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Results from a research evaluation survey at Uppsala University

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AVDELNINGEN FÖR KVALITETSUTVECKLING

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Abstract

In light of a recent research evaluation exercise carried out at Uppsala University in 2016 and 2017 (Quality and Renewal 2017), this study investigates the preconditions and processes perceived to contribute to an enhanced embedded research quality culture. The study draws on the results from a survey answered by nearly 3 700 research-active staff, including doctoral students. A mixed-methods approach is adopted based on both a quantitative binary logistic regression model combining significant factors from three survey-related themes and a qualitative analysis based on answers to open-ended questions. The results from the binary logistic regression show that respondents who receive constructive feedback, have access to good support and infrastructure, have a good social environment at the department, and have a reliable funding situation have the highest odds ratios for perceiving the conditions for conducting high-quality research as good or very good. These results are also supported by the analysis of the open-ended questions, lending validity to the conclusions.

Keywords: Research, research evaluation, survey, conditions for high-quality research, Sweden, Uppsala University.

Contents

Introduction

A goal for Uppsala University is to have 'world-leading research'. To achieve this goal, a major university-wide research evaluation exercise was conducted: Quality and Renewal 2017 (Q&R17).[1] The aims and approach of Q&R17 was somewhat different from earlier more control-oriented evaluations conducted in 2007 and 2011, which primarily focused on research results. The 2017 research evaluation aims to strengthen research at Uppsala University through an enhancement-led focus on analysis, critical self-reflection, and external evaluation of *preconditions* and *processes* that underpin research quality and strategic renewal in order to raise internal awareness of strengths, weaknesses, and areas in areas in need of development.

To complement key indicators and bibliometric data serving as background material for departmental self-evaluations (in turn subject to external peer review), an extensive internet-based survey was carried out that focused on perceptions about and conditions for conducting high-quality research in local research environments within Uppsala University. In this study, the extensive material from the survey, including both set response options and open-ended questions, is analysed to better understand the preconditions and processes for quality enhancement at the university.

Aim

Drawing on the results from the research environment survey, this study investigates which preconditions and processes contribute to the creation of an enhanced embedded research quality culture. This study uses quantitative and qualitative analyses of how research-active staff at Uppsala University perceive their opportunities for conducting high-quality research in their local research environments and how they answer open-ended questions about their opportunities to conduct high-quality research.

The study is based on two interrelated questions:

- What factors identified in the survey contribute to a generally good view of the opportunities for conducting high-quality research?
- What specific issues and aspects are raised in the survey by the respondents in the open-ended questions regarding processes and conditions for enhancing the research quality culture?

[1] This study is based partly on results previously discussed and published in the evaluation report *Quality and Renewal 2017 (Kvalitet och förnyelse 2017): Research Environment Evaluation at Uppsala University*. The report describes the survey data and tests for significant differences using the chi-square test. Comparisons are made between the distribution of answers given by women and men, doctoral students and senior staff, respondents with a Swedish or an international undergraduate degree, and respondents within the three disciplinary domains.

Data and methods

The Q&R17 Research Environment Survey was carried out in 2016. The design of the survey is based on literature on high-quality research environments and extensive reference/focus group discussions in the project group, quality committee, and a reference group (consisting of heads of departments, researchers, and doctoral students). The survey questionnaire was organised into eight themes: background; organisational affiliation and main research environment; research activities in the research environment; research-teaching linkages; collegial climate and social interaction; academic leadership; support and infrastructure; and concluding open questions about overall strengths and weaknesses. The survey included both set response options and open-ended questions.

The survey targeted research-active staff at Uppsala University, including doctoral students and clinical practitioners engaged in research or associated with Uppsala University. The survey was sent to nearly 6,600 persons associated with the three disciplinary domains (including nine faculties) sorted into 53 evaluation units. In total, 3,681 respondents answered the survey, resulting in a response rate of 57%.[2] The lowest response rates came from research areas with many clinical practitioners, foremost within the disciplinary domain of Medicine and Pharmacy.[3] From an employment category perspective, the category 'other', mainly including a range of clinical practitioners, had the lowest response rate (20%). The second and third lowest response rates are found among researchers (51%) and doctoral students (52%). However, when examining potential group biases, the share of individuals in each employment category did not substantially differ between the population invited to take the survey and those answering the survey (e.g., 35% of the population invited were doctoral students, and 32% of the answering respondents were doctoral students). This also applies to the gender distribution, which did not reveal any substantial differences between the invited population and the respondent population.[4]

The study uses a mixed-methods approach involving both quantitative and qualitative analyses. In the quantitative approach, the results from the comprehensive research environment survey are analysed using a binary logistic regression to identify and investigate which factors in the survey that research-active staff at Uppsala University perceive contribute to the opportunity to conduct good research (in the following referred to as high-quality research) in their main research environments.

High-quality research is investigated by analysing the association between a dichotomised outcome variable based on the survey question: 'Overall, I think my opportunity to conduct good research in my main research environment is…'

[2] In relation to disciplinary domain affiliation, the survey was sent to 1816 research-active staff within the Humanities and Social Sciences (corresponding to a response rate of 67%), 2618 persons within Medicine and Pharmacy (with a response rate of 44%), and 1816 persons within Science and Technology (with a response rate of 65%). The response rate varied between 42% and 71% at the faculty level and between 14% and 94% at the evaluation unit level (only six evaluation units out of 53 had a response rate lower than 50%).

[3] This can partly be explained by the fact that many practitioners have affiliations with several research environments included in the survey and partly by the fact that some clinical researchers at the University Hospital do not regard themselves as part of Uppsala University despite some form of formal affiliation, which may have had a negative impact on the response rate among practitioners.

[4] Because these figures are extracted from different materials, they are not fully comparable.

(where 0 = 'generally poor or neutral' and 1 = 'generally good').[5] The respondents answered the question with respect to three thematic sets of predictor variables from the survey that form three independent models.

To structure and select relevant variables from the survey, the models are based on the main themes in the survey. These themes include questions on factors that relevant literature has highlighted as important for conducting high-quality research.[6] Specifically, the themes in the models are defined by variables related to background factors (Model 1), academic core issues (Model 2), and structural factors (Model 3). Statistically significant variables from the three models are combined into a fourth model (Model 4) to determine the relationship between these across the themes. However, it should be noted that the models present a general and average respondent view on an overall university level; that is, these conditions could greatly differ between disciplinary domains (although included as a predictor variable in Model 1) and faculties. Thus, splitting the population into disciplinary domains or faculties could generate results different from those generated on a university level.

The qualitative analysis identifies and highlights themes and aspects voiced by the respondents. Together, the quantitative and qualitative analyses provide a more comprehensive picture of what the respondents perceive contributes to high-quality research and an embedded quality culture.

In the qualitative analysis, the answers to the open-ended questions in the survey have been coded and categorised using NVivo. For each question, all of the answers are categorised into themes, except for the question on weaknesses where the categorisation was terminated upon data saturation. This decision was made due to the large number of answers and the experience from the categorisation of the answers on strengths. A majority of the comments and the responses given to the open-ended questions in the survey are written in Swedish. The quotations are presented in their original language.

Disposition

The study is organised into three main sections. The first section describes the study's central background data. The second section, divided into two subsections, presents results from the binary logistic regressions. The first subsection briefly presents the results from the three initial models. The second subsection provides a more detailed account of the results from the fourth model (i.e., the subsection combines the significant variables from the three initial models). The third main section analyses the responses to the open-ended questions. Here, aspects and quotations are presented that relate to strengths and weaknesses in the research environment, whether the respondent would recommend the research environment to others, views on infrastructure and support, views on multilingualism, experiences of being affiliated to Campus Gotland, and other comments. The study concludes with a summary and a brief reflection of the results.

[5] The answering alternatives are 'very poor', 'poor', 'neither good nor poor', 'good', 'very good', and 'don't know/not applicable'. The alternative 'don't know/not applicable' was removed in the analysis.

[6] See Carlsson, H., Kettis, Å., and Söderholm, A. (2014). *Research Quality and the Role of the University Leadership*. Stockholm: The Swedish Association of Higher Education (SUHF)/Experts' Committee on Quality.

Descriptive background data from the survey

The research environment survey targeted staff who were actively participating in research at all levels and employed by or affiliated with Uppsala University. This section describes the background variables in the models.

Out of the 3,681 respondents who answered the survey, 56% are men and 43% are women and 19 respondents chose the option 'other' and 26 respondents did not answer the question. The largest proportion of respondents were between 31 and 40 years old (33%) and the second largest proportion was between 41 and 50 years old (22%, see Table 1).

As the undergraduate degree is the lowest formal degree that allows admission to the doctoral studies programme in Sweden, the variable containing information about where the respondents completed their undergraduate degree is used as a proxy to determine the share of international graduates at the university. Accordingly, nearly two-thirds of the respondents have an undergraduate degree from a higher education institution located in Sweden; the rest have an undergraduate degree from outside Sweden (i.e., are international graduates, see Table 1). Of the responding international graduates more than half, 53%, are associated with the disciplinary domain of Science and Technology, 23% with the disciplinary domain of Humanities and Social Sciences, and 24 % with the disciplinary domain of Medicine and Pharmacy

Table 1. Respondent characteristics: gender, age, and Swedish or international undergraduate degree.

		Column Valid N %	*Count*
Gender	Female	43%	1588
	Male	56%	2048
	Other	1%	19
	Total	**100%**	**3655**
Age	30 or younger	18%	659
	31-40 years	33%	1190
	41-50 years	22%	819
	51-60 years	16%	586
	61-66 years	7%	246
	67 or older	4%	157
	Total	**100%**	**3657**
Undergraduate degree	Sweden	65%	2168
	Outside Sweden	35%	1151
	Total	**100%**	**3319**

According to academic role or employment category, doctoral students make up the largest respondent group with nearly one third of the respondents (32%), followed by researchers (17%), senior lecturers (16%), and professors (15%, see Figure 1).

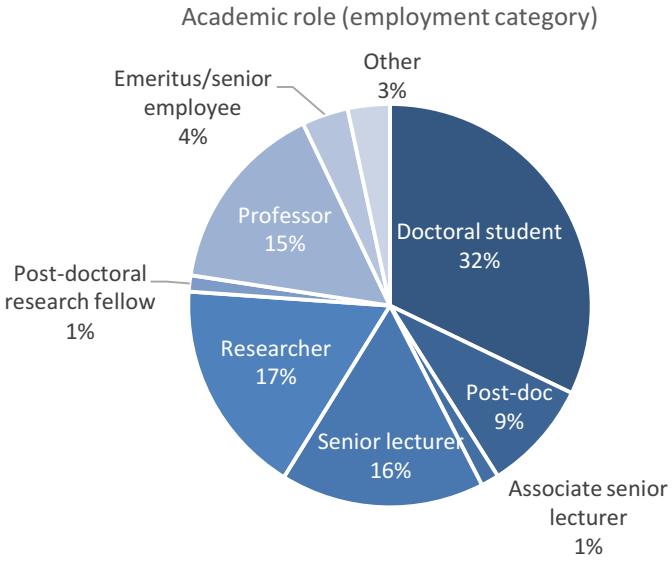

Figure 1. Respondents' academic roles at Uppsala University (employment categories) (n=3613).

However, if aggregating the respondents into larger groups (based on similarities in working tasks or employment conditions), the distribution of respondents becomes more even across the material (i.e., 32% doctoral students, 28% junior faculty[7], and 35% senior faculty[8]).

According to affiliation, the distribution of respondents is also evenly distributed across the disciplinary domains with one-third in each domain (Table 2). In turn, the disciplinary domains include nine faculties, of which the largest number of respondents belong to the faculties of Science and Technology (1222 respondents), Medicine (1001 respondents), and Social Sciences (514 respondents).

Table 2. Respondents' affiliations.

		Column Valid N %	*Count*
Disciplinary domain	Humanities and Social Sciences (H&S)	34%	1218
	Medicine and Pharmacy (M&P)	33%	1179
	Science and Technology (S&T)	34%	1222
	Total	**100%**	**3619**
Working in a clinical research environment	Yes	14%	522
	No	86%	3130
	Total	**100%**	**3652**
Campus Gotland	Yes	2%	59
	No	98%	3550
	Total	**100%**	**3609**

A small proportion (2%) of the respondents are based at Campus Gotland, part of Uppsala University located in Visby on Gotland in the Baltic Sea, and 14% of

[7] Junior faculty is here defined as assistant professors (*forskarassistenter*), associate senior lecturers (*biträdande lektorer*), post-docs, and researchers.
[8] Senior faculty is here defined as senior lecturers, professors, and emeriti/senior employees.

the respondents work in a clinical research environment (e.g., at Uppsala University Hospital, a Centre for Clinical Research (CKF), or the municipality). The majority of these respondents belong to the disciplinary domain of Medicine and Pharmacy.

The respondents' experiences may be influenced by the extent of their work at the university and how long they have been affiliated with the university. Table 3 lists the percentage and frequency of answers to the questions regarding percentage of full-time employment and work experience at Uppsala University. A large majority (74%) of the respondents answered that they work 76% to 100% of full-time employment at the university. In terms of work experience at the university, a work experience of two to five years is most common followed by '6-10 years' and 'more than 20 years'.

Table 3. Respondents' percentage of full-time employment and work experience at Uppsala University.

		Column Valid N %	*Count*
Percentage of full-time employment	10% or less	8%	284
	11-25%	5%	173
	26-50%	7%	245
	51-75%	6%	223
	76-100%	74%	2652
	Don't know	0%	0
	Total	**100%**	**3577**
Work experience at UU	1 year or less	9%	325
	2-5 years	32%	1156
	6-10 years	22%	798
	11-15 years	13%	475
	16-20 years	8%	297
	More than 20 years	16%	566
	Don't know	0%	0
	Total	**100%**	**3617**

The survey was designed to identify and define the respondents' organisational research environments. Thus, the respondents were asked to choose between six predefined types of research environments in which they conduct their main research activities: 43% identified the 'department', 23% identified 'research group (as organisational unit)', and 21% identified 'division/research programme or one of the department's research topics' (Figure 2).

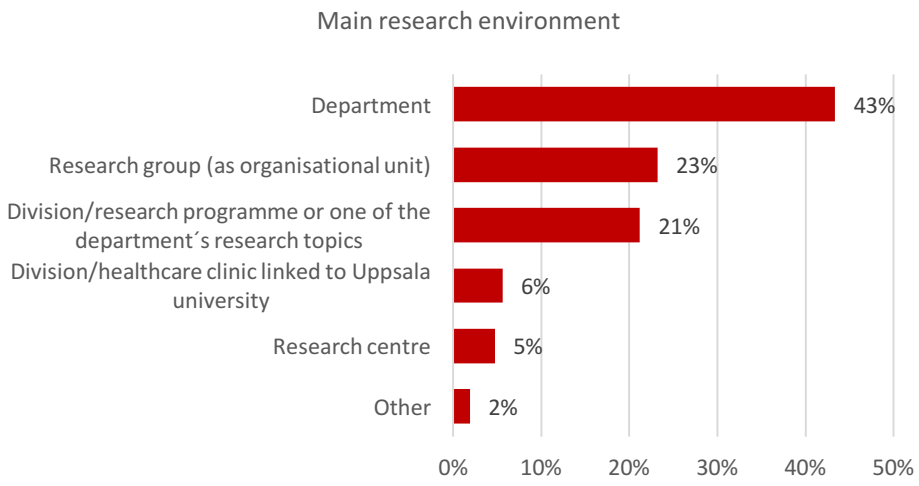

Figure 2. Option that best characterises the respondents' main research environment (n=3598).

Further investigating this, we can see distinct differences between the nine faculties. The 'department' is the most common research environment in the Faculties of Law, Social Sciences, Arts, Languages, and Theology. In the Faculty of Science and Technology, most respondents see the 'division/research programme' as their main research environment. In the Faculty of Medicine and the Faculty of Educational Sciences, the 'research group' is the most frequent option for respondents. However, in the Faculty of Pharmacy, both 'department' and 'research group' are nearly equally emphasised (37% and 35%, respectively).

In the following section, the relation between variables in the survey will be explored using four binary logistic regression models.

The Binary logistic regressions

This section briefly describes the outcome variable and the results from the three initial models to explain and verify the appearance of statistically significant variables used in the combined fourth model. In addition, a brief and general picture of the results will be presented for the first three models (see appendix for detailed results) and the size and effect of the variables for the fourth model will be discussed.

It should be noted that the effect of a predictor variable in the binary logistic regression model does not stand alone, as the effect is related to other predictor variables in the model – i.e., different model setups generate different results. In other words, the statistical significance and effect of the predictor variable (and its dummy categories) are relative to how the model is constructed.

Results from the initial binary logistic regressions

The survey asks the respondents a general question about how they perceive the overall opportunities to conduct high-quality research in their main research environment. A majority of the respondents (76%) perceived these opportunities as good or very good (Figure 3). Comparing the answers between different respondent groups showed no significant differences between men and women, doctoral students and senior staff, or Swedish graduates and international graduates.[9]

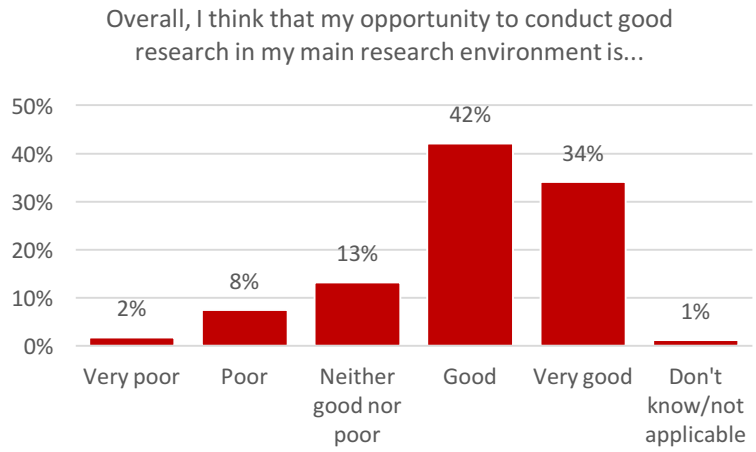

Figure 3. Overall opinion about opportunities to conduct good research (n=3459).

[9] For a more detailed analysis of statistical significant differences between respondent groups, see the full report 'Quality and Renewal 2017 (Kvalitet och förnyelse 2017): Research Environment Evaluation at Uppsala University'.
(http://uu.diva-portal.org/smash/record.jsf?pid=diva2%3A1153914&dswid=3195)

We performed a binary logistic regression to analyse the association between the opportunities to conduct high-quality research in the main research environment and other factors identified in the survey. The answers from the question are dichotomised into a dummy variable, in the analysis referred to as 'generally good' and 'generally poor or neutral' (see data and methods for a more detailed discussion).

Table 4. Frequency table of the dummy variable based on the question 'Overall, I think my opportunity to conduct good research in my main research environment is…'

		Column Valid N %	*Count*
Valid	Very poor, Poor and Neither god nor poor	23%	784
	Good and Very Good	77%	2648
	Total	**100%**	**3432**

Note: System missing and 'Don't know/not applicable' excluded (249 respondents).

Although the answers from the middle alternative 'neither good nor poor' is allocated to the dummy category 'generally poor or neutral' together with 'very poor' and 'poor', the frequency of answers is still quite small in this category compared to the frequency of answers in the 'generally good' category (see Table 4).

In the next section we will analyse how well the different models in the quantitative analysis perform and which factors have a significant effect on the perceived opportunity to perform high-quality research in the respondents' research environments.

Model 1. Respondent and research environment background factors

In the first model, we investigate the extent of the association between the opportunity to conduct high-quality research in the research environment with respect to ten predictor variables related to respondent background (gender, age, Swedish or international undergraduate degree, employment category), basic working conditions (e.g. work experience at Uppsala University, and contracted research percentage), and affiliations (disciplinary domain, clinical environment, Campus Gotland, and type of research environment. For a list of variables and their corresponding survey question, see Table 7 in the appendix).

Overall, the predictive capacity of the model incorporating these background factors is quite weak, accounting for only 13% of the variance – i.e., the proportional reduction in the absolute value of the log-likelihood (Nagelkerke $R^2 = 0.13$, see Table 10).[10] Several statistically significant factors stand out and increase the odds of perceiving the opportunity to conduct high-quality research as generally good: high estimated percentage of research in the employment (ideally 50-79% and 80% or more); being a professor or a researcher; and working at a research centre or in a research group. Moreover, there is a statistical significance in terms of gender, where men have slightly higher odds than women of perceiving the

[10] Nagelkerke R^2 is a pseudo R^2 measure that is an adapted version of the R^2 (normally used in linear regression modelling). The measure can be used in logistic regression with a categorical outcome variable. It is an adjusted version of the Cox & Snell R^2 (which is based on the log likelihood for the model compared to the log likelihood for a baseline model) that adjusts the scale of the statistic to cover the full range from 0 to 1.

opportunity to conduct high-quality research as generally good than women. Noteworthy is that a statistical significant negative association is related to disciplinary domain: the respondents from the disciplinary domain of Science and Technology have lower odds for perceiving the conditions for conducting high-quality research as generally good compared to respondents in the disciplinary domain of Humanities and Social Sciences (acting as a reference category).[11] Similarly, there is a negative association between both work experience at Uppsala University and age with the opportunity to conduct high-quality research. That is, the odds for perceiving the opportunity as generally good decreases with both increasing amount of work experience at Uppsala University and increasing age (50 years and older).

However, the analysis also shows that there are no statistical differences between respondents with Swedish or international undergraduate degrees. Similarly, there was no statistically significant difference between respondents working in a clinical research environment and those who do not or being located at Campus Gotland or not.

Model 2. Academic core issues in the research environment

In Model 2, we examine several selected variables that the literature identifies as influencing academic work and research. These predictor variables mainly address academic core issues expected to contribute to an academic approach, such as academic freedom, research ethics, collegial feedback, and academic networking. The model includes 16 predictor variables (see Table 8 in the appendix for a list of variables and their corresponding survey question). In the model summary (Table 11), we can see that the explanatory power of the model is higher than that of the background model accounting for 55% of the variance (Nagelkerke R^2 = 0.55), suggesting that these variables better explain the propensity of the respondents to perceive the opportunity to conduct high-quality research to be generally good in their research environments.

According to Model 2, respondents with the highest probability of viewing their opportunities to conduct high-quality research to be generally good are those: with overall good access to support and infrastructure; with good opportunities to receive constructive feedback on their research; who perceive they freely can develop or choose research topics and methods; with good opportunities to attend academic conferences; who are situated in work environments that place a great deal of importance on establishing contacts with internationally leading research environments; and those in work environments with a stimulating competition among colleagues. In addition, the respondents identified two less influential conditions that contribute to their opportunities to conduct high-quality research (i.e., the relatively high odds ratios for the middle alternative 'to some extent'): active discussions on issues about research ethics and/or academic integrity

[11] A plausible explanation for this is that the disciplinary domain of Humanities and Social Science (i.e., the reference category) has a larger share of respondents employed as senior lecturers and the disciplinary domain of Science and Technology has a larger share of post-docs, researchers, and post-doctoral research fellows relative to the reference category. The latter groups have also reported that they are more uncertain about the future and long-term funding situation compared to the senior lecturers (see Model 4).

(e.g., fraud, plagiarism, manipulation) and significant efforts to connect teaching to research in a carefully planned and executed manner.

Also having a statistically significant effect in Model 2 is the question that address research-related cooperation within the main research environment and the question whether valuable discussions on research are conducted even outside formal meeting places (e.g., in the hallways, break room, and lunch room).

Finally, several variables were not statistically significant: seminars where there is an open, permissive, and lively discussion climate; research-related cooperation with people at one or more universities in the European Union; research-related cooperation outside the European Union; aspiration to seek complementary knowledge outside one's own research environment; third stream activities such as placing great importance in the *main research environment* on working actively to communicate, promote, and utilise the research in industry and society (e.g., through collaboration or popular science communication); and the respondents *themselves* working actively to communicate, promote, and utilise their research in industry and society.

Model 3. Structural factors related to the research environment

Model 3 analyses the relative importance of structural factors related to the research environment and conditions for doing research. These factors include active quality management, collegial responsibility, recruitment strategies, and aspiration to seek gender equality. Related more to the individual researcher, Model 3 also includes the funding situation and information about qualifications for taking the next career step. In total, Model 3 includes 15 predictor variables (see Table 9 in the appendix for a list of variables and their corresponding survey question).

The overall predictive capacity of Model 3 is slightly higher than that of Model 2, accounting for 60% of the variance (Nagelkerke $R^2 = 0.60$, see Table 12). However, fewer variables and answering alternatives are statistically significant in Model 3 than in Model 2. Statistically significant variables for the likelihood of perceiving the opportunities to conduct high-quality research as generally good are: active quality management for the development of research activities; good current funding situation; immediate superiors taking charge of things that are not working; a critical mass of other active researchers in the field of research; aspirations to achieve gender equality and equal opportunities (regardless of gender, gender identity or expression, ethnicity, religion, physical ability or disability, sexual orientation, or age); and a mobility regarding research staff in and out of the main research environment.

Although social environment at the department, or equivalent, is statistically significant in Model 3, there are no differences between the reference category ('very poor') and the other answering alternatives (i.e., 'poor', 'neither good nor poor', 'good', and 'very good'). Similarly, the answers to the questions regarding if it works well to combine research career and family is statistically significant as a whole, but these answers show no statistical differences between the answering alternatives (Table 12).

Model 3 also has several non-statistically significant variables: providing support to newly graduated doctors; taking part in group-wide discussions on competence needs and recruitment strategies; clarifying the qualifications needed to

take the next career step within the university sector; promoting collegial responsibility regarding group-wide issues; ensuring everyone is heard at formal meetings; providing effective ways to handle multilingualism; and discussing the focus and long-term development of the research in the main research environment.

Main analysis (Model 4): The relative importance of factors contributing to the perceived opportunity to conduct high-quality research in the main research environment

Model 4, combining the statistically significant variables from the three previous models, includes 25 statistically significant predictor variables (Table 5).

Table 5. Source of significant variables in Model 4.

Model source	*Variable description**
Model 1	Gender
	Age
	Employment category
	Time employed at the university
	Disciplinary domain at the university
	Type of research environment
	Percent active in research
Model 2	The opportunity to freely choose research topics and methods
	Constructive feedback on research
	Stimulating competition
	Research ethics/academic integrity
	Contacts with internationally leading research environments
	Research-related cooperation with people within the main research environment
	Opportunity to attend academic conferences
	Connecting teaching and research
	Valuable discussions on research conducted outside the regular meeting places
	Access to support and infrastructure
Model 3	Critical mass of researchers
	Gender equality and equal opportunities
	Active quality management
	Current funding situation
	Mobility of researchers in and out of the main research environment
	Combining research career and family
	Social environment
	Superiors taking charge of things that are not working in the research environment

* See Table 7, Table 8, Table 9, and the survey appendix for full questions and variable names in the models.

The results from the binary logistic regression show that the explanatory power of the Model 4 is higher than for the other models, accounting for 69% of the variance (Nagelkerke $R^2 = 0.69$, see Table 13). Eighteen variables (and a variation of answering alternatives in the variables) in the combined model have statistically significant associations with the perceived opportunity to conduct high-quality research in the main research environment.

An indication of the size of the effects can be seen in the odds ratios (labelled Exp(B) in Table 13). However, a consequence of using categorical variables with several answering alternatives as predictors is that the results generated are plentiful. To increase the readability of the results, the analysis will initially focus on

variables with the largest *positive effect* and with high odds ratios at the far end of the scale (e.g., 'to a very large extent' or 'very good'). These results and other significant answering alternatives are also presented in Figure 4 (see Table 13 for a full presentation of the results).

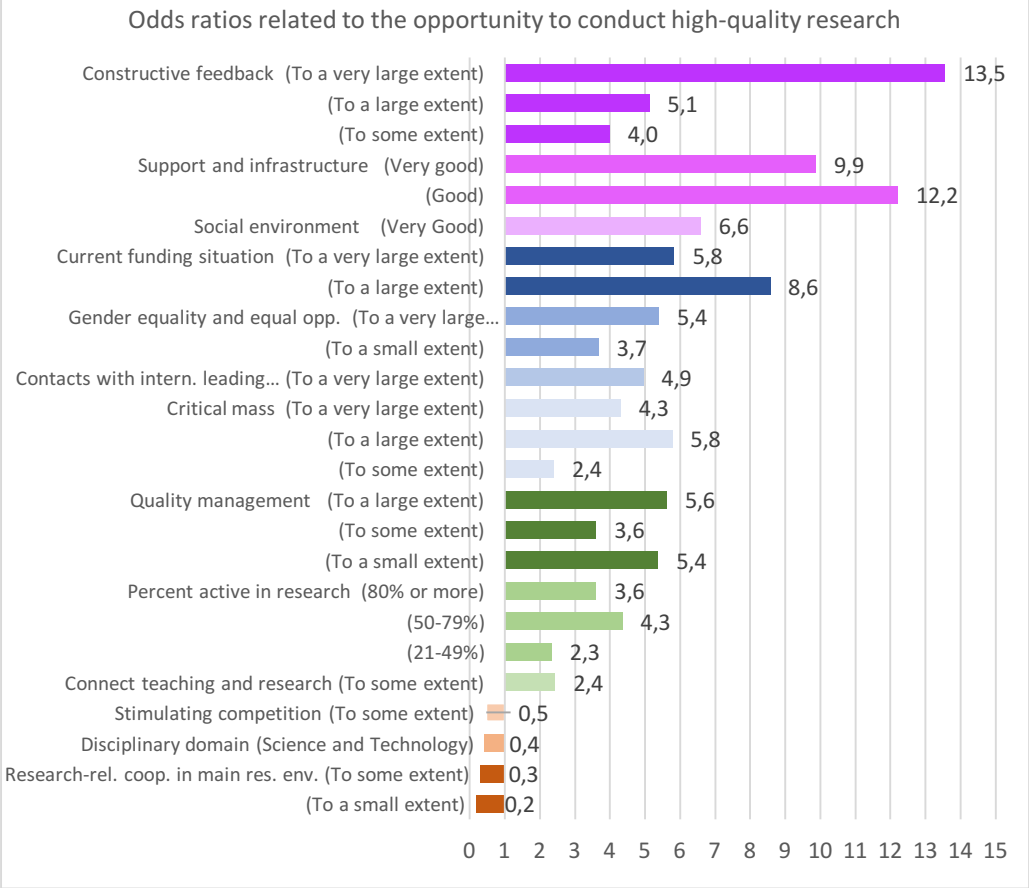

Figure 4. Odds ratios for perceiving generally good opportunities to conduct high-quality research in the main research environment in relation to statistically significant ($p < 0.05$) variables and categories in Model 4. Sorted by highest odds ratio value at the far end of the scale and grouped by variables sorted after answering alternative.

A first impression of the results is that most background factors have less impact, and academic core issues and structural factors have more impact on the effect of the combined model. Thus, the model results show that the variable with the highest odds ratio relative to the other variables in the model is linked to ***constructive feedback***. Here, respondents who perceive that their main research environment provides the opportunity to receive constructive feedback on their research are 13.5 times more likely to state that they have generally good opportunities than those opting for the reference category 'not at all'. The next highest odds ratio is found in relation to respondents who think that they have 'very good' access to ***support and infrastructure***. Compared to the respondents opting for the 'very poor' alternative, these respondents are 9.9 times more likely to perceive their opportunity to conduct high-quality research in their main research environment to be generally good. As regards to support and infrastructure, it should also be noted that the alternative 'good' has the next highest odds ratio in the model (odds ratio of 12.2). The ***social environment at the department*** (or equivalent) is

the variable with the third highest odds ratio at the far end of the scale. Thus, respondents who perceive that the social environment is 'very good' are 6.6 times more likely to think that the opportunities to conduct high-quality research are generally good than those opting for the reference category 'very poor'. However, there are several variables with higher odds ratios in answering alternatives that are not at the far end of the scale (e.g., the questions and alternatives related to support and infrastructure and current funding situation). The variable with the fourth highest odds ratio is related to respondents who 'to a very large extent' perceive that they have a ***current funding situation*** that enables them to have a long-term research perspective. This alternative has an odds ratio that is 5.8 times higher compared to the reference category 'not at all' (also note that the alternative 'to a large extent' is 8.6 times higher). The fifth highest odds ratio is related to respondents stating that there is 'to a very large extent' an aspiration to achieve ***gender equality and equal opportunities*** (regardless of gender, gender identity or expression, ethnicity, religion, physical ability or disability, sexual orientation, or age) in the main research environment. These respondents are 5.4 times more likely to be positive about the opportunities to conduct high-quality research than those who chose the alternative 'not at all'. The sixth highest odds ratio is related to respondents in main research environment who 'to a very large extent' place great importance on establishing ***contacts with internationally leading research environments***. Here, the odds ratio is 4.9 compared to the reference 'not at all'. The factor with the seventh highest odds ratio at the far end of the scale is ***critical mass of active researchers*** in the respondent's field of research, where respondents opting for this alternative are 4.3 times more likely to have generally good opportunities to conduct high-quality research than those choosing 'not at all'. Finally, the eighth highest odds ratio for alternatives at the far end of the scale is found in the background variable ***percent active in research***, where respondents who can devote more than 80% of their working time to research generally are 3.9 times more likely to perceive the opportunities to be generally good compared to respondents with a research activity of '1-20%' of a full-time employment. However, according to the model, the ideal amount of research is '50-79%' of full-time employment with an odds ratio of 4.3 (whereas 21-49% research of a full-time employment has an odds ratio of 2.3).

Moreover, another variable with a high odds ratio is the importance placed on ***active quality management*** for the development of research activities in the main research environment. The respondents who answered 'to a large extent' are 5.6 times more likely to have a generally good perception of the conditions for conducting high-quality research. Finally, respondents thinking that effort 'to some extent' is made in the main research environment to ***connect teaching to research*** in a carefully planned and executed manner are 2.4 times more likely to perceive the conditions to conduct high-quality research as generally good.

However, a few variables also have a *negative effect* on the outcome variable: ***stimulating competition between colleagues***; affiliation to a specific ***disciplinary domain;*** and ***research-related cooperation with people within the main research environment***. Thus, respondents perceiving that the main research environment 'to some extent' is characterised by a stimulating competition between colleagues show a higher propensity for a 'generally bad or neutral' attitude (i.e., odds ratios below one in relation to the dummy value 'generally good'). Similarly, respondents belonging to the disciplinary domain of Science and Technology are 57% less

likely (an odds ratio of 0.43) than respondents in the reference category disciplinary domain of Humanities and Social Sciences to view their opportunities for conducting high-quality research as generally good.[12] However, it is hard to explain the negative attitude toward research-related cooperation with people within the research environment (here both 'to a small extent' and 'to some extent' are significant compared to the reference 'not at all'). Perhaps, this could be viewed as 'inward' or limiting, while cooperation with researchers outside the main research environment could be considered more fruitful for conducting high-quality research.

Moreover, variables relating to research environments where respondents perceive that they have an opportunity to ***freely develop or choose research topics and methods***, where they have an opportunity to ***attend relevant academic conferences***, where it ***works well to combine research career and family***, where there is a ***mobility regarding research staff*** in and out of the main research environment, and where ***immediate superiors take charge of things that aren't working*** in the research environment are all statistically significant in the model, but do not show any significant differences between the reference category (i.e., 'not at all') and the other answering alternatives in the variable.

Relative to other variables in Model 4, *gender*, *age*, *employment category*, *time working at the university* (including doctoral studies), *type of research environment*, and active discussion on issues of *research ethics and/or academic integrity* are not statistically significant.

The next section discusses and analyses responses to the open questions

[12] See note related to Model 1 for a plausible explanation.

Responses to the open-ended questions

In addition to the quantitative questions, the survey questionnaire includes open-ended questions as well as some options to comment on a question or to specify an answer. These questions and opportunities to comment are designed to gain a deeper understanding of how the respondents perceive their research environment. When the respondents have the opportunity to formulate their opinions themselves, they can explain, motivate, and address themes and/or questions that are not covered in the quantitative questions. For example, the open-ended questions ask respondents to identify strengths and weaknesses, responses not elicited by the quantitative questions.

This section presents the results of the analyses of the answers to the open-ended questions and the answers to some of the comments. There are many answers in the data, several of them rather extensive. The categorisations capture larger themes and some of the comments are quoted, but the total complexity in this rich material is not possible to show in a limited report.

The following open-ended questions are included in the analysis (presented in the order of analysis):

- What do you think are the greatest strengths of your *main research environment* at Uppsala University?
- What weaknesses or obstacles to conducting successful research do you think exist in your *main research environment*? Please also suggest potential improvement measures!
- Would you recommend other researchers/doctoral students to apply to your *main research environment*?
- If you have any other comments regarding infrastructure and support at Uppsala University, please write them here. (Please also suggest potential improvement measures!)
- In an international research environment, multilingualism is common (e.g., in scientific discussions, social events, teaching, administrative support and information). Do you think that your department (or equivalent) has found an effective way to handle multilingualism?
- As a researcher at Campus Gotland, you are often a part of multiple environments, both within the campus and in a department located in Uppsala. In your case, having a primary workplace at Campus Gotland, which specific obstacles and opportunities for creating a good research environment do you see?
- Other comments

Greatest strengths in the main research environment at Uppsala University

About 1750 respondents answered the question 'What do you think are the greatest strengths of your *main research environment* at Uppsala University?' The comments have been aggregated into larger themes of strengths, where the answer from one respondent often is found in more than one category and sometimes up to ten different themes.

The largest theme includes different comments on the main research environment as ***a good work/social/research environment***. The respondents describe their work milieu as being a good place to be, a friendly place, and an open place with a team spirit where people help each other out and share their knowledge.

> Mycket gott samarbete och trivsel inom avdelningen, ingen missunnsamhet om resurser, positivt resonerande om fördelning av resurser. En mycket trevlig både fysisk och psykologisk arbetsmiljö som vi till stor del själva utformat.

> A stimulating environment with engaged and interested junior and senior researchers. A good atmosphere to work in.

> En god social miljö som främjar en vi-känsla och en stolthet över att tillhöra en grupp i världsledande ställning inom området.

> The great team spirit.

Several of these comments make a connection between a good social environment and the research conducted.

> Doing cutting-edge research in my research group. Close-knit research team of junior and senior researchers with an international background. Friendly and supportive atmosphere AND good research output.

> Miljön präglas av engagemang, respekt, vänlighet på ett sätt som uppmuntrar och stöttar mig som doktorand så att jag kan fokusera på mitt projekt och på att utvecklas till en självständig forskare.

> Kind people make a warm and friendly milieu where one can dare…is that not what research is? Daring to do things differently.

Within the theme of the work/social/research environment, there are some aspects that reoccur in the answers more often than others: *openness*, *a good climate for discussion and feedback*, *a stimulating and encouraging environment*, *an accepting environment*, *a creative environment*, *a supportive environment*, and *non-hierarchy*. Below, these aspects are presented in more detail.

One specific word that keeps reoccurring in the answers is *openness*. The respondents write about an environment with openness to discussions and openness to new ideas and/or to research (and researchers) inside and/or outside their own field of expertise. Some of the comments in this section have already touched on *a good climate for discussion and feedback* as a strength that several of the respondents see in their main research environment.

> Öppet debattklimat mellan personer med olika uppfattningar, allmänt intresse att lära sig och diskutera saker som berör såväl forskning som undervisning utanför det egna smala området; är inte i så värst hög utsträckning ett forskarhotell.

> People have good communication, everyone listens to each other in a respectful manner, casual discussions also usually turn in to reflective sessions related to research, many opportunities to present our work to get peer and seniors' feedback. No one feels excluded in the department.

> Öppet samtalsklimat med möjligheter att föra fram och diskutera konstruktiv och kreativ kritik. Tillåtande att även ställa till synes dumma frågor och få dem diskuterade.

> Open and critical discussions on all research. If someone wishes to publish something, the first stage of peer review is to prove it to the research group.

Another reoccurring aspect in the comments on the work/social/research environment is that it is a *stimulating and encouraging environment* to be in. Several answers identify that it is '*högt i tak*' (an *accepting environment*) as a strength. Another aspect of the work/social/research environment that some mention is that it is a *creative* environment.

> Lätt att hålla en öppen dialog om allt. En väldigt tillåtande atmosfär där man uppmuntras att tänka själv och att man ges utrymme att utföra dessa idéer.

> Miljön kan beskrivas som "icke-statisk" på så sätt att den inte fastnar i en vedertagen "sanning"/kultur kring hur saker ska göras => en mycket kreativ miljö.

> Den sociala atmosfären är också god och internationell - en dynamisk, spännande och kreativ miljö där mycket "händer".

Furthermore, some comments identify the environment as *supportive* and *non-hierarchical*.

> There is no sense of hierarchy or superiority; an issue or an idea is equally valid, whether it is brought up by a project student on the bachelor level or the head of the department. This freedom to express oneself without fear of being slammed down by someone more superior is, I believe, crucial to a healthy work environment and, perhaps more importantly, a safe research environment.

> Tillåtande och icke-hierarkisk miljö där "von oben"-attityder är bannlysta. Konstruktiva kritiska diskussioner som syftar till att forskaren ska kunna öka kvaliteten i det arbete hen bedriver.

Some respondents describe their work/social/research environment as a place that promotes curiosity, a positive climate, and an inclusive environment.

The second largest theme of strengths is about the fellow researchers/teachers in the environment. The theme consists of two parts where the largest includes comments on the ***high competence/high scientific level of the researchers/teachers***. Other comments are about the perceived good ***collegiality/colleagues***.

First, some of the comments regarding the *high scientific competence* in the environment are addressed. Several of these answers are also about how the environment as a whole and/or themselves as researchers benefit from the high competence of their colleagues.

> Excellent international team of professionals.

> Världsledande forskare med all den kompetens/data/kontakter mm som det medför

> Forskarna och lärarna vid institutionen är mycket skickliga inom sina respektive områden, bland annat genom att det länge funnits en kultur som betonat att alla tjänster ska utlysas i öppen konkurrens och utan snäva tjänstebeskrivningar. De är också mycket benägna att bidra till miljön på olika sätt, genom att delta i handledningen av doktorander, gå på seminarier, delta i arbetet med arbetsmiljön, lika villkor, med mera.

> Some people at the department are absolute powerhouses when it comes to research, especially research that matters on an international level, as well as good general knowledge of different opportunities that are important for early career researchers. They make it worthwhile to belong to the same research environment.

The respondents provide many positive comments on their *colleagues* and on the *collegiality* in their main research environment. Several comments address aspects of community and shared responsibility in the environment – 'A spirit of belonging together'.

> Stort kollegialt ansvarstagande innebär att vi är väldigt bra på kvalitetssäkring och problemlösning (vi poolar resurser på ett bra sätt genom att vara kollegialt inriktade). Hög kompetens i olika perspektiv och metoder innebär att kollegorna är både specialister och ganska "allmänbildade" forskare. Det är mkt värdefullt och motverkar klickbildningar och onödiga inlåsningar.

> Strong interdisciplinary collaborations with colleagues. A spirit of belonging together, taking responsibility beyond the own research group.

The third largest theme of strengths in the main research environment is different forms of ***cooperation***. These comments can be categorised as *(1) international cooperation*, *(2) cooperation within the main research environment*, and *(3) other cooperation, networks etc.*, although the categories often are interrelated.

Among the comments concerning *international cooperation*, the respondents mention international cooperation, collaborations, conferences, exchanges, networks, guest lecturers, seminar participants, etc.

> Internationell kreativ och produktiv miljö som ingår i flera ledande internationella nätverk. Flera gemensamma projekt i form av artiklar och ansökningar.

> Närheten, öppna attityden och stora intresse och interaktion inom vårt fält även internationell så att vi har lätt att gästforskare vill komma hit och berika vår miljö

> Möjligheterna att komma iväg på konferenser och utlandsvistelser vid andra universitet och forskningsmiljöer.

Several respondents also write about different forms of *cooperation within their main research environment*.

> Sammanhållning inom gruppen, med mycket interna diskussioner och feedback ex-vis på publikationer. Konkret samarbete i gemensamma forskningsprojekt.

> Vi är mer en avdelning än separata forskargrupper vilket är fördelaktig då många hjälps åt att hålla efter tex maskinpark, labb och att hjälpas åt med undervisningen.

> Inom avdelningen känner alla medarbetare ett ansvar för hela avdelningen, och vi kan prata om gemensamma satsningar.

Here are some examples of comments on *other cooperation, networks, etc*:

> Translationella möjligheter med verksamheter på preklinisk och klinisk institution samt Akademiska Sjukhuset. Mycket bra samverkan med andra forskningsgrupper.

> Leading research and communication with other leading institutions.

The fourth largest theme regarding comments of strengths in the research environment is ***infrastructure and support***. These comments address, for example, laboratories and laboratory equipment, instrumentation, administrative support, libraries and electronic resources, and premises. Some of the respondents comment that the available infrastructure is unique and world leading.

> Tillgång till unik infrastruktur och kompetens för att nyttja den samt en mycket god inställning till delande av nämnda infrastruktur.

> God tillgång till laborativ utrustning. Effektiva rutiner för insamling och analys av data. Breda nätverk för datainsamling. Stora uppbyggda databaser.

> Biblioteket fungerar mycket bra. Datorsupporten fungerar också mycket bra.

> I think the administrative support staff are fantastic. They always have time to help with anything.

The fifth category of strengths in the main research environment is ***freedom and independence***. In these comments, the research-active staff stress the importance of freedom of research such as the freedom to choose research topics, questions, and methods.

> Ett värnande om forskningens frihet, i den mening att forskare drivs och inspireras att hitta självständiga svar de på de forskningsfrågor som funnits angelägna att söka svar på.

> Friheten att välja forskningsuppgifter och frågeställningar o genomförandesätt.

> The freedom to test your ideas and decide and start appropriate studies.

Another large category of perceived strengths in the respondents' milieu is a ***high level/quality in the research/a successful environment.*** These respondents write about the high quality of the research conducted in the environment.

> Truly world-leading, cutting edge research. International.

> Flertalet medarbetare och samtliga professorer uppmuntrar och publicerar i världsledande tidskrifter.

> Unique standing in Europe due to established analysis methods.

There are also many comments on the ***breadth*** in the main research environment. These comments often concern breadth in the subject/area and/or in the competences in the environment. Some comments are about the breadth in background of the employees as well as the broad university.

> Mångfalden av olika inriktningar/perspektiv/ kompetenser inom vårt övergripande mycket breda ämnesområde

> En stor bredd av kompetenser bland de seniora och yngre forskarna inom mitt forskningsområde. Det finns oftast någon som går att fråga när man undrar hur det verkligen fungerar. Bredden är den främsta styrkan även om det då också kan ske en viss förlust av den extrema spetskompetensen.
>
> The variety of backgrounds of the group members (engineering, chemistry, physics) leads to fruitful group discussions.

Several comments are about ***the leadership*** in the environment. The respondents appreciate the leadership of research group leaders, heads of departments, and supervisors for PhD students. Several leadership qualities are mentioned: high competence in research and that the leadership takes the time to notice the employees and create an inclusive milieu. Some respondents commented on the knowledge, network, financing, etc. that the leader brings to the group.

> Forskningsledaren är en utmärkt forskare och har en genuin analytisk förmåga och intresse som gagnar hela gruppen.
>
> Att jag har institutionens bästa forskargruppsledare, som leder forskargruppen med starkt vetenskapligt fokus, i en miljö där medarbetarna känner stor frihet under ansvar i bästa tänkbara forskningsmiljö.
>
> En forskargruppsledare som delar med sig av nätverk, finansiering, kunskap och som premierar medarbetares välmående; en inställning till att dela med sig som genomsyrar allas arbetssätt, seniorer som doktorander.
>
> Gott ledarskap från prefekten; delar information och ser de anställda.
>
> Handledare som tar sig tid och är närvarande.

Another theme of strength mentioned in the open answers are that the people and/or the environment have a ***high level of ambition/motivation***.

> En generellt mycket hög individuell ambitionsnivå oavsett vad forskningen handlar om eller på vilken nivå den bedrivs
>
> […], en vilja att bli internationellt ledande.
>
> Viljan att bli bättre och större. Jag är mycket optimistisk inför framtiden. De brister vi har upplever jag att vi är medvetna om och strävar efter att förbättra.

An additional theme of strengths that the research-active staff see in their environment is that it has a ***stable economy and/or good resources and funding***.

> - Stabil ekonomi med trygg finansiering av doktorander.
>
> Goda resurser för forskning
>
> Stark extern finansiering.

Several of the respondents write about the ***seminars*** as a strength in their main research environment. These comments concern different aspects of a perceived good seminar culture such as openness, creativity, feedback, continuity, and invited external guests.

> Kreativ öppen seminariemiljö (dataworkshops, artikelarbete, arbete med ansökningar, inbjudna gäster) med kontinuitet i verksamhet över tid

> […], it has a strong focus on research seminars; it encourages senior researchers to put forward work in progress (not only doctoral students).

> Vi har även många gästforskare och inbjudna talare på våra seminarier som tillhör den absoluta eliten inom sina forskningsområden.

There are also several comments on the ***interdisciplinary and multidisciplinary*** orientation in the environment.

> Tillgång till många experter inom väldigt många områden för att bygga inomvetenskapliga och tvärvetenskapliga samarbeten.

> Institutionen har initierat bildandet av forskningskluster, där forskningsteman som går tvärt igenom flera ämnen diskuteras i grupper för att öka tvärvetenskapen och för att spåna om skapandet av gemensamma ämnesövergripande forskningsprojekt

Several respondents also comment that a strength of their milieu is the ***international environment*** with many employers with an international background.

> Excellent international team of professionals.

> Close-knit research team of junior and senior researchers with an international background

> Internationell miljö med många PIs och doktorander från forskningsledande miljöer.

Other categories that several respondents see as strengths in their environment are: ***the ability to look forward/new-thinking***, ***a sufficient critical mass***, ***a good reputation***, ***a good linking to clinical practises***, ***the cooperation with society and industry*** (the third mission), and ***gender equality and diversity***.

> Att miljön är klinisk och därmed sker i nära samarbete med sjukhuset. Det gör forskningen tydligt relevant.

> Internationell inriktning, mångfald såväl tvärvetenskapligt som etniskt och könsmässigt

In answering the question on greatest strengths in the research environment, most of the respondents, as mentioned before, write about several different aspects of the work place milieu. These aspects are quite often interrelated and can be difficult to separate from each other. To sum up, below are some full quotations that address several of the larger themes and illustrate some of the complexity.

> Mycket hög ämneskompetens i miljön. Jag bedömer att miljön är bland de bästa i landet och att den är väl känd utomlands. Det finns ett levande och genuint intresse för ämnet och dess utveckling. Det finns också en hög ambitionsnivå och en känsla av ansvar för att hålla en hög nivå/höja denna nivå. Det finns starka internationella kontaktnät på alla nivåer i verksamheten (från grundutbildning till senior forskning). Det är över lag god sammanhållning i personalgruppen, samtidigt som det finns ett öppet och kritiskt diskussionsklimat.

> Inspirerande ledarskap, hög kompetens, lätt att diskutera vetenskapliga frågor, humor, omtänksamhet, positiv feedback, framtidsambitioner, utvecklingsinriktat, lätt

att ha dialog med ledningen, uppmuntran och inbjuder till samarbete kring studier och metod.

Vi har en kreativ miljö med högt i tak och med tvärvetenskaplig inriktning och olika professioner. Vi har tydliga mål, både vetenskapligt och hur vi vill att gruppen ska arbeta. Vi är delaktiga i att sätta målen och utvärderar dem. Engagemang, feedback och inkluderande värdesätts högt. Vår forskningsledare arbetar aktivt med gruppen som bas och att skapa goda processer för att nå våra mål. Dessutom har vi roligt ihop.

Weaknesses or obstacles to conducting successful research in the main research environment

About 1800 respondents answered the question 'What weaknesses or obstacles to conducting successful research do you think exist in your *main research environment*? Please also suggest potential improvement measures!'. The comments have been aggregated into larger themes of weaknesses, where the answer from one respondent often is found in more than one category.

The theme with the most comments is about ***uncertain and/or poor funding***. The respondents write about insufficient research funding and about an uncertain funding situation. Many comment on the large dependence on external funding, which often is temporary. Some note that they have to finance their own employment by attracting external money, which is perceived as time-consuming, stressful, and difficult.

Största hindret är finansiering. Pengar till fri forskning behövs så att jag kan förverkliga mina forskningsidéer och utan detta så är jag kroniskt begränsad.

Att man är tvungen att ständigt söka extern finansiering.

Svårt att få forskningsmedel, […] mycket tid går åt för att skriva ansökningar.

Many respondents write that the uncertainty of the funding affects them and/or the milieu and makes it difficult to obtain a long-term, strategic perspective in research.

Den ständigt osäkra finansieringen av forskningen där förutsättningarna dessutom förändras över tid gör att långsiktig planering och strategiskt tänkande försvåras.

Många känner oro för sin långsiktiga forskningsfinansiering. Då blir det svårt med långsiktig forskning.

Uncertainty of future funding is just killing our long-term plans. There are no spare resources to investment into developing novel methods, even learning and testing new published methods is risky. We have no room for "high risk-high yield" experiments. Highly qualified candidates hesitate to join our group under such uncertain employment perspectives.

Furthermore, many of the research-active staff comment that the uncertain funding leads to ***uncertain employments***. Among these comments, several people write specifically about the difficulty in finding a (permanent) position after their doctoral degree, but there are also several comments regarding the same difficulties as a more senior researcher.

> Huge uncertainty about future prospects as a researcher. It's a BIG gamble to spend several years on research when having nearly 0% certainty that you will ever land on a secure research position.

> 1. Oklara karriärsvägar och dåliga anställningsvillkor för unga forskare. Detta gäller förmodligen dock hela vetenskapsområdet/universitetet. Någonting behöver göras när man har bevisat att man kan erhålla stora anslag i nationell och internationell konkurrens, etablerat en egen forskargrupp som bedriver självständig forskning men fortfarande inte vet om man kommer ha en anställning om något år. Här skulle man ha en extern kvalitetsgranskning av forskningen och om den bedömdes vara god så borde man få möjlighet att bedriva forskning under stabilare förhållanden. Osäkerheten gör absolut forskningsyrket mindre attraktivt.

> Att man inte kan satsa långsiktigt att min finansiering är så osäker gör att man alltid sneglar på andra jobb.

> Osäkerheten i anställningarna gör att onödig tid läggs på att fundera kring detta (av mängder av människor). Jag är övertygad om att varje arbetsdag vid (hela) UU går det flera man-dagar åt tankar/diskussioner kring detta…

Some of the respondents comment that the uncertainty in funding and employment creates a fragmented milieu, with an insecurity regarding who will be able to stay and participate in the research. There are also comments addressing the insufficient funding and uncertain employments creating a negative competition between colleagues.

> Egentligen inte i forskningsmiljön, men finansieringssystemet är ett problem eftersom det kan skapa en "hackighet" i forskningen. Institutionen lägger ned mycket tid på att hantera den osäkerhet det skapar, det är planeringsmässigt en stor utmaning att också seniora kollegor kan gå från att ha 75% forskning i projekt till att ha 0 % på ganska kort tid. Det finns många 'unknowns'!

> The long-term uncertainty caused by the current research funding models. This can cause large fluctuations in the workforce which pose important obstacles to long term projects.

> Too much turnover of people. Your lose lots of competences too easily that way.

> Konkurrens mellan kollegor om forskningsmedel.

> It would be nice for the actual research and working environment to simply be hired as a good researcher/teacher by the university and then do your work without having to worry about murky promotion trees and colleagues stealing your thunder. Then I think it would be easier to approach group with group, division with division etc. instead of today's group vs group, division vs division etc.

The next large theme of comments is about the ***support and infrastructure***. These comments cover perceived deficits in administrative support and/or administrative systems as well as comments on the available infrastructure for research. Concerning the administrative support and systems, several respondents mention IT support and financial support for travel, administration, and procurement. Some of the research-active staff comment that the administrative tasks are increasing and take too much time from their research.

> IT-supporten tar lång tid och begränsar vilka program jag får använda.

> Primula web. Lingmerths resebyrå. Raindanceportalen. Kort sagt: den fjärde uppgiften.

> - All administration. Det börjar bli ett berg av pappersexercis som skall fyllas i för minsta lilla grej. Jag skriver inte reseräkningar längre (för små belopp) eftersom de tar så lång tid. –Upphandling. För de som köper utrustning är detta oändligt svårt att jobba med. Jag tror vi skulle vara mer effektiva som en icke-myndighet i denna fråga.

> Alltför lite administrativt stöd lokalt inom enheten. Alltför mycket krav på självadministration via olika webverktyg som tar mycket tid från faktiskt forskningsarbete.

Aspects concerning infrastructure include perceived need for more lab personnel and computer storage. There are also a few comments about the libraries.

> A lab manager is needed to take care of day-to-day operations, organization and ordering of common supplies.

> Bristen på långsiktig finansiering gör att vi inte kan anställa labpersonal mer än under korta perioder vilket påverkar kvaliteten på data som produceras och kontinuiteten i labarbetet. Det är ett mycket stort problem som bara har blivit värre under min tid som aktiv forskare.

> Saknar tillgång till vissa vetenskapliga tidskrifter.

> […] juridisk otydlighet eller krånglighet (t.ex. upphandling, juridiska råd, datalagring, molntjänster). Mycket viktigt att datalagring blir billigare, och att UU tar ansvar för att upprätta möjlighet till arkivering av forskningsdata, som inte existerar idag till den kapacitet som krävs.

> There are not many things I can think of but improving the storage and server space to handle sequencing data in a more efficient way (we often encounter substantial delays due to lack of space) would be very helpful.

Another big theme among the answers on weaknesses in the main research environment is ***limited time for research***. The respondents quite often mention different *reasons for* the perceived insufficient time for research. Frequently mentioned reasons include teaching loads and/or administrative tasks. These responsibilities and the fragmentation associated with having many different responsibilities limit their time to do research. As already mentioned, the respondents also note that it is time-consuming to apply for research funding, which affects the time available to do actual research. Several clinical active physicians write about difficulties securing the time to do research due to the workload in the clinic. The possibility of a sabbatical year from teaching is proposed by some respondents as a way to increase the time available for research, another suggestion is more research time in the employment.

> Svårigheten att kombinera undervisning och forskning, ssk för lektorer. Undervisningen tar för mycket tid, och de 20 % som avsätts för forskning genererar inte genomförd forskning.

> På undervisningsdelen finns i sin tur förväntningar på pedagogisk utveckling, uppdatering av litteraturlistor till kurser vid sidan om lärarens forskningsområden och utförlig återkoppling till studenter. Förväntningar som inte går ihop med tiden som anslås för undervisning.

> Helst skulle varje lektor garanteras mer tid för forskning inom ramen för sin tjänst-det är svårt att hinna med alla olika uppdrag (utbildning, administration, ev forskning) och att söka forskningsmedel.
>
> Mycket energi läggs ner på att få tag på forskningsmedel och då blir mycket mindre energi och möjligheter kvar till att faktiskt utföra forskningen.
>
> Den kliniska miljön äter upp tid och engagemang. Patientarbetet är mer imperativt än forskningen som alltför ofta får stryka på foten.
>
> Generellt sett svårt att få tid för forskning när man är kliniskt verksam läkare - man förväntas producera men har ofta begränsade förutsättningar och resurser. Och det gör att man inte kan hävda sig, t.ex. vid tillsättning av ALF-medel och andra bidrag.
>
> Den bästa möjligheten att få en bättre forskningsmiljö vid UU, för alla, är att införa ett system med sabbatsledighet för lektorer. Den upphackade tillvaron som många lever med är förödande (undervisning parallellt med forskning, samtidigt som det är ständiga möten om div. andra frågor). Forskningen snuttifieras…

The next theme in the comments of weaknesses is ***lack of long-term perspectives, strategies and/or goals*** for the research in the main research environment. Some of these comments are interrelated with the comments on uncertain funding and uncertain employment previously discussed.

> En avsaknad av långsiktiga forskningsstrategier (inkl. rekryteringsstrategier) förankrad hos/framarbetade i samarbete med medarbetarna.
>
> […] and too little communication about intentions and strategies for long-term developments and priorities of the Department.
>
> Inget större intresse finns för forskningsstrategiska diskussioner. Forskning ses över huvud taget inte som en ledningsfråga och inte som en verksamhetsgemensam fråga, utan som något som den som vill kan hålla på med. Utöver doktoranderna är den samlade forskningsmiljön svag, och doktoranderna blir lätt isolerade.

Another theme related to the perceived lack of long-term perspectives is ***uncertain, unclear career paths***. The respondents write about the deficit in career paths to more senior employment.

> Avsaknad av en långsiktig plan för forskningsledare. Dåliga möjligheter för "tenure track". Allt beror på egen framgång i att söka externa medel.
>
> Inga tydliga riktlinjer för unga forskare om vilka vägar finns efter postdoc, karriärutveckling är svårt och inte tydligt.
>
> Framtida karriärvägar tals det tyst om, känns ganska utelämnad när egna forskningsmedel tar slut. Har också blivit ut-lasad som vik universitetslektor en gång.
>
> Tydligt definierade karriärvägar för både prekliniska och kliniska forskare.

Several of the respondents comment that the ***cooperation and communication*** *in their own milieu* can be improved. Some comment on cooperation and communication *in general* as areas that need improvement.

> It is hard to know exactly what other people in the group are working on and what challenges they are facing, and maybe we are losing opportunities to learn from each other.

> Forskningsmiljön är så bred att det blir osammanhängande. Huvudsakligen individuella forskare, mindre forskningsteam. Vi får inte riktigt tid att starta och utveckla goda idéer gemensamt.

> Projekten är väldigt individuellt styrda, vilket gör att konflikter lätt uppstår under samarbeten, med avseende på författarordning etc. Hade projekten varit mer grupp "ägda" hade viljan av att delta och erbjuda sina starka sidor till projekten varit en naturlig del av arbetet.

> Önskar mer samarbete med andra grupper, inte bara inom vår grupp. Önskar ha större möten med flera grupper närvarande där idéer och erfarenheter kan utbytas, samt samarbeten initieras.

One group of comments addresses ***the leadership*** as a weakness. In these comments, leaders on different levels of the organisation are mentioned, for example, leaders on the central level, the faculty level, the departmental level, and the research group level.

> Ledningen vid institutionen/fakulteten ägnar sig tyvärr mer åt förvaltning än att se möjligheter. Det är där ev. hinder finns.

> The division is built on a corruptive structure where a few persons give resources to one another.

> Tveksam kompetens hos forskargruppsledare gällande forskningsetiska frågor och låga forskningsmetodologiska ambitioner. Fokus på att forskargruppen ska framstå som framgångsrik istället för att fokusera på att producera högkvalitativ forskning.

> Not all PhD students receive the appropriate supervision. Team work is not sufficiently promoted. PhD students also need guidance on how to choose their next steps and this is not always easy to find. […] Supervision is of major importance, people that cannot offer help to their students should keep other responsibilities than supervision.

The next theme is about ***the work and social environment***. The respondents note deficits in the work climate such as different ways in which they perceive the milieu as a non-open environment. Some comments note that the senior researchers are not sufficiently engaged as role models, in discussing research, etc. Some write about a perceived hierarchical milieu and low transparency in decision processes, and a few respondents mention a perceived low presence in the environment as a weakness.

> Ett arbetsklimat som inte prioriterar samarbete och utveckling i första hand. Konkurrens på fel sätt, dvs mer bevakande och snål än stimulerande och inspirerande.

> Framförallt finns det en ostimulerande och hämmande arbetsplatsmiljö på min institution, där de etablerade äldre inte är särskilt intresserade av att prata engelska med de unga internationella studenterna, och inte heller av forskning eller vetenskapsfilosofiska frågor som inte berör deras egna projekt.

> Miljön är hierarkisk på ett sätt som ibland verkar hämmande på doktorander.

Another theme commented on by several of the respondents is that ***the research environment is too small***. They see difficulties securing stability, continuity, and a meaningful exchange between the participants in such an environment.

> Det är en liten avdelning (få personer) som spänner över många olika områden, där kompetensen inte alltid överlappar så väl -> svårt att ha bra diskussioner.

> The lack of large scale funding due to lack of a critical mass in the division.

Other themes commented on include ***recruitment***, ***loneliness and lack of support***, ***the third mission*** and ***deficits in the milieu as an international environment***.

The comments on recruitment are often about the process being *too slow* or about a perceived *too large share of internal recruitments*.

> We have lost external funding for small projects due to administrative requirements slowing down hiring of research assistants. Slow hiring processes of other staff and the need to find and hire temporary lecturers makes for an unsettled and poorly integrated environment.

> Absolute necessity of drastically reducing the administration time and process for new appointments; in international perspective, Swedish universities generally are a disgrace in this respect.

> Nivån på internrekrytering är hög och osund och hotar på sikt UUs roll som internationellt toppuniversitet.

> Det finns en mycket inskränkt mentalitet hos många kollegor om att vi bör rekrytera främst internt.

Some of the respondents express that that they *feel lonely and/or short of support in their environment*. For example, some comments address difficulties in receiving financial and/or other support to participate in conferences.

> Det är ensamt, jag önskar att det varit mer av arbete såsom forskargrupp.

> Ensamt (få på kontoret). Förbättringsförslag: Rekrytera sådana som vill vara i Uppsala.

Some of respondents note deficits in how the environment is working with *third mission activities*.

> Brist på intresse och incitament att bedriva en interaktion med en bildad allmänhet, som i ett ämne som vårt är centralt. Men incitamentsstrukturen leder till total nedprioritering av det.

Regarding weaknesses in the environment, some respondents note *the milieu as not being a good international environment*, and some write about difficulties being part of the milieu as an international member of staff.

> The information and most importantly the support are made by Swedish for Swedish. There is a clear inequality in that regard when it comes to foreigners (external and internal grants, information, political support). This lack of support to the talent is the major limit.

> Relatively little international, especially outwards, mobility. Sometimes it seems as if some Swedish researchers are only interested in the Swedish research environment and don't have any international ambitions. Since it is important for doctoral students as well, both encouraging them to be in another research environment but also developing clear guidelines that can't be interpreted one way or another and that would not put doctoral students at a disadvantage, would be a great help.

> Poor integration of international staff and their marginalisation (improvement: University-wide Language Policy like that at Lund University)

Some respondents note a perceived ***gender inequality*** in the environment.

> Ojämlik könsfördelning, utan reflektion kring/problematisering av detta.

> Too much competitions among researchers and those with families or have less time to put into long working hours gets pushed away from opportunities to work in research related activities such as book projects, being included in group research project fundings. In my view, it is always females (with kids) that get short end of this stick. I suggest more gender equal research opportunities particularly effort from the head prof. who are in charge with choosing who will be included in projects.

> Viktigt att fortsätta arbetet med att uppmärksamma genusstrukturer inte bara i antagning och anställning men även i utlärandet av att bli, klara sig och göra karriär som akademiker. Erbjudande om extern karriär coachning för kvinnliga akademiker kanske?

Would the respondents recommend others to apply to their main research environment?

The research-active staff were asked this question: 'Would you recommend other researchers/doctoral students to apply to your *main research environment*?' In addition, 400 respondents (all were given the choice to) added comments to their answers.

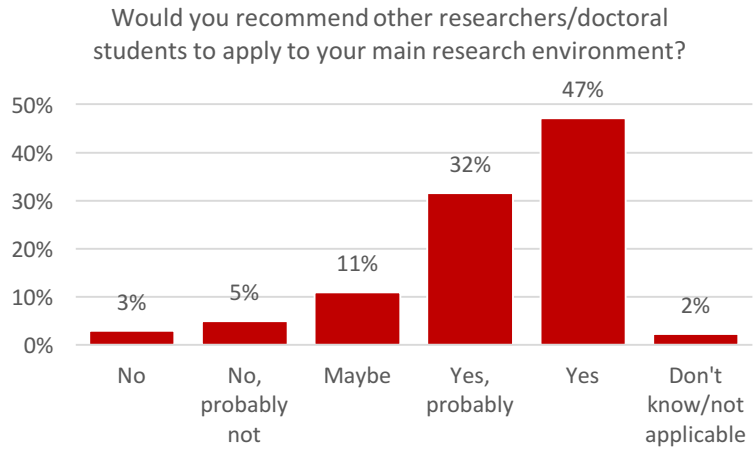

Figure 5. If the respondents would recommend their research environment to others (n=3475).

As shown in Figure 5, 79% of the respondents would or probably would recommend researchers/doctoral students to apply to their main research environment.

The comments can be aggregated into larger themes. Several of the themes commented on in this question also occur as central themes in the questions regarding the greatest strengths and weaknesses in the respondents' main research environment. The theme with the most comments concerns ***insufficient funding and insufficient secure employment conditions***. These respondents write that the lack of funding and the difficulty receiving new funding make it hard for them to recommend others to apply for work in the environment. Insecure job conditions because of the insufficient funding are also noted.

> För osäker ekonomisk situation. Majoriteten av arbetstiden går åt att jaga pengar istället för att bedriva kvalitativ forskning och undervisning. Situationen är helt ohållbar, ologisk och underminerar de tre uppgifterna som ingår i den akademiska verksamheten. Jag är mycket oroad över brister i kvalitén på vårt kunskapsförvaltande till nästkommande generationer till följd av mycket små ekonomiska resurser, vilket också leder till ytterst begränsad tid för kvalitativ undervisning och forskning. Naturligtvis är det så att kvalitativa satsningar som syftar till kompetensstärkande över generationer inte kan effektiviseras. Dessa processer måste få ta tid. För att skapa tid behövs tryggare anställningsformer!

> In addition to concerns about my main research environment, I find the University practice of actively discouraging/preventing employment >2 years reprehensible. It not only limits the types of research that can be undertaken in these positions and thus limits the rewards to the university, it marginalizes postdocs and researchers. We are disposable entities in this environment--in which the university and PIs receive far greater benefit than the people who's ideas and hard work largely fuel that success.

> Den svenska forskningsfinansieringstombolan gör mig osäker om att rekommendera en ung person att ge sig på en akademisk karriär.

The second and third largest themes are positive comments on ***the social and collegial climate*** in the research environment followed by negative comments on the same topic. There are about as many comments on positive aspects about the social and collegial climate as negative. The comments indicate that there is a great variety regarding the perceived social and collegial climate in the different research environments. Here are some positive comments:

> The Environment is very supportive, in particular of younger researchers. There is a strong sense of forging links with other institutions internationally. An excellent place to work.

> Jag tycker vi på många sätt står upp för idealbild av akademisk miljö, om än ett mer traditionellt ideal, med en tillåtande och fri miljö. Inte så styrd forskning, begränsat jätteprojekttänk, samt en konstruktiv vetenskaplig diskussion.

> Vi har en god stämning och stöttande arbetsklimat där vi fördelar arbetsuppgifter och gemensamt arbetar för att lyckas med stora komplicerade experiment och studier.

Here are some negative comments:

> Det finns ingen framåtanda, vision och drivkraft. Arbetsmiljösituationen präglas av interna problem, där gnällspikar, svåra personligheter kan styra eftersom avdelningsledningen (inte institutionsledningen) inte vill/vågar/orkar ställa krav, vara obekväm, lösa problem med berörda parter.

> Osunt klimat där vissa premieras och andra inte, baseras mer på vänskapsband och homosocialitet än meriter.

Several of the respondents who commented on the climate in their main research environment mention both weaknesses and strengths.

> Forskningsmiljön är visserligen inte den mest stimulerande för närvarande; den har liksom gått i stå, kanske p.g.a. ett otydligt ledarskap vad gäller forskningsmiljön och dess utveckling, liksom ett ibland bristande engagemang bland oss anställda för forskningsmiljön som en gemensam angelägenhet. Det kan även finnas praktiska orsaker bakom det sistnämnda (t.ex. konkurrerande administrativa och andra uppgifter som tar energi från forskningsmiljön). Likväl skulle jag rekommendera personer att söka sig hit, eftersom här finns en stor ämnes- och metodmässig kompetens, en tillåtande attityd, samt tillgång till stora internationella nätverk av forskare. Här finns potential.

Other themes are ***general positive statements*** about why one would apply to the research environment and the existence of ***high quality research and/or data*** in the milieu.

> We have great facilities, human resources and experiences to conduct high quality research and research education

> We created a brand new field with tremendous potentials. Students, postdocs and researchers will benefit tremendously from participating in revolutionary new experiments in a virgin area and carving out their own world.

Some respondents note ***weaknesses in the leadership*** as a reason for not recommending applying to their main research environment. Other respondents answer that if they were to recommend others to apply, it would be because there is a need ***to create a better and/or a bigger environment***.

> Övergripande ledning på enheten fungerar ej och medför en miljö dit man inte bör rekrytera

> Både för att mycket inom miljön är bra, men inte minst också för att uppmuntra sådana potentiella medarbetare som jag bedömer skulle förbättra miljön ytterligare

> Enda skälet att rekommendera den vore att försöka få in nya människor som skulle vara duktiga, intresserade, engagerade och som i bästa fall skulle kunna ändra på situationen här.

Some respondents note a ***too small critical mass*** in their research environment.

> Bristen på medarbetare inom samma område är den största nackdelen.

> Min forskningsmiljö är i princip obefintlig. Min handledare finns kvar på kliniken, men hon har ju inte heller någon forskningstid eftersom ALF-medlen gått förlorade. Hon hjälper mig så gott hon kan.

Others describe their environment as an attractive research environment that receives many applications.

> I have no hesitation in recommending others to come here, and they always seem satisfied when they do. We have a very steady stream of guest researchers and research visitors, and our doktorand application numbers are almost impossibly high (e.g. 40 applications for one place, and the top 10 are all clearly appointable). This is very positive.

> Vi är och anses av andra vara en attraktiv forskningsmiljö så ingen brist på intresse att söka sig hit för kortare eller längre perioder.

Other respondents were ambivalent about recommending others apply for positions, stating that ***'it [whether to apply for a position] depends'***. That is, these respondents believe a recommendation depends on the applicants' research interest, area, profile, and qualifications. Some respondents note that they would recommend applying if the person already has his/her own financing, if the person wants to teach, and if the person likes to work independently. Others said that they would only recommend people applying to certain groups or projects in the research environment.

Infrastructure and support

As seen in previous open-ended questions, preconditions and processes related to support and infrastructure are frequently commented on. Overall, 72% of the respondents at Uppsala University judge the access to support and infrastructure to be 'good' or 'very good' (Figure 6). However, the need for support and infrastructure for research varies across the university, depending for example on field of research. In this sense, there are differences in perceptions across the university. Respondents from the disciplinary domain of Science and Technology to a greater extent perceive that they have 'good' or 'very good' access to support and infrastructure compared to Medicine and Pharmacy, and Humanities and Social Sciences

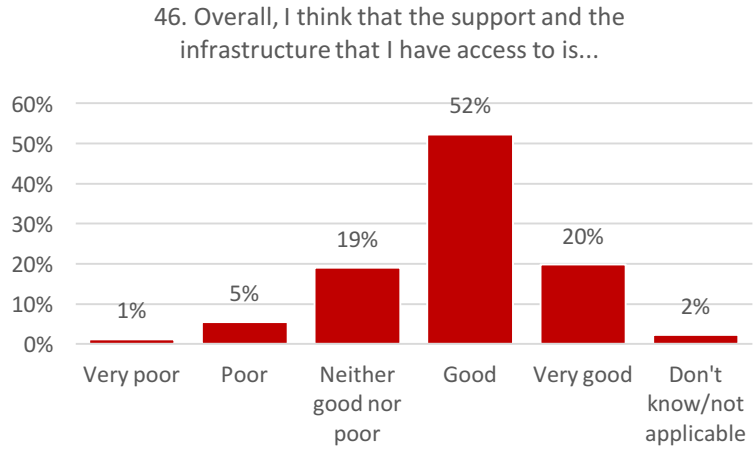

Figure 6. Overall opinion about support and infrastructure (n=3445).

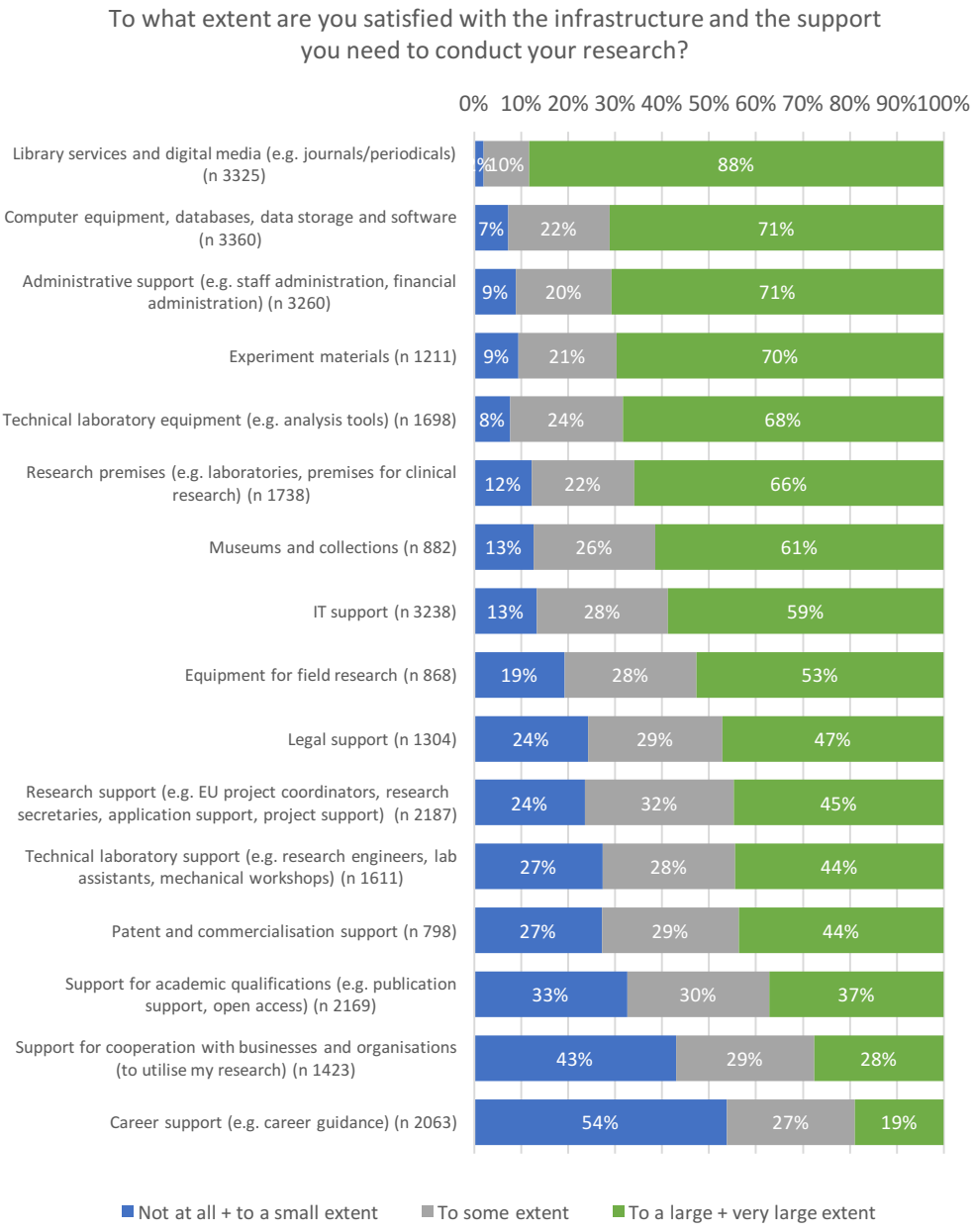

Figure 7. Satisfaction regarding infrastructure and support (regardless of within or outside of Uppsala University). Answers in the 'don't know/not applicable' category excluded (answers sorted by 'to a large + very large extent' in descending order).

The respondents were also asked to state to what extent they are satisfied with 16 listed aspects related to infrastructure and support needed to conduct research (irrespective of whether this is within or outside Uppsala University). Figure 7 shows the distribution of answers to these aspects in descending order, based on the combined proportion of answers in the 'to a large extent' and 'to a very large extent' categories.[13] The five topmost satisfactory aspects are: library services and digital media (e.g., journals/periodicals); computer equipment, databases, data storage and software; administrative support (e.g., staff administration, financial

[13] The answers in the 'don't know/not applicable' category are excluded here. Please note that the number of answers greatly differ between the different aspects listed.

administration); experiment materials; and technical laboratory equipment (e.g., analysis tools). The bottom of the figure identifies career support (e.g., career guidance), which by more than 50% is perceived to be 'not at all' or 'to a small extent' satisfactory.

In relation to this question, the respondents were also given the opportunity to comment on the support and infrastructure at Uppsala University, which nearly 600 respondents did. Most comments point to things that could be improved on or changed. Several constructive suggestions are made, but it should also be noted that a majority of the respondents are pleased with their access to support and infrastructure in general (Figure 6).

General comments on support and infrastructure

The general impression is that issues related to support and infrastructure are of great importance for research staff at Uppsala University and that opinions and needs vary between different users or stakeholders. Moreover, many respondents emphasise that each research area is unique, which also implies that an all-encompassing system that suits everyone would be difficult to implement. Additionally, a general perception highlighted in the comments is the ***importance of academic freedom*** – i.e., the freedom for each researcher or research project to have the opportunity to choose and decide which tools and working methods to use and how to use them. In other words, many respondents fear a lock-in situation in a support and infrastructure system that would be too rigid, too outdated, or simply not fit for the purpose.

A recurring concern is also related to the ***increased administrative burden***, which is perceived to steal time from research and teaching as well as resources from both block grants and external funding.

> Den administrativa bördan ökar för varje år; mindre hjälp från administrationen, mer redovisning, fler blanketter att fylla i, scanning mm. Det verkar som om forskarnas/undervisarnas tid är gratis, outtömlig och betydelselös medan administratörernas/sekreterarnas är viktig och dyrbar. En intressant prioritering.

Another more general set of comments relates to ***career development***. Here comments mainly regard career and employment opportunities, especially for staff with "non-permanent contracts" (e.g., post-docs, researchers, and associated senior lecturers) and non-Swedish speaking staff. The respondents desire better career guidance and clearer information about guidelines, rules, and regulations regarding, for example, labour law and acquisition of qualifications. Some respondents also request implementation of a tenure track.

> Jag anser att vi bör satsa mycket mer på att erbjuda karriärstöd till universitetets forskare, det borde gå att hämta inspiration från USA där nyanställda forskare erbjuds tenure track givet att vissa meriteringskrav uppfylls. Jag tror Uppsala universitet skulle kunna gå i bräschen för en sådan utveckling i Sverige och därigenom bli ett attraktivt förstahandsval för akademiker, inom och utom Sverige.

> See if it is possible to provide some kind of a tenure track system - people now sometimes end up being full-time teacher while their ambition was to be a researcher - if they had known from the start that they would not get a chance to get tenure, they might had chosen a different career path when it was still possible

Another matter of concern for the respondents touches on ***organisational obligations and hierarchies*** – i.e., at which organisational level certain support and infrastructure issues should be handled. A reoccurring view is that an increased centralisation and bureaucratisation only creates a larger distance between the central university level and the departments or research environments while generating larger administrative burden for individuals. A general impression among the respondents is that the administrative support should be more closely related to the research environments and the research conducted.

> […] Låt kärnverksamheten få en mer framträdande roll i dialogen kring behov och utveckling av infrastruktur och stöd. Uppsala universitet har världsledande forskning inom många relevanta områden för infrastruktur och stöd (organisation, kommunikation, IT, informationssystem, människa-datorinteraktion, ekonomi, innovation, hållbarhet, pedagogik, mångfald et c). Involvera dessa i vår egen verksamhetsutveckling. […] Sätt och håll anvisade tidsplaner även inom administration och förvaltning. Kommunicera förändringar i tid. […]

However, when it comes to support for and financing of vital research infrastructure, particularly expensive research infrastructure, some respondents express a wish that the university management focus more intensely on these issues. One suggestion is to create an inventory and funding pool at central level for expensive infrastructure and at faculty level for medium-sized infrastructure. This also includes better and more open processes for identifying and making infrastructure related decisions. Another suggestion is to better communicate and make visible existing support and infrastructure at the university, for example, on a common platform or by reoccurring information opportunities for both junior and senior personnel. Finally, at the local level (e.g., the departments), some respondents express that there is a lack of a common internal vision in some research environments, and some stress that the communication with the central university administration is absent or problematic. Another issue that is surfacing is the merger of smaller departments or divisions into larger departments, which often is viewed as hampering research by generating new problems.

Comments related to specific support and infrastructure

The majority of the comments made on specific support services and infrastructure can be aggregated into three major themes: IT support and infrastructure (e.g., databases, data storage and software); administrative support (e.g., staff administration and financial administration); and technical laboratory equipment and support.

As regards ***IT support and infrastructure***, many of the comments address the support services, both centrally and locally. The local support is greatly appreciated by some departments and campuses, but heavily criticised by others. Criticism is also directed toward the central IT support and a general concern is raised in some comments regarding the perceived increased centralisation of these services.

> Fokus ligger inte på forskarna och forskningens behov. IT- och dataservice kunde t.ex. ta reda på vad forskarna behöver för att kunna utföra sitt arbete snarare än att bara bestämma att man skall göra på ett visst sätt och därmed tvinga folk att inte kunna genomföra sin forskning på bästa sätt. Eftersom det inte finns något intresse

> för de enskilda forskarna, finns det heller inget intresse att stödja dem att komma vidare.

More concretely, not having administrator privilege on a work computer is viewed as a hindrance and a problem as IT support has to be contacted whenever software needs to be updated. Moreover, for some respondents, this set-up combined with the rules and regulations for procuring both software and hardware creates problems when needing to download and install software or set-up hardware necessary for their research.

Another reoccurring issue is a request for a better system for storing and making systematic back-ups of data, especially of large databases. A few respondents also highlight a lack of basic support for Apple computers.

The administrative support is often viewed as time-consuming, complex, and costly. Here, most attention is directed to the issues of more and more administrative tasks put on the shoulders of the individual. These tasks include handling traveling costs, expenses, and reimbursements. Some respondents reveal that they have chosen not to attend conferences or invite guest lecturers or seminar guests due to the administrative requirements that these activities require.

> Alla olika program och dylikt som finns för att registrera resor och utlägg borde skötas av sekreterare i stället för den enskilde forskaren. Jag blev forskare av en anledning. Och denna var INTE administrationen. På universitet utomlands har doktoranderna en egen bibliotekarie och sekreterare. Jag förstår givetvis att det inte går att ordna. Men den administrativa bördan bör skötas av människor som kan få rutin på detta

> Researchers spend so much time filling out travel claims with the new centralized online system that I have seriously started to think twice about travel abroad. The system might appear efficient from a macro perspective, but simple addition of each researcher's extra time paints a totally different picture.

Within this theme, an increasing centralisation is mostly viewed as a problem. Similarly, the overhead costs are seen as too high in relation to what the individual, research environment, or department receives.

> Under en lång rad år har det administrativa stödet försämrats vid UU, både på institutionsnivå och central nivå. Allt mer egenadministration har tillkommit och de administrativa system som införts har nästa ALDRIG inneburit förenklingar eller förbättringar, enbart pålagor och bördor som tar tid från kärnverksamheten (undervisning, forskning och kommunikation med det omgivande samhället). Att undervisande och forskande personal i så stor utsträckning ska ägna sig åt administration kan knappast gagna varken universitetet eller samhället i stort. Tyvärr tycks också finnas en kader av medarbetare vid universitetet centralt som gärna "hittar på" nya pålagor och administrativa system, vilka är förment välmenande men i grunden rent skadliga för vår verksamhet. Tänk om och tänk rätt!

The third theme receiving large attention is ***technical laboratory equipment and laboratory support***. Some respondents express that there is a lack of state-of-the-art equipment or that many facilities and much of the instruments are old or outdated. They also note they sometimes lack the specific equipment or help in relation to their research area (such as MR-scanners, statistical analyses, cameras, and recorders). Most the concern, however, is directed to the lack of resources (both financially and for personnel) related to laboratory support, such as biomedical

analysts, laboratory technicians, and research engineers. This limitation is perceived to lead to an ineffective use of research time and resources; that is, when doctoral students, post-docs, researchers, and professors are required to sacrifice research time to perform simpler and routine tasks.

> Verksamheten skulle kunna effektiviseras om ekonomiskt utrymme för personal för skötsel av utrustning och för enklare mätningar på specialiserad utrustning fanns.

Many respondents also request a larger responsibility for the research infrastructure at the central university level. The financing of infrastructure requires better coordination, and the present process for infrastructure support today is perceived as unclear.

Some respondents also highlight the need for laboratory facilities within the humanities and social sciences with more and better platforms for interdisciplinary research.

> We need a laboratory environment (locations, computers, software, participant pool services) for use in the social sciences that is open to all departments.

Other themes also receiving greater attention are library services, career support, and research support (e.g., financing and application support). As for ***library support***, some comments emphasise a better availability to and the supply of books and journals (especially e-journals), and some comments highlight the need for a larger research focus related to both supply and personnel.

> Uppsala universitetsbibliotek skulle behöva satsa på större forskningsfokus. Biblioteket har förutsättningar att bli ett internationellt ledande forskningsbibliotek, men missar den chansen därför att de inte anställer disputerad personal i tillräckligt hög utsträckning och därför att den forskningskompetenta personalen inte har forskning inom sina tjänster.

However, some comments stress many positive aspects of the library and its services.

> Det är ett privilegium att kunna ha tillgång till alla dessa olika tidskrifter, databaser etc. Biblioteken fungerar utmärkt i forskningshänseende. Härligt.

> Uppsala universitetsbibliotek är fantastiskt. Möjligheten till inköp, fjärrlån inom norden och mycket annat är mycket viktigt. Personalen är hjälpsam.

Many aspects related to ***career support*** have already been mentioned. However, as regards to more specific support structures (e.g., career guidance, help with rules and regulations, or information about career paths and qualifications), some respondents stress that better visibility of these support structures would be helpful and that they should be open to everyone, not just tenured employees. As for ***research support***, many respondents want both financial and professional support regarding writing applications (especially EU proposals) and financial management.

In relation to disciplinary domain, the frequency of comments is more or less evenly distributed across the three domains. However, comparing the distribution of comments between the disciplinary domains, more comments related to library

services, and research support (i.e., research applications, etc.), museums and collections. In addition, respondents in the Humanities and Social Sciences express a desire for third stream collaboration, whereas respondents in Science and Technology express a desire for more technical laboratory equipment and support. As expected, more comments in Medicine and Pharmacy are related to the university hospital and clinical research compared to the other disciplinary domains. However, many comments touch on the issue of administrative support: both the Humanities and Social Sciences and Science and Technology have an equally large number of comments.

Multilingualism

Within an international research environment, multilingualism is common in scientific discussions, social events, teaching, administrative support, and information. In the survey, the respondents were asked if they think that their department (or equivalent) has found an effective way to handle multilingualism.

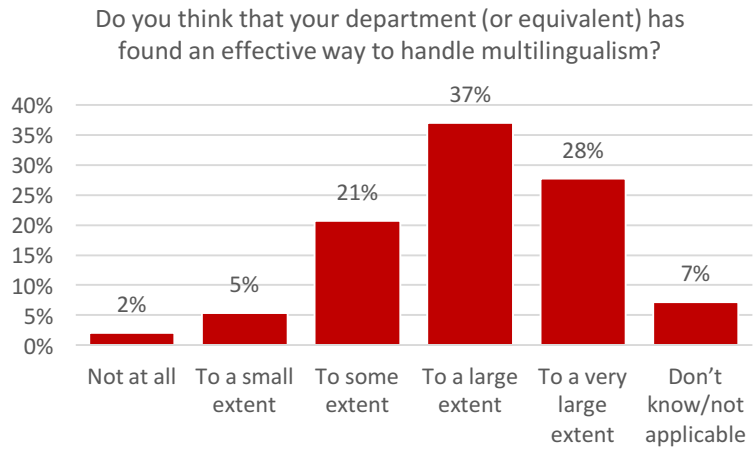

Figure 8. Respondents' view on handling multilingualism at the department/equivalent (n=3459).

As shown in the Figure 8, 65% of the respondents think that multilingualism to a large or to a very large extent is handled in an effective way within the department or equivalent.

The respondents also had the possibility to write a comment on this issue, something that about 550 respondents did. The comments clearly reveal that there are ***many research environments where different languages are used***. In some research environments, Swedish is the most used written and spoken language. In other cases, English is the most used language, yet in others, both Swedish and English are used. In some research environments, several languages other than Swedish and English are used. There are milieus where English is used and some of the staff members have English as their first language, but there are also environments where all staff use English as a second language. Clearly, there is a large variation of language use.

Some respondents note that the question of multilingualism is ***unproblematic*** at the department or equivalent, and most of the time they choose to use English, Swedish, or another language – separately or in parallel.

> Vi har 15 olika modersmål vid institutionen, men alla har lärt sig svenska. Alltså talar vi svenska eller något av våra 17 arbetsspråk när vi är i mindre grupper. Vi talar aldrig engelska.

> Vi har ofta flera gästforskare samtidigt på […] och de kommer från olika länder och världsdelar. Vi använder, som så många andra, engelska som språk när vi har någon som inte pratar svenska närvarande. Seminarierna anpassas ofta till engelska – och när det inte går så går det ut information om det – liksom annan verksamhetsinformation.

> Vi har en överenskommelse som alla är med på om att man kan få tala vilket språk man vill i korridorerna (och då finns det ett antal i en miljö präglad av mångfald i etnisk bemärkelse). Vi hjälps åt att översätta om det blir nödvändigt och vi har även konversationer där en person talar engelska och en annan svenska. Det kan bli problem med nyligen anlända postdoktorer och andra, men det funkar på det hela taget bra.

Other respondents write that the question of what language to use results in a lot of ***discussions and disagreements***. There are comments that Swedish should be the main language at the work place, comments that English has taken over too much, and comments that English must be the working language if Uppsala is to fulfil its potential as an international university.

> Engelska bör vara standard och vardagsspråk på en institution med högt internationellt utbyte och internationella ambitioner.

> Otydlighet om vilket språk som ska användas förekommer då och då. Risken är uppenbar att svenska termer går förlorade. Det påstås att vi inte kan förmedla mer än 60% av vår kunskap till ett språk som inte är vårt modersmål. Vi tappar därför ganska mycket av vårt kunnande i just språkövergångarna.

> Antalet som inte talar svenska har ökat snabbt de senaste åren och denna utmaning är en av våra mest livfulla diskussioner.

> Too many Hindi, Chinese and Germans speaking their own language. We must speak English or Swedish.

According to the comments, ***choice of language works in different ways according to different activities*** such as research activities, administration, information and meetings, and social and informal situations.

> Arbetsspråket är engelska. Administrationsspråket är mestadels svenska. Fika- och lunchspråk är svenska tills någon av våra icke-svenskar behöver byte av språk.

Within ***research activities***, English is often used, which seems to be rather unproblematic in many research environments. Some respondents point out that it can be difficult to participate in seminars and discussions in another language than your main language since it is harder to express and elaborate arguments and reasoning in the same way – i.e., discussions are inhibited. In some milieus, none of the staff have English as a first language. This limitation is seen as constraining when seminars are held in English. In some disciplines, research material are

mainly in Swedish or about the Swedish societal context, which makes the Swedish language more in focus.

> Forskningsarbetet är internationellt och kräver kommunikation på engelska.
>
> I vår miljö sker mycket kommunikation på engelska. Det innebär per automatik att personer med engelska som modersmål tillsammans med andra som talar flytande engelska har ett kommunikativt övertag – de har en helt annan förmåga att spontant kunna lägga ut texten på ett mer nyanserat och välformulerat sätt.
>
> Det har blivit bättre under mina 5 år vid institutionen. Från en nästan helt svensk miljö till en ofta engelsk miljö. Dock är det ett ständigt dilemma där kvalitet på seminarier och diskussioner (=svenska) ställs mot att vissa utesluts från dessa seminarier. Vanligtvis byter vi dock till engelska om icke-svenskspråkiga finns med men ibland så hålls också rent svenskspråkiga möten och seminarier.
>
> Detta har ännu inte fungerat men potentialen finns – för […] ämnen är dock ofta behovet av kunnighet i exempelvis svenska stor i de fall man studerar svenskt källmaterial – detta har gjort att flera forskare som deltar är svenskspråkiga – vid seminarium är det dock vanligt med internationella gäster och intellektuellt utbyte internationellt.

When it comes to ***administration, information and (more formal) meetings***, the choice of language seems to be a bit more difficult. An aggravating circumstance is that Swedish universities are public authorities and therefore the use of Swedish is sometimes required. When activities are in Swedish, non-Swedish speakers do not get access to the same information as others, something that the comments describe as excluding colleagues. Sometimes administration, information, and meetings at central university level and disciplinary domain/faculty level are accentuated as more problematic since Swedish is most often used. Comments highlight that documents and forms do not exist in English and that the university web and the internal web lack useful information in English.

> It is awkward to see English being used for research while Swedish being used for administration and policy discussions. This places certain barrier in front of staff with international background who have insufficient knowledge of Swedish and therefore feel excluded.
>
> When it comes to administrative matters, communication from the department/faculty administration is mostly monolingual (Swedish), which creates knowledge gap between non-Swedish speaking staff and Swedish speaking staff.
>
> The department is still working on deciding how to deal with the official language being Swedish because of government rules, and many of the PhD students being international, with limited Swedish skills. But in general the department has increased the amount of information that is made available in English and much of the information that gets sent out via email is sent in both Swedish and English.

The comments also point out that non-Swedish speakers cannot contribute to ***teaching***, ***collegial work, and collegial bodies*** as would be desirable. This circumstance increases the workload and responsibilities for the Swedish-speaking staff. The use of the Swedish language in this kind of work also excludes part of the staff from decision-making and certain positions in the university organisation. It also makes it harder to secure teaching qualifications.

> Som del av statlig myndighet krävs svenska i alla formella dokument och det gör att den som inte har svenska som andraspråk inte kan ha ledningsuppdrag. Vi har också den mesta undervisningen utlyst som svensk vilket gör att icke-svensktalande har svårt att ta viss undervisning.
>
> Det har bildats ett A-lag (som kan forska) och ett snabbt krympande B-lag (som på grund av sitt svenska modersmål måste hantera undervisning på grundnivå, medverkan i styrelsearbetet, etc.).
>
> Ett stort problem är tillsvidareanställda som inte har svenska som modersmål. I utlysningarna av tjänster sägs enligt UUs direktiv att innehavaren inom två år ska kunna undervisa på svenska. Sker inte detta har UU ingen plan för hur man ska hantera situationen utan detta lämnas över på institutionen. En tillsvidareanställd som inte kan svenska kan inte bidra till det kollegiala arbetet, t.ex. genom att vara prefekt, studierektor, sitta i nämnder och organ. Detta innebär dels att vi går miste om kompetenta personers arbetsinsatser, dels att vi som är svensktalande måste åta oss mer arbete. UU måste här ha en handlingsplan!
>
> Undantaget är undervisningen, där det på institutionsnivå finns flera exempel på lärare som vägrar undervisa på engelska på avancerad nivå, vilket är under all kritik.

Based on the comments, ***social and informal situations*** also seem to be a bit more difficult when it comes to language choice, and some respondents note that using Swedish excludes non-Swedish speakers.

> Vid seminarier är språket engelska, men i lunchrum/fikarum är det ofta svenska som dominerar vilket kan bli lite uteslutande för de som inte talar svenska. Också svårt att initiera konversation på engelska i lunch/fikarum eftersom många ofta övergår till svenska igen.
>
> Informella oreglerade situationer som kafferaster är svårast. Man bör använda minsta gemensamma nämnare, men det kan vara svårt för de som pratar med varandra att avgöra vid vilken radie engelska inträder.
>
> Vi pratar nästan alltid engelska även när vi bara 'fikar' tillsammans.

There are many opinions about ***use of language in the daily working life*** at the university. One of the respondents points out that there seems to be a perception of internationalisation – i.e., that everyone should automatically speak English. However, some non-Swedish speakers complain that it actually is hard to learn Swedish when everyone speaks English most of the time. Some comments address how to become more fluent in a language, how to gain knowledge in different languages, and how to help colleagues improve their Swedish language skills.

> It is even disappointing that my Swedish is still not good after working for three years in Sweden since English is the main language at work.
>
> Vi jobbar aktivt med att lära nya medarbetare svenska för att underlätta integrering på arbetsplatsen. Detta är inte fullt nödvändigt för forskningen men för individen och forskargruppen/institutionen är det viktigt för kollegialiteten och möjligheten att bidra på olika typer av (lednings-) uppdrag mm.
>
> Vi har en kontrakterad svenskalärare som hjälper anställda med icke-svensk ursprung att lära sig svenska. Ofta är dock vardagsspråket engelska.

> Working language is mostly English. Although non-Swedes are officially encouraged to learn Swedish, they are not given the appropriate time allocation or support resources to achieve this effectively.

Campus Gotland

In 2013, Gotland University merged with Uppsala University. Since then, Uppsala University has two locations, Uppsala and Visby on Gotland island (named Campus Gotland). Researchers at Campus Gotland are often part of multiple environments, both within the campus and in a department located in Uppsala. The researchers who primarily work at Campus Gotland were asked 'which specific obstacles and opportunities do you see for creating a good research environment?'

Of those who answered the survey and have their main workplace at Campus Gotland, 47 chose to comment on this question. In the answers, Campus Gotland is described as a small and cohesive campus environment that facilitates initiation and maintenance of research collaborations. The ***experienced smallness and cohesiveness*** of the campus is appreciated and is seen to create possibilities for multi-disciplinary research and seminars.

> Möjligheter: tvärvetenskapliga angreppssätt möjliga i forskningen tack vare nära kontakt med kollegor från andra discipliner.

> Den trevliga arbetsmiljön och litenheten är samtidigt en möjlighet vid Campus Gotland för tvärvetenskap/mångvetenskap då det är lätt att komma i kontakt och samarbeta med forskare placerade vid andra institutioner.

> Vår styrka i lättheten som vi rör oss över ämnesgränserna.

However, one respondent emphasises the lack of an organisational unit for multi-disciplinary research and education where funding can be allocated.

In addition to the valued possibilities to multi-disciplinary cooperation among colleagues at Campus Gotland, the ***increased possibilities to cooperate with researchers in Uppsala*** are acknowledged. Possibilities to gain new contacts, to interact with researchers in related research fields, and to be part of research groups are appreciated.

> Samgåendet med Uppsala universitet har skapat fantastiska möjligheter och kontakter med den institution som vi nu tillhör i Uppsala

> Samgåendet med Uppsala har skapat bra möjligheter till samarbete med forskare som gör närliggande men kompletterande forskning

Other positive comments on the research environment at Campus Gotland highlight an attractive historical environment where international researchers and networks want to come, good cooperation with local agencies, access to a purposeful laboratory, and a closeness to research material.

However, some comments reveal obstacles and challenges for a good research environment at Campus Gotland. One of these aspects relates to a ***perceived emphasis on education***. The focus and the priority is on education and according to the comments, there seems to be a limited discussion on research issues such as strategies, profiles, and applications. Although the respondents desire to conduct

research, their teaching load makes it difficult to find the time. Moreover, Campus Gotland has a lack of research leaders and professors. In addition, the respondents highlight the lack of postgraduate education as an obstacle for a good research environment and desire more PhD students.

> Det saknas en kontinuerlig diskussion om forskningsprofil, ansökningar, inriktning, målbilder osv.

> Frånvaron av forskarutbildning på Campus Gotland är ett hinder. Det borde finnas fler doktorander där som är inskrivna vid Uppsala universitet, och som t ex skulle kunna gå en kurs i forskarutbildningen vid UU.

> CGo har inriktat sig på grundutbildning, detta av historiska orsaker. Forskningsmiljöer och högre utbildning har tyngdpunkt i Uppsala. Möjligen kan nyrekrytering av "nya forskare" till Gotland avhjälpa situationen.

Despite the possibilities to cooperate between staff at Uppsala, the answers reveal that it is perceived to be ***difficult to establish and maintain contact with colleagues in Uppsala and to create a common academic environment***. A suggestion is to stimulate more joint research projects between Uppsala and Gotland. Campus Gotland is thought to be relatively unknown in some parts of Uppsala University, a lack of recognition that makes it hard to make new contacts with researchers in Uppsala. Furthermore, routine informal contact with colleagues in Uppsala is hard to establish.

> Dagliga/informella kontakter med kollegor i Uppsala är svåra att ha.

> Svårt att hålla kontakt med kollegorna i Uppsala, det blir sporadiska möten och inget naturligt utbyte i vardagen

Part of the difficulties keeping contact between staff at the different campuses is the limited ***possibilities for communication*** (e.g., trouble with technologies for videoconferencing, costs for travel, and accommodations).

> Tunn miljö på Gotland och svårt att delta i Uppsala då man antingen måste resa eller delta via videokonferenser med dålig teknisk kvalitet. Upplever samtidigt att deltagande i Uppsala kan bli enklare om problemen med ljud vid uppkoppling till större lokaler kan lösas.

> Det finns inget boende i Uppsala om man ska dit på arbete utöver hotell, det blir mycket dyrt om man är där ofta.

> Det innebär vidare extra kostnader att resa mellan Uppsala och Visby, t ex om en konferens ska organiseras i Visby, och en del av visionen för campus är ju att fler internationella möten ska äga rum där, men det kostar också. Boendena på Adelsgatan är inte tillräckligt många utan bokas upp långt i förväg för inresande lärare, vilket är glädjande, men också tvingar oss att boka in forskare på hotell när de ska besöka Visby.

Views expressed in 'other comments'

At the very end of the survey, the respondents were given the opportunity to make a final comment in an open-ended question labelled 'other comments'. About 220 respondents chose to do so.

As expected, the nature of the comments varies. However, it is still possible to group many of these into a few themes. One of these themes centres on ***the survey per se***, where the respondents address issues related to the construction of the questionnaire, the survey questions or its usefulness. A majority of these are related to technical problems or ambiguity regarding how to interpret or answer some specific questions. A few respondents express a negative attitude toward the survey, although an equal number of respondents express a positive attitude. Additionally, some comments address ***reflections about research evaluations***, of which the survey is only a part. Some negative comments touch on the context of evaluations in general and the Q&R17 exercise (or previous exercises) in particular.

> Please, please, please! Do not waste our time and money on another KoF that will tell us what we already know. The last KoF was a spectacular waste of time and energy for virtually no change and extremely limited redistribution of money. Make sure you add up the time every faculty member is expected to spend on KoF and compare that cost to the value before you start another massive process: if there is not going to be very significant change then there is no point in spending very significant resources on it.

> Leder detta till någon förändring? Tillåter mig att vara skeptisk.

There are also some positive comments related to the evaluation exercise:

> It is very good to see that Uppsala University finally wants to check and do some quality improvements. May be you were too nice to do this before. I think it will bring good for everyone in a better future rather than assuming everything will go always good. Thanks for doing this and hope it will not only stay in paper but there will be also some transparent improvements in the system. Thanks in advance.

Another distinct theme is centred on comments highlighting mainly positive **experiences of conducting research in a specific research environment or at Uppsala University in general**.

> Over the last three decades, I have worked in several universities in several countries, sometimes at very senior level, and I have never regretted my decision to come to Uppsala.

A few negative experiences are also mentioned.

> Jag hade inte trott att forskningsmiljön kunde vara så dålig som det är här på ett universitet innan jag kom hit.

> De positiva inslagen i min arbetsmiljö kommer ofta från kollegor på andra avdelningar än min egen.

A fourth theme touches on essential conditions for conducting research and is foremost related to ***funding, resource allocation and support***. Most of these comments point to shortcomings in the system (nationally, university management-wise, and related to the central administration).

> Put pressure on the government to allocate a larger proportion of research funding as basic support to universities rather than through grant-schemes with research councils. I have little faith in the claim that the annual grant-seeking circus is improving the quality of research by increasing competition. I think it is an enormous waste of resources.

> Det är ett stort problem att vi har en central förvaltning som inte uppfattar sig som en stödfunktion till kärnverksamheten, utan istället driver en helt egen agenda. Den centrala förvaltningens företrädare har helt tappat kontakten med verksamheten och har enligt min uppfattning en mycket begränsad kunskap om hur de konkreta villkoren för lärare och forskare ser ut. Den "dubbelbeskattning" i form av ständigt ökade OH-kostnader och ökade krav på "egenadministration" underminerar kraftigt möjligheterna att bedriva forskning och undervisning av god kvalitet.

Several issues are addressed to a lesser extent: ***research-teaching circumstances*** (e.g., efforts linking the two, problems allocating time, and resources); ***gender inequality and gender balance***; ***unclear career paths***; ***internationalisation*** (e.g., mobility, conditions, and quality); ***social/working environment*** (stress and pressure); and ***working in a clinical environment*** (e.g., problems linking research with clinical work). A few comments stress a more general critique, however difficult to thematise due to the small sample size of comments.

Summary and reflections

This study draws on the results from an extensive research environment survey directed to all research-active staff at Uppsala University. The survey served as background material to the comprehensive research evaluation exercise carried out in 2016 and 2017 (Q&R17). The study uses a mixed-methods approach based on a quantitative logistic regression analysis of questions with set response options and a qualitative text analysis of the open-ended questions in the survey. The study investigates what preconditions and processes contribute to the creation of an enhanced embedded research quality culture at Uppsala University.

More specifically, the *binary logistic regression approach* identifies and investigates which factors research-active staff perceive as contributing to the opportunity to conduct high-quality research in their main research environments. In this summary, the results are initially presented in relation to each model.

The main findings from the *qualitative approach*, aiming to analyse and highlight themes and aspects voiced by the respondents, are first presented as strengths and weaknesses and second in combination with the results from the logistic regressions. Together, the qualitative and the quantitative analyses present a more comprehensive picture of what the respondents believe contribute to high-quality research and an embedded quality culture at Uppsala University.

Main results from the binary logistic regressions

The binary logistic regressions provide a picture of how the respondents perceive their opportunities to conduct high-quality research. First, as reported below, this is investigated in three independent models based on survey questions from central themes in the survey. Second, the relative importance of significant variables identified as contributing to the perceived opportunity to conduct high-quality research in the three models are combined into a fourth model.

Results from Model 1: Respondent and research environment background factors

According to Model 1, which investigates background factors, we find that employment conditions (e.g., having more time devoted to research or having a position with more research such as being professor or researcher) and the research environmental setting (i.e., working in a research group or at a research centre) have a positive effect on the perceived opportunity for conducting high-quality research. The analysis also shows that men are slightly more likely to have this perception than women are. Surprisingly, both age and time working at the university seem to have a negative effect on the perceived opportunity to conduct high-quality research; i.e., the older the respondent or the longer experience the

respondent has working at the university, the likelihood increases of giving a more negative answer to the question.

Results from Model 2: Academic core issues

Model 2 concerns academic core issues: receiving good access to support and infrastructure; receiving constructive feedback; experiencing academic freedom; providing opportunities to attend conferences; establishing contacts with other internationally leading research environments; and experiencing stimulating competition. All these aspects have a positive effect on the perceived opportunity to conduct high-quality research.

Results from Model 3: Structural factors

Model 3 addresses how structural factors – individual and environmental factors – influence the ability to conduct research. As for individual factors, stable funding has the strongest effect on the perceived opportunity to conduct high-quality research. As for environmental factors, active quality management, good leadership, critical mass of researchers, gender equality and equal opportunities, and in- and outward mobility have the strongest effect on the perceived opportunity to conduct high-quality research.

Results from Model 4: Main combined analysis

When combining the statistically significant variables from the three previous models into a combined fourth model (Model 4), we can see how these factors relate to each other. Here the results show that the only background factor with a relatively strong effect is a high percentage of research in the employment, but gender, age, employment category, time working at the university, and type of research environment no longer are statistically significant. More importantly, some factors have the strongest effect on the perceived opportunity to conduct high-quality research: receiving constructive feedback; receiving good access to support and infrastructure; working in a good social environment at the department (or equivalent); having a current funding situation that enables a long-term research perspective; achieving gender equality and equal opportunities; making contacts with internationally leading research environments; and maintaining a critical mass of researchers in the respondent's field of research. A factor which also has a relatively strong effect is being in an environment with an active quality management concerned with the development of research activities in the main research environment. Connecting teaching to research has a moderate effect, although still a statistically significant. The model also shows that respondents from the disciplinary domain of Humanities and Social Sciences (acting as a reference category) have higher odds for perceiving the conditions for conducting high-quality research as generally good compared to respondents in the disciplinary domain of Science and Technology.

Main impressions from the open-ended questions: Strengths and weaknesses

Many of the results from the logistic regressions are supported by the comments and answers given in the open-ended questions. The open-ended questions also provide a more nuanced picture of quality development. That is, in these answers we also analyse some of the preconditions and processes that many respondents find problematic or negative in the local research environments or at the central university level while also addressing both individual and structural aspects. This refers not only to issues associated with conducting research 'in itself', but also to experiences about the working environment, social environment, and employment conditions in general.

Highlighted in the open-ended question regarding the greatest strengths in the research environment are aspects foremost related to the environment *per se*, such as being an open, accepting, supporting, stimulating, encouraging, and creative environment with a good climate for discussion and feedback. Other strengths mentioned are high levels of competence or scientific knowledge among researchers and teachers in the environment, good collegiality, good cooperation within and outside the environment, good infrastructure and support, academic freedom, good leadership, highly motivated and ambitious colleagues, stable economy and good funding conditions, stimulating seminars, inter- or multidisciplinary approaches, and being in an international environment with many colleagues with an international background.

As for the weaknesses or obstacles to conducting successful research in the main research environment, the uncertain and/or poor funding situation receives the largest attention followed by uncertain employment conditions. Support and infrastructure are also highlighted as obstacles, especially in relation to perceived insufficiencies in administrative support and/or administrative systems, as well as on the available infrastructure for research. Limited time for conducting research and lack of long-term research perspectives or strategies in the main research environment are also viewed as shortcomings. Moreover, another obstacle, and somewhat related to uncertain employment conditions, is uncertain or unclear career paths. Some respondents also stress lack of cooperation in the research environment and leadership deficits. In some cases the respondents also find the social or working climate to be problematic, such as not being an open or accepting environment. Finally, some comments also mention that the research environment is too small (i.e., the respondents perceive that there is a lack of critical mass).

Several of the themes and aspects in strengths and weaknesses are also mentioned in the answers to the open-ended questions on infrastructure and support, multilingualism, and Campus Gotland, and in the comments on whether the respondents would recommend others to apply to their main research environment.

Concluding discussion and reflections

Implications of the study are twofold. First, introducing a survey to the research evaluation process provides valuable insights to assessing both preconditions and processes underpinning high-quality research within the research environments. Not only is the survey useful as background material for the evaluation units when reflecting on their operations and writing self-evaluations, but also as a means for identifying or highlighting strengths and weaknesses within the university that otherwise can be hard to assess.

Second, when using the survey to examine specific factors and aspects of the multi-facetted nature of research and especially the opportunities for conducting high-quality research, the results show a clear overlap between the outcomes from the logistic regressions and the analysis of the open-ended questions that can be used to recognise important areas for further quality enhancement at Uppsala University. The mixed-methods approach shows similar results from the quantitative as well as the qualitative analyses, lending validity to the results.

The results from Model 4 can be contextualised according to a four-dimensional matrix spanning from the *individual level* to the *environmental level* and from favourable *preconditions* to quality enhancing *processes* (Table 6). These can also be understood in relation to the themes identified in the open-ended questions. When including weaknesses commented upon in the open-ended questions, the analysis often reveals two sides of the same coin. On one side, the results clearly identify factors and aspects that the respondents perceive as stimulating high-quality research in the research environment. On the other side, the results also point to central areas of quality enhancement, especially in research environments where these factors or aspect are less developed or not in place.

Table 6. Matrix based on the results from Model 4. Important factors for quality enhancement.

	Preconditions	***Processes***
Individual level	Funding situation Percentage active in research	Constructive feedback
Environmental level	Support and infrastructure Critical mass International contacts	Good social environment Gender and equal opportunities Active quality management Connecting teaching and research

On the individual level, both the logistic regression and the comments made in the open-ended questions highlight the importance of preconditions related to having time and financial resources for conducting research. As shown previously in the study, two central reoccurring themes in the open-ended question on weaknesses are uncertain and/or poor funding and limited time for research. Common reasons for the perceived insufficient time for research are teaching load, administrative tasks, fragmentation of working tasks, time spent applying for research funding, and heavy clinical workload.

Process-wise, constructive collegial feedback stands out as an important factor on the individual side. In the open-ended questions some comments note that this, where not in place, is a weakness, as some respondents express a need for

improvements concerning research cooperation and communication within the research environment.

Preconditions on the environmental level pointed out as important for the research quality culture are foremost good access to support and infrastructure (i.e., relevant, reliable, and fit for the purpose), critical mass of researchers in the field of research, and establishing contacts with internationally leading researchers and research environments. However, the analysis of the open-ended questions also shows that shortcomings related to these aspects are viewed as central areas for quality development and improvement. Thus, reoccurring themes that are perceived as deficits are foremost related to administrative support, administrative systems, and/or in the infrastructure. Similarly, many respondents also comment that their research environment is too small and that a greater focus in the research environment should be devoted to making international contacts.

Important factors for quality development in the cross-section between processes and the environmental level are related to creating or nurturing a good social climate (considered in the comments as stimulating an open, friendly, collegial, and encouraging climate) and an aspiration to achieve gender equality and equal opportunities (foremost with regard to gender, internationalisation, and multilingualism). Also viewed as important processes in this respect are to work actively with quality management of research activities as well as to connect teaching and research (although to a moderate extent).

To conclude, we argue that research quality is at its best when the individual and environmental dimensions are positively intertwined, stimulating both individual development and the development of the research environment. In the wake of the comprehensive research evaluation Q&R17, we suggest that identified favourable preconditions and processes that stimulate high-quality research should be nurtured and shortcomings attended to in an embedded quality system. These actions should help develop both the individual researchers and the research environment, which ultimately will benefit the university as a whole.

Appendix 1: Tables

Questions and corresponding variables in the models

Table 7. Model 1: Variables and survey questions

Question	*Variable name*	*Comment*
1. Gender?	Q1_UO.Gender	
2. Age?	Q2.Age	
3. Do you work in a clinical research environment (e.g. at Uppsala University Hospital, a centre for clinical research (CKF), a municipality)?	Q3.Clinical	
5. What is your academic role at Uppsala University (employment category)?	Q5.AcademicRole-Combined	
7. Please specify where you completed the following degrees and post-doc. Fill in all options that apply to you!		
a) Undergraduate degree (Bachelor's degree or equivalent professional qualification)	Q7a_1.DegreesUndergrad_Swe_Int	New dichotomised variable based on bachelor's degree from Sweden or outside Sweden
8. How long have you been working at Uppsala University (including time as a doctoral student)? (If you were working at Gotland University before the merger, please state the total length of time you worked at Gotland University and Uppsala University together.)	Q8.O_TimeAtUU	
10. Is Campus Gotland your *primary workplace*?	Q10.CampusGotland	
12. In which faculty at Uppsala University are you primarily active?	Q12_Disc_Domain	New variable based on faculty belonging
16. Choose the option that best characterises the *main research environment*…	Q16.MainResearchEnvironment	Six options: department; research centre; division/healthcare clinic linked to Uppsala University; division/research programme or one of the department's research topics; research group (as organisational unit); and other
17a. To what extent do you estimate that you were active in research at Uppsala University over the past semester (spring semester 2016)? (Indicate percentage of full-time employment.)	Q17a.UV_TimeActiveInResearch	

Table 8. Model 2: Variables and survey questions

Question	*Variable name*
18. Please respond to the following statements about your *main research environment*?	
c) It provides the opportunity for me to freely develop/choose research topics and methods	Q18c.O_FreelyResearchTopicsAndMethods
d) It provides the opportunity to receive constructive feedback on my research	Q18d.O_Feedback
f) There is an aspiration to seek complementary knowledge outside one's own research environment	Q18f.O_ComplementaryKnowledge
g) There is *stimulating* competition between colleagues	Q18g.O_StimulatingCompetition
l) There is active discussion on issues of research ethics and/or academic integrity (e.g. fraud, plagiarism, manipulation)	Q18l.O_ResearchEthics
19. I think that my *main research environment* places great importance on...	
e) establishing contacts with internationally leading research environments	Q19e.O_ContactsInternationallyLeading
f) working actively to communicate, promote and utilise our research in industry and society (e.g. through collaboration or popular science communication)	Q19f.O_CommunicateIndustryAndSociety
22. Please respond to the following statements regarding the primary seminars or similar events that you participated in. In these seminars…	
b) there is an open, permissive and lively discussion climate	Q22b.O_OpenClimate
24. In my research, I have research-related cooperation with people...	
a) within my main research environment	Q24a.O_MainResearchEnvironment
e) at one or more other universities in the European Union	Q24e.O_OtherUniversitiesEU
f) at one or more other universities outside the European Union	Q24f.O_OtherUniversitiesOutsideEU
25. I have the opportunity to attend academic conferences/similar that I deem relevant to my research.	Q25.O_AcademicConferences
26. I work actively to communicate and promote my research and my knowledge in the field outside the university	Q26.O_CommunicateandPromote
37. I think that great effort is made in my main research environment to connect teaching to research in a carefully planned and executed manner.	Q37.O_ConnectTeachingAndResearch
39. At the department level (or equivalent) in which I work...	
d) valuable discussions on research are conducted even outside the regular meeting places (e.g. in the hallways, in the break room, at lunch)	Q39d.O_ResearchdiscussionsOutsideRegularMeeting
46. Overall, I think that the support and the infrastructure that I have access to is...	Q46.O_OverallSupportAndInfrastructure

Table 9. Model 3: Variables and survey questions

Question	*Variable name*
18. Please respond to the following statements about your *main research environment*?	
e) There is a sufficient number (a critical mass) of active researchers in my field of research	Q18e.O_CriticalMass
m) There is an aspiration to achieve gender equality and equal opportunities (regardless of gender, gender identity or expression, ethnicity, religion, physical ability or disability, sexual orientation or age).	Q18m.O_GenderEqualityAndEqualOpportunities
19. I think that *my main research environment* places great importance on...	
c) active quality management for the development of research activities	Q19c.O_QualityManagement
d) providing support to researchers who are newly graduated doctors	Q19d.O_NewlyGraduated
28. My current funding situation enables me to have a long-term perspective regarding my research.	Q28.O_CurrentFundingSituation
30. I take part in group-wide discussions on competence needs and recruitment strategies in my main research environment	Q30.O_CompetenceNeeds
31. There is mobility regarding research staff in and out of my main research environment	Q31.O_Mobility
32. It is clear to me what qualifications are needed for me to take the next career step within the university sector.	Q32.O_NextCareerStep
38. How well do you agree with the following statements about your *main research environment*?	
a) There is a sense of collegial responsibility regarding group-wide issues	Q38a.O_CollegialResponsibility
d) It works well to combine research career and family	Q38d.O_CombineResearchAndFamily
39. At the department level (or equivalent) in which I work...	
b) everyone can make their voice heard at formal meetings	Q39b.O_VoiceHeard
40. Do you think that your department (or equivalent) has found an effective way to handle multilingualism?	Q40.O_Multilingualism
41. Overall, I think that the social environment in my department (or equivalent) is...	Q41.O_SocialEnvironment
42. There is active discussion on the focus and long-term development of the research...	
a) in my main research environment	Q42a.O_LongtermDevelopmentMainResearchEnvironment
44. In my role as researcher/doctoral student, I feel that my *immediate superiors* at Uppsala University...	
e) take charge of things that aren't working in the research environment	Q44e.O_SuperiorsTakeCharge

Tables: Results from the binary logistic regression models

Table 10. Model 1: Respondent and research environment background factors. Binary logistic regression.

	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I. for EXP(B)*	
							Lower	*Upper*
Q1_UO.Gender (0=Woman, 1=Man)	0.235	0.095	6.086	1	0.014*	1.265	1.049	1.525
Q2.Age (ref. = 30 or younger)			12.696	5	0.026*			
31-40 years	-0.043	0.160	0.071	1	0.789	0.958	0.700	1.311
41-50 years	-0.341	0.201	2.895	1	0.089	0.711	0.480	1.053
51-60 years	-0.649	0.228	8.094	1	0.004*	0.523	0.334	0.817
61-66 years	-0.717	0.277	6.710	1	0.010*	0.488	0.284	0.840
67 or older	-0.492	0.514	0.915	1	0.339	0.611	0.223	1.676
Q3.Clinical (0=Yes, 1=No)	-0.156	0.187	0.689	1	0.406	0.856	0.593	1.236
Q5.AcademicRole_Combined (ref. = Doctoral student)			46.450	8	0.000*			
Post-doc	0.082	0.189	0.186	1	0.667	1.085	0.748	1.573
Associate senior lecturer	0.457	0.449	1.036	1	0.309	1.580	0.655	3.810
Senior lecturer	0.140	0.187	0.566	1	0.452	1.151	0.798	1.659
Researcher	0.538	0.175	9.503	1	0.002*	1.713	1.217	2.412
Post-doctoral research fellow	0.362	0.465	0.606	1	0.436	1.436	0.578	3.570
Professor	1.164	0.222	27.370	1	0.000*	3.201	2.070	4.951
Emeritus/senior employee	1.007	0.544	3.430	1	0.064	2.737	0.943	7.942
Other	0.017	0.276	0.004	1	0.950	1.017	0.592	1.748
Q7a_1.DegreesUnder-grad_Swe_Int (0=Swedish, 1=International)	-0.099	0.115	0.733	1	0.392	0.906	0.722	1.136
Q8.O_TimeAtUU (ref. = 1 year or less			16.642	5	0.005*			
2-5 years	-0.807	0.213	14.357	1	0.000*	0.446	0.294	0.677
6-10 years	-0.870	0.228	14.615	1	0.000*	0.419	0.268	0.654
11-15 years	-0.809	0.257	9.945	1	0.002*	0.445	0.269	0.736
16-20 years	-0.907	0.279	10.607	1	0.001*	0.404	0.234	0.697
More than 20 years	-0.952	0.277	11.770	1	0.001*	0.386	0.224	0.665
Q10.CampusGotland (0=Yes, 1=No)	0.228	0.321	0.505	1	0.477	1.257	0.669	2.360
Q12_Disc_Domain (ref. = H&S)			13.868	2	0.001*			
M&P	-0.264	0.148	3.162	1	0.075	0.768	0.574	1.027
S&T	-0.509	0.137	13.868	1	0.000*	0.601	0.460	0.786
Q16.MainResearchEnvironment (ref. = Department)			19.250	5	0.002*			
Research centre	0.743	0.258	8.277	1	0.004*	2.103	1.267	3.490
Division/healthcare clinic	-0.162	0.229	0.498	1	0.480	0.851	0.543	1.333
Division/research programme or one of the department's research topics	0.173	0.132	1.727	1	0.189	1.189	0.918	1.540
Research group	0.409	0.133	9.503	1	0.002*	1.505	1.161	1.952
Other	-0.068	0.346	0.038	1	0.845	0.935	0.474	1.842
Q17a.UV_TimeActiveInRe-search (ref. = 1%-20%)			84.279	4	0.000*			
21%-49%	0.744	0.143	27.214	1	0.000*	2.104	1.591	2.782
50%-79%	1.437	0.163	77.989	1	0.000*	4.210	3.060	5.792
80% or more	1.130	0.160	49.978	1	0.000*	3.094	2.262	4.232
I did not conduct any re-search…	0.796	0.310	6.579	1	0.010*	2.217	1.207	4.072
Constant	1.019	0.442	5.315	1	0.021*	2.771		

Test	*Chi²*	*df*	*Sig.*
Overall model evaluation			
Likelihood ratio test	268.861	33	0.000*
Cox & Snell R Sq. = 0.085			
Nagelkerke R Sq. = 0.130			
Goodness-of-fit test			
Hosmer & Lemeshow	5.284	8	0.727

Note: *$p < .05$. Data from Q&R17 Research Environment Survey 2016

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Table 11. Model 2: Academic core issues in the research environment. Binary logistic regression.

	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I. for EXP(B)*	
							Lower	*Upper*
Q18c.O_FreelyResearchTopics-AndMethods (ref. = Not at all)			34.001	4	0.000*			
To a small extent	0.505	0.770	0.429	1	0.512	1.656	0.366	7.495
To some extent	1.282	0.744	2.971	1	0.085	3.604	0.839	15.488
To a large extent	1.251	0.740	2.860	1	0.091	3.495	0.820	14.900
To a very large extent	2.025	0.744	7.415	1	0.006*	7.574	1.764	32.523
Q18d.O_Feedback (ref. = Not at all)			49.433	4	0.000*			
To a small extent	0.601	0.536	1.256	1	0.262	1.823	0.638	5.211
To some extent	1.027	0.537	3.665	1	0.056	2.794	0.976	7.997
To a large extent	1.698	0.544	9.751	1	0.002*	5.464	1.882	15.865
To a very large extent	2.489	0.586	18.017	1	0.000*	12.045	3.817	38.009
Q18f.O_Complementary-Knowledge (ref. = Not at all)			1.675	4	0.795			
To a small extent	0.628	0.520	1.461	1	0.227	1.874	0.677	5.188
To some extent	0.623	0.518	1.448	1	0.229	1.865	0.676	5.144
To a large extent	0.663	0.531	1.561	1	0.212	1.941	0.686	5.492
To a very large extent	0.697	0.559	1.554	1	0.212	2.008	0.671	6.007
Q18g.O_StimulatingCompetition (ref. = Not at all)			11.821	4	0.019*			
To a small extent	-0.033	0.284	0.013	1	0.908	0.967	0.554	1.690
To some extent	0.059	0.283	0.043	1	0.836	1.060	0.609	1.846
To a large extent	0.831	0.344	5.836	1	0.016*	2.297	1.170	4.508
To a very large extent	0.174	0.521	0.112	1	0.738	1.190	0.429	3.306
Q18l.O_ResearchEthics (ref. = Not at all)			7.538	4	0.110			
To a small extent	0.535	0.277	3.733	1	0.053	1.708	0.992	2.940
To some extent	0.756	0.280	7.291	1	0.007*	2.130	1.230	3.687
To a large extent	0.543	0.307	3.129	1	0.077	1.722	0.943	3.144
To a very large extent	0.660	0.430	2.357	1	0.125	1.934	0.833	4.490
Q19e.O_ContactsInternational-lyLeading (ref. = Not at all)			14.129	4	0.007*			
To a small extent	0.566	0.481	1.384	1	0.239	1.762	0.686	4.525
To some extent	0.768	0.475	2.616	1	0.106	2.156	0.850	5.471
To a large extent	1.101	0.490	5.040	1	0.025*	3.007	1.150	7.864
To a very large extent	1.548	0.533	8.444	1	0.004*	4.700	1.655	13.349
Q19f.O_CommunicateIndustry-AndSociety (ref. = Not at all)			0.623	4	0.961			
To a small extent	0.002	0.382	0.000	1	0.996	1.002	0.474	2.117
To some extent	-0.081	0.382	0.045	1	0.833	0.923	0.437	1.950
To a large extent	0.007	0.407	0.000	1	0.987	1.007	0.453	2.235
To a very large extent	-0.198	0.464	0.182	1	0.669	0.820	0.330	2.038
Q22b.O_OpenClimate (ref. = Not at all)			2.732	4	0.604			
To a small extent	0.730	0.932	0.613	1	0.434	2.075	0.334	12.900
To some extent	0.481	0.914	0.277	1	0.599	1.617	0.270	9.700
To a large extent	0.614	0.914	0.452	1	0.502	1.848	0.308	11.081
To a very large extent	0.358	0.919	0.152	1	0.697	1.431	0.236	8.674
Q24a.O_MainResearchEnviron-ment (ref. = Not at all)			19.959	4	0.001*			
To a small extent	-0.601	0.412	2.122	1	0.145	0.548	0.244	1.231
To some extent	-0.229	0.394	0.338	1	0.561	0.795	0.368	1.721
To a large extent	0.051	0.397	0.017	1	0.897	1.053	0.484	2.290
To a very large extent	0.558	0.413	1.824	1	0.177	1.748	0.777	3.930
Q24e.O_OtherUniversitiesEU (ref. = Not at all)			2.889	4	0.577			
To a small extent	0.277	0.231	1.433	1	0.231	1.319	0.838	2.074
To some extent	0.025	0.220	0.013	1	0.911	1.025	0.666	1.578
To a large extent	0.319	0.261	1.487	1	0.223	1.375	0.824	2.296
To a very large extent	0.096	0.331	0.084	1	0.772	1.101	0.575	2.106
Q24f.O_OtherUniversitiesOut-sideEU (ref. = Not at all)			4.604	4	0.330			
To a small extent	-0.164	0.221	0.552	1	0.457	0.848	0.550	1.309
To some extent	-0.254	0.220	1.331	1	0.249	0.775	0.503	1.194
To a large extent	0.001	0.271	0.000	1	0.998	1.001	0.589	1.701
To a very large extent	-0.664	0.347	3.655	1	0.056	0.515	0.261	1.017
Q25.O_AcademicConferences (ref. = Not at all)			37.742	4	0.000*			
To a small extent	-0.049	0.655	0.006	1	0.940	0.952	0.264	3.439
To some extent	0.912	0.624	2.135	1	0.144	2.489	0.732	8.457
To a large extent	1.031	0.619	2.770	1	0.096	2.803	0.833	9.435
To a very large extent	1.761	0.638	7.605	1	0.006*	5.816	1.664	20.327

Q26.O_Communicateand-Promote (ref. = Not at all)			3.988	4	0.408			
To a small extent	-0.368	0.282	1.705	1	0.192	0.692	0.398	1.202
To some extent	-0.517	0.280	3.417	1	0.065	0.596	0.344	1.032
To a large extent	-0.561	0.307	3.339	1	0.068	0.570	0.312	1.042
To a very large extent	-0.485	0.360	1.818	1	0.178	0.616	0.304	1.246
Q37.O_ConnectTeaching-AndResearch (ref. = Not at all)			10.663	4	0.031*			
To a small extent	0.213	0.304	0.491	1	0.484	1.237	0.682	2.245
To some extent	0.692	0.293	5.578	1	0.018*	1.998	1.125	3.550
To a large extent	0.365	0.313	1.356	1	0.244	1.440	0.779	2.661
To a very large extent	0.028	0.427	0.004	1	0.948	1.028	0.445	2.376
Q39d.O_Researchdiscussions-OutsideRegularMeeting (ref. = Not at all)			18.736	4	0.001*			
To a small extent	-1.038	0.546	3.616	1	0.057	0.354	0.122	1.032
To some extent	-0.580	0.534	1.179	1	0.278	0.560	0.196	1.596
To a large extent	-0.064	0.540	0.014	1	0.906	0.938	0.326	2.703
To a very large extent	-0.170	0.575	0.088	1	0.767	0.843	0.273	2.602
Q46.O_OverallSupportAndInfra-structure (ref. = Very poor)			88.954	4	0.000*			
Poor	1.055	0.812	1.691	1	0.194	2.873	0.585	14.103
Neither good nor poor	1.625	0.779	4.356	1	0.037*	5.081	1.104	23.382
Good	2.810	0.776	13.099	1	0.000*	16.603	3.626	76.025
Very good	2.957	0.800	13.665	1	0.000*	19.231	4.011	92.216
Constant	-7.299	1.575	21.472	1	0.000*	0.001		

Test	*Chi²*	*df*	*Sig.*
Overall model evaluation			
Likelihood ratio test	943.196	64	0.000*
Cox & Snell R Square = 0.355			
Nagelkerke R Square = 0.551			
Goodness-of-fit test			
Hosmer & Lemeshow	4.508	8	0.809

Note: *$p < .05$. Data from Q&R17 Research Environment Survey 2016.

Table 12. Model 3: Structural factors related to the research environment. Binary logistic regression.

	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I. for EXP(B)*	
							Lower	*Upper*
Q18e.O_CriticalMass (ref. = Not at all)			47.523	4	0.000*			
To a small extent	-0.074	0.391	0.036	1	0.850	0.929	0.432	1.998
To some extent	0.765	0.380	4.045	1	0.044*	2.149	1.020	4.529
To a large extent	1.584	0.404	15.387	1	0.000*	4.873	2.209	10.751
To a very large extent	1.417	0.458	9.555	1	0.002*	4.125	1.680	10.130
Q18m.O_GenderEqualityAnd-EqualOpportunities (ref. = Not at all)			6.266	4	0.180			
To a small extent	0.578	0.527	1.202	1	0.273	1.782	0.635	5.004
To some extent	0.570	0.498	1.314	1	0.252	1.769	0.667	4.692
To a large extent	0.604	0.511	1.399	1	0.237	1.829	0.672	4.976
To a very large extent	1.206	0.556	4.700	1	0.030*	3.341	1.123	9.944
Q19c.O_QualityManagement (ref. = Not at all)			11.748	4	0.019*			
To a small extent	1.308	0.547	5.726	1	0.017*	3.699	1.267	10.800
To some extent	1.261	0.555	5.158	1	0.023*	3.529	1.189	10.480
To a large extent	1.644	0.582	7.997	1	0.005*	5.178	1.657	16.187
To a very large extent	2.201	0.700	9.898	1	0.002*	9.037	2.293	35.611
Q19d.O_NewlyGraduated (ref. = Not at all)			6.567	4	0.161			
To a small extent	-0.187	0.401	0.216	1	0.642	0.830	0.378	1.822
To some extent	0.254	0.414	0.376	1	0.540	1.289	0.573	2.900
To a large extent	0.373	0.452	0.680	1	0.409	1.452	0.599	3.522
To a very large extent	0.836	0.649	1.659	1	0.198	2.306	0.647	8.224
Q28.O_CurrentFundingSituation (ref. = Not at all)			39.473	4	0.000*			
To a small extent	-0.192	0.225	0.733	1	0.392	0.825	0.531	1.281
To some extent	0.361	0.243	2.200	1	0.138	1.434	0.890	2.311
To a large extent	2.123	0.425	24.995	1	0.000*	8.352	3.634	19.195
To a very large extent	2.079	0.675	9.480	1	0.002*	7.998	2.129	30.047
Q30.O_CompetenceNeeds (ref. = Not at all)			2.984	4	0.561			
To a small extent	-0.182	0.255	0.507	1	0.476	0.834	0.506	1.375
To some extent	-0.142	0.263	0.289	1	0.591	0.868	0.518	1.454
To a large extent	-0.046	0.311	0.021	1	0.884	0.955	0.519	1.758
To a very large extent	-0.736	0.448	2.705	1	0.100	0.479	0.199	1.152
Q31.O_Mobility (ref. = Not at all)			10.317	4	0.035*			
To a small extent	0.411	0.515	0.637	1	0.425	1.508	0.550	4.137
To some extent	0.825	0.508	2.637	1	0.104	2.281	0.843	6.170
To a large extent	1.108	0.527	4.428	1	0.035*	3.028	1.079	8.498
To a very large extent	1.190	0.625	3.619	1	0.057	3.287	0.965	11.200
Q32.O_NextCareerStep (ref. = Not at all)			3.654	4	0.455			
To a small extent	0.520	0.385	1.826	1	0.177	1.682	0.791	3.575
To some extent	0.656	0.359	3.349	1	0.067	1.927	0.954	3.892
To a large extent	0.419	0.360	1.356	1	0.244	1.520	0.751	3.077
To a very large extent	0.488	0.442	1.217	1	0.270	1.629	0.684	3.877
Q38a.O_CollegialResponsibility (ref. = Not at all)			4.391	4	0.356			
To a small extent	0.465	0.549	0.718	1	0.397	1.592	0.543	4.669
To some extent	0.840	0.534	2.475	1	0.116	2.316	0.814	6.596
To a large extent	0.952	0.556	2.938	1	0.087	2.591	0.872	7.699
To a very large extent	0.855	0.646	1.751	1	0.186	2.351	0.663	8.340
Q38d.O_CombineResearch-AndFamily (ref. = Not at all)			13.821	4	0.008*			
To a small extent	-1.020	0.555	3.386	1	0.066	0.360	0.122	1.069
To some extent	-0.271	0.533	0.258	1	0.611	0.763	0.268	2.169
To a large extent	0.037	0.536	0.005	1	0.945	1.038	0.363	2.970
To a very large extent	-0.331	0.595	0.310	1	0.578	0.718	0.224	2.304
Q39b.O_VoiceHeard (ref. = Not at all)			1.289	4	0.863			
To a small extent	0.288	0.748	0.148	1	0.700	1.334	0.308	5.778
To some extent	0.513	0.736	0.486	1	0.486	1.671	0.394	7.074
To a large extent	0.412	0.741	0.309	1	0.579	1.510	0.353	6.456
To a very large extent	0.237	0.784	0.091	1	0.763	1.267	0.273	5.887
Q40.O_Multilingualism (ref. = Not at all)			3.536	4	0.472			
To a small extent	0.486	0.641	0.575	1	0.448	1.626	0.463	5.715
To some extent	0.085	0.601	0.020	1	0.888	1.089	0.335	3.534
To a large extent	0.416	0.595	0.489	1	0.484	1.516	0.472	4.868

To a very large extent	0.455	0.618	0.541	1	0.462	1.576	0.469	5.291
Q41.O_SocialEnvironment (ref. = Very poor)			35.725	4	0.000*			
Poor	-0.687	0.676	1.033	1	0.309	0.503	0.134	1.893
Neither good nor poor	-0.538	0.666	0.652	1	0.419	0.584	0.158	2.156
Good	0.526	0.671	0.614	1	0.433	1.692	0.454	6.301
Very good	1.036	0.718	2.077	1	0.149	2.817	0.689	11.517
Q42a.O_LongtermDevelop-mentMainResearchEnvironment (ref. = Not at all)			0.286	4	0.991			
To a small extent	0.016	0.466	0.001	1	0.973	1.016	0.407	2.533
To some extent	0.094	0.455	0.043	1	0.836	1.099	0.450	2.681
To a large extent	0.164	0.475	0.119	1	0.731	1.178	0.464	2.990
To a very large extent	0.140	0.609	0.053	1	0.818	1.151	0.348	3.799
Q44e.O_SuperiorsTakeCharge (ref. = Not at all)			18.620	4	0.001*			
To a small extent	0.184	0.409	0.202	1	0.653	1.202	0.539	2.678
To some extent	0.614	0.403	2.319	1	0.128	1.848	0.838	4.074
To a large extent	1.141	0.428	7.114	1	0.008*	3.130	1.353	7.241
To a very large extent	1.814	0.629	8.324	1	0.004*	6.133	1.789	21.027
Constant	-5.438	1.083	25.239	1	0.000*	0.004		

Test			*Chi*^{2}	*df*	*Sig.*			
Overall model evaluation								
Likelihood ratio test			771.357	60	0.000*			
Cox & Snell R Sq. = 0.385								
Nagelkerke R Sq. = 0.598								
Goodness-of-fit test								
Hosmer & Lemeshow			2.631	8	0.955			

Note: *$p < .05$. Data from Q&R17 Research Environment Survey 2016.

Table 13. Model 4: Combined model of factors contributing to a positive view of conducting good research in the main research environment. Binary logistic regression.

	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I. for EXP(B)*	
							Lower	*Upper*
Q1_UO.Gender(0=Woman, 1=Man)	0.270	0.205	1.729	1	0.189	1.310	0.876	1.960
Q2.Age (ref. = 30 or younger)			10.541	5	0.061			
31-40 years	0.480	0.358	1.799	1	0.180	1.616	0.801	3.257
41-50 years	0.207	0.454	0.208	1	0.649	1.230	0.505	2.997
51-60 years	-0.538	0.512	1.101	1	0.294	0.584	0.214	1.594
61-66 years	-0.151	0.611	0.061	1	0.804	0.860	0.260	2.847
67 or older	-1.675	1.331	1.584	1	0.208	0.187	0.014	2.543
Q5.AcademicRole_Combined (ref. = Doctoral student)			5.955	8	0.652			
Post-doc	0.593	0.454	1.708	1	0.191	1.810	0.743	4.408
Associate senior lecturer	-0.452	0.897	0.253	1	0.615	0.637	0.110	3.696
Senior lecturer	-0.143	0.420	0.116	1	0.734	0.867	0.380	1.975
Researcher	0.080	0.377	0.045	1	0.832	1.083	0.518	2.266
Post-doctoral research fellow	-0.027	0.885	0.001	1	0.976	0.974	0.172	5.514
Professor	0.344	0.473	0.530	1	0.466	1.411	0.559	3.563
Emeritus/senior employee	1.422	1.403	1.028	1	0.311	4.146	0.265	64.820
Other	-0.301	0.581	0.268	1	0.605	0.740	0.237	2.311
Q8.O_TimeAtUU (ref. = 1 year or less			4.930	5	0.424			
2-5 years	-0.135	0.556	0.059	1	0.808	0.873	0.294	2.597
6-10 years	-0.358	0.578	0.384	1	0.536	0.699	0.225	2.171
11-15 years	0.094	0.617	0.023	1	0.878	1.099	0.328	3.680
16-20 years	-0.736	0.657	1.257	1	0.262	0.479	0.132	1.735
More than 20 years	-0.417	0.650	0.412	1	0.521	0.659	0.184	2.354
Q12_Disc_Domain (ref. = H&S)			8.421	2	0.015*			
M&P	-0.465	0.295	2.496	1	0.114	0.628	0.352	1.119
S&T	-0.851	0.293	8.421	1	0.004*	0.427	0.241	0.759
Q16.MainResearchEnvironment (ref. = Department)			8.813	5	0.117			
Research centre	-0.871	0.487	3.202	1	0.074	0.419	0.161	1.087
Division/healthcare clinic	0.252	0.468	0.290	1	0.590	1.286	0.514	3.216
Division/research programme or one of the department´s research topics	-0.088	0.269	0.107	1	0.743	0.916	0.541	1.551
Research group	0.514	0.290	3.137	1	0.077	1.673	0.947	2.955
Other	-0.344	1.042	0.109	1	0.741	0.709	0.092	5.462
Q17a.UV_TimeActiveInResearch (ref. = 1%-20%)			20.882	4	0.000*			
21%-49%	0.846	0.304	7.762	1	0.005*	2.329	1.285	4.223
50%-79%	1.469	0.339	18.820	1	0.000*	4.346	2.238	8.441
80% or more	1.283	0.342	14.068	1	0.000*	3.608	1.845	7.054
I did not conduct any research at UU during the previous semester	1.446	0.752	3.700	1	0.054	4.246	0.973	18.529
Q18c.O_FreelyResearchTopicsAndMethods (ref. = Not at all)			15.481	4	0.004*			
To a small extent	-1.300	0.884	2.164	1	0.141	0.273	0.048	1.540
To some extent	-0.086	0.837	0.011	1	0.918	0.917	0.178	4.729
To a large extent	-0.219	0.828	0.070	1	0.792	0.804	0.159	4.074
To a very large extent	0.284	0.828	0.117	1	0.732	1.328	0.262	6.734
Q18d.O_Feedback (ref. = Not at all)			20.083	4	0.000*			
To a small extent	0.761	0.661	1.326	1	0.250	2.139	0.586	7.809
To some extent	1.382	0.661	4.364	1	0.037*	3.981	1.089	14.555
To a large extent	1.633	0.678	5.800	1	0.016*	5.118	1.355	19.326
To a very large extent	2.606	0.749	12.097	1	0.001*	13.547	3.119	58.840
Q18e.O_CriticalMass (ref. = Not at all)			24.615	4	0.000*			
To a small extent	0.348	0.431	0.653	1	0.419	1.417	0.608	3.299
To some extent	0.872	0.438	3.958	1	0.047*	2.391	1.013	5.645
To a large extent	1.754	0.482	13.227	1	0.000*	5.775	2.245	14.858
To a very large extent	1.457	0.564	6.674	1	0.010*	4.295	1.422	12.977
Q18g.O_StimulatingCompetition (ref. = Not at all)			12.397	4	0.015*			
To a small extent	-0.263	0.372	0.501	1	0.479	0.769	0.371	1.593
To some extent	-0.755	0.383	3.887	1	0.049*	0.470	0.222	0.996
To a large extent	0.144	0.457	0.099	1	0.753	1.155	0.471	2.828
To a very large extent	-1.198	0.762	2.472	1	0.116	0.302	0.068	1.344

Q18l.O_ResearchEthics (ref. = Not at all)			4.227	4	0.376			
To a small extent	0.165	0.379	0.189	1	0.664	1.179	0.561	2.477
To some extent	0.547	0.388	1.989	1	0.158	1.728	0.808	3.697
To a large extent	0.357	0.437	0.668	1	0.414	1.429	0.607	3.367
To a very large extent	-0.091	0.563	0.026	1	0.871	0.913	0.303	2.751
Q18m.O_GenderEqualityAndEqualOpportunities (ref. = Not at all)			12.364	4	0.015*			
To a small extent	1.301	0.566	5.282	1	0.022*	3.674	1.211	11.143
To some extent	0.896	0.540	2.746	1	0.098	2.449	0.849	7.063
To a large extent	0.798	0.551	2.098	1	0.148	2.221	0.754	6.536
To a very large extent	1.685	0.599	7.907	1	0.005*	5.394	1.666	17.463
Q19c.O_QualityManagement (ref. = Not at all)			11.033	4	0.026*			
To a small extent	1.681	0.604	7.746	1	0.005*	5.369	1.644	17.535
To some extent	1.282	0.613	4.371	1	0.037*	3.602	1.083	11.976
To a large extent	1.725	0.653	6.972	1	0.008*	5.614	1.560	20.208
To a very large extent	1.217	0.760	2.567	1	0.109	3.378	0.762	14.974
Q19e.O_ContactsInternationallyLeading (ref. = Not at all)			6.140	4	0.189			
To a small extent	0.802	0.601	1.782	1	0.182	2.231	0.687	7.247
To some extent	0.976	0.586	2.772	1	0.096	2.654	0.841	8.376
To a large extent	1.108	0.604	3.368	1	0.066	3.029	0.927	9.895
To a very large extent	1.598	0.684	5.460	1	0.019*	4.945	1.294	18.899
Q24a.O_MainResearchEnvironment (ref. = Not at all)			15.279	4	0.004*			
To a small extent	-1.702	0.596	8.149	1	0.004*	0.182	0.057	0.587
To some extent	-1.220	0.568	4.619	1	0.032*	0.295	0.097	0.898
To a large extent	-0.850	0.570	2.224	1	0.136	0.427	0.140	1.306
To a very large extent	-0.557	0.586	0.905	1	0.341	0.573	0.182	1.806
Q25.O_AcademicConferences (ref. = Not at all)			13.478	4	0.009*			
To a small extent	-0.312	0.911	0.117	1	0.732	0.732	0.123	4.368
To some extent	0.721	0.876	0.678	1	0.410	2.057	0.369	11.455
To a large extent	0.712	0.877	0.658	1	0.417	2.038	0.365	11.372
To a very large extent	1.269	0.905	1.966	1	0.161	3.557	0.604	20.969
Q28.O_CurrentFundingSituation (ref. = Not at all)			30.168	4	0.000*			
To a small extent	-0.029	0.256	0.013	1	0.909	0.971	0.588	1.604
To some extent	0.454	0.276	2.710	1	0.100	1.575	0.917	2.705
To a large extent	2.147	0.467	21.115	1	0.000*	8.560	3.426	21.391
To a very large extent	1.764	0.671	6.911	1	0.009*	5.834	1.566	21.729
Q31.O_Mobility (ref. = Not at all)			11.251	4	0.024*			
To a small extent	-0.002	0.532	0.000	1	0.997	0.998	0.352	2.834
To some extent	0.657	0.518	1.604	1	0.205	1.928	0.698	5.327
To a large extent	0.879	0.543	2.617	1	0.106	2.408	0.830	6.987
To a very large extent	0.743	0.643	1.337	1	0.248	2.103	0.597	7.413
Q37.O_ConnectTeachingAndResearch (ref. = Not at all)			7.496	4	0.112			
To a small extent	0.299	0.406	0.542	1	0.462	1.348	0.608	2.989
To some extent	0.888	0.395	5.062	1	0.024*	2.429	1.121	5.264
To a large extent	0.611	0.429	2.030	1	0.154	1.843	0.795	4.273
To a very large extent	0.478	0.556	0.737	1	0.391	1.612	0.542	4.798
Q38d.O_CombineResearchAndFamily (ref. = Not at all)			12.359	4	0.015*			
To a small extent	0.096	0.718	0.018	1	0.894	1.100	0.269	4.499
To some extent	0.363	0.692	0.276	1	0.599	1.438	0.371	5.579
To a large extent	0.886	0.688	1.657	1	0.198	2.426	0.629	9.346
To a very large extent	-0.080	0.729	0.012	1	0.912	0.923	0.221	3.853
Q39d.O_ResearchdiscussionsOutsideRegularMeeting (ref. = Not at all)			2.326	4	0.676			
To a small extent	-0.923	0.709	1.694	1	0.193	0.397	0.099	1.595
To some extent	-0.816	0.705	1.341	1	0.247	0.442	0.111	1.759
To a large extent	-0.685	0.722	0.900	1	0.343	0.504	0.122	2.075
To a very large extent	-0.952	0.779	1.495	1	0.221	0.386	0.084	1.776
Q41.O_SocialEnvironment (ref. = Very poor)			16.153	4	0.003*			
Poor	0.738	0.751	0.963	1	0.326	2.091	0.479	9.120
Neither good nor poor	0.716	0.754	0.902	1	0.342	2.047	0.467	8.975
Good	1.430	0.753	3.607	1	0.058	4.177	0.955	18.264
Very good	1.884	0.789	5.709	1	0.017*	6.583	1.403	30.886
Q44e.O_SuperiorsTakeCharge (ref. = Not at all)			10.977	4	0.027*			

To a small extent	-0.406	0.432	0.880	1	0.348	0.667	0.286	1.556
To some extent	0.086	0.427	0.040	1	0.841	1.089	0.472	2.517
To a large extent	0.654	0.469	1.948	1	0.163	1.924	0.768	4.823
To a very large extent	0.316	0.562	0.316	1	0.574	1.371	0.456	4.121
Q46.O_OverallSupportAndInfrastructure (ref. = Very poor)			29.028	4	0.000*			
Poor	0.961	1.037	0.858	1	0.354	2.614	0.342	19.965
Neither good nor poor	1.519	0.997	2.322	1	0.128	4.568	0.647	32.237
Good	2.501	1.008	6.163	1	0.013*	12.197	1.693	87.878
Very good	2.289	1.035	4.894	1	0.027*	9.868	1.298	75.006
Constant	-9.428	2.146	19.297	1	0.000*	0.000		

Test	*Chi²*	*df*	*Sig.*
Overall model evaluation			
Likelihood ratio test	1060.139	102	0.000*
Cox & Snell R Sq. = 0.443			
Nagelkerke R Sq. = 0.692			
Goodness-of-fit test			
Hosmer & Lemeshow	3.859	8	0.870

Note: *$p < .05$. Data from Q&R17 Research Environment Survey 2016.

Appendix 2: The Q&R17 Research Environment Survey

Have you conducted research at Uppsala University during 2015 or 2016?

☐ Yes

☐ No (Thank you for your response! You are not part of the target group in this survey.)

1. BACKGROUND

1. Gender

☐ Female

☐ Male

☐ Other

2. Age

☐ 30 or younger

☐ 31-40 years

☐ 41-50 years

☐ 51-60 years

☐ 61-66 years

☐ 67 or older

3. Do you work in a clinical research environment (e.g. at Uppsala University Hospital, a centre for clinical research (CKF), a municipality)?

☐ Yes. Where?_____

☐ No

4. What percentage of a full-time employment are you working at Uppsala University this semester? (If you work at a clinic please indicate the overall percentage that you conduct teaching and research at Uppsala University)

☐ 10% or less

☐ 11-25%

☐ 26-50%

☐ 51-75%

☐ 76-100%

☐ Don't know

5. What is your academic role at Uppsala University (employment category)?

☐ Doctoral student

☐ Post-doc

☐ Associate senior lecturer (in Swedish "biträdande universitetslektor")

☐ Senior lecturer (including adjunct and guest lecturer)

☐ Researcher (including guest researcher)

☐ Post-doctoral research fellow (in Swedish "forskarassistent")

☐ Professor (including adjunct and guest professor)

☐ Emeritus/senior employee

☐ Other, please specify: _____

6. What is your highest *academic degree/title*?

☐ Bachelor, Master or equivalent title (e.g. professional qualification)

☐ Licentiate

☐ Doctor

☐ Docent (or equivalent)

☐ Professor

☐ Other, please specify: _____

7. Please specify where you completed the following degrees and post-doc. Fill in all options that apply to you!

	Uppsala University	Other higher-education institution in Sweden	Higher-education institution elsewhere in Europe	Higher-education institution outside Europe	Have not completed /Not applicable
a) Undergraduate degree (Bachelor's degree or equivalent professional qualification)	☐	☐	☐	☐	O
b) One or two year Master's degree or equivalent professional qualification	☐	☐	☐	☐	O
c) Doctoral degree, year:____	☐	☐	☐	☐	O
d) Post-doc	☐	☐	☐	☐	O

8. How long have you been working at Uppsala University (including time as a doctoral student)? (If you were working at Gotland University before the merger, please state the total length of time you worked at Gotland University *and* Uppsala University together.)

☐ 1 year or less

☐ 2–5 years

☐ 6–10 years

☐ 11–15 years

☐ 16–20 years

☐ More than 20 years

☐ Don't know

9. In your current position at Uppsala University, do you have any formal duties with overall responsibility for leading other colleagues' research (other than the role as a supervisor or as director of studies)? Please mark all relevant options!

☐ Yes, as department head or equivalent (including deputy and vice head)

☐ Yes, as director of a research programme

☐ Yes, as leader of a research group

☐ Yes, as project leader for a research project

☐ Yes, other: _____

☐ No

2. ORGANISATIONAL AFFILIATION AND MAIN RESEARCH ENVIRONMENT

Below are some questions about your organisational affiliation in the environment in which you conduct your primary research. (If you work at a clinic, the organisational affiliation at Uppsala University in which you conduct your research.)

2.1 Organisational affiliation

10. Is Campus Gotland your *primary workplace*?

☐ Yes

☐ No - go to question 12

11. As a researcher at Campus Gotland, you are often a part of multiple environments, both within the campus and in a department located in Uppsala. In your case, having a primary workplace at Campus Gotland, which specific obstacles and opportunities for creating a good research environment do you see?

_____

_____

_____

12. In which faculty at Uppsala University are you *primarily* active?

☐ Arts ☐ Languages ☐ Social Sciences

☐ Theology ☐ Law ☐ Medicine

☐ Pharmacy ☐ Science and Technology ☐ Educational Sciences

Comment: _____

13. In which department/equivalent are you *primarily* active?

Comment:_____

14. In which of the following sub-units are you *primarily* active?

Comment:_____

15. Besides your main research environment, which other research environments (if any) are you involved in at ***Uppsala University*** (other department, research centre, SciLife Lab or other SFO, programme, research node, division/healthcare clinic at Uppsala University Hospital etc.)?

_____
_____

2.2 Main research environment

Researchers/doctoral students are often involved in several research environments. *Here we would like you to **select** one of the research environments at, or linked to, Uppsala University that you are involved in and answer the questionnaire based on this. From here on, this environment will be referred to as your **main research environment***.*

At times, however, your feedback is requested at the department level (or equivalent) regardless of whether you have indicated this as your main research environment or not.

16. Choose the option that best characterises the ***main research environment*** that you have chosen. Please choose only *one* option!

☐ Department

☐ Research centre

☐ Division/healthcare clinic linked to Uppsala University

☐ Division/research programme or one of the department's research topics

☐ Research group (as organisational unit)

☐ Other:_____

*In this survey, the main research environment refers to the environment at, or linked to, Uppsala University where you on a daily basis conduct your research, i.e. the environment in which you day to day interact with colleagues regarding your own and their research, both informally at coffee breaks etc. and formally in for example seminars. For many researchers, this would generally correspond to the department (or equivalent). However, at larger departments or departments with several research subjects the main research environment may rather be understood as a sub-grouping/research group/specialisation/subject.

Although some researchers at the university to an equal or even larger extent are connected to research environments outside Uppsala University, this survey addresses the main research environment at Uppsala University, or linked thereto.

(If you would like to complete the questionnaire for several different research environments in which you are involved, please contact KoF17survey@uadm.uu.se for additional questionnaires.)

3. RESEARCH ACTIVITIES IN THE RESEARCH ENVIRONMENT

17. a) To what extent *do you estimate* that you were active in research at Uppsala University over the past semester (spring semester 2016)? (Indicate percentage of full-time employment.)

☐ 1% – 20%

☐ 21% – 49%

☐ 50% – 79%

☐ 80% or more

☐ I did not conduct any research at Uppsala University during the previous semester

☐ Don't know

b) Do you regard that the work time you spent on research at Uppsala University last semester (as stated above) is less or more than the research time set out in your *formal* terms of employment (i.e. your agreed or contracted time)?

Much less	Less	Same	More	Much more	Don't know/not applicable
☐	☐	☐	☐	☐	O

3.1 General questions about the research

18. Please respond to the following statements about your *main research environment*?

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) It is a stimulating and creative climate that contributes to my research	☐	☐	☐	☐	☐	O
b) It provides scope for me to test new approaches and take risks	☐	☐	☐	☐	☐	O
c) It provides the opportunity for me to freely develop/choose research topics and methods	☐	☐	☐	☐	☐	O
d) It provides the opportunity to receive constructive feedback on my research	☐	☐	☐	☐	☐	O
e) There is a sufficient number (a critical mass) of active researchers in my field of research	☐	☐	☐	☐	☐	O
g) There is *stimulating* competition between colleagues	☐	☐	☐	☐	☐	O

h) There is *too tough* competition between colleagues	☐	☐	☐	☐	☐	O
i) There is a satisfactory balance in the gender distribution	☐	☐	☐	☐	☐	O
j) There is a satisfactory balance between junior and more senior researchers	☐	☐	☐	☐	☐	O
k) There are senior researchers who take responsibility for ensuring that the collective research environment develops as good as possible	☐	☐	☐	☐	☐	O
l) There is active discussion on issues of research ethics and/or academic integrity (e.g. fraud, plagiarism, manipulation)	☐	☐	☐	☐	☐	O
m) There is an aspiration to achieve gender equality and equal opportunities (regardless of gender, gender identity or expression, ethnicity, religion, physical ability or disability, sexual orientation or age).	☐	☐	☐	☐	☐	O

19. I think that my *main research environment* places great importance on...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) publications in highly ranked national and international journals	☐	☐	☐	☐	☐	O
b) the aspiration to conduct world-class research	☐	☐	☐	☐	☐	O
c) active quality management for the development of research activities	☐	☐	☐	☐	☐	O
d) providing support to researchers who are newly graduated doctors	☐	☐	☐	☐	☐	O
e) establishing contacts with internationally leading research environments	☐	☐	☐	☐	☐	O
f) working actively to communicate, promote and utilise our research in industry and society (e.g. through collaboration or popular science communication)	☐	☐	☐	☐	☐	O

3.2 Seminars, research group meetings, project meetings, etc.

Seminars (or equivalent) refer here to scientific discussions in the form of organised meetings involving employees actively conducting research.

20. Have you taken part in seminars or similar events at *Uppsala University* in the past year?

☐ Yes, several times per semester (e.g. seminar series)

☐ Yes, occasionally

☐ No – go to question 23

☐ Don't know go to question 23

21. The *primary* seminars or similar events I have participated in at *Uppsala University* over the past year have taken place...

(Please *choose only one* option, as the following question is based on your answer here. Later in the questionnaire you will be asked to describe any other seminars you have taken part in.)

☐ in the department

☐ at the research centre

☐ at Uppsala University Hospital, CKF

☐ within the division/research programme

☐ within one of the department's research subjects

☐ within a research group (as organisational unit)

☐ in interdisciplinary networks/contexts

☐ other (please specify)

_____

Please answer the following question based on your response above.

22. Please respond to the following statements regarding the *primary* seminars or similar events that you participated in. In these seminars…

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) scientific reasoning and critical thinking is stimulated	☐	☐	☐	☐	☐	O
b) there is an open, permissive and lively discussion climate	☐	☐	☐	☐	☐	O
c) senior researchers participate	☐	☐	☐	☐	☐	O
d) everyone can speak on equal terms	☐	☐	☐	☐	☐	O

e) the seminar culture is *too tough* (overly critical)	☐	☐	☐	☐	☐	O
f) the seminar culture is *too kind* (not critical enough)	☐	☐	☐	☐	☐	O

23. Have you over the past year taken part in seminars or similar events *in addition to* those mentioned in the previous question (at or outside Uppsala University)?

☐ Yes, several per semester (e.g. seminar series). Please specify where: _____

☐ Yes, occasionally. Please specify where: _____

☐ No

☐ Don't know

3.3 Cooperation, networks and collaboration with the community

24. In my research, I have research-related cooperation with people...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) within my *main research environment*	☐	☐	☐	☐	☐	O
b) in my *department/equivalent* (if this is your main research environment, please give the same answer as above)	☐	☐	☐	☐	☐	O
c) in one or more other *departments/equivalent* at Uppsala University or (another) *clinic* at Uppsala University Hospital	☐	☐	☐	☐	☐	O
d) at one or more other *universities in Sweden*	☐	☐	☐	☐	☐	O
e) at one or more other *universities in the European Union*	☐	☐	☐	☐	☐	O
f) at one or more other *universities outside the European Union*	☐	☐	☐	☐	☐	O
g) in the business community, industry, spin-offs	☐	☐	☐	☐	☐	O
h) at government agencies/organisations (other than universities)	☐	☐	☐	☐	☐	O
i) at hospitals, medical centres or similar (other than Uppsala University Hospital)	☐	☐	☐	☐	☐	O

If you, in your research, have research-related cooperation with people within any other organisation than those mentioned in the previous question, please write them here:

_____
_____

25. I have the opportunity to attend academic conferences/similar that I deem relevant to my research.

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

26. I work actively to communicate and promote my research and my knowledge in the field outside the university (e.g. through popular science communication, speaking engagements).

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

27. I work actively with businesses and other organisations so that my research can provide mutual benefit (e.g. through the commercialisation of ideas arising from the research).

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

3.4 Funding

28. My current funding situation enables me to have a long-term perspective regarding my research.

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

29. I see my future research funding situation as...

Very uncertain	Rather uncertain	Neither uncertain or certain	Rather certain	Very certain	Don't know/not applicable
☐	☐	☐	☐	☐	O

3.5 Recruitment and career paths

30. I take part in group-wide discussions on competence needs and recruitment strategies in *my main research environment*

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

31. There is mobility regarding research staff in and out of my *main research environment* (e.g. of doctoral students, post-docs, guest researchers)

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

32. It is clear to me what qualifications are needed for me to take the next career step within the university sector.

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

3.6 Concluding questions regarding research

33. In my opinion, my *main research environment* can be characterised as… Please choose only *one* option!

☐ Internationally leading

☐ Internationally renowned

☐ Nationally leading

☐ Nationally renowned

☐ Substandard

☐ Don't know/not applicable

Comment:_____

34. Would you recommend other researchers/doctoral students to apply to your *main research environment*?

No	No, probably not	Maybe	Yes, probably	Yes	Don't know/not applicable
☐	☐	☐	☐	☐	O

Comment:_____

35. Overall, I think that my opportunity to conduct good research in my *main research environment* is...

Very poor	Poor	Neither good nor poor	Good	Very good	Don't know/not applicable
☐	☐	☐	☐	☐	O

4. RESEARCH-TEACHING LINKAGES

36. a) How much of your work time *do you estimate* that you spent teaching during the past semester at Uppsala University (at the graduate or undergraduate level)? (Indicate percentage of full-time employment)

☐ 1% – 20%

☐ 21% – 49%

☐ 50% – 79%

☐ 80% or more

☐ I did not teach at either the graduate or undergraduate levels last semester

☐ Don't know

b) Do you regard that the work time you spent teaching at Uppsala University last semester (at the graduate or undergraduate levels) is less or more than the teaching time set out in your terms of employment (i.e. your agreed or contracted time)?

Much less	Less	The same	More	Much more	Don't know/not applicable
☐	☐	☐	☐	☐	O

37. I think that great effort is made in my *main research environment* to connect teaching to research in a carefully planned and executed manner.

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

5. COLLEGIAL CLIMATE AND SOCIAL INTERACTION

38. How well do you agree with the following statements about your *main research environment*?

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) There is a sense of collegial responsibility regarding group-wide issues	☐	☐	☐	☐	☐	O
b) Colleagues share information and experience	☐	☐	☐	☐	☐	O
c) Doctoral students are included in the collegial community	☐	☐	☐	☐	☐	O
d) It works well to combine research career and family	☐	☐	☐	☐	☐	O

39. At the *department level (or equivalent)* in which I work...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) interaction is encouraged between the various researchers and groups (e.g. shared equipment, joint ventures and applications)	☐	☐	☐	☐	☐	O
b) everyone can make their voice heard at formal meetings	☐	☐	☐	☐	☐	O
c) employees are usually present at the workplace	☐	☐	☐	☐	☐	O
d) valuable discussions on research are conducted even outside the regular meeting places (e.g. in the hallways, in the break room, at lunch)	☐	☐	☐	☐	☐	O

40. In an international research environment, multilingualism is common (e.g. in scientific discussions, social events, teaching, administrative support and information). Do you think that your department (or equivalent) has found an effective way to handle multilingualism?

Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
☐	☐	☐	☐	☐	O

Comment:_____

41. Overall, I think that the social environment in my department (or equivalent) is...

Very poor	Poor	Neither good nor poor	Good	Very good	Don't know/not applicable
☐	☐	☐	☐	☐	O

6. ACADEMIC LEADERSHIP

42. There is active discussion on the focus and long-term development of the research...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) in my *main research environment*	☐	☐	☐	☐	☐	O
b) in my *department/equivalent* (if this is your main research environment, please give the same answer as above)	☐	☐	☐	☐	☐	O

43. I think that I can easily inform myself of important decisions made at the...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) department level/equivalent	☐	☐	☐	☐	☐	O
b) faculty level	☐	☐	☐	☐	☐	O
c) disciplinary domain level	☐	☐	☐	☐	☐	O

44. In my role as researcher/doctoral student, I feel that my *immediate superiors* at Uppsala University...

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) are engaged in research matters	☐	☐	☐	☐	☐	O
b) are available when I need to contact them	☐	☐	☐	☐	☐	O
c) have confidence in me as an employee	☐	☐	☐	☐	☐	O
d) are interested in how my research proceeds	☐	☐	☐	☐	☐	O
e) take charge of things that aren't working in the research environment	☐	☐	☐	☐	☐	O
f) give positive feedback on good performances	☐	☐	☐	☐	☐	O

g) involve employees in fundamental, long-term issues	☐	☐	☐	☐	☐	O
h) support me in my efforts to secure research funding (such as time and resources)	☐	☐	☐	☐	☐	O
i) encourage me to take the next step in my research career within the university sector	☐	☐	☐	☐	☐	O

7. SUPPORT AND INFRASTRUCTURE

45. To what extent are you satisfied with the infrastructure and the support you need to conduct your research? (Regardless of whether the infrastructure or support is within or outside of Uppsala University.)

	Not at all	To a small extent	To some extent	To a large extent	To a very large extent	Don't know/not applicable
a) Library services and digital media (e.g. journals/periodicals)	☐	☐	☐	☐	☐	O
b) Computer equipment, databases, data storage and software	☐	☐	☐	☐	☐	O
c) Technical laboratory equipment (e.g. analysis tools)	☐	☐	☐	☐	☐	O
d) Technical laboratory support (e.g. research engineers, lab assistants, mechanical workshops)	☐	☐	☐	☐	☐	O
e) Equipment for field research	☐	☐	☐	☐	☐	O
f) Research premises (e.g. laboratories, premises for clinical research)	☐	☐	☐	☐	☐	O
g) Experiment materials	☐	☐	☐	☐	☐	O
h) Museums and collections	☐	☐	☐	☐	☐	O
i) IT support	☐	☐	☐	☐	☐	O
j) Administrative support (e.g. staff administration, financial administration)	☐	☐	☐	☐	☐	O

k) Research support (e.g. EU project coordinators, research secretaries, application support, project support)	☐	☐	☐	☐	☐	O
l) Legal support	☐	☐	☐	☐	☐	O
m) Support for academic qualifications (e.g. publication support, open access)	☐	☐	☐	☐	☐	O
n) Career support (e.g. career guidance)	☐	☐	☐	☐	☐	O
o) Patent and commercialisation support	☐	☐	☐	☐	☐	O
p) Support for cooperation with businesses and organisations (to utilise my research)	☐	☐	☐	☐	☐	O

b) If you have any other comments regarding infrastructure and support at ***Uppsala University***, please write them here. (Please also suggest potential improvement measures!)

_____

_____

46. Overall, I think that the support and the infrastructure that I have access to is...

Very poor	Poor	Neither good nor poor	Good	Very good	Don't know/not applicable
☐	☐	☐	☐	☐	O

8. FINAL OPEN QUESTIONS

47. What do you think are the greatest strengths of your *main research environment* at Uppsala University?

_____

_____

_____

48. What weaknesses or obstacles to conducting successful research do you think exist in your *main research environment*? Please also suggest potential improvement measures!

_____

_____

_____

49. Other comments:

_____

_____

_____

Thank you very much for your time and assistance!