LISS Data Archive

Notes Before Completing the Application

We have read and understood the notes concerning our application submission.

True

Reviewer Entry

Reviewer 1

Comments:
thank you for addressing the comments.

Reviewer 2

Comments:

CORE TRUSTWORTHY DATA REPOSITORIES REQUIREMENTS

Background & General Guidance

Glossary of Terms

BACKGROUND INFORMATION

Context

R0. Please provide context for your repository.

Repository Type. Select all relevant types from:

Domain or subject-based repository

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Brief Description of Repository

The LISS Data Archive preserves and disseminates the data which are collected in the LISS panel, as well as those of the supplementary Immigrant panel which collected data from 2010 until 2014. The mission of the LISS (Longitudinal Internet studies for the Social Sciences) panel is to facilitate research in the social sciences in the Netherlands and abroad. The facility is open to academics and policy makers anywhere in the world for (non-profit) scientific purposes.

In 2006, the Dutch Research Council (NWO) granted a proposal entitled An Advanced Multi-Disciplinary Facility for Measurement and Experimentation in the Social Sciences (MESS). The funding was used to set up the LISS panel as a prominent data infrastructure for social sciences in the Netherlands.

The LISS Data Archive is managed and operated by Centerdata, a scientific research institute housed on the campus of Tilburg University in the Netherlands. Centerdata specializes in collecting and analyzing (panel) data and disseminating these to academic researchers.

The LISS Data Archive is available at https://www.dataarchive.lissdata.nl. For more information about Centerdata see: http://www.centerdata.nl/en

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Brief Description of the Repository's Designated Community.

The main designated community of the LISS Data Archive are the researchers in the social sciences in the Netherlands and abroad. However, many disciplines, from linguistics to medical sciences, make use of the research infrastructure.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Level of Curation Performed. Select all relevant types from:

D. Data-level curation – as in C above; but with additional editing of deposited data for accuracy

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Comments

We produce the data ourselves and process the datasets and documentation for dissemination according to the policy of the LISS Data Archive.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Insource/Outsource Partners. If applicable, please list them.

To maintain the LISS Data Archive, Centerdata works with the following partners:

Data Archiving and Networked Services (DANS): in addition to its own system, the LISS Data Archive application stores the data at DANS to ensure long-term preservation. Centerdata has a data deposit contract and a Data Processing Agreement (DPA) with DANS. https://easy.dans.knaw.nl/ui/home

Combell: An ISO 27001 certified hosting partner that offers their server park for data storage. Centerdata has a Service level Agreement (SLA) with Combell for the server as well as a Data Processing Agreement (DPA) for their services. https://www.combell.com/en/

Open Data Infrastructure for Social Science and Economic Innovations (ODISSEI): the LISS Data Archive is part of the national research infrastructure for the social sciences in the Netherlands. Centerdata works with ODISSEI to further develop the LISS Data Archive infrastructure for researchers' future needs. https://odissei-data.nl/en/

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Summary of Significant Changes Since Last Application (if applicable).

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Other Relevant Information.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

ORGANIZATIONAL INFRASTRUCTURE

1. Mission/Scope

R1. The repository has an explicit mission to provide access to and preserve data in its domain.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The mission of the LISS Data Archive is to preserve and disseminate the data collected in the LISS panel. The LISS panel was established to facilitate research in the social sciences in the Netherlands and abroad. This is done by providing scientific researchers access to the LISS Data Archive, where they can download and use all published datasets collected in the LISS panel, free of charge. The facility is open to academics and policy makers anywhere in the world for (non-profit) scientific purposes.

This mission is stated in Chapter 2 of the 'Preservation and Dissemination Policy of the LISS Data Archive', available at https://www.lissdata.nl/access-data/cts

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

2. Licenses

R2. The repository maintains all applicable licenses covering data access and use and monitors compliance.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

To access and download the data files, users must comply with the conditions of use and sign a user statement to affirm compliance.

The LISS data may only be used for scientific, policy or socially relevant (i.e. non-commercial) research. The full rules and conditions can be found at: https://www.lissdata.nl/access-data

The user statement can be found at https://statements.centerdata.nl/liss-panel-data-statement

Centerdata assesses access approval and decides whether a login code is provided. If a data user does not comply with the rules and conditions, then his/her access rights to the further use of data can be revoked by Centerdata, as the data are only accessible via a password protected login. If the user's manner of data usage appears to violate the Dutch Code of Conduct for the use of personal data in scientific research, the Dutch Personal Data Protection Act or any other national legislation, Centerdata may contact the data user regarding the issue. If necessary, Centerdata may report the matter to disciplinary or legal authorities.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

3. Continuity of access

R3. The repository has a continuity plan to ensure ongoing access to and preservation of its holdings.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

To guarantee long-term preservation, the data that are disseminated via the LISS Data Archive are also deposited in EASY, the Dutch national data repository administered by Data Archiving and Networked Services (DANS). These deposits run semi-automatically via a SWORD (Simple Web-service Offering Repository Deposit) interface that has been built between the two repositories. The data deposits in EASY include the LISS data files and codebooks and the study level metadata as defined by the EASY system.

Data users have open access to the metadata via the EASY repository, but are referred to the LISS Data Archive in order to access and download the actual data files. Centerdata has signed a Data Deposit Agreement with DANS which gives DANS the right to arrange access to the data in the event that Centerdata ceases to exist, for instance by asking another Dutch scientific research organization to continue providing the data access. While the primary goal is to guarantee access and storage by ongoing management of the LISS Data Archive, this contingency plan serves to create maximum trust in the long-term preservation.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:
Accept

4. Confidentiality/Ethics

R4. The repository ensures, to the extent possible, that data are created, curated, accessed, and used in compliance with disciplinary and ethical norms.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository
ACcept.

Response:

Centerdata adheres to the ethical standards in the social sciences throughout the data life cycle. First, the data for the LISS Data Archive are collected through surveys fielded in the LISS panel. The panel members consent to panel participation, the storage, use and dissemination of data via a multi-stage agreement including the initial recruitment as well as the activation of an account (after login) in the panel environment. Since the introduction of the General Data Protection Regulation (GDPR; in Dutch: Algemene Verordening Gegevensbescherming) in 2018, existing panel members as well as newly recruited panel members are also asked to give their explicit informed consent via a web form to (continue) taking part in research projects. Only respondents who comply can (continue to) participate in the panel. In line with the GDPR, respondents may withdraw their consent to participate in the panel at any point in time by contacting the panel helpdesk. From the moment respondents withdraw their consent they will cease being a LISS panel member and will not be able to participate in future surveys. No new data will be collected and used for scientific research. The procedure to withdraw consent is clearly described in the personal survey environment of each panel member.

After completing the fieldwork of the surveys, the LISS data are processed to be entered into the LISS Data Archive. This process is defined in an internal manual for data dissemination. As part of this process, the data are cleaned from any privacy-sensitive information, which might for instance be mentioned in open answers to survey questions. For each dataset, there is a second-reader check procedure, who checks for -among other things- the cleaning of any privacy-sensitive information.

Centerdata also requires that the data users observe strict confidentiality with respect to all information encountered when using the data. See the full user statement at https://statements.centerdata.nl/liss-panel-data-statement

Delivering high quality data and applying scientifically sound research methods are core values at Centerdata. Centerdata's management team governs over the collection, archiving and dissemination of the LISS panel data. Regarding legal and ethical norms, Centerdata at all times complies with applicable laws and regulations in the Netherlands, including the GDPR. Furthermore, Centerdata uses working methods that are in accordance with the guidelines described by the Association of Universities in the Netherlands (VSNU) in the Code of Conduct for use of personal data in scientific research (VSNU, 2005, https://www.vsnu.nl/en_GB/code-personal-data).

Centerdata is registered at the Dutch Data Protection Agency (Autoriteit Persoonsgegevens) under No: FG008875. Centerdata is registered at the Tilburg Chamber of Commerce under the number KvK Tilburg: 41098659.

The information above can be found in Chapters 3 and 6 of the Preservation and Dissemination Policy of the LISS Data Archive at https://www.lissdata.nl/access-data/cts

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

5. Organizational infrastructure

R5. The repository has adequate funding and sufficient numbers of qualified staff managed through a clear system of governance to effectively carry out the mission.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository
Accept

Response:

Centerdata is an eminent research institute, located on the Tilburg University (TiU) campus in the Netherlands. Centerdata has supported and contributed to research that is relevant to science, society and policy since 1997. The institute is committed to collecting, analyzing and disseminating reliable data. In 2006, the Dutch Research Council (NWO) granted a proposal - An Advanced Multi-Disciplinary Facility for Measurement and Experimentation in the Social Sciences (MESS) and funding for seven years, to set up the LISS panel infrastructure. Soon after, Centerdata developed the LISS Data Archive, its own system for data archiving and dissemination. All surveys fielded in the panel are disseminated via this system. Since 2006, Centerdata has evolved into a prominent provider of infrastructure for research and data collection in the Netherlands.

Centerdata employs over 40 people, most of which hold permanent contracts (October 2020). The level of education is high, with most of the employees having completed an academic program (Masters or PhD). The academic background of its employees varies from social and behavioral sciences to informatics, data science and engineering. Thanks to the broad scale of inhouse knowledge the institute is able to work across disciplines and implement overall solutions to support scientific research.

The LISS Data Archive is managed by the Survey Research department, where more than ten employees prepare LISS studies for dissemination via the archive. The operational management is in the hands of dedicated employees. To ensure the highest professional quality, Centerdata offers internal training programs on data management as part of an active education and training policy for all its employees. The archival system, developed in-house and full property of Centerdata, is maintained and developed further by the IT department.

Since 2014, when the funding of the 2006 grant ended, the funding for maintaining the LISS Data Archive comes from different sources: via funding from the government, ODISSEI (Open Data Infrastructure for Social Science and Economic Innovations), and through paid assignments to collect data in the LISS panel. Centerdata is a member of ODISSEI; the LISS panel and its archive fulfill a central role in this infrastructure. In 2020, ODISSEI received funding from the Dutch Research Council (NWO) through the Dutch national Roadmap for Large-scale Research Infrastructures for the next five years.

More information on Centerdata: https://www.centerdata.nl/en
More information on ODISSEI: https://odissei-data.nl/en/

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

6. Expert guidance

R6. The repository adopts mechanism(s) to secure ongoing expert guidance and feedback (either inhouse or external, including scientific guidance, if relevant).

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository
Accept

Response:

Centerdata is part of an extensive network of data management and archiving experts in the Netherlands and abroad and communicates with its partners about data archiving and dissemination. Two important contacts in this field are Data Archiving and Networked Services (DANS) and Open Data Infrastructure for Social Science and Economic Innovations (ODISSEI). With DANS, Centerdata has regular contact and has e.g. recently developed a machine-to-machine SWORD interface between the LISS Data Archive and the EASY repository of DANS. Through ODISSEI, Centerdata can consult with a network of 40 partner organizations that work together to improve the data available to social scientists and to make them more accessible. For example, the LISS Data Archive takes part in the ODISSEI Portal, which is being developed to combine metadata from a wide variety of research data repositories into a single interface, enabling advanced semantic queries to support findability and facilitating data access. Furthermore, Centerdata regularly consults Statistics Netherlands for advice on methodology related to data collection and sampling of the LISS panel. Centerdata is also a stakeholder of E-data & Research, an interdisciplinary magazine about digitalizing and disseminating data, and Centerdata is stakeholder of the Dutch speaking Platform for Survey Research (NPSO).

https://odissei-data.nl/en/en-odissei/member-organisations/
https://odissei-data.nl/en/work-streams/en-data-facility/
https://www.edata.nl/
https://www.npso.net/

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

DIGITAL OBJECT MANAGEMENT

7. Data integrity and authenticity

R7. The repository guarantees the integrity and authenticity of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository
Accept

Response:

Integrity

To ensure the integrity of uploaded data files (data files, codebooks, images etc.), MD5 and SHA1 checksums are calculated whenever a file is uploaded to the server. The integrity of the data file is checked by recalculating the checksum of the current files on the server and comparing those values with the checksum determined during the file upload. These checksums are calculated by the system but not externally displayed, by default. At the Data User's request, they can be made available in order to view and control the integrity of the data file he/she has downloaded. Within the archival system, each handling is logged and can be traced back to the individual user.

Authenticity

When the data files are created at the end of the data collection process, all data processing steps are documented in SPSS syntax files. These syntax files are stored in the same internal directory as the data files, a secured environment and only accessible for Centerdata employees. Data file names include an extension that stands for the version number, and each time anything is altered in a data file, the file receives a new version number.

If the data file or documentation needs to be corrected after publication, then the following procedure applies. A copy of the original file is modified by the Centerdata Project Leader, using the same documentation procedure as for the first version, i.e. a syntax file is created including the modifications for the data file. Data file names include an extension which stands for the version number and which is updated for the new version. The changes in the data file are documented in a log file. The file naming and version logging of the related documentation, such as codebooks, follows the same procedure as for the data file.

When the Data Archive Operator receives the SIP, he/she checks the data and metadata. The Operator examines a data entry checklist, based on which he/she either accepts or rejects the SIP. If the SIP is accepted, the Operator converts it into an Archival Information Package (AIP) by entering the data and documentation into the archive and adding the relevant metadata. The data-entry forms that are used for entering (meta)data into the LISS Data Archive contain several systematic checks to prevent the entry of incorrect or duplicate (meta)data. After this, a colleague Operator controls the AIP and either accepts or rejects it for publication.

The information above can be found in Chapter 6 of the Preservation and Dissemination Policy of the LISS Data Archive at https://www.lissdata.nl/access-data/cts.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

8. Appraisal

R8. The repository accepts data and metadata based on defined criteria to ensure relevance and understandability for data users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
Accept

Response:

The LISS Data Archive only stores and disseminates the data collected in the LISS panel, administered by Centerdata, and therefore does not deal with external depositors of data.

The LISS data are stored and disseminated as SPSS and STATA (and in the near future also as CSV) files. As part of the archiving process, the files are checked for their content and data quality. For example, whether the files are saved in the right format, whether the file names have the right format, and whether the files open properly and include the right variables. The study description and variable metadata are included in documentation files (codebooks) which are provided as PDF files. These formats are in compliance with the organization's file format standards for delivering survey data and documentation.

In case we would need to remove a study and the data (e.g. due to changes in technology, culture or legislation like data protection or intellectual property rights) that had already been published and received a DOI, we will keep the particular study online (i.e. the metadata, or at least a basic description of the study). A note will inform visitors that the data are no longer available and the reason why, so that the DOI will still render to the correct place in the archive and visitors are properly informed of the reason of removal.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

9. Documented storage procedures

R9. The repository applies documented processes and procedures in managing archival storage of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository
Accept

Response:

Centerdata has documented its processes for managing the data storage of LISS data in the 'Preservation and Dissemination Policy of the LISS Data Archive' document. It describes six functional entities and related interfaces (CCSDS, 2012): ingest, data management, archival storage, administration, access, and preservation planning. These processes are based on the CCSDS (2012) Reference Model for an Open Archival Information System (OAIS). This policy

can be found at: https://public.ccsds.org/Publications/RefModel.aspx

For the full documentation of the different entities, we refer to the Preservation and Dissemination Policy. Here, we describe the procedural steps from ingest to dissemination as well as change management within the archive. When the Data Archive Operator receives the Submission Information Package (SIP), he/she checks the data and metadata. The Operator follows a data entry checklist, based on which he/she either accepts or rejects the SIP. If the SIP is accepted, the Operator converts it into an Archival Information Package (AIP) by entering the data and documentation in the archive and adding the relevant metadata. The data-entry forms that are used for entering (meta)data in the LISS Data Archive contain several systematic checks to prevent entering incorrect or duplicate (meta)data. After this, a colleague Operator checks the AIP and either accepts or rejects it for publication. The data that are archived in the LISS Data Archive are also deposited in the data repository of DANS for long-term preservation. After the Operator has published the AIP, he/she sends it to the DANS repository via a SWORD interface (Simple Web-service Offering Repository Deposit). Finally, the Operator informs the Project Leader and LISS Data Archive Coordinator that the study has been published and asks them to check the Dissemination Information Package (DIP) online.

All data processing steps are documented in SPSS syntax files when data files are processed for archiving. These syntax files are stored in the same internal directory as the data files, which is a secured environment and only accessible to Centerdata employees. If the data file or documentation needs to be corrected after publication, then the following procedure applies. A copy of the original file is modified by the Centerdata Project Leader, using the same documentation procedure as for the first version, that is, using a syntax file that includes the modifications of the data file. Data file names include an extension which stands for the version number and which is updated for the new version. The changes in the data file are documented in a log file. The file naming and version logging of the related documentation such as codebooks follow the same procedure as for the data file. After this, the Project Leader delivers a new SIP version to the Data Archive Operator together with the log file. The Data Archive Operator enters the new version of the data in the archive and enters information on the modifications in specified AIP fields which are visible for the Data Users. Older versions of data files remain stored in the database, but only the newest version of any file, such as the data file or codebook, is disseminated.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:

10. Preservation plan

R10. The repository assumes responsibility for long-term preservation and manages this function in a planned and documented way.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
Accept

Response:

The data of the LISS Data Archive are collected by Centerdata and therefore Centerdata carries full responsibility for storing and disseminating the data as well as their long-term preservation.

The data are disseminated in the preferred formats of the designated community, namely SPSS and STATA. To address the threat of file format obsolescence, Centerdata monitors the development of the software packages SPSS and STATA at a yearly basis and checks for new releases. To guarantee availability of the data in the long-term, Centerdata also stores the data as CSV files and is planning to disseminate the data in CSV format as well this year, as part of the data packages. Furthermore, the source code of the surveys, including metadata for labels, and data processing files are both stored internally in text-based files.

Additionally, Centerdata has included a continuity plan in the Data Deposit Agreement with DANS as an extra guarantee for long-term preservation. See R3 for further details.

The archive's approach to preservation is documented and published online in the 'Preservation and Dissemination Policy of the LISS Data Archive' report, available at: https://www.lissdata.nl/access-data/cts

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

11. Data quality

R11. The repository has appropriate expertise to address technical data and metadata quality and ensures that sufficient information is available for end users to make quality-related evaluations.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

LISS Data Archive follows the Dublin Core and DDI3 as metadata standards to describe the data. Centerdata has been one of the forerunners in applying DDI3 into practice.

As the producer and supplier of the data in the LISS Data Archive, Centerdata is responsible for the quality of the LISS and metadata and has several control mechanisms in place to ensure this.

First, a project leader at the Survey Research department is responsible for the correct collection and processing of the raw data. After completing the fieldwork, the data are labeled and the respondents' open answers are checked for privacy sensitive information. This work is defined in an internal dissemination manual and conducted by experienced survey researchers, accustomed to process and control survey data. The data processing steps are documented in (SPSS) syntax files/scripts. This ensures an audit-trail to the original data file. By running these scripts, the data are processed into a Submission Information Package (SIP) to be ingested by the LISS Data Archive. Each SIP is controlled by a colleague following a second reader protocol. The second reader provides feedback on the SIP, which is then improved where necessary. Only after this, the SIP is sent to the LISS Archive Operator. After the acceptance check, the Operator enters the study into the archive and enriches the data package with the archival metadata. The outcome, the Archival Information Package (AIP), is reviewed by a second reader before the study is published and sent to DANS via the SWORD interface. For both second reader checks, an internal checklist is provided.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

12. Workflows

R12. Archiving takes place according to defined workflows from ingest to dissemination.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

Centerdata has a stepwise data archiving protocol that defines each step for preparing a Submission Information Package and managing the Archival Information Package of each study in the LISS Data Archive. This protocol defines which role in the organization carries out each step and which documentation, such as a manual or checklist, is provided for the task. This protocol is described in Chapter 6 of the 'Preservation and Dissemination Policy of the LISS Data Archive, available at: https://www.lissdata.nl/access-data/cts

When changes to the internal processes are necessary, these changes are first discussed at a meeting including the employees of the Survey Research department and then approved by the LISS Data Archive Coordinator, the LISS Coordinator, or the head of Survey Research.

Concerning data security, the raw LISS data are internally processed into SIPs on a restricted server that only dedicated employees have access to. At this early stage of data processing, any privacy-sensitive information is cleaned from the datasets. The archival application itself functions with different security levels for different user types. To access the system, one must login with personal login credentials. External data users who are logged in gain very limited rights to operate within the system, namely to download the published data. Internally, Centerdata staff members also need to register to access the system. Depending on the tasks, a specific role is allocated to the staff member. The access rights within the system are dependent on this role.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

13. Data discovery and identification

R13. The repository enables users to discover the data and refer to them in a persistent way through proper citation.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

On the website of the data archive, users can use several ways to search the database, such as keyword search, by browsing lists of studies, or through a topic or concept based search. The keyword search can be used to query not only the study level information and related publications, but also the surveys' question texts and variable labels.

To enable harvesting the metadata of the LISS Data Archive, the repository supports the OAI-PMH protocol. Dublin Core metadata information about published study units can be harvested. The LISS Data Archive metadata are also indexed by Google and can be searched with Google.
To further enhance the visibility of the LISS Data Archive studies, the repository is connected to NARCIS, https://www.narcis.nl/) (the National Academic Research and Collaborations Information System), the Dutch main national portal for scientific information. And of course, the LISS studies are also findable via the EASY repository of DANS.

When a LISS study is deposited at DANS, a persistent identifier (DOI and URN) is created by DANS. For a newly added

study, the DOI is shown via the LISS Data Archive. Furthermore, Centerdata is currently in the process of starting to mint and register their own DOIs.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

14. Data reuse

R14. The repository enables reuse of the data over time, ensuring that appropriate metadata are available to support the understanding and use of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

LISS Data Archive provides an extensive set of metadata on the whole life-cycle of the research, including information on the study objectives, details on data collection, the entire questionnaire as well as metadata on the data file and individual variables. The questionnaires are published in the original language, Dutch, as well as in English. This information is available via freely downloadable codebooks as well as via the metadata fields on the website of the archival application. Also, information on publications related to the data is provided on the website per study, when available.
The used metadata support the Dublin Core and DDI3 (Data Documentation Initiative) standards. The DDI elements that are used include:
Citation
Code / Code Scheme

Coding
Collection Event
Concept / Concept Scheme
Conceptual Component
Data Collection
Funding Information
Group
Organization / Organization Scheme
Other Material
Physical Data Product
Physical Instance
Question Construct / Control Construct Scheme
Question Item / Multiple Question Item / Question Scheme
Representation
Response Domain
Study Unit
Variable / Variable Scheme

The data files are provided as SPSS and STATA files, which are widely used in the social sciences. Centerdata employees also use these statistical software packages and monitor their developments. We furthermore intend to provide the data files as CSV-files. This format will make the data files even more accessible and will contribute to their long-term availability.

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

TECHNOLOGY

15. Technical infrastructure

R15. The repository functions on well-supported operating systems and other core infrastructural software and is using hardware and software technologies appropriate to the services it provides to its Designated

Community.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

LISS Data Archive runs on an application developed by Centerdata. This web application was built using a PHP framework and uses a relational database to store the data. The architectural basis is version 3 of the Data Documentation Initiative (DDI) that supports a life-cycle approach of documenting survey projects, and distinguishes between the metadata of questions (data collection) and variables (dataset). The LISS Data Archive server is harvestable via an OAI-PMH implementation.

This application has served as a model for several other data repositories that Centerdata hosts for other research organizations, such as the PROFILES Registry (https://www.profilesregistry.nl/). Centerdata maintains and continuously develops this application package family, formerly called Questasy and nowadays known under the product name RepositoryCTRL.

The LISS Data Archive repository runs on a server of Centerdata's partner Combell, which is an ISO 27001 certified server provider. An incremental backup of the application (including data) is made daily to the back-up storage. The Centerdata application servers are protected by firewalls and protected against DDOS attacks, and measures are in place to detect any irregularities on the network. Since March 10, 2021, Centerdata is also ISO 27001 certified, which ensures that effective security controls and policies are in place.

More information on the technical infrastructure of LISS Data Archive can be found at the following sources:
https://doi.org/10.29173/iq645
http://www.ddialliance.org/sites/default/files/QuestasyDocumentingAndDisseminatingLongitudinalDataUsingDDI3.pdf

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

16. Security

R16. The technical infrastructure of the repository provides for protection of the facility and its data, products, services, and users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

To store the data, Centerdata uses the services of hosting provider Combell B.V. The data centers of Combell B.V. are fully ISO 27001 certified, redundant and physically located within the European Economic Area. Centerdata has its own protected part, to which third parties have no access.

Access to the server rooms of Combell is limited by physical and organizational access measures. These rooms are fitted with fire protection and continuity guarantees for energy supply. The servers are protected against DDOS attacks. The Centerdata application servers are protected by firewalls and measures are in place to detect any irregularities on the network. Functional access to the system is limited to the relevant system administrators.
Concerning logical access security, the system is protected by passwords and IP restrictions.

At Centerdata, the access to the LISS Data Archive application is based on role-specific authorization. Data users need to log in via two-factor authentication to access the data. For internal access, an IP restriction is in place in addition to login. Concerning programmable security measures, the configurations and log files of the servers and applications used by Centerdata are periodically checked where necessary. Centerdata maintains an incident logbook. In the LISS Data Archive, account passwords are always hashed in the database after the first login.

More information on the data safeguarding plan can be found in Chapter 7 of the repository's data preservation policy at:

https://www.lissdata.nl/access-data/cts

Reviewer Entry

Reviewer 1

Comments:
accept

Reviewer 2

Comments:
Accept

APPLICANT FEEDBACK

Comments/feedback

These Requirements are not seen as final, and we value your input to improve the CoreTrustSeal certification procedure. Any comments on the quality of the Requirements, their relevance to your organization, or any other contribution, will be considered as part of future iterations.

Response:

Reviewer Entry

Reviewer 1

Comments:
Thank you again for your excellent application.

Reviewer 2

Comments:
Thanks for addressing the points! It is a solid description. Looking forward to seeing the archive progress.