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**Innovative approaches to data collection on children**

**Quality in official statistics based on reports from  
child respondents**

**Note by Statistics Norway\***

*Abstract*

Respondents between 6 and 17 years comprise a substantial part of the samples for Statistics Norway's (SSB) surveys. This sub-group has received little attention from survey designers at SSB.

Several surveys were recently redesigned from interviewer- to self-administered surveys. Some of our new surveys are developed including respondents from 6 years old. Child respondents from 12 years are instructed to answer most questions themselves. Child respondents under 12 years are encouraged to answer in cooperation with a parent or guardian. Depending on child reports like this has implications for the questionnaire design.

In this working paper, we present our analyses of how questionnaire design tailored to child respondents may affect data quality in SSBs surveys.

Our work will inform best practices and offer guidance to the international survey methodology community, on how we treat child respondents in social surveys.

The presentation will include concrete examples from several surveys for children and a series of measures taken to secure high data quality in reports from children. .

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## I. Introduction

1. SSB's focus on child respondents was initiated in 2021. Due primarily to budget constraints, several of SSB's surveys underwent a redesign from mainly interviewer administered telephone surveys to self-administered web surveys. This included the Surveys on Culture and Media consumption. Almost at the same time, a decision was made to develop a new reporting solution in an App for a new round of data collection of one of SSBs flagship surveys – the Time Use Survey. Building on these redesigns and groundbreaking development work, a new round of Living Conditions for Children is planned for data collection in the spring of 2024. These surveys have three important characteristics in common:

- They all include child respondents in the sampling frame.
- They are all web surveys.
- They all consist of predominantly behavioral questions.

All of these characteristics pose specific methodological challenges for the survey design.

2. Statistics Norway has strong traditions for involving respondents in the questionnaire development process. The case surveys were no exception. What we discovered thorough user testing of the questionnaire drafts, was crucial to the end products. In this paper, we analyze how the insight gained through qualitative user testing contributed to improvement of the survey data quality.
3. When these surveys were redesigned, an initial mapping was done to get acquainted with the existing survey design. A key discovery was that child respondents were often stepmotherly treated through their parents: that is, their responses were mediated by their parents' presence. Other important findings from this work can be summarized as follows:
  - One questionnaire version was developed to fit all respondents.
  - SSB did not prepare survey communication such as invitations to the survey specifically directed to children, all communication for respondents under the age of 15 went to the parents or guardians.
  - Information letters offered scarce guidance on if and which parts of the questionnaire should be responded to in cooperation with an adult, except an occasional sentence in the invitation letter stating that “we advise you to keep an adult nearby during completion”.
  - No specific interviewer training was offered to interviewers dealing with children.
4. According to Norwegian legislation, all persons below the age of 18, are children. This correlates with the terminology in the Convention on the Rights of the Child where everyone under the age of 18 years is referred to as children. The Norwegian Personal Data Act regulates how SSB communicate with child respondents<sup>1</sup>.
  - Under 15 years. All communication goes through a parent.

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<sup>1</sup> <https://www.ssb.no/en/omssb/personvern/dine-rettigheter-etter-personopplysningsloven> (22/01/24)

- 15-17 years. Communication is directed to the child respondent directly, but the parents receive information in advance and may refuse the participation of the child participant.
5. Our primary concern from a questionnaire design perspective are respondents under 15 years of age. This delimitation is in accordance with current best practice, as respondents above this age may be treated as adults in a survey context<sup>2</sup>. However, we split the age group 6-14 into more nuanced sub-groups. In accordance with inconclusive research, in practice we operate with the following groups when designing questionnaires targeted to child respondents<sup>3</sup>:
- 6-11 years. We encourage this age group to respond in cooperation with a parent.
  - 12-15 years. We encourage this age group to respond individually, but to confer with a parent if help is needed.

The two age groups are treated differently also in terms of how we tailor our questionnaires to target the youngest children differently than the older. In practice many projects are restricted to children 12-18 years old. Children in this age group are usually capable of completing a questionnaire without much need for supervision or guidance. Their cognitive maturity also eases ethical perspectives, as they may question adults' authority, hence are more capable of making their own decisions and less vulnerable compared to younger respondents for being exploited. For the youngest age group, we take extra care to make sure that questions are carefully crafted, considering both questions, response options and instructions<sup>4</sup>.

## II. Case surveys

### A. Culture and Media Consumption Surveys

6. The Culture and Media Consumption surveys were conducted by Statistics Norway from 1991 to 2021 as the same survey. Today, they are carried out as two separate mixed mode surveys, whereas before the transformation in 2021 it was a telephone survey. The populations in both the Cultural Activity Survey and the Media Use Survey are drawn from the Norwegian National Population Register and consists of people that are nine years and older. For practical reasons we will refer to these surveys as the Culture and Media Consumption in this presentation.
7. One of the aims of the Cultural Use Survey is to measure the Norwegian population's use of cultural institutions such as theatre, and libraries, as well as sports events. Also, Statistics Norway aims to measure the population's participation in cultural activities such as singing in a choir, acting in theatre plays, but also participation in sports. The survey is conducted twice a year every second year, for example in February and September 2023. In addition to a randomly drawn sample of 6000 individuals, in 2021 and 2023 an additional sample of

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<sup>2</sup> Socialstyrelsen 2015, Borgers 2000, Haraldsen 2002, de Leeuw 2004

<sup>3</sup> Socialstyrelsen, 2015, Gulløy and Haraldsen, 2012

<sup>4</sup> Socialstyrelsen, 2015

3000 consisting of immigrants and children of immigrants was drawn. Both samples started on 9 years. Half of the population were asked to answer in February and the other half in September. The median time of the survey interview was 10 minutes in 2023.

8. The Media Use Survey aims to measure the Norwegian population's daily use of social media, television, books and so on. The survey is conducted four times a year every year. In 2023 it was conducted in February, June, September and December. 1500 persons are sampled for each of the four data collection rounds, making the total gross sample per year 6000. The median time of survey completion was 16 minutes in 2023.
9. When SSB revised the surveys before data collection in 2021, we tried to make the questions more understandable for children, as most of the questionnaire was the same for both children and adults. We concluded that if children understood the questionnaire, then the grown-up population would do too. Cognitive interviews were conducted in order to make the questionnaire as good as possible.

## **B. Living Conditions Survey**

10. Statistics Norway has carried out living conditions surveys aimed at children regularly in the past, last rounds was in 2013 and 2020. These previous surveys are methodologically based to a large extent on questions aimed at adults. From 2020 onwards, the survey is designed to cover the topic of participation in outdoor activities and sports. For the 2020 survey, a nationally representative sample of 5 000 children aged 6–15 years was drawn. A supplementary sample of 2 500 children was also drawn in Oslo/the capital municipality. We sent out emails, letters and SMS with information about the survey to the children's guardians. Approximately 56 per cent of the gross sample responded to the survey in 2020. The data collection took place using a web questionnaire that was sent out to the respondents' parents/guardians.
11. Up to 2007, outdoor activities and sports were covered by a self-administered paper questionnaire. From 2011 onwards, the topics were included in the interview. Neither outdoor life nor sports have the same central position among the living conditions areas as health, work, housing, social relations and economy, but have nevertheless traditionally been regarded as a living conditions area. However, sports and outdoor life are important policy areas, sport and outdoor organizations receive large state fundings and is ascribed the task of promoting physical activity in the population, and youths' participation in outdoor activities and sports follows socio-cultural class lines.
12. The purpose of the thematic sections on sports and outdoor activities is to capture aspects that are important for living conditions. This means that we are primarily interested in how the activities affect quality of life, and how they are connected to other areas of living. How one spends one's free time and opportunities to participate in various forms of activities one enjoys is important in terms of quality of life. The extent to which there are social differences in participation among different groups in the population is also interesting from a living condition and policy perspective. The survey maps the type of activity and frequency.

13. We observe an increased interest in knowledge about children, and how they perceive their own lives has gained increased legitimacy among both practitioners and policy makers<sup>5</sup>. *“The increased interest for children’s living conditions and development is based on the acknowledgement that in a knowledge-based society, children’s competence is the central “capital”*<sup>6</sup>. Knowledge production about children’s living conditions acknowledging children as independent agents, requires a sound methodological base.
14. Since the 70s, the Nordic understanding of “quality of life” has developed from a pure focus on material standards, to resources. The shift in perspectives from objective material measures to non-observable measures such as resources including social relationships and access to different life arenas, was also followed by a parallel shift in methodology on child research.
15. The 2024 survey is conducted through web data collection, which for most respondents mean that they will report using their smartphones. Information letter and reminders are sent by e-mail and SMS to the parents of child respondents. This is done to secure parental consent when the respondents are children. The questionnaire itself contains various questions about what leisure and outdoor activities they take part in and the frequency of participation. The questionnaire is structured so that the children themselves have to fill in most of the questions. At the beginning of the questionnaire, there are a few questions to parents, about the parents’ participation in leisure activities, and barriers to participation. In the letter and in the form, we informed that parents should be nearby in case the respondent needed help for those who were 11-15 years old, and that guardians should assist for those who were 6-10 years old. Testing indicate that it takes approximately 10 minutes to answer the questionnaire.

### C. Time Use Survey

16. Statistics Norway have conducted Time Use surveys every tenth year since 1971. The Time Use Survey is a diary survey where respondents record what they are doing for two consecutive days. Children from 9 years old have been included in our Time Use Surveys from 2000. In 2022/23 we conducted our third Time Use Survey including children. In 2000 and 2010 we used paper diaries and telephone interview for background information but in 2022/23 we developed a web application where the respondents recorded what they did. Additionally, they answered background questions on their phone, laptop or tablet. Statistics Norway used interviewers to recruit and explain the purpose of the survey and give some technical support as well.
17. The most important element of the survey is the diary part. The respondent record in their own word what they do, where they are at the time they are doing it, and who they are with. They are instructed to record this as detailed as possible down to ten-minute intervals. In the paper diaries the diary consisted of fixed 10-minute intervals, but with the new web application, the respondents can set their own time for the different activities they do by selecting from (hours and minutes - hh.mm) to (hh.mm). The shortest time interval they can describe is 10 minutes. They have to fill all 48 hours.

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<sup>5</sup> Backe-Hansen and Frønes (2012), National programme for official statistics 2024-2027

<sup>6</sup> Backe-Hansen and Frønes, 2012

18. Important aims of switching from paper to a web application was to reduce the response burden for the respondents and meet the expectation of using new and user-friendly technology when collecting data. This has been one strategy to reduce decreasing response rates. Other aims have been to reduce the use of manual coding and data registration and increase data quality.
19. When developing data collection solutions and conducting surveys, user testing is used to ensure that the response process and respondent perspective are taken into account and to uncover possible measurement errors that can impair data quality. One of the methodological challenges when developing our new Time Use Survey is that the survey includes a wide range of age groups from 9 years to 79 years and it is important to ensure that the instrument is accessible for all target groups. We also need consent from the parents of 9-15 years olds which complicates the survey design.
20. We conducted an extensive series of cognitive tests (N=58) throughout the development process of the new Time Use Survey. To begin with, one round of tests was done before we conducted a pilot survey. Another round of tests supplemented by feedback from our interviewers after the pilot survey to further develop the web application and survey design, and a last round of tests after we started the data collection to ensure the quality and adjust and improve if needed.
21. Children was one of the target groups of all the user tests. Some of the most important findings from the user tests are that parents are important when it comes to deciding whether the child shall participate or not. Parents of 9–11-year-old children generally decide without including the child while parents of 12–15-year-old children include their children in the decision. We also found that the parents feel it's their responsibility to make sure that the tasks will be completed when they have said yes to participate. We found that both incentives and the topic "Time Use" motivates children to participate. We found that parents often record the activities in the application for the children. Especially for the age group 9-11. Some parents said that they didn't think that their children would be able to register correctly what they do for two days, as detailed as required.
22. We developed examples and instructions in the application for different age groups to try to make them as relevant as possible for the different respondents, but the Time Use survey requires that the respondents can record at what time during two days they do different activities. Some of the youngest respondents have trouble remembering, and also struggle to report the right times for their different activities, because they are not that familiar with the concept of time and using a clock.

### **III. Theoretical background**

#### **A. A response process**

23. The response process includes understanding the intent of the question and meaning of the concepts applied, retrieving relevant information and judging this information in order to report an accurate answer. There are a lot of things going on in the minds of respondents from reading a question to reporting an answer to it.

## B. Child respondents

24. Children go through a dramatic development as they approach adulthood. “*The biggest challenge with the youngest children may be to achieve good responses from them, while for the adolescents it may be difficult to get any response at all*”<sup>7</sup>. Careful consideration must be taken when suggesting age limits for categorizing child respondents into specific sub-groups for tailored treatment.
25. Piaget’s theory on children’s development stages has impacted the survey research on children. In short, Piaget (1929) divides our target population into the following categories:
  - 4-8 years. *Preoperational stage*. This period is recognized by language limitations that affect interpretation, crucial to the survey response process.
  - 8-11 years. *Concrete operational stage*. In this period logical and systematic thinking is developed, but mainly on a concrete level. They learn to read (crucial for self-administered surveys), language develops, and they can to some extent differentiate between their own and others’ perspectives.
  - 11-15 years. *Formal operational period*. Children in this period develop the skills to think in abstract terms and are no longer restricted to what they can observe. They also develop a more advanced conception of time.<sup>8</sup>
26. Even if Piaget’s theory has had huge influence on research on children, the theory and boundaries between the periods have become less absolute over time. It is generally acknowledged that there is a lot of variation and overlap between groups<sup>9</sup>. Age, individual differences, as well as cultural and social conditions, may affect children’s abilities to respond to a questionnaire. In a specific survey, it is therefore important to consider differences in the population within the same age group and adjust the questionnaire to make sure that respondents with all levels of abilities can respond to the questions.<sup>10</sup>
27. Child respondents constitute a significant share of the samples for several of SSBs key surveys. What distinguishes child respondents in contrast to adult respondents is that they generally have cognitive abilities that differentiates them from the rest of the population. Due to child respondents’ characteristic cognitive capabilities, special attention is required to handle child respondents in a way that ensures solid data quality in their survey responses.
28. Earlier, parents could reasonably report on behalf of their children, while the new perspective on more subjective dimensions of life, force researchers to include children speaking for themselves, as their own spokespersons. As a result, methodology competence about children in research is crucial.
29. While there are many similarities between research on adults and children, there are also some conditions particular to children. Children are individuals in development, and they have a need for protection. Children’s right to protection requires that parents act as their gatekeepers, and we need their permission to study their child. Young children need to know

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<sup>7</sup> Gulløy and Haraldsen, 2012:174

<sup>8</sup> Gulløy and Haraldsen, 2012

<sup>9</sup> Gulløy and Haraldsen 2012, Socialstyrelsen 2015

<sup>10</sup> Gulløy and Haraldsen, 2012

how to read and write to be able to fill out their own questionnaires. Older children usually have the technical abilities but lacks important references<sup>11</sup>.

30. Childhood might be the most heterogenous stage of life. Childrens' age affects their ability to judge, their experiences and their ability to express themselves and reflect upon their own situation. Hence, research on children involves ethical as well as methodological challenges.
31. Children's abilities to respond to questionnaires is not only dependent on age, but also social and cultural conditions. Questionnaires targeted to child respondents should be tailored to make sure all children have access to interpret and respond to the questions. Several researchers advise against conducting surveys for children under the age of 7 due to their limited but developing language and cognitive abilities, and their strong reliance on adults<sup>12</sup>. It is further claimed that children from around 14-16 years can be expected to be fully developed in terms of both cognition and language, and from that point on have equal opportunities to participate, as adults<sup>13</sup>.
32. Socialstyrelsen (2015) underlines that one should be careful about conducting surveys for children below the age of 8, and that for child respondents aged 8-12 one should be extra careful when wording questions, including response options and instructions. Children aged 8-12 years have different starting points compared to older respondents – also due to their social, communicative, and cognitive abilities still being under development. It is also emphasized that child respondents in this group will in particular have problems with questions that depend on their memory, as well as providing a response grading their answer in vague scales. They are also more likely than others to respond to questions even when they do not know the answer. According to this source, children from the age of 16 can be expected to be cognitively fully developed.<sup>14</sup>
33. All these sources underline that child respondents generally - younger children particularly - are likely to...
  - ...struggle with questions that depend on their memory, which is crucial for many behavior questions<sup>15</sup>.
  - ...respond in a way that makes adults satisfied<sup>16</sup>.
  - ...interpret concepts literally<sup>17</sup>.
  - ...respond even when they do not understand the question<sup>18</sup>.Child respondents are more sensitive to factors that may influence their responses to survey questions, for example what they believe the interviewer expect them to report or the response options offered<sup>19</sup>.

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<sup>11</sup> Backe-Hansen and Frønes, 2012

<sup>12</sup> Gulløy and Haraldsen 2012, Haraldsen 2002, Ottosen 2002, de Leeuw 2004

<sup>13</sup> Borgers 2000, de Leeuw 2004

<sup>14</sup> Socialstyrelsen, 2015

<sup>15</sup> Gulløy and Haraldsen, 2012

<sup>16</sup> Socialstyrelsen, 2015

<sup>17</sup> Socialstyrelsen, 2015

<sup>18</sup> Socialstyrelsen, 2015

<sup>19</sup> de Leeuw, 2004



## C. Behavioural questions

34. Many survey questions aim to measure respondents' behaviors, often asking them to report how frequently they engaged in a given behavior during a specified reference period. Respondents are often not able to recall and count all relevant events, unless the behavior is rare and important, and the reference period short and recent. Instead, respondents will typically need to rely on estimation strategies to arrive at a plausible approximation. Available research suggests that the recall of individual behavioral episodes is largely limited to rare and unique behaviors of considerable importance, and poor even under these conditions<sup>20</sup>. Behavior questions where respondents must rely on their memory is often mentioned as particularly difficult for children under 12 years.
35. Typical behavioral questions in these surveys are for example "How long is it since you last visited a public library in Norway" or "How often do you go cross-country skiing during winter?". This type of questions come with their own set of problems.
36. Strategies in questionnaire construction are developed to aid respondents' recall process. A thorough qualitative questionnaire development process allowed us to identify the need for certain strategies, and our analyses shows how a universe of strategies are incorporated in our surveys to tailor our questionnaires to child respondents. These measures benefit child respondents in particular, but also improves the usability and reduce response burden for all respondents regardless of age.
37. In many studies, respondents are asked to report their behavior by checking the appropriate response alternative on a numeric frequency scale. Respondents assume that the researcher constructed a meaningful scale that is relevant to the question. Specifically, they assume that values in the middle range of the scale reflect the average or "usual" behavior, whereas values at the extremes of the scale correspond to the extremes of the distribution. Given these assumptions, respondents can draw on the range of the response alternatives as a plausible frame of reference in estimating their own behavioral frequency. This results in higher frequency estimates when the scale presents high rather than low frequency values. One may expect that the impact of numeric frequency values is more pronounced, the more poorly the behavior is represented in memory. However, when a respondent engages in the behavior with high regularity, its frequency can easily be derived, reducing the impact of the offered frequency scale. Appropriate strategies should also be applied when constructing response options. There may be age- and culture-related differences in estimation.
38. Behavior questions are context sensitive. It is important to consider how we order the questions and which social expectations the questions communicate<sup>21</sup>. A question communicates a certain conception about what is normal or abnormal behavior. Children will be especially sensitive to such leads in the questions. Strategies to overcome this tendency, may be to explicitly state that all responses are equally normal or correct, or randomizing the order of response options.
39. When respondents have arrived at an answer, they need to communicate it to the surveyor. At this stage, the answer they communicate to the surveyor may deviate from the true

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<sup>20</sup> Schwartz et al., 2008

<sup>21</sup> Gulloy and Haraldsen, 2015

response that they hold private due to considerations of social desirability and self-presentation. Adjustment of an answer due to social desirability is particularly likely when exposed to threatening questions and is more evident in face-to-face interviews than in self-administered questionnaires, which provide a higher degree of confidentiality.

## D. Web surveys

40. A general perception is that methodological challenges for adults, often are enhanced among child respondents. All our case studies are web surveys. Advantages and limitations in web surveys can be summarized as follows<sup>22</sup>:

- One of the most appealing advantages of web surveys is the costs. The saving may be transformed into higher data quality.
- Another advantage is the speed of the data collection process, which also applies to respondents who may also save time. However, saving time for questionnaire completion may also indicate that respondents pay less attention to the survey questions, which ultimately can result in a lower level of data quality.
- Ease of implementation, as no programming skills and limited computer literacy required to implement a survey.
- Computerization of the questionnaire prepares the ground for numerous features that can stimulate higher data quality, such as:
  - Routing/filter errors can be prevented
  - Immediately validation of data
  - Questions and answers can be randomized to eliminate order effects
  - Adaptive questionnaire, assigning earlier responses to the respondent

Computerization of questionnaires typically reduce response burden.

- Multimedia capabilities enable extended and innovative interfaces for web survey questionnaires, for example different visual and audio stimuli.
- Time and geographic flexibility are other obvious advantages with web surveys – as they allow for 24/7 data collection, independence of time zones, no geographical limitations, instant access to the questionnaire from anywhere in the world.
- Self-administration allows respondents to answer the survey at their own pace, whenever and wherever they choose. No interviewer bias. On the other hand, no one to motivate or clarify.<sup>23</sup>

41. While self-administered surveys reduce the risk of socially adapted responses, they also require that the respondent is able to read and administer the survey on their own – a challenge particularly relevant when surveying children. Ideally the survey mode is chosen based on our need to communicate with the respondents<sup>24</sup>. In practice, however, due to the

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<sup>22</sup> Callegaro et al., 2015

<sup>23</sup> Callegaro et al., 2015

<sup>24</sup> Haraldsen, 1999

relative affordability of self-administered surveys, web data collection mode is often chosen to reduce costs, even when acknowledging that child respondents in particular, may benefit from being guided by a professional interviewer.

## E. Qualitative questionnaire development

42. Statistics Norway applies various qualitative methods to investigate how respondents interact with questions and questionnaires. The most prominent feature of these methods is that they examine in detail how respondents in the target group for a specific survey think or act. However, qualitative methods do not tell us how widespread the reactions to the tested questionnaires are. Qualitative methods can be extremely valuable in the development of questionnaires because they provide the opportunity to:
- Gain deeper insight into the respondent's perspective. We can better understand respondents' thoughts, opinions, and experiences related to the questions and identify any challenges or misunderstandings.
  - Discover possible problems or weaknesses in the questionnaire. Respondents can provide feedback on whether the questions are confusing, unclear, inappropriate, or difficult to answer. This helps identify areas that need improvement or revision.
  - Test the questionnaire's functionality and usability. This includes evaluating visual design, instructions, navigation, and functionality.
  - Iteratively improve the questionnaire. Based on feedback from test respondents, we can make adjustments, revise questions, and make changes to optimize the questionnaire. This ensures that the final questionnaire is tailored to the respondents' needs and understanding.
  - Improve the reliability of the collected data. By gaining insight into respondents' perceptions and interpretations of the questions, we can avoid misunderstandings or misinterpretations that could affect data quality.

In summary, qualitative testing methods contribute to a thorough, user-oriented, and quality-assured development of questionnaires. They help identify potential problems, improve functionality, and optimize questions to achieve reliable and valid data.

43. The concrete methodology used in these studies, are cognitive testing. This is a beneficial method to test how the questions in a questionnaire perform. The method allows us to investigate if the questions perform as intended. Cognitive interviews provide insight in respondents response process, as described earlier, referring to the thought process that takes place in respondents minds from the moment they are exposed to a question to the moment where they choose an appropriate response. Insight in the response process is crucial to reveal problems with the questions that may result in measurement errors<sup>25</sup>. Extensive literature is available for advice on how to perform cognitive interviews with children<sup>26</sup>.

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<sup>25</sup> SSB, 2006

<sup>26</sup> Bowen 2003, Willis 2005, de Leeuw 2004

## IV. Analyses

44. Semi-structured cognitive interviews resulted in crucial insights we could use in our questionnaire design to reduce the risk of measurement errors related to the offered **response scales**.
- i. Observations from cognitive interviews with children done when preparing for the Culture and Media Surveys, made us aware that children can have difficulties relating to a large set of response options. This became especially apparent on a question on which country had produced the movie they had just reported having seen in the cinema recently. In several redesign steps, we moved from a list of 14 countries, to a shorter list of 8 areas, finally ending up with a y/n-question on whether or not the movie was Norwegian. Though the problem was related to the respondents' lack of knowledge, the redesign from 14 response categories to one binary question, contributed to reduced response burden for the child respondents<sup>27</sup>.
  - ii. We also find a related example from the same surveys. Respondents are asked if they read books, and if they do, what kind of book they read. We decomposed this complex question to tailor the questionnaire to children. Instead of asking one question accompanied with a long list of several categories of genres that is hard for children to relate to, we first asked whether the book they read was a children's book. The intention with this first question was to reduce the response burden for those children who read a children's book. If they answered "no" to that question, they got a list of genres that they could choose from. The cognitive interviews and user tests showed that children found it easier to answer yes/no questions rather than considering several options from a longer list. Decomposing complex tasks into more specific ones, may ease the response task.
  - iii. Providing an open response format can also aid in avoiding systematic biases associated with frequency scales<sup>28</sup>. This was also our approach in the Time Use Survey where the respondents wrote in their own words what they did during the two days they participated. An alternative practice in Time Use surveys is to give the respondents a list of activities to choose from. This alternative practice, mainly to reduce the response burden – in particular for vulnerable respondents such as children, was considered but finally avoided as it was assumed to introduce a risk for measurement errors due to respondents being led by the activities offered on the list. Allowing respondents to choose activities from a list or pull-down menu of some sort, would also entail a risk for less details in the reporting. It would be difficult – if not nearly impossible - to provide an exhaustive and user-friendly list of activities<sup>29</sup>.
  - iv. Cognitive interviews for the Living Conditions Survey for children, included both children and their parents in the test setting, as the first module of the questionnaire is targeted to the parents. The parent/guardian questions are included to achieve a more comprehensive picture of the sampled child's activity level, for example if there might be specific hindrances that bars the child from participating in more

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<sup>27</sup> Socialstyrelsen, 2015

<sup>28</sup> Schwarz et. al., 2008

<sup>29</sup> De Leeuw et al, 2008

sports and outdoor activities than what is the fact. On questions on how often a parent or guardian of the child observes the child during practice, we observed a lack of consistency in how the offered response options were dealt with. As a result, we chose to move from vague quantifiers, such as “sometimes” and “often” to more tangible quantifiers such as “less than half” and “more than half”. This was an attempt to ease the response burden, by minimizing the respondents’ having to make their own judgement of which frequency “often” and “sometimes” corresponds to. Vague quantifiers may be viewed as inadequate for the assessment of objective frequencies<sup>30</sup>.

- v. Another measure taken in the same survey, was to redesign the response options on activities with rare occurrences. Taken into account both what we know and observe about children being very sensitive to what they believe will make the adult/surveyor satisfied, we wanted to adjust the response options to better reflect the child respondents’ reality.

This consideration made us move from a high frequency/regularity scale to a tailored scale more nuanced on the less frequent side of the scale, on outdoor activities that for many child respondents occur less often and irregularly.

Moving from vague to tangible response scales, reducing the number of response options, ensuring a match between the offered response options and the child’s reality, and providing an open response format are all acknowledged measures to adapt surveys about behavior to child respondents<sup>31</sup>.

- 45. The iterative questionnaire development process also resulted in observations that enabled us to improve how we **phrased our questions and optimized the sequence** of the questions and response tasks.
  - i. In the Living Conditions Survey, we reduced the amount of text typically prepared for telephone administrated interviews, to make the questionnaire better suited for self-completion. Example;

*Previously: “About how many times did you take a bath in the ocean, in rivers or in lakes the past 12 months? Several times during the same day, counts as once»*  
*Current: «How often do you take a bath outdoors, in the season?”*

By replacing the specification of ocean, rivers and lakes to the equally clear “outdoors”, we reduce the amount of text and make it easier for child respondents to get an overview of the response task.

- ii. A related measure in the same survey was also to reduce the reference period. In the previous round of the same survey the offered reference period was the past 12 months. A common advice to tailor surveys to child respondents is to avoid long and distant reference periods. Hence, we redesigned the questions from past 12 months thus:

*Previous: “During the past 12 months, did you go for longer hikes in the forest or in the mountains?”*

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<sup>30</sup> Schwarz et. al, 2008

<sup>31</sup> Schwarz et al, 2008

*Current: «How often do you go for hikes in the forest, in the mountains or in parks?»*

Furthermore, in the same survey, we decided to provide appropriate recall cues to aid child respondents recalling memories about activities that may have occurred a long time ago.

*Previous: “During the past 12 months, did you go cross country skiing in the forest or in the mountains?”*

*Current: “During the winter, how often do you usually go skiing?”*

The phrase “During the winter” was intended to aid child respondents recall to the relevant season for this type of activities. It should however be mentioned that such cues should be exhaustive to not limit the recall<sup>32</sup>. A related initiative was also a new structure of the module, where the new survey ordered activities by season. This initiative was also done in order to reduce the burden on child respondents, assuming that their recall and cognition would benefit from thinking through activities for the same season instead of jumping back and forth in their memory, that is recalling according to a chronological order. As a result of the collocation, the “during the winter” phrase was not repeated on the following questions on other winter activities.

Another initiative that became clear to us during the cognitive testing was that child respondents may lack the cognitive ability necessary to interpret references to answers given in previous questions, the way that is intended. This became especially apparent in the testing of the Living Condition Survey as it was tested on small mobile screens in a one-question-per-page format. As a result, we decided to phrase all questions in full text instead of referring to the previous question, as several respondents did not understand that “this” is referring to the same activity they confirmed to be doing in the previous question. The new wording replaced “this” with the full description of the activity equal to the one given in the previous question.

*Previously filter question (1): “Does it happen that you fish? Y/N”*

*Previously follow-up questions (2): “How often do you do this?” (Frequency scale starts with “more seldom than once a month”)*

*Currently “How often do you fish?” (Frequency scale starts with “never”)*

A related problem observed, was that especially young respondents (but not only!) response process would benefit from having visual access to more than one question at a time. Referring to the example above, only seeing the “y/n”-question, respondents expressed insecurity about how often that had to do the activity in order to say “yes”. This confusion was quickly solved when they chose to respond “yes” and was exposed to the follow-up question about frequency. These experiences affected our decision to skip the y/n – filter question and rather include a category for “never” in the frequency question. As a result, we also reduced the number of questions in the survey.

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<sup>32</sup> Schwarz et. al., 2008

Observation in testing also proved that child respondents may have a tendency to interpret compound concepts quite literally. For example, respondents were asked if they participate in “kampsport”, which refer to different types of martial arts, such as taekwondo and boxing. The concept is a combination of two words – “kamp” and “sport”. Respondents however, who clearly was not familiar with how the concept is used in the everyday jargon. Respondents explained that yes, they are familiar with the concepts, and it refers to sports where they play “kamp” in the weekends – hence their interpretation deviates from how we intend them to interpret the concept.

- iii. In the Culture and Media Surveys, several adjustments were made to ease the response task for child respondents. Cognitive tests indicated that there was a need to replace complex concepts with more concrete descriptions, as long and complex texts tend to cause both high response burden as well as general confusion. As a result, we moved from a question design where questions containing complex concepts was followed by an explanation of the concepts, to a question where the complex concept was not used at all, and rather replaced with an explanation of the theoretical concepts.

*Previous: “How many times during the past 12 months did you attend pop cultural events? For example, computer meets, Cosplay or other gatherings and conferences related to cartoons, animation and similar popular – and Childrens culture”*

*Current: «How many times did you participate on computer meets, LAN or other events for digital gaming during the past 12 months? For example, The Gathering in Hamar, Gigacon or The Convention*

In order to adjust the questionnaires to children we also made the categories they could choose from more relevant and understandable. We simplified the language by replacing words such as “visual arts exhibition” to “art exhibition” in the cultural use survey questionnaire.

Keeping question texts short and precise, and restricting the reference period to a short and recent period, is all in accordance with current best practices to tailor surveys about behavior questions to child respondents<sup>33</sup>.

46. Other observations from our extensive series of semi-structured cognitive interviews made us identify measurement error risks related to the **instructions** that accompany the question wording.
  - i. For our Time Use Survey, we discovered the importance of placing instructions on how to fill in the diary close to the different tasks the respondents were required to do, rather than a summary of Q&As in the menu-bar of the application. We also developed age specific “example diaries” that were available in the time use application to facilitate and make the respondents aware of how detailed we wanted them to describe what they did during the two days they participated.
  - ii. Observations from cognitive interviews with child respondents preparing for the Living Conditions Survey, raised our awareness on how we communicated the intended reference period to child respondents. On questions asking about “last week”, for example “How often did you have fun with friends the last week”,

<sup>33</sup> Schwarz et al., 2008, Gulloy and Haraldsen, 2012

problems were observed for several test respondents. Several asked “last week, what do you mean by that?” Upon probing it became clear it was interpreted as from Monday/the beginning of the week of the test interview, until and including today/the day of the interview. As a result, we inserted a brief instruction as a headliner/on top of the page that stated, “Think about the previous 7 days”, then continued with the survey questions as before.

Also, in the Living Conditions Survey we discovered the importance of placing crucial instructions for child respondents where the instruction is needed. As a result, we added an instruction right after questions about activities that were especially likely to be impacted by context effects, e.g., by including activities from the school day – “Outside school hours was added.

In the Living Conditions Survey testing, we saw a clear tendency that child respondents’ interpretation of questions was very closely tied to examples given. An illustrative example is the question «How often do you go for hikes, in the forest, in the mountains or in parks?» where one of our test participants stopped reading the question after “forest”, stating “Nope! Never in the forest», before clicking «no» and moving on to the next question.

Out of concern for the children’s observed lack of ability to generalize from examples, we reduced the number of examples to those deemed absolutely necessary. Example question on household chores:

*Previously: “How often do you do household chores, for example clean your own room, vacuum, or take out the trash?”*

*Current: “How often do you do household chores, for example clean your own room, vacuum, or take out the trash?”*

In the current version, we decided to keep only two examples. The cognitive interviews revealed that it could be unclear if cleaning one’s room should be counted as “household chores”, hence it was identified as a particularly relevant example, while taking out the trash was also kept underlining that also minor/less time-consuming tasks should be taken into account. We did not observe any difficulties with interpreting “vacuuming”, this would also be considered a typical household chore and not necessary to include as an example.

Qualitative testing also served to support the observation of children lacking the ability to generalize. In the Time Use Survey, we observed that child respondents became uncomfortable and confused when the format of the survey forced them to report inaccurate data<sup>34</sup>. The survey setup requires that all time use is reported in 10-minute intervals. This requirement prevents respondents from reporting what they actually did in situations where they for example left home at 08.30 and school started at 08.45. This was however a non-negotiable design feature, and it was never a realistic option to let go of the intervals and let respondents report minute by minute. The decision was made both out of concern for how the data should be delivered and based on an assumption that it communicated to the respondents the desired detail level in their time use reporting.

In summary, placing crucial instructions where they are needed, developing age

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<sup>34</sup> Berg and Lund, 2023



specific examples/instructions, making it clear what should be counted and not, and reviewing the number of and relevance of examples, are all effective measures to reduce measurement errors in child surveys<sup>35</sup>.

47. **Survey communication** refers to how we communicate with the respondents at all touch points during the survey, including information letter/invitation, e-mails, SMS and phone calls.
- i. An important aim in the Living Conditions Survey is to capture all levels of participation in activities outside school hours, regardless of one's interest or lack of such, for sports and outdoor activities – which are the main topics of the survey. To make sure that the children participating in the Living Conditions Survey perceive the survey as relevant to them even if they have zero interest in sports and outdoor activities, we avoid any communication that underlines the focus on sports and outdoor activities. This affects both the title of the survey “Invitation to participate in our survey on Living Conditions among children” and “Survey about leisure activities”, rather than for example “Survey about sports and outdoor activities. This is a measure we take to avoid that children are reluctant or unwilling to participate because we gave them the impression that the survey is not relevant for them.

Another measure in the same survey, to ensure perceived relevance for child respondents, is to start the (child module) survey with easy and positive questions relevant to all children. That way we try to motivate all children regardless of level of interest for sports and outdoor activities to participate in the survey – and continue their reporting once they have started.

- ii. When preparing the Culture and Media Survey, observations from user tests indicated that child respondents found it frustrating to report “no” to many questions. The repeated “nay-saying” seemed to contribute to the children's feeling that they were of little interest for the surveyor. Another reasonable interpretation of this response fatigue for child respondents may be that they found it boring to participate in a survey where so few of the activities were relevant to them – it affected their motivation, and may as a result affect the overall precision of their answers and willingness to complete the survey. As a result, additional response categories were added to increase relevance – for example, a new category for attending “Child theater” was added, so that more children could confirm that they had been to the theater in the reference period.

Both a thoroughly thought-through survey communication with a survey title that targets all parts of the sample, and starting the questionnaire with questions that is perceived as relevant and easy to respond to by all respondents are well known practices to motivate all respondents to complete the survey<sup>36</sup>.

48. In addition to manipulating response options, questions and instructions, several other measures are taken to ensure high data quality in reports from child respondents. This includes several aspects of the **overall survey design**, such as the chosen mode of data collection, the length of the questionnaire, recruitment strategies etc.

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<sup>35</sup> Schwarz et al., 2008, Socialstyrelsen, 2015

<sup>36</sup> Haraldsen, 1999

- i. To reduce the response burden for child respondents in the Living Conditions Survey, significant simplifications were done to reduce the response task. On some topics, we moved from four very detailed questions to only one. For example, previously asking both “During the last 12 months, have you been on a shorter hike in the forest or in the mountains?” and (If yes) “About how many times have you been on a shorter hike in the forest or in the mountains?” The question set is then repeated for longer hikes, adding up to anywhere between 2-4 questions in total, depending on how the respondents’ report. The new approach was more poignant, asking only one question: “How often do you go for walks, for example in the forest, in the mountains or in parks?” The new approach lacks the detail level of the old version, but benefits child respondents in particular by reducing the number of questions from potentially 4 to 1, hence a reduction of the response burden.
- ii. Data collection for all our case surveys are done in self-administrated web mode. There are several reasons for this decision. One obvious advantage with this approach is that it gives respondents sufficient time for the recall phase before providing a response<sup>37</sup>. The situation is different in interview administered surveys, where the speed of the interview to a large extent is set by the interviewer and the child respondent would be more likely to provide a (less accurate) response quickly, to adapt to the speed of the interviewer, and comply with the perceived expectations of the interviewer.
- iii. An additional benefit to the above-mentioned positive effect of giving the respondents sufficient time to think, is that lack of interviewer presence may counteract reporting affected by social desirability. The cognitive interviews done in preparations for the Time Use Survey reminded us of this effect, because we observed in some interviews where the parents were present that they seemed to encourage the child to include more socially accepted activities, and not as interested in turning up the volume of activities that generally are perceived as less socially desirable, such as spending time indoors in front of a screen. This effect would likely also be relevant if the Time Use Survey diary were to be completed in a telephone interview. It is generally acknowledged that self-administered modes could result in more truthful reporting<sup>38</sup>. This is an issue we will look into in more detail in the Culture and Media Surveys, where we have comparable data from mixed mode data collection.
- iv. A closely related problem observed in the same survey, was that observations indicated that the parents – to a greater extent than the children themselves – reported their child’s time use based on plans and schedules, for example the school day schedule and the planned timing for after school activities, rather than actual time use. If the compliance between plans and reality is low, the data quality would also suffer from such a practice<sup>39</sup>.
- v. A web functionality feature that did not go well with child respondents, was the automatic skip to next questionnaire item when having chosen a response. Outbursts of surprise and confusion was observed repeatedly “What??” The feature left respondents frustrated and unsure of which response they chose as the questionnaire moved extremely rapidly to the next question item, not allowing respondents to get a

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<sup>37</sup> Schwarz et al., 2008

<sup>38</sup> Callegaro et al., 2015

<sup>39</sup> Berg and Lund, 2023

visual confirmation that they managed to click the button they intended to. Sometimes they navigated back to the previous question to check, and if deemed necessary -edit, their response, sometimes they assumed their answer was wrong but still did not bother to go back and correct. The problem was of course eliminated when we moved to a click next button at the lower right side of the screen.

- vi. Motivation to participate in our surveys was a topic covered by our qualitative testing. It was a clear impression from conversations with child respondents when preparing for the Time Use Survey, that participation in the surveys was very closely linked to their parents. Parents do operate as gatekeepers for their children and without their cooperation we would likely not succeed in recruiting child respondents to participate<sup>40</sup>. However, parents seemed to consider pros and cons of their child participating from their children's perspective – and often, the prospects of their children receiving a cash gift card seemed to weigh in on the decision. The impression is that what adults often claim to be their motivation “contributing to society”, is not yet developed in their children. These findings means that other strategies need to be utilized to motivate children to participate, for example by emphasizing which use and impact the survey might have for the child in the future<sup>41</sup>.

Our current practice for distribution of survey invitation letters, does make it rather complicated to target invitation letters directly to the child respondents, as legislation only allows communication with children through their parents – besides, the contact information register only includes details of the adult population. In order to achieve accurate responses, we need to motivate respondents to do invest the necessary effort<sup>42</sup>. In the Time Use Survey, we offered respondents monetary incentives to participate. All respondents that participated in the Time Use Survey got a cash gift card of 44 euros. This was intended to compensate for the high response burden on respondents who accepted the invitation.

In the case of the Time Use Survey, we offered respondents a reconstruction of the reference period through an history event calendar. Reconstruction may provide a rich set of contextual cues for recalling relevant episodes<sup>43</sup>. Hence, we applied a diary approach in the Time Use Survey.

- vii. Observations in qualitative testing with children while preparing for our case surveys supported the notion that there is great cognitive variation within the age interval 6-15 years, and there may also be rather big differences in cognitive maturity between genders at a certain age. This cannot be compensated fully by any measure we know in questionnaires. However, we chose to apply routing to allow child respondents to skip questions irrelevant to them. We also applied more nuanced age filters to better tailor the questionnaire content to the youngest (Under 12) and older respondents (12+). In the Culture and Media Surveys we introduced more nuanced age filters than applied in earlier rounds on some questions to increase relevance. For example:

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<sup>40</sup> Berg and Lund, 2023

<sup>41</sup> Gulloy and Haraldsen, 2012

<sup>42</sup> Schwarz et al., 2008

<sup>43</sup> Schwarz et al., 2008

*<=12 years: “Did you use internet to pay for anything last week, for example by VIPPS or Spink?”*,

*>12 years: “Did you use internet to perform bank services last week, for example by VIPPS or online banking?”*.

Questions that were skipped for the youngest respondents were for example due to lack of experience and knowledge about the content, for example:

*>12 years: “Did you comment on news on social media last week?”*

- viii. In the Time Use Survey a few questions about mental health were filtered out for respondents under 16 years old.

Summing up, several initiatives were taken to give the best possible starting point for child respondents to provide accurate responses. Both more and better age filters, a diary survey format that aids recall when appropriate, incentives/motivation, self-completion mode, allow respondents enough time to search memory, and keeping the questionnaire at an “optimal minimum” length are all ways to reduce response burden and prepare a fundament for higher quality responses from child respondents and hence improved data quality.

## V. Conclusion

49. Measures to accommodate our survey question to child respondents, do also benefit other respondents.
50. Questionnaire design thinking “one size fits all” is no longer feasible. Tailoring to the target group is essential, for example due to varying knowledge level, but also due to varying cognitive abilities.
51. The overall experience from an extensive test series of cognitive interviews for our surveys for children, encourages us to move towards less proxy reporting where parents report on their child’s behalf, and to a greater extent make sure that the child respondents are involved in the reporting. This is of course depending on who is likely to have the most correct information. On questions that children have the best knowledge about, for example how they experience and view different elements of their life, they may be better spokespersons than their parents. Our user testing also indicates that children nowadays have good technical skills, and experience less technical difficulties in web questionnaires compared to other parts of the population<sup>44</sup>.
52. One of our key challenges as survey designers is to gain and maintain respondents’ interest and motivation to both start and complete the survey<sup>45</sup>. To optimize our efforts to take child respondents into greater consideration, it is necessary to consider how we conduct the survey

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<sup>44</sup> Berg and Lund, 2023

<sup>45</sup> Gulloy and Haraldsen, 2012

communication. In earlier practice, SSB did not prepare survey communication such as invitations to the survey specifically directed to children. Scarce guidance was also offered on how children should report, except an occasional sentence in the invitation letters stating that “we advise you have an adult nearby during the reporting in case help is needed”. The SSB practice is to use contact information from a central register for public services for the first contact/survey invitation letter. The invitation including a link to the survey is sent electronically to the recipients registered email address. Traditionally, the invitation letter is sent to the guardians of child respondents, informing them of how their child is sampled. The guardians choose based on the information in this letter if they allow their child to participate. If they do, they have to use a government digital portal to log on<sup>46</sup>, on behalf of their children and, if deemed appropriate, hand over the digital device – usually their mobile phone – to the child who responds to the survey questions<sup>47</sup>. As part of our focus on child respondents, we are currently redesigning our survey communication to communicate directly with the children. Hence, we are developing invitation letters to the child respondents where we kindly ask their guardians to redistribute to their children if they approve of the participation.

53. No specific interviewer training is offered to interviewers dealing with children. This is however a practice we intend to change.
54. The indisputable fact that self-administered web surveys are economically beneficial to the surveyor, makes it unlikely that many surveys with child respondents in the future will be conducted in interview administered mode, even if there are several methodological reasons in favor of this. Hence, a perspective that encourages methodologists to focus on how to exploit the opportunities in web mode would clearly more beneficial. A huge advantage about self-administered data collection mode, is the contribution to respondents’ sense of anonymity. The great variation within the group of child respondents aged 6-15 years, would on one hand support keeping an interview administered data collection mode to make sure that the children with the least abilities could be offered guidance from professional interviewers when needed. One of many benefits with professional interviewers, in contrast to random parents, is that they have training and the required skills to make sure they conduct the interview according to SSBs standards.
55. SSB aims to increase the involvement of children when developing questionnaires, as representatives for the target group, to better understand which dimensions to be measure, what might be considered sensitive topics and questions etc. This goes beyond regular user testing, as children will be involved in the early design stage of the surveys, at a time in the process where the content and design of the survey is yet to be decided.
56. SSB is currently in the development phase of standard questions to collect information about who responded to the questions in the survey. The question has been implemented in the Culture and Media Survey and the plan is to implement in more surveys. Data from these questions may be used to investigate the data quality and statistical impact of parents reporting as proxies for their children, effects from cooperative reporting and identifying questions that child respondents deal with best alone.

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<sup>46</sup> The portal is only available to adults

<sup>47</sup> We have para data that suggests that about 55% of the respondents report using small screen devices

57. More analyses should be done on existing survey data collected from children to better understand which question types work well with children, and from which age can they report independently from adults.
58. The intensified work and focus on child respondents gain solid support from the current Norwegian national program for official statistics. In the program, statistics on child respondents are highlighted as one of three crosscutting issues in the 4-year program period 2024-2027. A national professional network is established to share experiences, among peers who also conduct methodologically sound survey research on children. The network has its first meeting in February 2024. A systematic review of literature and knowledge is currently being conducted summarizing all relevant research done on questionnaire methodological projects on child respondents. In parallel, a mapping of practices in peer NSOs on how child respondents are dealt with in other countries are in the making. It is expected that by the end of 2027, national recommendations for how to deal with child respondents will be published.
59. Accompanying other initiatives, methodological experiments to gain further insight of in child respondents response processes are currently being designed. The experiment aims to investigate how child respondents handle multiple choice questions by comparing it to a series of agree/disagree questions. The latter question format is known to be cognitively more demanding and producing poorer data quality than item-specific questions<sup>48</sup>. The assumption is that this will be even more the case for child respondents.
60. In summary, many initiatives are taken at SSB to ensure high data quality in survey responses from child respondents. Exploiting the advantages of both extensive iterative user testing with child respondents and current best methods for questionnaire design, several efficient measures are done. Some of the measures taken are related to the development of questions, response options and instructions. Additional measures include survey communication, chose of data collection mode and the overall survey design. Important tailoring to child respondents includes for example:
  - *Restricted reference periods to short and recent periods*
  - *Providing appropriate recall cues*
  - *Decomposing complex tasks into more specific ones*
  - *Give respondents sufficient time to recall information*
  - *Motivate respondents to invest the necessary effort*
  - *Providing an open response format to avoid systematic biases associated with frequency scales*
  - *Reconstruction of reference period through offering a diary*
  - *Avoiding vague quantifiers attempting to ease the response burden*

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<sup>48</sup> Saris et al., 2010

## VI. References

- Backe-Hansen, Elisabeth and Ivar Frønes (red.) (2012) *Metoder og perspektiver i barne- og ungdomsforskning*. Oslo: Gyldendal
- Berg, Nina and Kari-Anne Lund (2023): *Brukertesting av ny tidsbruksundersøkelse*. SSB Notater 2023/26. Oslo: Statistisk Sentralbyrå
- Borgers, N., J.J. Hox (2000) Reliability of responses in questionnaire research with children. *The fifth international conference on logic and methodology*. Køl: Tyskland
- Borgers, N., J. Hox, D. Sikkell (2003) "Response quality in survey research with children and adolescents: the effect of labeled response options and vague quantifiers". *International Journal of Public Opinion Research*, Vol. 15, nr. 1:83-94
- Bowen, N.K. (2008) *Cognitive Testing and the Validity of Child-Report Data from the Elementary School Success Profile*. NIH Public Access. Author manuscript. <https://ncbi.nlm.nih.gov/pmc/articles/PMC2818440/>
- Calligaro, Mario, K.L. Manfreda and V. Vehovar (2015) *Web Survey Methodology*. London: Sage
- De Leeuw, E., N. Borgers, A. Smits (2004) Pretesting questionnaires for Children and Adolescents. *Methods for Testing and Evaluating Survey Questionnaires*. S. Presser, J.M. Rothgeb, M.C. Cooper, J.T. Lesler, E. Martin, J. Martin, E. Singer. New Jersey: John Wiley & Sons
- Graue, M.E. (1998) *Studying Children in context: Theories, Methods and Ethics*. Thousand Oaks, CA: Sage
- Gulløy, Elisabeth and Gustav Haraldsen (2012) «Kapittel 9. Spørreskjemaundersøkelser blant barn og ungdom», in Backe-Hansen et al.: *Metoder og perspektiver i barne- og ungdomsforskning*. Oslo: Gyldendal
- Haraldsen, Gustav (1999) *Spørreskjemametodikk etter kokebokmetoden*. Oslo: Gyldendal
- Haraldsen, G., and T. Dale (2002) Hvordan spørre barn og ungdom? *Børn som respondenter. Om børns medvirken i surveys*. D. Andersen, M.H. Ottosen. København, Social-forskninginstituttet
- Larsen, H.B. (2002) Spørsmålformuleringer til børn – set fra et utviklingspsykologisk perspektiv. *Børn som respondenter. Om børns medvirken i survey*. D. Andersen, M.H. Ottosen. København: Socialforskningsinstituttet
- National program for official statistics (2024). <https://www.ssb.no/en/omssb/nasjonalt-program-for-offisiell-statistikk>
- Norbert Schwarz, Bärbel Knäuper, Daphna Oyserman, and Christine Stieh (2008) "Chapter 2. The Psychology of Asking Questions» in *International Handbook of Survey Methodology*
- Saris, Willem & Revilla, Melanie & Krosnick, Jon & Shaeffer, Eric. (2010). Comparing Questions with Agree/Disagree Response Options to Questions with Item-Specific Response Options. *Survey Research Methods*. 4. 61-79. 10.18148/srm/2010.v4i1.2682.
- Schwarz, N. and S. Sudman (red.) (1994): *Autobiographical Memory and the Validity of Retrospective Reports*. New York: Springer
- Scott, J. (1997) "Children as Respondents. Methods for Improving Data Quality." I Lyberg et al. (red.): *Survey Measurement and Process Quality*. New York, NY: Wiley
- SSB (2023) Kulturbruksundersøkelsen 2021. Notater /Documents; 2023/17. Oslo: Statistisk sentralbyrå
- SSB (2006) Praktisk brukertesting. Statistisk sentralbyrås håndbok 87. Oslo: Statistisk sentralbyrå.
- Socialstyrelsen (2015) *Litteraturstudie om surveyundersøkingar til barn ock ungdomar*.