social Studies (IISS) at Tallinn University.

In addition, informed consent is also needed for linking participants' data from surveys to their data available in different Estonian national registries and to data gathered by PISA studies. This consent will be handled in the same way as the one for general informed consent for the web-based panel survey (see above). The consent form for data linking will specify the purpose and data processing rules of such linking and list all the registers from which a person´s data will be used (i.e. Population register, Estonian Education Information System, Examination Information System, Employment register, Unemployment register, Social Services and Benefits Registry).

All participants in the biographical in-depth interviews, focus groups and in the case studies will be asked to sign a paper consent form in two copies before the data collection starts. When conducting interviews, we will go through a process of debriefing as a standard practice in research with human subjects for discussing and dealing with any sensitivities that arise during the interaction. Signed consent forms on paper will be stored in the locked storage room at the IISS.

5.2.2. Anonymization/pseudonymization

Multiple data protection measures are applied to avoid any potential misuse of sensitive data. Collected data will be anonymised for analysis by a qualified and authorised person responsible for data processing in the study. All personally identifiable information will be stripped from the survey datasets provided for analysis and will be kept in a separate password-protected document in the secured server of IISS with authorized access only. All researchers working with the data sign the confidentiality agreement. All research findings will be made public only at a personally non-identifiable level.

The confidentiality of participants in qualitative sub-studies will be guaranteed by using pseudonyms and codes in the transcriptions. If requested by the participants, all the topics they consider to be sensitive will be adequately obscured in the analysis/presentations of results. In

addition, the research team is trained to search for potentially sensitive/harmful information, and will obscure sensitive contextual information, even if participants do not indicate that the materials are confidential. All efforts will be taken to ensure proper management and removal of such data. In using quotations, we will make sure that it will not be possible to identify individual participants in any publication of the research results.

5.2.3 Further processing of previously collected personal data

ELSY involves analysis of administrative data available in different Estonian registers (i.e. Population register, Estonian Education Information System, Examination Information System, Employment register, Unemployment register, Social Services and Benefits Registry). According to national legislation on administrative register data from Estonia (the Database Act, last amended in 2007 and incorporated in the Public Information Act), individual-level consent is not required for the research use of this information. For using registry data, a research proposal will be submitted to the respective data provider together with an ethics approval by the Ethics Committee of Tallinn University. If the registry administrator evaluates the personal data involved to be sensitive, the research team will apply for consent from the Estonia Data Protection Inspectorate. The administrative database provided for analysis will only include anonymised data that will not allow identification of individuals in compliance with the EU General Data Protection Regulation.

In addition, combined datasets created by linking existing administrative data from different national registries will be analysed in anonymised format. The linking will be conducted by Statistics Estonia based on an application submitted by the research team accompanied by approval from the Ethics Committee of Tallinn University. The administrative database provided for analysis by Statistics Estonia via VPN or on-site will only include anonymised data that will not allow the identification of individuals in compliance with the GDPR.

5.2.4 Data storage

ELSY produces a wealth of data sets on young people that should be properly stored and for which secure access has to be arranged. Combining our longitudinal qualitative and quantitative data collections result in the following data sets collected and created during the project:

a) administrative datasets that include either extracts from one register or a combined database of data taken from several registers;
b) datasets from web-based surveys;
c) transcripts of biographical interviews, personal semi-structured interviews and focus groups;
d) datasets created by linking ELSY survey data with data from different registers;
e) datasets created by linking ELSY survey data with PISA data carried out in Estonia in the year 2022.

All collected data will be processed, consistently systematised and organised by naming and structuring the files and folders accompanied by proper documentation and metadata during the project.

Raw data from surveys and qualitative studies carried out during the project will be stored in a password-protected repository on the secured server of the Institute of International Social Studies (IISS) at TLU. The server is located on a hard disk of a computer only used for scientific data storage (not used for any other tasks than data processing and archiving) and situated in a separate room at IISS. Access to the password-protected folder of the project´s data will be granted only to the PI and research team members carrying out data processing. Raw data will be stored without the attribution of personal details. All personally identifiable information will be stripped from the datasets (both survey datasets and interview transcripts) and will be kept in a separate password-protected document in the secured server of IISS.

Cleaned, organised and anonymised datasets based on the raw data from surveys and qualitative studies are stored in a data repository OwnCloud and made accessible to the members of the research team. OwnCloud is a scientific data storage repository located on the TLU server and secured on the basis of a separate license agreement, which meets all GDPR requirements.

For those participants who have provided consent to link their data, databases which link collected survey data to administrative data will be created by Statistics Estonia (SE) and will be stored on the secure servers of SE. Research team members will have access to the data via secure connections (VPN) or by working with the data at the safe centre at the SE.

For those participants who have provided consent to link their data to the PISA study, datasets which link original survey data to datasets created by PISA study will be created and stored by the Ministry of Education and Research responsible for coordinating PISA studies in Estonia. Research team members will get access to the data for analysis according to the Ministry´s data management rules and requirements upon a respective collaboration contract signed beforehand.

5.3 FAIR principles

FAIR, the view that research data have to be Findable, Accessible, Interoperable and Reusable, has become one of the cornerstones of Open Science (Wilkinson et al., 2016). ELSY subscribes to these principles. However, turning these principles into practice is challenging for a number of reasons. First, ELSY combines multiple data sources, some of which are too sensitive to make publicly available. Registry data and PISA data are not collected by ELSY itself, and their linkage to ELSY data is only assured through agreements with Statistics Estonia and the Ministry of Education and Research. Analysis of ELSY data in combination with these data sources is only possible within the secure storage and analysis environment provided by Statistics Estonia. Second, the quantitative longitudinal data to be collected in the web surveys can be curated and submitted to a data archive fairly easily. However, analysing this data as stand-alone data is not very useful, as limited background information is collected in the survey, as this will be obtained from the registers. Thus, analysing the survey data is mainly interesting in combination with

information from the registers, and access to the secure environment of Statistics Estonia is needed for this. Third, making qualitative data publicly available is very challenging as the amount of time (and money) that has to be spend on it is very considerable, in particular regarding the anonymization and documentation of such data. Internationally, very inspiring examples of archives functioning as Digital Repositories allowing the curation of qualitative data exist (e.g. the UK Data Archive at the University of Essex[4] and the Timescapes Archive at the University of Leeds[5]). A comparable example in Estonia is yet lacking. Finally, an overall restriction on plans for curation is the limited budget that is estimated to be available for ELSY.

Given the parameters outlined above, the current approach to apply the FAIR principles to ELSY consist of the following:

- Anonymised datasets from the original web-surveys and pseudonymised interview transcripts will not be made public, but will be available upon valid request to the data owners at Tallinn University, after signing a collaboration and confidentiality agreement.
- Information needed for reusing data from surveys and qualitative studies will be shared with the research community via the scientific data repository DataDOI. Metadata and documentation of the study, including research instruments, detailed description of the methodology, sample structure etc, which will be uploaded and made public via the DataDOI, will help secondary users to find, understand, and re-use the data upon request.
- Linked data cannot be made public. Interested researchers can contact the research team at Tallinn University to discuss collaboration and facilitate the application procedures and data protection rules of Statistics Estonia and the Estonian Ministry for Education and Research.

Given the costly nature of curating the data, the project team will explore funding opportunities to improve upon the procedures outlined above and to broaden the (re)usability and accessibility of the different types of data collected within ELSY.

[4] https://www.data-archive.ac.uk
[5] https://timescapes-archive.leeds.ac.uk

6. Impact

In this Chapter, the societal and scientific impact of ELSY are discussed, as well as the dissemination strategies by which these are achieved. In section 6.1, we discuss the potential societal impact of ELSY. The dissemination and other strategies that are used to realize this impact, are outlined in section 6.2. Finally, in section 6.3, we pay attention to the scientific impact that ELSY is expected to generate.

ELSY aims to provide researchers and policymakers with a unique perspective on the lives of Estonian youth. The distinctiveness lies in its mixed-methods design, involving the creation of an extensive longitudinal dataset that integrates a variety of quantitative and qualitative data sources.

The analysis of registry data covering different birth cohorts born between 1995 and 2005 allows for the identification of evolving trends, patterns and changes over time within the various educational and career pathways that youth navigate. Starting from registry data, the main aim of ELSY is to follow the 2006 birth cohort as they transition into adulthood. By linking the registry data of this cohort with data on this same cohort from the 2022 PISA survey, regular web-based surveys, and by incorporating retrospective and prospective information gathered from the in-depth biographical interviews, focus groups and qualitative case studies, the study will provide an unprecedented level of breadth and depth. This approach captures the multifaceted aspects of young people's lives and also makes it possible to explore how past actions, aspirations, resources, and changing contexts shape their lives over time.

While the primary focus of the study revolves around educational and employment trajectories, ELSY will also explore a broader spectrum of topics such as health, well-being, private life, and social interactions. The overarching goal is to uncover how experiences in one aspect of life influence other life domains.

6.1 Societal impact

The combination of multiple data sources, collected and analysed through the proposed mixed-methods design provides invaluable insights for young people themselves, the general public and evidence-based policy making across different domains, including in the field of education, housing, family, well-being and the labour market. Given the hierarchical nature of policymaking, where decisions at the national level influence subnational policies and their implementation at the level of communities and even specific organizations, the project results will have relevance for policymakers and practitioners at both the national and local levels.

Following the transition processes of young people within a representative cohort born in a specific year (2006) allows us to understand the various choices these young people make in response to complex social, economic, and societal changes. Through a mixed-methods approach, combining quantitative longitudinal data with qualitative insights, the study aims to elucidate not only what happens to young Estonians, but also how they experience this and what kind of strategies they develop to cope with uncertainty and adversity. This nuanced understanding involves recognizing how different life domains influence each other, shedding light on the challenges that youth face during various life phases as they transition into adulthood. Armed with this information, policy

makers can assess the key challenges that young people face. In addition, information on who successfully navigates the transition to adulthood and who does not, provides them with informed practical guidance for supporting young people in their learning and working careers. These investigations not only position the experiences of Estonian youth as a case study from a research perspective but also as a valuable resource for policy application and interventions. This positioning sets the stage for future studies that delve into these critical aspects.

The linkage of ELSY to the PISA 2022 dataset enables the analysis of the relationship between achievements at age 15 and subsequent educational pathways and labour market outcomes. This will strengthen the knowledge base for enhancing collaboration between education and labour market policies in supporting smoother school-to-work transitions. More specifically, such a study can facilitate an understanding of the long-term effects of educational achievements within various learning contexts and the parental home environment, influencing both educational and occupational aspirations.

Moreover, thanks to its longitudinal design, ELSY can demonstrate the effects of learning environments and facilitators on educational and occupational outcomes, as well as the impact of various activities on actual transitions, progression to further education and/or the labour market, and possible subsequent transitions. Another added value of ELSY is that it provides data crucial for developing policy measures aimed at reducing the number of NEET youth, preventing dropouts from education, and fostering a more balanced family and work life for young individuals.

Furthermore, the survey places a notable emphasis on mental health and feelings of insecurity, offering valuable insights into the psychological well-being of young adults. Utilizing this information can guide the establishment of support systems to address mental health challenges during this crucial life stage. Through case studies conducted on selected youth groups, the study strives to explore diversity in life courses, thereby illuminating issues associated with social inclusion, equity, and diversity. This aims to identify potential barriers and inequalities that different youth groups may face during their transition into adulthood.

6.2 Dissemination and stakeholder involvement

To maximize the impact of the research outside academia, the team foresees the use of different types of targeted dissemination activities to build and sustain a well-functioning communication arena for cooperation between different stakeholders in the youth field. We believe that one of the best ways to make sure that the study reaches out to young people themselves and to relevant policymakers and practitioners in the field is to make sure that they are actively involved throughout the study since its preparatory phases.

Dissemination is an integral component of ELSY's research design, and the Policy Network of ELSY will be created as a key instrument within our dissemination strategy. The Policy Network, initiated during the YouthLife project while preparing the research design for ELSY and subject to further expansion in subsequent years, includes decision-makers from various political and governmental bodies:

a) Decision-makers and officials in governmental organisations engaged in research funding, such as representatives of the Estonian Research Council, members of the commission of the Estonian Research Infrastructure Roadmap, and research coordinators in different Ministries.

b) Key policymakers and public administrators in fields related to youth well-being and transitions across various life domains. This includes representatives from the Ministry of Education and Research, Ministry of Social Affairs, Ministry of Culture, Ministry of the Interior, Ministry of Defence, Ministry of Economic Affairs and Communication, and Ministry of Climate.

However, it is important to broaden the scope of this Policy Network. A major group of stakeholders that should be included are organizations supporting young people's transitions and well-being such as the Estonian Youth Board, Estonian Teachers' Union, Estonian Association of Youth Workers, and Estonian Association of School Leaders). Another major target group for dissemination activities consist of youth organizations focusing on youth involvement, including the Estonian National Youth Council, the Estonian Union of Students, and Youth councils operating in different Estonian regions. Finally, a crucial target group of ELSY´s dissemination strategy is youth themselves. ELSY actively involves young people both in the preparation of different data collection rounds for its sub-studies, as well as in debates on results. During the launch of ELSY in 2024, focus group interviews will be conducted with young people belonging to the ELSY cohort. These youth will be regularly contacted throughout the study's lifespan through focus group interviews (in 2027, and 2030 as shown in Figure 2) and via the study's webpage and social media accounts.

The dissemination strategy for ELSY aims to foster knowledge co-creation and sharing with stakeholders. Stakeholders will be invited to participate in individual and organization-based group consultations, thematically specialized workshops, as well as public workshops and press conferences, depending on the purpose of dissemination.

During individual and organisation-based group consultation meetings and thematic workshops, the primary objective is to gather stakeholders' experiences, knowledge, interests, and concerns to tailor instruments and analysis frames for different sub-studies, fostering resulting policy recommendations based on scientific evidence and practitioner experience. These dissemination events will precede the start of each ELSY cycle for repetitive sub-studies (focus groups, surveys, and biographical interviews) in 2024, 2028, and 2031.

Public workshops and press conferences, aimed at presenting and discussing the results, will be organized at the end of each ELSY cycle (in 2027, 2030, and 2033). In addition to these events, the research team will produce brief policy-relevant publications on key results from ELSY published through various channels, including email lists targeting different stakeholder groups and the project website, social media accounts, etc. Research results and their potential policy implications will also be disseminated through articles and interviews published in popular blogs and mass media.

Finally, dissemination channels such as stakeholders' email lists, webpages, and social media accounts will be used to provide updates on the study's progress, announce upcoming public dissemination events, and inform about published research results.

6.3 Scientific impact

This study aims to advance the current state of research on youth transitions through innovative contributions. In our view, the major contribution is that the project seeks to bridge the divide between qualitative and quantitative research methodologies and promote the use of mixed methods to study youth transitions from a life-course perspective. The incorporation of registry data, web-based surveys, biographical interviews, case studies, focus groups data and PISA data provides a comprehensive and holistic understanding of the factors influencing the lives of young adults. This unique approach enables researchers to explore the complex interplay between societal factors, personal experiences, and educational and labour market outcomes, offering valuable insights into the patterns and determinants of youth transitions at individual, family, and institutional levels. Such insights contribute to both future scientific and policy debates.

Moreover, the study strives to intensify synergies between methodologically complementary research approaches and introduce innovative ways of analysing existing and new data sources. As a result, the ELSY has the potential to expand the scope of the research field, providing new knowledge on youth transitions in post-Soviet settings in the European Union, with a specific focus on Estonia.

One key contribution of the study lies in its timing, as it will explore the experiences, future aspirations, and plans of a cohort who faced the COVID-19 crisis during their early educational trajectory. This trajectory has been further disrupted by the Ukrainian war, energy crises, and economic distress. While characteristics of the learning paths of COVID-19 cohorts are likely to be explored in other national contexts, conducting this study as planned is crucial for understanding the Estonian context.

This adds to the conceptual relevance of our research findings, considering the very specific institutional contexts in Estonia. Here, school leaders and individual teachers have extensive autonomy in deciding the contents and modes of learning. After regaining independence, the Estonian education system was reformed, granting schools a great deal of autonomy and decision-making power over the organization of school life and teaching. For almost 30 years, Estonian schools have prepared their school development plans, developed school-level curricula, established a system for teachers' salaries and professional promotion, selected teachers, and supported teachers' professional development. The opportunities for schools to make decisions themselves are greater in Estonia than in most countries. Comparative analysis of the recent PISA study demonstrates that school autonomy significantly predicts pupils' educational outcomes, e.g. math test results (OECD, 2023). This view into the context of decentralized institutional settings within the wider context of crises will be conceptually important for forming any hypothesis about the impact of crises on the life course of youth in Europe.

The flexibility in the research design, allowing for the exploration of emerging issues through quickly prepared ad-hoc case studies among the survey panel respondents, ensures that the study remains responsive to the evolving nature of challenges faced by young adults. This adaptability is valuable for identifying and understanding new trends and issues as they arise.

ELSY's multifaceted evidence gathered on the Estonian youth will further support international cooperation with other research groups studying young adults' life courses. The interdisciplinary nature of the research project, integrating insights from different fields e.g. sociology, political science, demography, and social work, amplifies the potential for international cooperation and knowledge transfer.

The research team members are active at all levels of academic teaching, and they will introduce methodological approaches and results of research to the curricula through special courses for MA and PhD studies.

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Appendix

Table A1. An overview of relevant information for ELSY in the Estonian registry databases

Key concepts in ELSY	Factual information	Registers				
		Population register	Employment register	Unemployment register	Estonian Education Information System	Examination information System
Individual level						
Education trajectories						
	Educational pathways and transitions (admission, discontinuation, graduation, curriculum, etc.)				✓	
	Participation in hobby education				✓	
	Information about student loans, scholarships and grants				✓	
Employment trajectories						
	Employment pathways and transitions (type of employment, contract, employer, job title etc.)		✓			
	Occupational pathways and transitions		✓			
	Salary		✓			
	Unemployment/jobseeker status			✓		
	Job search data[6]			✓		
	Participation in labour market training[7]			✓		

[6] Job search plan data includes information describing individual's professional and job-related skills, as well as factors promoting the commencement or continuation of work: work and job experience data; data on self-employment activities as an entrepreneur; entrepreneurial experience data; education and information on the profession, competence, or occupation; language proficiency data; computer usage and software proficiency data; motor vehicle driving license data.

[7] Labour market training is provided to those who are seeking work or registered with the Unemployment Insurance Fund as: unemployed; a jobseeker with a notice of dismissal; or a jobseeker of retirement age who is not employed.

Social relationships formation						
	Partnership history and current status[8]	✓				
	Children	✓				
Resources/Restrictions						
Socio-demographics		✓				
	Gender	✓				
	Age	✓				
	Statement-based information about (highest educational level, ethnicity, mother tongue)	✓				
Migration						
	Educational migration (short-term study abroad)				✓	
Own capitals	Grades/exam results					✓
Immediate environment						
School characteristics						
	Language of instruction				✓	
	Type of educational institution				✓	
	School location				✓	
	Number of students				✓	
Parental family						
	Statement-based information on mother, father, spouse (highest educational level, ethnicity, mother tongue)	✓				
	Socio-economic origin	✓	✓			
	Economic capital	✓	✓			

[8] Marital/cohabitation status and history