Data Management Plan

Project Name Teleworking - Which tasks suit best?(FWO DMP) - Data Management Plan
Grant Title 1S42322N
Principal Investigator / Researcher Jonas De Kerf
Project Data Contact jonas.dekerf@kuleuven.be
Description There are many reasons to expect that home-based telework will remain and make up a considerable part of contemporary labor. Whilst documented positive consequences for both employees and organizations, practice and policy are still unsure about how to successfully manage teleworking such that it enhances employee performance and scientific research remains inconclusive about how telework affects individual efficiency and effectiveness. We claim that a disregarded though highly relevant factor is the nature of the tasks carried out while teleworking. This research project aims at unraveling the telework-performance relationship, using a task-related approach based on work design theory. In a first study, we examine which tasks (e.g. complex) are best performed at home (compared to at the office) and how task-work location interactions affect employeesâ€™ task performance. In a second study, we assess how daily communication exerts influence on performance amongst teleworkers. A third study then uses an intervention to assess how daily and weekly work design, i.e. a combination of task characteristics at home and at the office, affects both daily and weekly performance. Findings promise to contribute to the topical telework literature and both practice and policy struggling with managing teleworkers. Data for these quantitative studies are collected by using experience sampling (study 1), event sampling (study 2) and weekly and daily diary studies (study 3).
Institution KU Leuven

1. General Information
Name applicant

Jonas De Kerf

FWO Project Number & Title
1S42322N
Teleworking - Which tasks suit best? Using work design theory to
understand the work location-performance relationship

Affiliation

- KU Leuven
- Vrije Universiteit Brussel

From December 2021 onwards, I started a Joint PhD with the Work and Organisational Pyschology department at Vrije Universiteit Brussel as secondary institution.

2. Data description
Will you generate/collect new data and/or make use of existing data?

- Generate new data

Describe in detail the origin, type and format of the data (per dataset) and its (estimated) volume. This may be easiest in a table (see example) or as a data flow and per WP or objective of the project. If you reuse existing data, specify the source of these data. Distinguish data types (the kind of content) from data formats (the technical format).

This research project consists of three studies. For each study, new data will be generated using diary surveys. The experience sampling method (study 1) and event sampling method (study 2) are implemented to collect data. In the third study, we will use daily and weekly diary surveys. Data is collected via surveys conducted either via participants' phones (using an online research app, i.e., Expiwell) or via e-mail while using Qualtrics. Each study contains of data from both pilot and official studies in Excel and SPSS, and separated files with (potential) candidates' e-mail addresses.

For the first study, data from two pilot studies are already collected and stored. The specific overview of the data for study 2 & 3 is yet to be determined.

Dataset	Origin	Type of Data	Raw/Processed	Format	Volume (+/-)
Data_Pilot1_S1	Qualtrics Survey (S2)	Numerical, textual	Processed (anonymized)	SPSS	5 MB
Emails_Candidates_S1	Qualtrics Survey (S2) – interested and potential candidates	Textual	Processed	Xlsx	0.040 MB
Data_Pilot2_S1	Expiwell Survey	Numerical, textual	Raw export from Expiwell	Xlsx	5 MB
			Then processed (anonymized)	SPSS	3 MB
Emails_Pilot3_S1	From the file: Emails_Candidates_S1	Textual	Processed	Xlsx	0.030 MB
Data_Pilot3_S1	Expiwell	Numerical, textual	Raw export from Expiwell	Xlsx	10 MB
			Then processed (anonymized)	SPSS	9 MB
Data_Official_S1	Expiwell	Numerical, textual	Raw export from Expiwell	Xlsx	10 MB
			Then processed (anonymized)	SPSS	9 MB
Emails_Pilot_S2	(Qualtrics) - unknown	Textual	Processed	Xlsx	0.030 MB
Data_Pilot_S2	Expiwell	Numerical, textual	Raw export from Expiwell	Xlsx	10 MB
			Then processed (anonymized)	SPSS	9 MB
Emails_S2	(Qualtrics) – unknown	Textual	Processed	Xlsx	0.030 MB
Data_ Official_S2	Expiwell	Numerical, textual	Raw export from Expiwell	Xlsx	10 MB
			Then processed (anonymized)	SPSS	9 MB
Emails_Pilot_S3	(Qualtrics) - unknown	Textual	Processed	Xlsx	0.030 MB

			Raw export from Expiwell	Xlsx	10 MB
Data_Pilot_S3	Expiwell	Numerical, textual	Then processed (anonymized)	SPSS	9 MB
Emails_S3	Qualtrics - unknown	Textual	Processed	Xlsx	0.030 MB
Data_ Official_S3	Expiwell	Numerical, textual	Raw export from Expiwell	Xlsx	10 MB
			Then processed (anonymized)	SPSS	9 MB

3. Legal and ethical issues
Will you use personal data? If so, shortly describe the kind of personal data you will use. Add the reference to your file in KU Leuven's Register of Data Processing for Research and Public Service Purposes (PRET application). Be aware that registering the fact that you process personal data is a legal obligation.

- Yes

Yes. In each study, will use (potential) participants' e-mail addresses as a key to combine datasets from different days in the same study with one another and to contact them regarding the practicalities of the data collections.

This DMP will include information on how I plan to safeguard this personal data throughout each study and after the end of this project.

The reference from the accepted PRET application is; G-2021-3769.

Description of the personal data:

E-mail addresses are collected during each study in order to contact both potential and interested participants after the study and to combine multiple datasets.

The data collection for the first study goes as follows: after filling out a demographic questionnaire in August 2020, which was part of an earlier data collection of my promoter, employees of VDAB were asked whether they wanted to participate in the first (diary) study. If they agreed, they were voluntarily asked to fill in their **e-mail addresses**, so that they can be contacted afterwards about several practicalities involving the data collection. Data for the following studies are collected in a similar manner. Hence, respondents' e-mail addresses are the only personal data that is collected in this research project, and they are stored in a separate file. Those e-mail addresses will be stored on the secure Y-drive of the Faculty of Economics and Business, KU Leuven, which is a central storage that only the primary researcher has access to.

Participants in each study can also indicate whether they are interested in the results of the study by filling in their e-mail addresses, and that data is stored and secured in a similar manner. After the studies, e-mail addresses will be deleted since they no longer serve us a purpose. From that point on, data are thus anonymized. During the actual data collection (i.e., not contacting or collecting participants) in Expiwell, data are already anonymized because participants log in on the mobile application with their own profile, using an anonymous link that was sent by the principal researcher of this project. Therefore, we do not know which participant is filling in the questionnaires and no datafile exists that includes a key to link the answers with participants.

During each study, we will also collect **sociodemographic data**. Examples are age, sex, function, tenure, number of children living at home, highest educational degree, and working regime.

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, add the reference to the formal approval by the relevant ethical review committee(s)

- Yes

Yes, reference to ethical committee approval (PRET application): G-2021-3769

Does your work possibly result in research data with potential for tech transfer and valorisation? Will IP restrictions be claimed for the data you created? If so, for what data and which restrictions will be asserted?

- No

Do existing 3rd party agreements restrict dissemination or exploitation of the data you (re)use? If so, to what data do they relate and what restrictions are in place?

- No

4. Documentation and metadata
What documentation will be provided to enable reuse of the data collected/generated in this project?

For each data collection in study 1-3, an xlsx file of the used scales and instructions is prepared by the researcher and reviewed by the promoters of this project. These files include the typologies of questions, the codes that were given to the variables in the datasets, the references of the original source of the variables and their response categories and variables. During and after each study, the files are also stored on the OneDrive and X-drive of KU Leuven, respectively. The X-drive is a KUL storage that only WOS-researchers have access to (i.e., the department of the involved researchers at KUL).

Furthermore, each step in the analyses and methodology (e.g., data cleaning, recoding variables, etc.) undertaken by the researcher is documented either via codes or syntax files, so that replication and reviews are possible.

Will a metadata standard be used? If so, describe in detail which standard will be used. If no, state in detail which metadata will be created to make the data easy/easier to find and reuse.

- No

The datafiles generated from either Qualtrics or Expiwell include metadata (e.g., date, number of survey, time, location, etc.) and are analyzed and recoded in SPSS. The formats of both platforms are used during this study, for convenience purposes. More specifically, the xlsx files downloaded from both Qualtrics or Expiwell already include the metadata for each file and these are stored on the KUL X-drive. The metadata files for the surveys will be stored as .xlsx files during the project and csv files afterward.

5. Data storage and backup during the FWO project
Where will the data be stored?

During each study, data is stored on the secured OneDrive of KU Leuven. Datafiles are only shared with researchers involved in and during this project.

After each study, our research data will be stored on the secure X-drive of the Faculty of Economics and Business, KU Leuven, which is a central storage that only the primary researcher (Jonas De Kerf) and his KUL promotor (Rein De Cooman) have access to. These network drives have enough capacity for the data that I plan to collect during this project. These separated and secured X-drive files are back-up on a daily basis. After 10 years, the research data will be deleted, in line with the FEB and FWO guidelines.

The researcher (Jonas De Kerf) will only have access to the personal data, whilst both his promotors (Rein De Cooman and Sara De Gieter) and other researchers/collaborators will have access to the **anonymized** data in OneDrive.

Master's students are also used to collect and analyze data, although they will only have access to the **anonymized** data in SPSS.

How is backup of the data provided?

KU Leuven's central servers have automatic daily back-up procedures and are used as back-up storage during each study. Furthermore, the professional and secured OneDrive account of the researcher is used during every study, which has an automatic back-up procedure as well.

Is there currently sufficient storage & backup capacity during the project? If yes,

specify concisely. If no or insufficient storage or backup capacities are available then explain how this will be taken care of.

- Yes

The OneDrive of KUL is used during each study, and the Y-drive when each study is finished. The storage locations of the WOS department have been used extensively in the past and proved numerous times to have enough capacity.

What are the expected costs for data storage and back up during the project? How will these costs be covered?

Although no costs are expected while storing the data, since this service is free for KUL personnel, unexpected costs can be covered by the bench fee provided by FWO.

Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Access to data, as well as reading and editing rights, are restricted to a limited number of authenticated persons (i.e. the principal researcher and promoters), based on security groups managed and audited through a web interface by the researcher himself. Access to the web interface is controlled through a Shibboleth authentication process. Access from other devices or access without proper access authorization is prevented by a combination of system and storage access control, encryption and firewalling of the systems involved.

Only the PhD student and his KUL promotor (Rein De Cooman) have access to the long-term data storages after each study in the secured X-Drive. On the primary investigator's personal Y-drive, the personal e-mail addresses are stored. When these personal datafiles have no further purpose (e.g., after contacting respondents or combining datafiles), e-mail addresses are deleted.

6. Data preservation after the FWO project
Which data will be retained for the expected 5 year period after the end of the project? In case only a selection of the data can/will be preserved, clearly state the reasons for this (legal or contractual restrictions, physical preservation issues, ...).

Only the datafiles that are eventually used for the analyses in the research studies are retained, so other scholars could verify or replicate the results when necessary or requested. Also the data that was collected during pilot studies is stored for the expected 10 years, in case the PhD researcher would prefer to carry out extra analyses or use the data for additional purposes (e.g., verifying other hypotheses, providing an example during teaching courses, etc.).

Datafiles with personal data (i.e., the e-mail addresses) are deleted as soon as they are no longer required.

Where will the data be archived (= stored for the longer term)?

A separate archive is made on the secured KUL X-drive when the PhD researcher finishes a study to store the data for the longer term (i.e., the required 10 years).

What are the expected costs for data preservation during the retention period of 5 years? How will the costs be covered?

No costs are expected while storing the data, since this service is free for KUL personnel. Nonetheless, unexpected costs can be carried by the FWO bench fee.

7. Data sharing and reuse
Are there any factors restricting or preventing the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

- No

Which data will be made available after the end of the project?

We plan to provide our anonymized data on which the analyses of each study are based in an open access repository. However, if possible, only for a limited duration (10 years).

Where/how will the data be made available for reuse?

- In an Open Access repository

The anonymized datasets with documentation will be available through the [Open Science](#)

[Framework](), on my public profile.

When will the data be made available?

- Upon publication of the research results

Who will be able to access the data and under what conditions?

The Open Science Framework works with licenses, which we possibly will use to avoid our data being used for commercial ends or modified by unauthorized people.

What are the expected costs for data sharing? How will the costs be covered?

We do not expect costs for data sharing. The OSF is a free service, managed and maintained by the Center for Open Science.

8. Responsibilities

Who will be responsible for data documentation & metadata?

During this research project, the principal investigator (Jonas De Kerf) is responsible for implementing research data management. The main supervisor, Rein De Cooman, is responsible for ensuring that the researcher implements data management.

Who will be responsible for data storage & back up during the project?

Jonas De Kerf and his (main) promotor Rein De Cooman

Who will be responsible for ensuring data preservation and reuse ?

Jonas De Kerf during this research project and his (main) promotor Rein De Cooman afterwards

Who bears the end responsibility for updating & implementing this DMP?

The PI bears the end responsibility of updating & implementing this DMP.