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Student views on quality in their study programs – what matters?

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Name of Author(s)

Stein Erik Lid
Pål Bakken
Kim Kantardjiev

Contact Details

Stein Erik Lid
Norwegian Agency for Quality in Education - NOKUT
Drammensveien 288, PO Box 578
1327 Lysaker
Norway
E-mail: sel@nokut.no

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Abstract

Student views on quality in their study programs – what matters?

The Norwegian Agency for Quality in Education (NOKUT) recently carried out the first national student survey (“Studiebarometeret”) focusing on the students’ views on quality in their own study programs. In this paper we first describe the design of the survey, then explore which factors matters the most for overall satisfaction with their study programs by regression analysis. The validity and reliability of the survey itself, as well as the more general question of what student surveys may contribute to understanding and enhancing quality in higher education is discussed.

Presentation

Student views on quality in their study programs – what matters?

The Bologna process has ensured similar higher education structures, qualifications systems, monitoring systems and credit systems across its membership countries (Kogan et al. 2006). Against this backdrop, large scale student surveys are becoming common, due among other things to an increased pressure for accountability and transparency (Baird and Gordon 2009). There is evidence that the differences between subjects and between study programs are more important for student experience of quality than the institution itself (Harvey 1997; Wiers-Jenssen et al. 2002; Surridge 2009).

NOKUT recently completed the first national student survey in Norway which focuses solely on the quality in study programs. The results are publicly available at www.studiebarometeret.no, where users may compare the results for individual study programs¹. The survey is commissioned by the Norwegian Ministry for Education and Research. The goals are to provide relevant information for prospective students when choosing a study program, as well as providing comparative data the institutions, government, NOKUT and other stakeholders may utilize to assure and enhance the quality of higher education provision.

All second year bachelor and master students at Norwegian higher education institutions were invited to participate in the survey. Participation is voluntary for the institutions. 17 600 students at 1600 study programs at 58 institutions participated, resulting in an average response rate of 32 %.

In this paper we describe how the survey was carried out. We also explore the data from the survey to understand which topics and specific questions that matters most for the student's perception of overall quality in their study program. Finally we discuss the quality of the data from the survey and how the survey might contribute to quality assurance and enhancement in the Norwegian HEI sector.

The survey

Studiebarometeret is solely focusing on the quality aspect of study programs. The survey does not ask questions about study quality at the course or institutional level, neither does it include questions about student welfare. Thus, the survey does not aim to explain all aspects of a student's life that may influence his or hers overall view of the study program quality. All students, independent of degree level and subject area, received identical questionnaires. The questionnaire consisted of 84 questions or statements, covering a range of topics, including the students' perception of:

- Learning culture/environment
- Stimulation and coherence
- Working life relevance
- Teaching and academic counselling
- Examinations and assignments
- Learning outcome
- Student influence/participation

The statement: *"I am, all things considered, satisfied with the program"* was included to monitor the overall satisfaction with the quality of the students' study program. The questionnaire also includes

¹ www.studiebarometeret.no contains information in Norwegian. An English version will be available from February 2015.

questions about their rationale for choosing their specific program, their academic goals, motivation and study effort (workload). Studiebarometeret uses a Likert, 5-point scale, ranging from very poor (1) to very good (5). In addition, a category “not applicable” was used for some questions.

The students’ study program, e-mail addresses, mobile phone number, as well as some other background data was retrieved from the HEIs study administrative systems. Thus NOKUT received comparable data of high quality and we were able to reach more than 99 % of the student population. The questionnaire was distributed directly to students via links in e-mail and text messages (SMS). In addition, the survey was reachable through links distributed on social media, webpages and digital learning platforms. The survey had a smart phone interface, and the students could answer by using phone, tablet and PC.

In order to achieve as high response rate as possible, a lot of different measures were taken. Both NOKUT, the National Union of Students and the Ministry encouraged the HEIs to promote the survey to their students, both before and during the period of data acquisition. Many HEIs made considerable efforts in promoting the student survey to their students. An analysis of institutional measures that were taken shows that information to the students in lectures was most effective. In addition, cooperation with the local student unions and information on social media and learning platforms has a positive effect on the response rate.

Links to the questionnaire was sent out in October 2013, the survey closed after 3 weeks. In that period, the links were spread altogether 5 times, by e-mail and SMS. Altogether 17 600 students participated, resulting in an average response rate of 32 %. We consider this acceptable considering that this was the first time the survey was carried out. However, the response rate differed considerably among the institutions: one small and specialized college obtained 89 %, whereas one university only obtained 17 %. The variation in response rate among study programs varied even more.

Results

We first grouped questions/statements on related topics (“indexes”). For example, all five statements concerning teaching and academic counselling were grouped in one index: *The teachers’ ability to make their teaching stimulating; The teachers’ ability to facilitate one’s understanding of difficult subject matter; How well the teaching covers the curriculum; The quality of feed-back on your work; Individual student counselling*»². The composition of indexes was identified using principal factor analysis with oblique rotation. For all questions/statements, the students were instructed to answer, based on experience from their own study program. The index values are the average unweighted scores for the questions belonging to each index.

Table 1 shows average scores for each index (on a scale from 1-5) based on individual scores in the total population. Overall, the average Norwegian student appears to be quite satisfied with his/her study program (4,1 out of 5). Among the indexes, they are most satisfied with the *Working life relevance* (4,2), *Student assessments* (4,1) and *Academic stimulation and coherence* (4,0). They are least satisfied with *Student influence and participation* (3,2), *Teaching and academic counselling* (3,3) and their *Learning outcome* (3,7). The standard deviation for the average index scores are relatively high (0,6-1,0), indicating that student views vary quite significantly among individuals in the total

² The full questionnaire in English can be downloaded at:
http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/UA-enhet/Studiebarometeret/Sp%C3%B8rrekjema_endelig_engelsk.pdf

population.

Table 1. Average scores and standard deviation for the index scores and the question of overall satisfaction. The calculations are based on all 17591 individual respondents in the survey.

Index	Average score (1-5)	Standard deviation
Academic stimulation and coherence	4,0	0,7
Teaching and academic counselling	3,3	0,8
Learning outcome	3,7	0,6
Student influence and participation	3,2	0,9
Working life relevance	4,2	0,8
Learning environment	3,8	0,7
Student assessments	4,1	0,7
<i>I am, all things considered, satisfied with the programme</i>	4,1	1,0

Table 2 shows the average scores for overall satisfaction and the indexes for some of the major subject fields. There is relatively little variation in the average score for overall satisfaction between subject fields. However, it appears that engineering (5-year master)-, law- , medicine- and business and administration students overall are most satisfied. In the other end teacher education- and engineering (3-year bachelor) students appear to be least satisfied. When examining the average scores for the indexes, we observe some interesting characteristics and differences. For instance, whereas medicine students are among the most satisfied student group overall and the most satisfied group when it comes to *Working life relevance*, they are at the same time the student group most dissatisfied with the quality of *Teaching and academic counselling*, *Student influence and participation* and *Student assessments*. Whereas teacher education students are the least satisfied overall, they are among the most satisfied with *Working life relevance*. A general trend seems to be that students in professional education rate the *Working life relevance* of their study program significantly higher than students in basic disciplines. For instance, students in humanities, sociology and political science are the least satisfied with *Working life relevance*. These differences are not surprising as professional education is targeted at specific professions with very good job opportunities in Norway. The humanities, in particular, are in public and political debates often criticized for lack of relevance outside academia, and this view appears to some extent to be present also among the students (see also more on this below).

An interesting observation is that on average, the students rate the overall satisfaction higher than the average score of all the indexes and individual questions of which they consist. Thus, we find that the students tend to express a more critical opinion the more specific the questions become. This also indicates that there may be other factors not addressed in the questionnaire that are important when rating their overall satisfaction, such as student economy, housing and social life.

Overall the results from the Norwegian survey are similar to what has been found in Britain (National Student Survey, NSS), where 83 % of the respondents either mostly or definitively agree to the statement equivalent to "I am, all things considered, satisfied with the program" (HEFCE 2011). Although a detailed comparison is difficult since the questions in the two surveys are not identical, many similarities exist also at the level of more detailed topics. However, an interesting difference is that while Norwegian students appear relatively dissatisfied with the quality of *teaching and academic counselling*, *teaching and learning* scores better than overall satisfaction among British students.

Table 2. Average scores (scale 1-5) for overall satisfaction and indexes for different subject fields.

	Overall satisfaction	Teaching and academic counselling	Learning environment	Student influence and participation	Academic stimulation and coherence	Working life relevance	Student assessments	Learning outcome	Respondents (n)
Engineering (master)	4,3	3,1	4,0	3,2	4,1	4,5	4,1	3,6	988
Law	4,2	3,3	3,6	3,1	4,3	4,5	4,1	3,6	655
Medicine	4,2	2,8	4,0	2,8	4,2	4,6	3,7	3,7	388
Business and administration	4,2	3,3	3,8	3,3	4,0	4,3	4,2	3,6	2831
Preschool teacher	4,1	3,4	3,6	3,1	4,0	4,5	4,2	3,8	733
Nursing	4,1	3,2	3,7	3,1	4,0	4,6	4,1	3,8	1349
Natural sciences	4,1	3,3	3,8	3,3	4,0	3,9	4,1	3,7	649
Humanities	4,1	3,5	3,8	3,3	4,0	3,5	4,2	3,7	530
Sociology	4,1	3,3	3,6	3,2	4,0	3,6	4,3	3,7	156
Political science	4,1	3,3	3,8	3,2	4,0	3,7	4,2	3,7	434
All disciplines	4,1	3,3	3,6	3,2	4,0	4,2	4,1	3,7	17590
Art	4,0	3,5	3,8	3,4	3,9	3,6	4,0	3,7	448
Psychology	4,0	2,9	3,7	2,9	4,0	4,1	4,0	3,7	429
Pedagogy	4,0	3,4	3,8	3,1	4,1	4,2	4,3	3,8	532
Engineering (bachelor)	3,8	3,0	3,6	3,0	3,8	4,2	4,1	3,5	1007
Teacher education	3,7	3,1	3,6	3,0	3,7	4,4	4,1	3,7	697

What matters most for the students overall satisfaction with their study programs?

The highest bivariate correlation between overall satisfaction and the indexes was found for *Academic stimulation and coherence* and *Teaching and academic counselling* (table 3). Among all the questions, the highest correlation with overall satisfaction is found for individual questions focusing on academic stimulation and teacher performance. The single statements that correlate most strongly with overall satisfaction is “*To what extent do you find that the programme is stimulating*” (Pearsons R = 0,61), and “*To what extent do you find that the programme consists of courses that are well connected and integrated*” (0,51). In addition questions on student participation, working life relevance and learning outcome appears to be important. The lowest bivariate correlation was found for the indexes *Student assessments* and *Learning environment*. The results indicate that the most important areas for the students are connected to the teaching situation and the academic input.

Table 3. Bivariate correlations (Pearson’s R) between student views on topics (indexes) and overall satisfaction with their study programs. Calculations are based on all 17591 individual respondents in the survey. ** indicates that the correlation is significant at the 0.01 level (2-tailed).

Index	Correlation with overall satisfaction
Academic stimulation and coherence	0,63**
Teaching and academic counselling	0,55**
Learning outcome	0,49**
Student influence and participation	0,46**
Working life relevance	0,45**
Learning environment	0,40**
Student assessments	0,37**

In order to analyse to which degree the students opinions on the quality topics (indexes) explain the variation in their overall satisfaction, linear regression was carried out. In this model, the scores of the indexes are independent variables whereas the scores for overall satisfaction is the dependent variable. Table 4 shows the results based on individual answers from the whole student population as well as major subject fields.

The main result is that for the total population (all disciplines) the model explains 50 % of the observed variation in overall satisfaction. The strength of the model varies somewhat between subject fields, from art (60 %) to master education in engineering (43 %). Considering that the students overall satisfaction with their study programs are most likely influenced by a number of other factors such as student housing, financing and the non-academic social scene, the model appears to be relatively robust. However, when considering what factors matters for overall satisfaction based on the strength of the beta values (table 4) for each index, it must be taken into account that other factors not included could potentially distort the model. Thus, the results described below and shown in table 4, are only valid within the model defined by the questions/indexes that are included.

Table 4 indicates that students in different subject fields tend to emphasize the same topics (indexes). Thus, among the indexes included in the model, *Academic stimulation and coherence*, appears to matter most for overall satisfaction (highest beta-value). *Teaching and academic counselling* as well as *Working life relevance* also appears to contribute quite significantly. *Learning outcome*, *Student influence and participation* and *Learning environment* contribute less strongly in the model, whereas how students view the quality of *Student assessments* appear to have no influence on their overall satisfaction. The average index scores (table 1) have little connection to what matters for overall satisfaction in the model. For instance, whereas the students are very satisfied with the quality of *Student assessments*, it does not appear to matter at all for overall satisfaction. We also find that whereas the students on average are relatively dissatisfied with the quality of *Teaching and academic counselling*, this appears to matter quite strongly for their overall satisfaction.

These results resemble the results from the NSS in the UK. In both surveys the strongest relationship to overall satisfaction is found for the topics related to academic stimulation and teaching. They two surveys are also similar in indicating that the *learning environment* – roughly equivalent to “learning resources” in NSS – is in the lower range of correlation with overall satisfaction (Buckley 2012).

Table 4 also indicates some interesting differences/characteristics in what matters for students in different subject fields. For instance, it appears that students in professional education (especially at the bachelor level) put more emphasis on *Working life relevance* than the average student. For students in humanities on the other hand, *Working life relevance* appears to matter very little for their overall satisfaction. This result seems to reflect general differences between these subject fields. Professional education is targeted at specific professions and a significant portion of the education takes place at the professional institutions during practice (schools, hospitals, kindergartens). Thus *Working life relevance* (whether viewed as good or bad) is a highly present topic for the students. Education in the humanities on the other hand is discipline oriented, for the most part not targeted at specific professions and rarely takes place outside academic campuses. We find that students in the humanities rate the *Working life relevance* of their study programs the lowest of all subject fields examined, but as table 4 indicates, this does not appear to matter much for their overall satisfaction.

Other factors

We have also examined to what extent overall satisfaction vary with factors such as degree level (BA/MA),

credit points produced, the students own effort, motivation, goals and results. These results are briefly described below.

Overall, master students are more satisfied with their study program than bachelor students. The difference in average scores for overall satisfaction is significant (independent t-test at 0,01-level) but relatively small (0,1 out of the scale from 1-5). The biggest differences in favour of the master students are found when they are asked about their experience with research based teaching (0,6), satisfaction with theoretical aspects of learning outcome (for instance critical thinking and reflection (0,3)), and individual academic student counselling (0,3).

The survey includes several questions about the students' academic goals, their effort (study time per week) and their motivation for choosing their study programs. When introducing data on these factors into the linear regression model described above (table 4), we find that these factors do not contribute significantly, indicating that they do not influence the students overall satisfaction. We do find that students at study programs and in subject fields that on average study the most are also more satisfied on average. However, at the individual level the correlation between study time and satisfaction is very weak. It therefore appears that the connection between study effort and satisfaction is an indirect effect of characteristics within specific study programs. For instance, the average medicine student works very hard and is also highly satisfied with the study program, but there is no clear correlation between the two variables at the individual level. Thus we find no indications of a causal relationship between the two.

Table 4. Linear regression with the scores of the indexes as independent variables and scores for overall satisfaction as the dependent variable. The Beta-values indicate the relative contribution from the independent variables in explaining the observed variation in overall satisfaction. All beta values are standardized. * indicates that the correlation is significant at the 0.05 level, ** at the 0.01 lever (2-tailed).

	ANOVA Model (R ²)	Teaching and academic counselling (Beta)	Learning environment (Beta)	Student influence and participation (Beta)	Academic stimulation and coherence (Beta)	Working life relevance (Beta)	Student assessments (Beta)	Learning outcome (Beta)	Respondents (n)
Engineering (master)	0,43**	0,10**	0,07*	0,11**	0,39**	0,11**	0,01	0,08**	913
Law	0,49**	0,27**	0,18**	0,07	0,20**	0,08*	0,01	0,13**	607
Medicine	0,57**	0,25**	0,15**	0,09*	0,36**	0,10*	-0,02	0,05	364
Business and administration	0,49**	0,17**	0,04*	0,07**	0,33**	0,18**	0,02	0,10**	2566
Preschool teacher	0,47**	0,11*	0,05	0,27**	0,29**	0,13**	-0,03	0,06	677
Nursing	0,50**	0,20**	0,04	0,13**	0,22**	0,22**	0,00	0,12**	1273
Natural sciences	0,49**	0,11*	0,08*	-0,02	0,39**	0,15**	0,07*	0,14**	603
Humanities	0,55**	0,18**	0,09*	0,04	0,43**	0,07	-0,02	0,14**	509
Sociology	0,58**	0,15*	0,04	0,04	0,48**	0,24**	0,07	-0,04	148
Political science	0,48**	0,13*	0,05	0,07	0,32**	0,07	0,06	0,19**	410
Art	0,60**	0,30**	0,05	0,06	0,26**	0,07	0,05	0,17**	414
Psychology	0,53**	0,22**	0,03	0,06	0,36**	0,20**	-0,03	0,12*	403
Pedagogy	0,59**	0,24**	0,01	0,10*	0,36**	0,15**	0,03	0,07	502
Engineering (bachelor)	0,50**	0,29**	0,07*	0,11**	0,18**	0,18**	0,00	0,11**	922
Teacher education	0,53**	0,28**	0,00	0,08*	0,29**	0,23**	0,01	0,01	643
All disciplines	0,50**	0,19**	0,06**	0,10**	0,33**	0,16**	0,02*	0,09**	16302

Validity and reliability

A range of methods has been used in order to analyse the validity and reliability of the survey. The questionnaire is partly based on other national and international student surveys, both former and existing. An expert group, consisting of different stakeholders and research institutes with broad experience from student surveys, helped in designing the questionnaire. A group of students made a qualitative test before finalising the questionnaire.

Several months before the survey was carried out, a pilot survey was undertaken that included a limited number of institutions and study programs. The design of the pilot project was made as similar as possible to the main survey in the autumn 2013. Among other things, we received a number of comments from the respondents through an open box in the questionnaire as well as telephone interviews conducted afterwards. The pilot project gave valuable experience used to adjust the project design for the main survey. We also received feedback from the students in the main survey, as well as discussions with HEI employees afterwards, giving an overall impression of a well-functioning questionnaire with relevant questions.

Despite this overall positive impression, not all the questions in the questionnaire gave valid data. The portion of respondents that answered “not applicable” or that did not answer specific questions is low for most of the questions. Fourteen of the questions have portions of invalid data larger than 10 %. Most of them are questions where we expected a large portion of missing data, for instance questions about experience with research and about international exchange. In addition, feedback from students, HEIs and our own analysis have led us to rephrase some questions, deleting some, and adding new questions before this years’ survey.

With respect to representation, all students in their second year of their study programs were invited to respond, thus there was no selection bias in the setup of data acquisition. It is however relevant to analyse whether there was a *self*-selection bias among respondents in order to examine whether unequal representation of different student groups influenced the results. A number of background variables on the students were used to analyse whether particular student groups are more likely to answer the questionnaire than others.

The single most significant finding is that women are far more likely to answer the survey than men. Overall, women’s response rate is 36 %, while men’s response rate is 27 %. The same is true when examining gender differences in response rates for different subject fields. Women are also more positive than men in their views on study programme quality; this applies for the question of “overall satisfaction” as well as for the large majority of other questions. The differences in “overall satisfaction” are quite small (but significant in statistical terms), thus giving the data a small “positive bias”.³

Other background variables (among them age, citizenship, admissions competence and if the student is an exchange student or not), have also been analysed. The differences in response rates and satisfaction between these groups are negligible.

We have also analysed the drop-out during the completion of the questionnaire. 7.8 % of the persons that started the survey did not complete. Except for an increased drop-out after the first set of questions, the drop-out is fairly evenly distributed throughout. Women and older students were more likely to complete

³ The difference between the sexes is 0.07 on “overall satisfaction”. The average difference (all questions) is 0.08, the largest difference is 0.18. These are small numbers, considering the five-point scale.

the survey than men and younger students.

A key question is whether the most positive or negative students are more likely to respond. It is difficult to answer this question for certain without asking the students that did not respond the same questions, which for all practical purposes is impossible. We have instead tried to answer the question by analysing possible differences between respondent groups one might suspect being either more positive or negative than the average respondent:

- We analysed whether the first 1 000 respondents are more positive than the latest 1 000 respondents. On the question of “overall satisfaction”, the first 1 000 answered 0.05 more positive than the latest 1 000. This difference is significant in statistical terms, but substantially insignificant. From this analysis we find no indications that willingness or engagement to respond affects the results noticeably.
- There is a clear tendency that the more credit points⁴ they have produced the more likely they are to answer the survey. The correlation between credit points produced and “overall satisfaction” is 0.04. The correlation is (positive) significant in statistical terms, but substantially insignificant.
- At study program level, one might expect that study programs with high response rates have the most positive respondents. The correlation between response rate and “overall satisfaction” is 0.13 (Pearson’s R) among the 700 study programs with the largest number of respondents⁵. The correlation is (positive) significant in statistical terms, but not substantially very significant.

In summary, we find a series of minor indications that the most positive students are more likely to answer the survey, thus creating a small “positive shift” in the results for the Studiebarometeret.

The national survey as a quality enhancement tool

The results from the Studiebarometeret were published for the first time in February 2014. The survey is planned to take place every year for at least five years. The Studiebarometeret has received a mixed welcome by the HEI sector. However, the feedback from the majority of the participating institutions as well as the Norwegian Association of Higher Education Institutions and the National Union of Students has been positive. They report that the Studiebarometeret contributes to quality assurance and enhancement in three ways. First they find the data made available from the survey useful for complementing their own data from local student evaluations (in order to increase the value of data for institutional quality assurance and enhancement, NOKUT has made all the raw data for the survey available for the institutions). Some institutions have already implemented the Studiebarometeret in their quality assurance systems. Several institutions plan to replace the use of data from similar local evaluations with data from the Studiebarometeret in 2015. Secondly, the Studiebarometeret allows the institutions to compare student views on study programs between different institutions. This is especially useful when comparing similar study programs across the whole sector, allowing the institutions to monitor how their programs perform compared to other relevant programs at other institutions. The third reason given is that making the results public creates some form of action at the institution. Good results may be used to boost morale or in marketing. Poor results will be followed up and not go unnoticed. Prior to this year’s survey, several institutions that did not participate in the first round (e.g. the Police academy and some smaller private HEIs) have signalled their interest to participate, thus including almost all major providers of higher education in Norway.

The Studiebarometeret has also proved to be a welcome tool for the Ministry. The data from the Studiebarometeret has been used by the government to highlight issues which they find especially

⁴ The background variable *number of credits produced the latest three semesters* was used in this analysis.

important. For NOKUTs work as a quality assurance agency the survey serves both the purpose of providing data for analysis and data for audits of higher education. Although not a formal part of the criteria that HEIs must adhere to, Studiebarometeret gives indications of possible quality failures and provides indications on areas of interest.

The positive welcome of Studiebarometeret is not shared by all institutions and staff. The Studiebarometeret has been criticised for representing even one more evaluation contributing to “evaluation fatigue” among students and thus undermining the institutions local evaluations. Studiebarometeret has also been criticised for publishing results based on too low response rates and highlighting results that indicate differences between study programs that are not statistically significant. This is obviously a valid concern as so many as 45 % of the 1600 study programs in the Studiebarometeret had less than 20 students included in the survey population. In 2013/14 we published results for study programs if there were 10 or more individual responses. This allowed us to publish results for 40 % of the study programs included in the survey (attended by 70 % of the students). The average study program we published data for has a response rate of 41 % and 20 individual respondents. Before publishing results for the next survey we plan to increase the threshold for publishing results. We also believe it is realistic to obtain a higher total response rate as the survey should be better known among students and staff at the HEIs this year. The HEIs have also reported that they plan to intensify the marketing of the survey among the students in the hope that this will produce better quality data.

Similar surveys exist in other countries such as the Netherlands (Nationale Studenten Enquete) (Brenders 2013), the United Kingdom (The National Student Survey) (Marsch and Cheng 2008) and the USA (National Survey of Student Engagement) (Kuh 2004). Results from the Norwegian survey seem consistent with other European surveys (Arnesen et al. 2011; Buckley 2012; Eurostudent 2008-11). We therefore expect the results from the Studiebarometeret to be relevant outside a Norwegian context. The raw data (anonymous) from the survey is publicly available for research purposes, and can be obtained by contacting the Norwegian Social Science Data Services (NSD).

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