

Open Science Survey at Utrecht University (#41394)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

Note: as the purpose of this study was to monitor open science practices and explore relationships with work-context variables and current reward standards, only research questions were formulated, but not hypotheses.

1. What is the current state of awareness, attitudes and behaviours regarding Open Science practices of researchers at Utrecht University (UU)?
2. What do researchers at UU currently identify as the opportunities and obstacles for engaging in Open Science practices?
3. What are the relationships between attitudes and behaviors regarding open science and what researchers at UU identify as opportunities and obstacles of OS practices?
4. What are the relationships between the type of work environment (e.g., faculty, discipline, work culture, reward structure) and the awareness, attitudes and behaviours regarding Open Science practices?
5. What are the relationships between demographics (e.g., gender, nationality, chronological age) and job characteristics (e.g., hierarchical position, type of researcher, contract type and size) and awareness, attitudes and behaviors regarding open science practices?
6. Do academics identify different obstacles and opportunities for engaging in OS practices, depending on the type of work environment, their demographic background and their job characteristics?
7. How do behaviours, attitudes, opportunities, and obstacles change over time, in relation to the work environment, demographics and job characteristics of researchers?
8. Does being a member of the Open Science Community Utrecht predict with awareness, attitudes and behaviours regarding Open Science practices and how does that change over time?
9. What are the relationships between the amount of time spent on a MERIT task and awareness, attitudes and behaviors regarding open science practices?

3) Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variables are the awareness, attitudes, behaviours, opportunities and obstacles regarding Open Science practices.

For 10 Open Science practices, we ask whether participants are aware of them (yes/no), whether they are important for their work (4-point scale) and whether they are part of their workflow (4-point scale). Measured at two timepoints.

Two questions regarding the opportunities and obstacles for Open Science practices (in general). Six (opportunities) and seven (obstacles) statements are shown where participants indicate how much they apply to them on a 5-point scale. Both questions are followed-up with an open question to elaborate and/or indicate other relevant opportunities and obstacles. Measured at two timepoints.

4) How many and which conditions will participants be assigned to?

All participants fill out the same questionnaire.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

1. Descriptive statistics:

Frequencies (awareness; dichotomous), Means, SD's, distributions and confidence intervals (attitudes/behaviors; continuous)

2. Descriptive statistics:

Means, SD's, distributions and confidence intervals (opportunities/obstacles; continuous)

3. Inspection of Correlations (Pearson's r) between OS attitudes, behaviors and opportunities and obstacles

*Cluster analyses to group participants into four quadrants on their attitudes (low/high) and behaviors (low/high) on OS practices

*Structural Equation Model to test how perceived opportunities (Model 1) and obstacles (Model 2) are related to specific OS attitudes and behaviors

4. *Faculty on Awareness OS

Frequency tables, Crosstabs and Logistic regression analyses to test whether Awareness of open science practices is different depending on 1. Faculty,

*Faculty on Attitudes and Behaviors OS

Two MANOVA's to test whether OS Attitudes and Behaviors differ per faculty

*Work Culture on Attitudes OS

*Correlation table between 6 elements of culture, attitudes OS and Behavior OS

*MANOVA: faculty on Culture

*SEM Path model from Culture (6 dimensions) to Attitudes OS (10 dimensions).

SEM Path model from Culture (6 dimensions) to Behaviors OS **control for faculty

5. Data inspection:

*Correlation table demographic, job characteristics, attitudes and behaviors OS

*Series of multiple regressions and/or SEM model with Gender, Nationality, Age, Position, Type of Researcher, Contract type, Contract size as independent variable and Attitudes and Behaviors OS as dependent variable (control for faculty; dummy coded)

6. Series of multiple regressions and/or SEM model with

*Gender, Nationality, Age, Position, Type of Researcher, Contract type, Contract size as independent variable and Obstacles and Opportunities as dependent variables (control for faculty; dummy coded)

*Series of multiple regressions and/or SEM model with

*Gender, Nationality, Age, Position, Type of Researcher, Contract type, Contract size as covariates; Work culture dimensions as Independent variable and Obstacles and Opportunities as dependent variables (control for faculty; dummy coded)

7. Latent growth modelling, which will allow us to identify potential systematic change in the outcomes variables, as well as individual differences in such change, while accounting for the nested nature of our data (e.g., assessments are nested within persons, who are nested within faculties).

8. Repeated measures analyses

9. Inspection of Correlations (Pearson's r) between OS attitudes, behaviors and opportunities and obstacles with the amount of time spent on a MERIT task

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Not applicable. We have put upper and lower bounds on all response options to prevent nonsensical responses.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

Based on prior experience, we expect that about 30% of the ~3600 UU researchers will respond. This survey will be sent out in spring 2020 and one year later in spring 2021. Data of participants that participate in both surveys can be linked by using a unique code generated by the participant.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

We will test whether our sample is representative of the population by checking for deviations in faculty, hierarchy, gender balance and career stage.

We will inspect a potential underlying factor structure (Exploratory Factor Analyses) on the OS attitudes and behaviors to investigate whether we can work with larger (latent) constructs to investigate the relationship with other variables. Confirmatory factor analyses will be conducted on the questionnaire about work culture (6 subdimensions are expected; competition, effort, performance, team collaboration, error safety and corporate responsibility).

We will conduct qualitative data analyses and recode open answers on questions in the questionnaire to use for additional analyses for exploratory purposes

We will examine the relationship between academics' tendency to engage in OS practices in relation to their professional identification at two timepoints to answer the question: To what extent is open science becoming part of academics' identity.

We will investigate the outcomes of this monitor in relation to an additional set of questions about Open Science in relation to the COVID-19 crisis.

We will analyze longitudinal data using latent growth modeling to potentially distinguish between groups of individuals showing similar patterns of change in the main outcome variables over time.