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## Plan Overview

*A Data Management Plan created using DeIC DMP*

**Title:** Circular Economy Entrepreneurship in Denmark

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**Template:** Horizon 2020

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### Project abstract:

Circular economy entrepreneurship is an emerging field that emphasise joint economic and ecological value creation. Unlike the other forms of entrepreneurship, it combines business practices and sustainable development, which consequently transform business sectors and societies. Circular economy entrepreneurship involves various stakeholders with entrepreneurs playing a central role in providing solutions to natural resources depletion and environmental degradation. To achieve this feat, entrepreneurs need new attitudes and behaviours, new business models and processes, and new partnerships. Although interest in circular economy entrepreneurship is increasing, extant academic research is scarce and boundaries set by existing entrepreneurship literature need extension to take into consideration resource depletion, environmental aspects and socio-technical issues. At present, very little is known about how entrepreneurs build new ventures that create and support a circular economy whilst being economically viable and competitive. The overall purpose of the CEED project is to contribute to the transition to a circular economy by identifying the enablers and barriers for CE entrepreneurship. CEED is an explorative research project that uses a combination of methods to develop innovative solutions to overcome these barriers in Denmark and beyond. CEED will contribute to research excellence in this emerging area through the analysis of best practices to reveal the patterns of the interaction between the circular economy and entrepreneurship.

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# Circular Economy Entrepreneurship in Denmark - Initial DMP

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## Data summary

Provide a summary of the data addressing the following issues:

- State the purpose of the data collection/generation
- Explain the relation to the objectives of the project
- Specify the types and formats of data generated/collected
- Specify if existing data is being re-used (if any)
- Specify the origin of the data
- State the expected size of the data (if known)
- Outline the data utility: to whom will it be useful

The main goal of the CEED project is to contribute to the transition to a circular economy (CE) through entrepreneurship by identifying enablers and barriers to circular economy entrepreneurship. CEED is an explorative research project that uses a combination of methods to develop innovative solutions that could overcome the barriers as well as promote the enablers in Denmark. The purpose of the data collection/generation is to identify the barriers and enablers and to enhance the development of innovative solutions.

The data is crucial for the realisation of the following objectives of the project:

- Map, evaluate and compare existing CE entrepreneurial ventures, entrepreneurs and the entrepreneurial contexts in different sectors and regions of Denmark.
- Identify the enabling and constraining factors in the development of CE entrepreneurship business models taking into account the differences across sectors and markets in Denmark.
- An evaluation of CE entrepreneurship development level taking into consideration individual level factors, system level factors, socio-cultural factors and market factors.

Predominantly, different type of qualitative data will be collected (texts, audio, and business models). The audio files from the interviews will be in uncompressed file formats such as MPEG Layer-3 files (mp3). The raw (sound) and personal data will not be shared. However, transcribed and derivative data will be in open (non-proprietary) file formats such as CSV and txt files to support the need for interoperability and re-usability.

Existing data will not be re-used as this is an exploratory project.

The origin of the data is mainly from interviews, websites and document analyses.

An estimate on the expected volume of data is not yet known at this stage, however a range between (50GB-500GB) is envisioned due to incremental growth and the national coverage of the project.

The project is participating in the open access pilot (Horizon 2020 ORD pilot), which refers to the practice of providing online access to scientific information that is free of charge to the end-user and reusable. The data will be available to be utilized by institutions, researchers, practitioners, policymakers and other interested parties in the CE entrepreneurship domain.

## FAIR data

### 2.1 Making data findable, including provisions for metadata:

- Outline the discoverability of data (metadata provision).
- Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?
- Outline naming conventions used.
- Outline the approach towards search keyword.
- Outline the approach for clear versioning.
- Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how.

A direct identifier in a readme file will be permanently associated with the transcribed data file that will be created. The readme file will provide potential users with metadata for the basic discovery information such as title, principal investigator, supervisor, keywords, methods of collection, the type and format, file version and terms of use.

To make the data persistent and identifiable, the project shall use the host institution's existing approach to standard identification mechanism which includes the naming conventions, keyword search and the versioning conventions during transcription.

To make the transcribed and derivative data FAIR, it will be uploaded in the Zenodo repository, where it will be provided with all metadata necessary. The data will be given a DOI and a Creative Commons end user license.

The approach towards search keyword is based on the intent behind the keyword and whether or not the keyword solve that intent. The keyword will comprise different variations such as "Data on Circular Economy Entrepreneurship", "Data on Circular Economy Entrepreneurship in Denmark", "Data on Circular Economy Entrepreneurship in Europe"

The standards for metadata creation commonly used within the research community for describing social, behavioural and economic data such as Data Documentation Initiative (DDI) shall be used. DDI enables the documentation of a project from its earliest stages through questionnaire development, data collection, archiving and dissemination, and beyond, with no metadata loss.

### 2.2 Making data openly accessible:

- Specify which data will be made openly available. If some data is kept closed provide rationale for doing so.
- Specify how the data will be made available.
- Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?
- Specify where the data and associated metadata, documentation and code are deposited.
- Specify how access will be provided in case there are any restrictions.

Data that will be openly available includes transcribed and derivative data, the associated metadata and data underlying publications. Such data will be uploaded in Zenodo. Peer-reviewed articles published in academic journals will also be open accessed.

The transcribed and derivative data that will be made available will be anonymised.

No specific software tools are needed to access the data as it will be stored in excel and word files during data collection and these files will be converted to open formats before sharing.

The data and associated metadata, documentation and code will be deposited in the host institution's secure SharePoint or OneDrive during the collection of the data. After the data is transcribed, it will be uploaded to Zenodo for sharing.

SharePoint and OneDrive allows for detailed and differentiated user access in case there are any restrictions.

### 2.3 Making data interoperable:

- **Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**
- **Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability. If not, will you provide mapping to more commonly used ontologies?**

Since the data is mainly interview transcripts, there is limited need of Standardised formats, vocabularies, terminologies and methodologies to facilitate interoperability. No specific software applications are needed to facilitate combination with other datasets.

All documents will be in the English language to allow ease of inter-disciplinary and cross-disciplinary interoperability.

#### **2.4 Increase data re-use (through clarifying licenses):**

- **Specify how the data will be licensed to permit the widest reuse possible.**
- **Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed.**
- **Specify whether the data produced and/or used in the project is usable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why.**
- **Describe data quality assurance processes.**
- **Specify the length of time for which the data will remain re-usable.**

Measures will be taken to ensure that the transcribed and derivative data and its associated metadata made publicly available for the widest reuse possible by uploading it Zenodo. The data will be licensed with a CC-BY license issued by Creative Commons.

The anonymized transcribed and derivative data will be available for re-use by third parties as soon as it is deposited to Zenodo repository.

The data quality assurance process will include periodic checks for completeness, consistency, validity, reliability, timeliness and interoperability of the data by the principal investigator and the supervisor in accordance with the existing established standard data quality management at SDU.

The anonymized data will remain available for a minimum period (4 years) after the end of the project as defined in the H2020 Grant Agreement under the exploitation of the results.

## **Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

- **Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**
- **Clearly identify responsibilities for data management in your project**
- **Describe costs and potential value of long term preservation**

The estimated costs of making the data FAIR are not yet known. However, such costs are eligible for reimbursement under the conditions defined in the H2020 Grant Agreement. Uploading well described data in Zenodo will make it substantially FAIR. However, the cost for publishing open access will be covered by the Grant Agreement if compliant with the conditions.

The Principal Investigator (Michael Sheriff) will be primarily responsible for data management. The supervisor (Steffen Korsgaard) will ensure data quality assurance and the SDU Data Protection Officer (DPO) will oversee the security of the data.

SDU's storage and security services will be used for data management.

No additional costs are envisaged to occur to the host institution for long time preservation as the raw data and non-anonymized data from the project will be deleted after the mandatory period of storage.

## **Data security**

**Address data recovery as well as secure storage and transfer of sensitive data.**

Storage of digital copies of data will be on secure SharePoint or OneDrive provided by SDU. All data files will be password protected.

Hard copies of data are kept when not in use in a locked cabinet.

No copies of interviewee notes or interviewee data will be shared. The principal investigator will be the only person handling the original data.

No sensitive data shall be collected

Personal identifiable data will be stored separately in a file and a will be given a unique identification (ID) number. The ID number will link the personal identifiable data with the rest of the collected data in the project. In this way participants will be pseudonymized and later anonymized by destroying the personal identification file.

Backup data will be automatically handled by SDU IT Services.

The participants and consent forms that participants will sign clearly state the conditions for participation, which is voluntary and the mechanisms regarding storage, withdrawal, sharing and deletion of data.

After the end of the project and the mandatory period of storage of the data, the raw and non-anonymized data shall be completely deleted.

## **Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former.**

SDU Research & Innovation Organisation (RIO) approved the ethics review of the project on behalf of the Danish Data Protection Agency.

The SDU RIO approval was issued on 29-10-2019 with Notification number: 10.721. The notification is included in SDU's record of processing, which contains information where SDU processes personal data. The project has been assessed "Green" which means that it is considered to be a low risk project. A data protection impact assessment (DPIA), was therefore not performed by SDU RIO.

Participants' consent will be sought for the collection of the data through a participant information sheet and the signing of a participant consent form.

## Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any).

The project will use the policies and procedures for research data management established by the the host institution (SDU) for data management and the Horizon 2020 FAIR data principles.