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# Improving Performance of Data Management of an NGO Working in Human Rights: The Case of Uyghur Rights Monitor (URM)

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I started studying for this master's degree at the Metropolia University of Applied Sciences in fall 2022. During my courses such as Circular Economy and Corporate Social Responsibility which were taught by Zinaida Grabovskaia, PhL, I have learnt and realized that business is not just about increasing profits. Business activities should also be responsible for the negative impacts they have caused on the environment and society, including human rights. However, unfortunately, the world including the democratic countries of the EU which claim to advocate for human rights are still doing business with China, a country that has been producing and exporting products by violating human rights, for example allowing companies to use forced labor. This is why I chose to write a thesis on a human rights-related topic.

Now, I have almost completed my thesis thanks to the inputs and guidance of a research team at the case company Uyghur Rights Monitor (URM), my thesis instructor, and administrative staff at the Metropolia.

The URM team accepted all my interviews despite its very busy schedule. This made it possible for me to collect data that is necessary for writing this thesis. Thank you for your help!

Special thanks go to my thesis instructor Antti Hovi, Senior Lecturer at Metropolia. Antti guided me on how to write a thesis at the University of Applied Sciences. Thank you, Zinaida Grabovskaia, for providing insightful comments which improved this thesis.

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Helsinki
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# Abstract


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The objective of this thesis is to propose recommendations for the Uyghur Rights Monitor (URM) to improve performances in the selected Data Management (DM) areas. As a newly established voluntary organization of three researchers, URM is dedicated to investigating and exposing human rights violations in East Turkistan (ETR, a.k.a. Xinjiang Uyghur Autonomous Region). By producing evidence-based policy briefs based on extensive qualitative data, the case organization aims to unveil the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people living in ETR and hold the perpetrators accountable.

This thesis study was conducted by utilizing an applied action research approach with qualitative methods. The study was executed according to the pre-established research design and three rounds of data collection through semi-structured in-depth interviews with the case organization´s team. First, existing knowledge was reviewed on core concepts including data, DM, and the good practices of evaluating and improving DM performance in the context of NGOs in human rights. Second, the current state of the DM performance in the case organization was analysed. Third, the initial proposal was created by combining the results of the current state analyses and the case organization's inputs on the co-creation of improving the DM performance. Finally, validation was done based on the case organization's feedback on the initial proposal and the final proposal was produced.

The outcome of this thesis is the recommendations on how to enhance the case organization's performance in the selected DM areas. These DM areas concern the collection of primary data, access to a larger data storage, and establishment of KPIs to measure data dissemination improvement.

By implementing the recommendations, the case organization could improve its accountability and social impact as well as enhance its efforts to unveil the Chinese Communist Party's human rights violations in ETR and hold the perpetrators accountable.



Keywords: Data management, Uyghur Rights Monitor, performance improvement, human rights, East Turkistan, China

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Appendices

# 1 Introduction

Improving the Data Management (DM) performance of NGOs working in human rights enhances their efficiency in collecting, storing, analyzing, and disseminating (e.g. reporting) information about human rights violations, victims, and perpetrators. Consequently, the improvement increases the credibility of the NGOs to their audiences including donors, policymakers, partners, the public, and academic institutions. This thesis evaluates Uyghur Rights Monitor's (URM) DM performance and proposes recommendations on how to improve the performances of URM's selected DM areas. The improvements might support the case organization in its efforts to expose human rights abuse in East Turkistan (ETR, a.k.a. Xinjiang Uyghur Autonomous Region) and hold the perpetrators accountable.

## 1.1 Business Context: An NGO Working on Uyghur Human Rights

The case organization of this thesis is Uyghur Rights Monitor (URM). It is a newly established volunteer-intensive platform founded by three researchers who are investigating human rights violations in ETR. The goal of the case organization is to unveil the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people living in ETR and hold the perpetrators accountable. The case organization does not have a stable income or long-term donor. Its activities, e.g. producing evidence-based policy briefs, are funded through project-based grants (Appendix 2: Interview 1).

The People's Republic of China, which is dictated by the Chinese Communist Party, came to power in 1949 and 'peacefully liberated' ETR, i.e. Xinjiang (Dillon, 1997) which means the 'New Territory' or 'New Dominion' (Becquelin, 2000). Since then, the Chinese authorities have seen the 'Sinification' of ETR as an important measure of integrating the region into the nation. The 'Sinification' has been implemented by encouraging mass Han Chinese immigration (Dillon, 1997) to ETR, imposing the endogenous people to adapt to Han Chinese economic and cultural system (Confucian education), and severe restriction on religious practices and expression of ethnic (Uyghur) identity (Cliff, 2012). The Chinese authorities have determined to continue and intensify its suppression, marginalization, and Sinification policies towards non-Han aboriginal ETR residents including the Uyghurs. Because, the Uyghur perhaps has become an obstacle, at least

in the view of the Chinese state, to realize the ‘Chinese dream’: a ‘great rejuvenation of the Chinese nation’ (Kallio, 2015) i.e. to build a Sino-centric world order.

The Chinese authorities have interpreted and criminalized (Becquelin, 2004) any manifestation of the Uyghur cultural identity and religious practice as intended to foster the ‘three evil forces’ refers to so-called political separatism, Islamist extremism and terrorism. The authorities have promoted Standard Chinese (Mandarin or Putonghua) under the name of bilingual education that Chinese focused on the cost of Uyghur languages. This policy is against China’s own various laws that guarantee autonomous areas have the right to organize their curriculum in their language (Becquelin, 2004). The authorities restricted residents’ including Uyghur’s movement within and beyond ETR. Since October 2016, the residents of ETR have been ordered to hand over their passports (Wong, 2016), in violation of China’s Passport Law (The Central Government of the PRC, 2006).

Especially from the end of 2016, the Chinese authorities have intensified the repression and assimilation policies towards Uyghurs and other ethnic groups in ETR. These policies are exemplified by China’s most intense campaign of establishing large-scale re-education camps and forcible social re-engineering (Zenz, 2019). The authorities have promoted state-sponsored interethnic mixing(marriage) and intensified the restrictions on Uyghur sociocultural practices, such as banning traditional dress, imposing Mandarin-only education policies in schools, and closing mosques (Human Rights Watch, 2021; OHCHR, 2023; Radio Free Asia, 2004; U.S. Department of State, 2022). According to the United Nations report (OHCHR, 2022), up to two million, about 17% of, Uyghurs have been subjected to detention and forced labour in detention camps where they are reportedly forced to renounce their cultural and religious identity and adopt Chinese Communist Party ideology. Uyghurs have been detained in re-education camps or concentration camps without judicial procedures (Reuters, 2018). Randall Schriver, who leads Asia policy at the U.S. Defense Department, claimed that the number of camp detainees could be around 3 million (Stewart, 2019). The Chinese authorities have systematically relocated a large number of Uyghurs including the camp detains to factories in coastal China. According to the Australian Strategic Policy Institute (The Economist, 2020), from 2017 to 2019, more than 80,000 former camp detainees were shipped out of ETR to work in factories across China.

The Chinese government initially denied the existence of such camps but later defended them as "vocational education and training centres" aimed at combating so-called extremism and terrorism. However, reports from previous sources, including human rights groups (Human Rights Watch, 2021; OHCHR, 2023), scholars (Zenz, 2019), international media (Radio Free Asia, 2004; The Economist, 2020), and governmental documents (U.S. Department of State, 2022) show that the camps as places where detainees are subjected to political indoctrination, forced labour, torture, and other human rights abuses.

The case organization publishes a series of policy briefs and infographics on its organizational website. The publications are about human rights abuses in ETR including genocide against Uyghurs and other Turkic groups, re-education camps, arbitrary imprisonment, forced labour, and the Chinese authorities who are planning and implementing these crimes. The publications are available from the link at https://www.uyghurrightsmonitor.org/category/architects-of-uyghur-genocide/. The publications expose the agencies behind the planning, decision-making, implementation, and whitewashing of crime in ETR (Uyghur Rights Monitor, 2023).

## 1.2 Business Challenge, Objective and Outcome

The case organization and other NOGs such as Human Rights Watch, Uyghur Human Rights Project, Coalition to End Forced Labour in the Uyghur Region, as well as End #Forced Labour Fashion are dedicated to exposing human rights abuse in ETR. The case organization has limited capacity in terms of human resources and finance. The organization is interested in doing a DM performance evaluation and considering possible improvements to it.

The objective of this thesis is *to propose improvements to the case organization's Data Management (DM) performance in the selected areas* that would support the organization's efforts to expose human rights abuse in ETR. The expected outcome is *the improvement proposal/ recommendations on how to enhance performances in the selected DM areas of the case organization.*

## 1.3 Outline of the Thesis

Against this background, this thesis started by reviewing relevant existing knowledge and good practices of evaluating DM performance as well as creating a conceptual

framework (CF) for guiding the improvements proposal and supporting the next steps in the thesis study. Then, it evaluated the case organization´s current DM performance and co-created, together with the case organization´s stakeholders, i.e. the URM team, the initial proposals/recommendations for improving the case organization´s performance in the selected DM areas. In the end, the final recommendations were produced based on the validation of the key stakeholders at the case organization.

The thesis was written in seven sections. Section 1 introduced the background of the case organization and described the problem, objective & outcome of the thesis study. Section 2 explained the Method and Material utilized in this study. Section 3 explored the Existing Knowledge and best practice on DM performance especially in R&D and NGO; described the role of NGOs in exposing human rights abuse and the future of DM in this area; as well as created a conceptual framework for evaluating and improving DM. Section 4 reported on the results of the current state analysis of the case organization´s DM. Section 5 reported on the results of the co-creation of the initial proposal (recommendations) for improving the case organization´s selected DM areas. Section 6 reported on the results of the final proposal and validation. Section 7, Conclusions summarized the study and discussed managerial implications for the case organization.

# 2 Method and Material

This section addresses the method and material utilized during the thesis study. It begins by describing the research approach and research design, then continues with the description of data collection and analysis methods.

## 2.1 Research Approach

This thesis study is about the development/improvement of data management practices of an NGO working on human rights. Thus, the research approach utilized in this thesis is qualitative by nature.

Specifically, for this study, applied action research (Kananen, 2013) was chosen as the main research approach. Applied action research “is not own methodology but a group of different research methodologies that are used according to a situation or an objective for development” (Kananen, 2013, p.20). It combines research and development (R&D) to achieve continuous enhancement and improvement in organizations (ibid., 2013). The objective of applied actions research might include processes, activities, products, services, and situations as subjects to continuous improvements in organizations (ibid., 2013, p.21). It allows the study to be conducted according to the research conventions: data is carefully collected, documented, and analyzed, which means the methods that produce reliable and novel results (ibid., 2013, p.22). The case study approach is also applied because it enables the utilization of multiple sources of evidence (Yin, 2003).

To develop recommendations on how to improve the case organization´s performances in selected DM areas, first, relevant existing knowledge and best practices were reviewed to create a conceptual framework for supporting the study. The secondary sources include online reports (e.g., online publications about NGOs' DM performance) and academic papers. Then, in-depth interviews were conducted with the case organization´s team. This enabled the implementation of the current state analysis, the introduction of initial proposal/recommendations, and the production of final recommendations based on validation.

## 2.2 Research Design

This study was carried out according to the following research design shown in Figure 1:

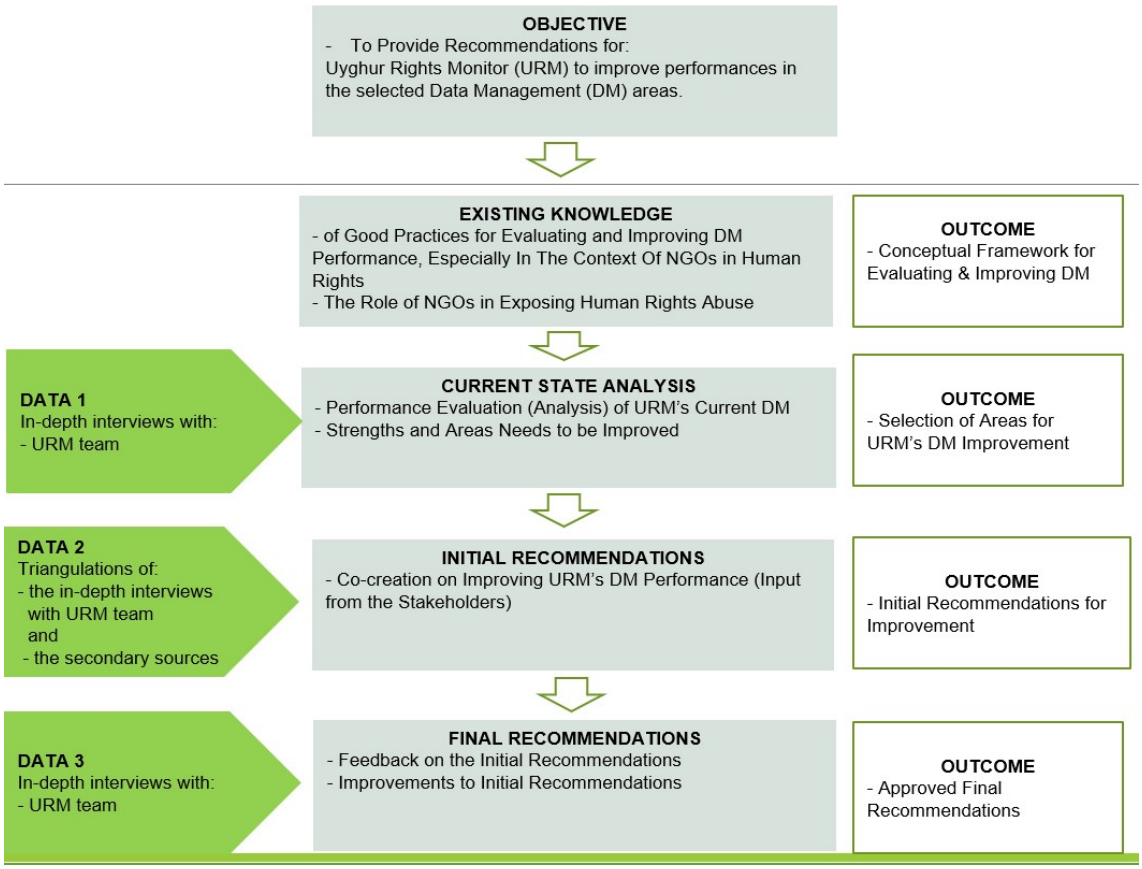



Figure 1. Research design of this study.

As shown in Figure 1, the thesis started with a review of the existing knowledge and best practice on DM performance and its improvement, especially in the context of NGOs in human rights; and built a theoretical framework for guiding the improvement efforts. Next, based on the in-depth interviews with the case organization´s team (key stakeholders), the study carried out the current state analysis of the case organization´s DM performances. Then, the thesis was co-created, by considering the the case organization´s input, and the initial recommendations on performance improvements in the selected DM areas. Finally, the initial recommendations were evaluated based on validation/feedback from the case organization´s team and the final recommendations were produced.

## 2.3 Data Collection and Analysis Methods

As previously mentioned, this study draws data from existing knowledge of DM, and in-depth interviews with the URM team. Table 1 below shows details of Data collections 1-3 used in this study.

| | Participants/ Role | Data type | Topics Discussed | Date | Document Name, Location |
|---|---|---|---|---|---|
| | **Data 1, for the Current State Analysis** | | | | |
| 1 | URM Team | In-depth interview via e-mail | -Understanding URM (e.g. HR and financial) & its organizational Goal<br>- Data Collection | Sent: 29.2.2024<br>Received: 20.3.2024 | Interview 1, Appendix 2 |
| 2 | URM Team | Same as above (S/A) | - Data Cleaning<br>- Data Integration | Sent: 7.3.2024<br>Received: 20.3.2024 | Interview 2, Appendix 3 |
| 3 | URM Team | S/A | - Data Storage<br>- Data Analysis | Sent: 11.3.2024<br>Received: 20.3.2024 | Interview 3 Appendix 4 |
| 4 | URM Team | S/A | - Data Sharing<br>- Data Protection | Sent: 12.3.2024<br>Received: 20.3.2024 | Interview 4, Appendix 5 |
| 5 | URM Team | S/A | -Data Dissemination | Sent: 13.3.2024<br>Received: 20.3.2024 | Interview 5, Appendix 6 |
| | **Data 2, for Initial Proposal Building** | | | | |
| 6 | URM Team | - In-depth interview via e-mail<br>- Triangulations of the interviews and existing knowledge /secondary sources | Initial Proposals building | Sent: 25.3.2024<br>Received: 3.4.2024 | Interview 6, Appendix 7 |
| | **Data 3, for Validation** | | | | |
| 7 | URM Team | In-depth interview via e-mail | Validation and production of the Final Proposals (Recommendations) | Sent: 11.4.2024<br>Received: 17.4.2024 | Interview 7, Appendix 8 |

Table 1. Details of Data Collections 1-3 used in this study.

As demonstrated in Table 1, data for this thesis was collected in three rounds. At the beginning, Data 1, was collected by conducting five in-depth interviews via e-mails with the URM team. The first interview is about understanding the case organization (e.g. HR and financial), its organizational goal, and data collection practices. The second interview asked about the case organization´s data cleaning and data integration practices. The third interview was about the case organization´s data storage and data analysis. The fourth interview focused on the case organization´s data sharing and data protection practices. The fifth interview asked about the case organization´s data dissemination practices.

Then, Data 2, was collected by conducting an in-depth interview via e-mails with the the case organization´s team. In this round of data collection, the case organization´s team was asked to input their thoughts on improving performance in the selected DM areas. The case organization´s inputs were utilized for building the initial recommendations.

Finally, Data 3 was collected by conducting an in-depth interview via e-mails with the case organization´s team. Data 3 included the team's feedback for the initial recommendations. The feedback was used to validate the initial recommendations and produce the final recommendations.

All the Data (1,2,3) was collected through semi-structured in-depth interviews with the the case organization´s team. The results from the team interviews are more reliable compared to individual interviews because the team's opinion reflects the organization's reality concerning DM practices. Additionally, the in-depth interviews allow for flexible communications and ensure that the main questions are discussed with every interviewee (Legard, Keegan, & Ward, 2009). Qualitative content analysis (Hsieh & Shannon, 2005) was utilized to analyze the interview data and the secondary sources. Triangulations (Wai-Chung Yeung, 2003) of the various data sources (in-depth interviews and secondary sources) are useful for the processes of producing Initial to Final Proposal. The in-depth interviews can be found in Appendices 1- 7.

# 3 Existing Knowledge and Best Practices for Evaluating and Improving Data Management Performance in R&D and NGOs (Especially in Social Sciences)

This section discusses available knowledge and key concepts related to Data, Data Management (DM), the best practice of DM performance evaluation and improvement in R&D and NGOs, as well as the role of NGOs in exposing human rights abuse. Also, it creates a Conceptual Framework (CF) towards conducting the current state analysis of the case organization's DM performance and building of proposal/recommendation on performance improvement in the selected DM areas.

## 3.1 Data

There are different definitions of data. According to JavaTpoint (2024), data is a distinct piece of information that is gathered and translated for some purpose. Australian Bureau of Statistics (2024a) defines data as the measurements or observations that are collected as a source of information. Rod Pierce (2024) states that data is a collection of facts, such as numbers, words, measurements, observations or just descriptions of things.

Depending on the source, data can be classified as primary data or secondary data. Primary data refers to the "data that has been generated by the researcher himself/herself, surveys, interviews, experiments, specially designed for understanding and solving the research problem at hand." (Benedictine University Library, 2024). Similarly, OECD (2015, p.187) states that "Direct data collection can occur by various modes, including by a paper questionnaire, by telephone, or by web-based collection, provided there are sufficient security measures in place to protect sensitive data, or by interview in countries where computers, telephones and postal services are not widely available". Secondary data "means data collected by someone else earlier." It can include government publications, websites, books, journal articles, internal records etc. (Benedictine University Library, 2024).

Data can be divided into two categories namely qualitative data and quantitative data. Qualitative data are measures of 'types' (e.g. gender, country of origin, occupation type, product type, satisfaction, etc.). In other words, qualitative data is descriptive information, i.e., it describes something. Quantitative data are measures of values or counts and are expressed as numbers. It is about numeric variables (e.g. how many, how much or how

often; weight, height, time, price, temperature etc.). (Australian Bureau of Statistics, 2024b; Rod Pierce, 2024).

Quantitative and qualitative data can be collected from the same data unit as shown in Table 2 below.

Table 2. Example of how quantitative and qualitative data can be gathered from the same data unit (Source: Australian Bureau of Statistics, 2024b).

| Data unit | Numeric variable = Quantitative data | | Categorical variable = Qualitative data | |
|---|---|---|---|---|
| A person | "How many children do you have?" | 4 children | "In which country were your children born?" | Australia |
| | "How much do you earn?" | $60,000 p.a. | "What is your occupation?" | Photographer |
| | "How many hours do you work?" | 38 hours per week | "Do you work full-time or part-time?" | Full-time |
| A house | "How many square metres is the house?" | 200 square metres | "In which city or town is the house located?" | Brisbane |
| A business | "How many workers are currently employed?" | 264 employees | "What is the industry of the business?" | Retail |
| A farm | "How many milk cows are located on the farm?" | 36 cows | "What is the main activity of the farm?" | Dairy |

As shown in Table 2, quantitative and qualitative data are often used together to get a full picture of a phenomenon. For example, the collection of data on annual income (quantitative) and occupation data (qualitative) allows one to get more detail on the average annual income for each type of occupation (Australian Bureau of Statistics, 2024b). In a business context, data, if efficiently utilized, can be a valuable asset which helps make faster and more accurate business decisions (Delen, 2014).

To sum up, there is no unified definition of data. Data can be classified into different categories. The next section of this thesis describes the components of Data Management (DM).

## 3.2 Data Management (DM) and its Components

There is no unified definition of data management (DM). SAP (2024) states that “Data management is the practice of collecting, organizing, and accessing data to support productivity, efficiency, and decision-making.” According to QlikTech International AB (2024), “Data management refers to the process of collecting, storing, organizing, and

maintaining data to support analysis and decision-making". CartONG (2024) states that "Data management refers to the full range of processes, methodologies and tools needed at various stages of data analysis (collection to analysis to decision making)." Digital Marketing Institute (2024) defines a similar concept called Data management systems that "help organizations optimize the use of data to make decisions and take actions that will maximize the benefits to the organization. The systems do this by collecting, processing, securing, and storing data in a way that can be used for strategic decision-making." After all, though the concept of DM is defined differently, all the definitions mention that DM helps organizations make evidence-based decisions.

Inspired by the literature mentioned above, this thesis study defines the data management (DM) as follows:

> DM refers to the process of collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data with the maximum capacity of an organization to achieve organizational goals.

Weber and Smith (2023) state that "Capacity is the engine that drives performance and makes it possible for an organization to meet its goals and achieve its overall mission. Simply put: Capacity = Ability to Perform.". Organizational capacity can be reflected in the number of trained employees and financial situation etc. The organizational Goal refers to its accountability and social impacts. Accountability is essential for R&D and NGOs' work, especially on human rights projects. To promote human rights and justice, NGOs need to "… improve their own accountability vis-à-vis the people they are trying to serve and among themselves." (Van Tuijl, 1999, p.512).

The elements of DM such as collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data are separately presented in the following sections.

### 3.2.1 Data Collection

Data collection can be described within two categories namely the collection of qualitative data and quantitative data. According to JavaTpoint (2024), qualitative data can be collected via common methodologies such as interviews, focus groups, case studies, ethnographic research, participant observation, open-ended survey questions, and pulling from existing records i.e. secondary sources.

Quantitative data can be collected through two types of methods namely surveys and one-on-one interviews. Closed-ended survey questions are more appropriate for collecting quantitative data. The closed-ended survey questions can be combined with other types of questions such as multiple-choice questions including rating scale questions, semantic differential scale questions etc. The survey questions can be distributed via Email, SMS, QR code, embedded website, QuestionPro app, etc. One-on-one Interviews, another traditional method to collect quantitative data, were conducted face-to-face. But it has been moved to telephonic and online platforms such as Team, Zoom, Skype and so on. The online interview has the advantages of overcoming the issue of distance between interviewer and interviewee and saving time. However, “A data collection process should strive to minimise the burden and cost and maximise timeliness, the response rate and accuracy” (OECD, 2015, p.190).

Software including, but not limited to, Google Forms, Tableau, Qlik Sense, and Looker can be utilized to collect data. Additionally, qualitative data analysis software such as NVivo, Atlas.ti, MAXQDA, Dedoose etc. not only help to collect data but help to analyze data as well.

### 3.2.2 Data Cleaning

According to Tableau (2024), “Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. When combining multiple data sources, there are many opportunities for data to be duplicated or mislabeled.” Cleaned data ensures that data is accurate, consistent, and relevant before it’s time to analyze (Hotjar, 2024). Additionally, clean data increases overall productivity and business efficiency, as well as helps quicker decision-making (Tableau, 2024). Data cleaning can be done by using software such as Tableau Prep, and OpenRefin, etc.

### 3.2.3 Data Integration

According to Astera (2024), data integration is all about “combining data from multiple sources into a centralized repository. This repository provides a holistic understanding of the entire business. When done right, this leads to a single source of truth (SSOT) that organizations rely on for accurate decision-making.”

Data integration has many benefits such as improved decision-making, automated business processes, reduced costs (in terms of labor, infrastructure, errors in data), improved compliance and security, increased agility, collaboration etc. (ibid., 2024).

Data integration can be carried out by using digital platforms such as Microsoft Azure Data Factory, Pentaho Data Integration, Talend Open Studio, Informatica PowerCenter, and so on. For example, Pentaho Data Integration was used to create a Platform for Brazilian Civil Society Organizations that provide valuable public services for society (Ferreira, Praia, Bonecini, Vieira, and Lopez, 2017).

### 3.2.4 Data Storage

IBM (2024) states that “data storage refers to magnetic, optical, or mechanical media that records and preserves digital information for ongoing or future operations.”. Nowadays users require huge data storage to meet their projects’ high-level computational needs (e.g., big data projects, AI, and machine learning). Additionally, huge data storage amounts are needed as backup solutions to protect against data loss due to disaster, failure, or fraud.

Tools like cloud storage (e.g. Google Drive, Dropbox, and OneDrive), external hard drives (e.g., Seagate Backup Plus, Western Digital My Passport, and Toshiba Canvio Advance), as well as Network-Attached Storage (e.g., Synology DiskStation and Buffalo TeraStation 5200DN), can be utilized to store data.

### 3.2.5 Data Analysis

Data analysis can be carried out within two categories namely qualitative and quantitative data analysis. Qualitative data analysis can be done through a deductive or inductive approach. In the deductive technique i.e. grounded theory, the analyst starts with a question and evaluates data subjectively in terms of the question. In the inductive technique, the analyst starts without an agenda and simply evaluates the data to look for patterns (JavaTpoint, 2024).

*Qualitative* data analysis depends on analogue and digital tools such as SWOT analysis, Porter's five forces, as well as qualitative data analysis software. As previously mentioned, tools/software such as NVivo, Atlas.ti, MAXQDA, Dedoose etc. can be

utilized to conduct qualitative data analysis. The software includes features such as coding for sentiment analysis and text interpretation, transcription analysis, and so on. For example, ATLAS.ti is utilized to conduct discourse analysis and create diffusion maps that give an overview of the different contents of the human right to housing from a global perspective (Kolocek, 2013). Collecting and analyzing qualitative data can be very time-consuming so sampling is used in qualitative data analysis. However, if the sample size is too small, the validity of the study will be undermined (ibid., 2024).

*Quantitative* data analysis is the process of analyzing and interpreting numerical data. It helps to draw meaningful conclusions by identifying patterns, trends, and relationships between variables through mathematical calculations and statistical tests. It turns individual data points into meaningful insights to assist in making informed, i.e. data-driven decisions (Hotjar, 2024). The numerical nature of quantitative data reduces personal bias (JavaTpoint, 2024).

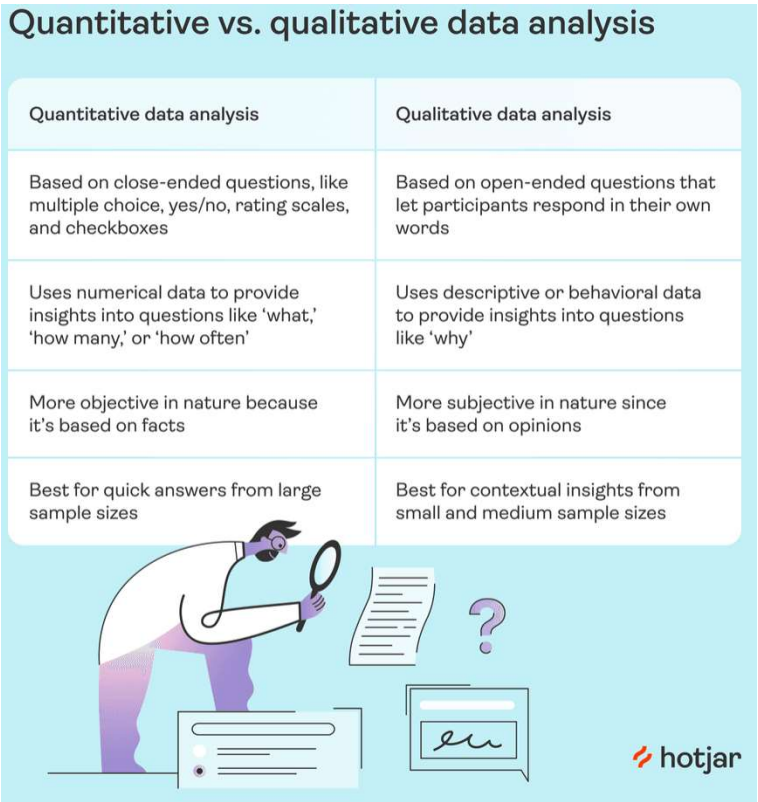
Quantitative data analysis has two main branches namely descriptive analysis and inferential analysis. Descriptive analysis is a method of summarizing or describing attributes of the data set. For example, calculating key stats like distribution and frequency, mean, median, as well as mode. Inferential analysis refers to methods that allow us to conclude from statistics, for example, by analyzing the relationship between variables or making predictions. These methods include t-tests, cross-tabulation, factor analysis, etc. (ibid, 2024). Cross-tabulation is the most preferred and widely used method for quantitative data analysis. It uses a basic tabular form, which contains data that have some connection with each other, to evaluate an effective result between different data sets in the research study (JavaTpoint, 2024).

For conducting quantitative data analysis, some tools/software such as relational database management systems (e.g., MySQL, PostgreSQL, Oracle, and Microsoft SQL Server) and statistical software packages (e.g., SPSS, R, Stata, SAS, and MATLAB) can be utilized. For example, MySQL was utilized to improve scholarship management applications for an NGO which aims to improve the lives of children and their families by providing scholarships to children who do not have the finances to get a quality education (Ocran, 2017). In another case, SPSS was used to analyze the knowledge management practices of an NGO named Society for Health Education, one of the leading NGOs in Maldives (Safa, Shakir and Boon, 2006). Additionally, Microsoft PowerBI can be an optimal tool for data analytics and reporting. It is a collection of software services, apps,

and connectors that work together to connect disparate data sets, transform, and clean the data into a data model and create charts or graphs to provide visuals of the data. It is used to find insights within an organization's data.

The differences between the qualitative and quantitative data analysis are shown in Table 3 below.

Table 3. Comparison of quantitative and qualitative data analysis (Source: Hotjar, 2024).




As illustrated in Table 3, quantitative data analysis could answer the “what” questions but not the “why” ones. Thus, qualitative and quantitative data analysis should be treated as complementary processes to find out what is happening in a particular business and why (Hotjar, 2024).

### 3.2.6 Data Sharing

According to AWS (2024), “Data sharing is the process of making the same data resources available to multiple applications, users, or organizations. It includes technologies, practices, legal frameworks, and cultural elements that facilitate secure

data access for multiple entities without compromising data integrity.”. Data sharing improves efficiency within an organization, fosters better R&D, and fosters collaboration with vendors and partners. Additionally, if the data is shared in a secure, lawful, and respectful manner, then creates new opportunities for collaboration that benefit the broader community. However, Data disclosure (e.g. privacy) has potential regulatory, competitive, financial, and security risks (ibid., 2024).

Data can be shared via some tools like cloud storage (e.g. Google Drive, Dropbox, and OneDrive) as well as Network-Attached Storage (e.g., Synology DiskStation and Buffalo TeraStation 5200DN) can be utilized to store data.

### 3.2.7 Data Protection

Cloudian (2024) states that “Data protection signifies the strategic and procedural steps undertaken to safeguard the privacy, availability, and integrity of sensitive data, and is often interchangeably used with the term ‘data security.’”. By protecting data, companies can prevent data breaches, data loss, and damage to reputation, and can better meet regulatory requirements. Data protection solutions rely on technologies such as data loss prevention (DLP), storage with built-in data protection, firewalls, encryption, and endpoint protection (ibid., 2024).

According to CybeReady (2024), some of the best data protection software includes Acronis Cyber Protect, CybeReady, Barracuda Backup, and so on.

### 3.2.8 Data Dissemination

Data Dissemination refers to the “release of data to users through various media (new media and traditional media) such as the internet or online media, press conference or release, article in print newspaper, television or radio interview, etc.” (UNESCO, 2024). In the context of NGOs, this thesis articulates that data should be disseminated in the form of reports on organizational websites and social media, as well as interviews in international media/journals. Engaging data visualization (e.g., charts, graphs, and tables) allows effective dissemination of data to team members and stakeholders of the organizations (Hotjar, 2024).

Data can also be disseminated via various social media platforms such as Facebook, X/Twitter, Instagram, LinkedIn, YouTube etc. The dissemination results can be measured with KPIs such as likes, followers and comments.

### 3.2.9 Some Tools/Software Used in DM

The following Table 4 lists some tools/software used in DM. The lists are collected by referring to the websites that explain specific tools/software that can be used to carry out specific DM tasks such as collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data.

Table 4. Some Tools/Software Used in Data Management (DM).

| Tools/Software | Referenced websites | Short introductions |
|---|---|---|
| **Data Collection**<br><br>- Google Forms<br><br>- Tableau<br><br>- Qlik Sense<br><br>- Looker | https://www.google.com/forms/about/<br><br>https://www.tableau.com/<br><br>https://www.qlik.com/us/products/qlik-sense<br><br>https://cloud.google.com/looker/ | Google Form is a survey builder application that allows one to create customizable survey forms that can be shared among samples using a web URL.<br><br>Tableau is the world's leading AI-powered analytics and business intelligence platform.<br><br>Qlik Sense is a business intelligence (BI) and visual analytics platform that helps global enterprises move faster and work smarter.<br><br>Looker is a data exploration and analytics solution combining modelling, transformations, and derivations at the same layer. |
| **Data Cleaning**<br><br>- Tableau Prep<br><br>- OpenRefin | https://www.tableau.com/products/prep<br><br>https://openrefine.org/ | Tableau Prep Builder provides a modern approach to data preparation, making it easier and faster to combine, shape, and clean data for analysis within Tableau.<br><br>OpenRefine is a powerful free, open-source tool for working with messy data: cleaning it; transforming it from one format into another; and extending it with web services and external data. |
| **Data Integration**<br><br>- Data integration platforms (e.g., Microsoft Azure Data Factory, Talend Open Studio, and Informatica PowerCenter) | https://azure.microsoft.com/en-us/products/data-factory<br><br>https://www.talend.com/products/talend-open-studio/<br><br>https://docs.informatica.com/data-integration/powercenter/10-5-5.html | Data integration platforms enable the combination and harmonization of data from different sources and formats into a common data model. They also provide tools for data quality assessment, data transformation, data mapping, and data governance. |
| **Data Storage** | | Nowadays users require huge data storage to meet their projects' high-level computational |

| | | |
|---|---|---|
| - Cloud storage (e.g. Google Drive, Dropbox, and OneDrive)<br><br>- External hard drives (e.g., Seagate Backup Plus, Western Digital My Passport)<br><br>- Network-Attached Storage (e.g., Synology DiskStation, Buffalo TeraStation 5200DN) | https://www.google.com/drive/<br>https://www.dropbox.com/<br><br>https://www.microsoft.com/en-gb/microsoft-365/onedrive/online-cloud-storage<br><br>https://www.seagate.com/gb/en/products/external-hard-drives/backup-plus/<br><br>https://www.westerndigital.com/products/hdd/external-hdd<br><br>https://www.synology.com/en-us/dsm<br><br>https://www.buffalotech.com/ | needs (e.g., big data projects, AI, and machine learning). Additionally, huge data storage amounts are needed as backup solutions to protect against data loss due to disaster, failure, or fraud. |
| **Data Analysis**<br><br>- Relational database management systems (RDBMS) such as MySQL, PostgreSQL, Oracle, and Microsoft SQL Server.<br><br>- Statistical software packages such as SPSS, R, Stata, SAS, and MATLAB.<br><br>- Qualitative data analysis software such as NVivo, Atlas.ti, MAXQDA, and Dedoose.<br><br>- Microsoft PowerBI | https://www.mysql.com/<br><br>https://www.postgresql.org/<br><br>https://www.oracle.com/<br><br>https://www.microsoft.com/en-us/sql-server/sql-server-2022<br><br>https://www.ibm.com/products/spss-statistics<br><br>https://www.r-project.org/about.html<br><br>https://www.statanordic.com/index.html<br><br>https://www.sas.com/fi_fi/home.html#<br><br>https://www.mathworks.com/products/matlab.html<br><br>https://help-nv.qsrinternational.com/20/win/Content/about-nvivo/about-nvivo.htm<br><br>https://atlasti.com/<br><br>https://www.maxqda.com/<br><br>https://www.dedoose.com/<br><br>https://www.microsoft.com/en-us/power-platform/products/power-bi/ | RDBMS are widely used for storing and querying large and complex datasets including census data, economic indicators, and social network data.<br><br>Statistical software packages provide various functions for data analysis as well as output (i.e. presentation) options for data visualization and reporting.<br><br>Qualitative data analysis software supports the analysis of non-numerical data including text, audio, video, and images. They also allow for conducting various analyses such as content analysis, discourse analysis, narrative analysis, and visualization.<br><br>Microsoft PowerBI can be an optimal tool for data analytics and reporting. It is a collection of software services, apps, and connectors that work together to connect disparate data sets, transform, and clean the data into a data model and create charts or graphs to provide visuals of the data. It is used to find insights within an organization's data. |
| **Data Sharing** | | |

| | | |
|---|---|---|
| - Via cloud technologies (e.g. Google Drive, Dropbox, OneDrive, and Hybrid cloud)<br><br>- Via Network-Attached Storage (e.g., Synology DiskStation, Buffalo TeraStation 5200DN) | https://www.google.com/drive/<br><br>https://www.dropbox.com/<br><br>https://www.microsoft.com/en-gb/microsoft-365/onedrive/online-cloud-storage<br><br>https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-hybrid-cloud-computing#:~:text=A%20hybrid%20cloud%E2%80%94sometimes%20called,to%20be%20shared%20between%20them.<br><br>https://www.synology.com/en-us/dsm<br><br>https://www.buffalotech.com/ | Data sharing improves efficiency within an organization, fosters better R&D, and fosters collaboration with vendors and partners. Additionally, if the data is shared in a secure, lawful, and respectful manner, then creates new opportunities for collaboration that benefit the broader community. |
| **Data Protection**<br><br>- Acronis Cyber Protect<br><br>- CybeReady<br><br>- Barracuda Backup | https://www.acronis.com/en-us/<br><br>https://cybeready.com/<br><br>https://www.barracuda.com/products/data-protection/backup | Acronis Cyber Protect provides backup and restoration for individual files or entire systems.<br><br>CybeReady has a fully managed training program that transforms the security culture for organizations of all sizes.<br><br>Barracuda Backup helps protect against data loss by backing up data to dedicated on-site hardware and cloud-based virtual machines (VMs). |
| **Data Dissemination**<br><br>- Printed newspapers and magazines<br><br>- Via various social media platforms (e.g., Facebook, X/Twitter, Instagram, LinkedIn, and YouTube etc.) | https://www.facebook.com/<br><br>https://twitter.com/<br><br>https://www.instagram.com/<br><br>https://www.linkedin.com/<br><br>https://www.youtube.com/ | Data dissemination is the “release of data to users through various media (new media and traditional media) such as internet or online media, press conference or release, article in print newspaper, television or radio interview, etc.” (UNESCO, 2024). |

More information about the specific DM tools/software and their pricing policy can be found on their websites shown in Table 4. Organizations can choose the tools/software according to their capacity (e.g. HR and finance) and DM needs.

### 3.2.10 Data Management in Research and Development and NGOs

In the context of research and development, Data Code Design (2024) provides comprehensive solutions for DM. The solutions should be achieved by answering the following questions: a) What data is missing? b) How is data integrated? c) What data is currently stored and how is it analyzed? Where and how is data stored? In which intervals? d) How is data processed, analyzed, and visualized? e) How available is data for any member of the team? f) What is the state of data security and data privacy? What backup and archiving solutions are available?

For humanitarian, development, and social action projects, CartONG (2024) addressed a concept called “Information Management” i.e., the data management cycle for NGOs. The data management cycle consists of the following elements which are shown in Figure 2 below.

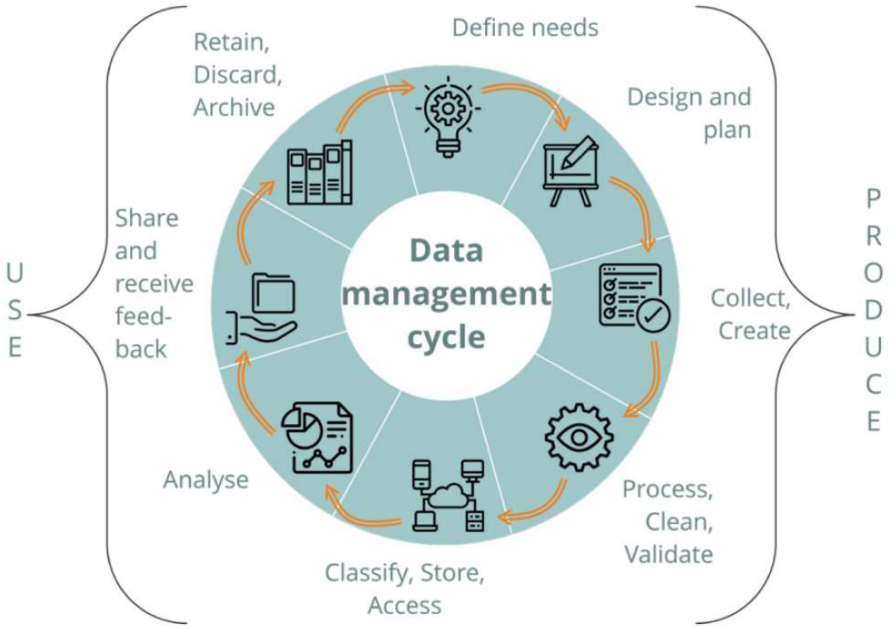



Figure 2. Data management cycle (CartONG, 2024).

As seen in Figure 2, the data management cycle for NGOs requires a range of steps namely defining the needs, planning for collecting data, ensuring data quality (data cleaning and validating), analyzing the data, sharing the data with beneficiaries to promote evidence-based decision-making, and getting feedback from beneficiaries and communities involved in the project.

Wuta (2023) points out that many NGOs face significant barriers in terms of DM, for example, barriers in data analysis that can hinder turning data into insights which consequently prevents data-driven decision-making. Data analysis challenges for NGOs include (ibid., 2023): a) Limited data analysis skills that could undermine the impact of NGOs' projects; b) Struggling to standardize data collection and entrance as well as ensuring data accuracy; c) Limited resources such as tools/software, budget, and personnel.

According to Wuta (2023), to overcome those challenges, NGOs' must invest in staff training in data analysis, develop standardized data collection methods, explore open-source data analysis tools/software, and cooperate with other organizations to share knowledge and resources.

In summary, it is worth noting that some of the categorized tools/software can be used to do different DM tasks. This means that some of the tools/software can be used to do more than one DM task. For example, Google Drive, Dropbox, and OneDrive can be utilized to store data as well as to share data. NVivo, Atlas.ti, MAXQDA, Dedoose etc. not only used to collect data but to analyze data as well. The selection and usage of DM should be based on the capacity and needs of an organization. Organizations need to invest in developing staff competencies in DM.

The next section describes the best practice for evaluating and improving DM performance in the context of research and development and NGOs

## 3.3 Best Practice for Evaluating and Improving DM Performance in the Context of Research and Development and NGOs

This section addresses some good practices for evaluating and improving DM performance in R&D and NGOs.

### 3.3.1 Evaluating DM Performance in R&D and NGOs

According to Smith and Sutherland (2002), performance is "the functioning of a program or organization over which the actors involved have direct control or a manageable interest'. Yawson and Sutherland (2010, p.166) extend the concept to performance measurement which refers to "the system (methods and tools) used to monitor and

assess the program or organization's functioning". This thesis study, in the context of DM in R&D and NGOs, sees the performance evaluation as assessing or evaluating each process/component - collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data - of DM.

For NGOs, the topic of performance evaluation has become urgent. This is because NGOs encounter increasing competition from an increasing number of similar organizations, all competing for scarce donors, foundations, and government funding (Kaplan, 2001). Research and Development (R&D) organizations are also "under pressure not only to improve their performance but also to be able to demonstrate this improvement." (Yawson and Sutherland, 2010, p.163). Because R&Ds are faced with survival challenges within an increasingly complex and competitive global environment (ibid., 2010).

According to the European Commission (2024), data management plans are a key element of good data management. The plan should include the following information on: a) the handling of research data during & after the end of the project; b) what data will be collected, processed and/or generated methodology & standards will be applied; c) whether data will be shared/made open access; d) and how data will be curated & preserved (including after the end of the project).

Good DM performance evaluation practices ensure the quality and integrity of data, reduce errors and duplication, and comply with legal and ethical standards (QlikTech International AB, 2024). Science Europe (2024) developed "Guidance on the Evaluation of Data Management Plans". The guidance is presented in the form of a rubric and lists the different DM criteria and performance levels that indicate to what extent the criteria are met. The rubric contains two DM performance levels: 'Sufficiently Addressed' and 'Insufficiently Addressed'. Insufficiently addressed refers either to a lack of information or to information deemed incorrect. The guidance is relevant to this thesis study, i.e. good practices for evaluating DM performance. Because the core evaluation criteria in the guidance can and should be adapted to concerning the existing institutional (e.g. organizational) practices (ibid., 2024).

Thus, based on data and data management literature (Astera, 2024; Australian Bureau of Statistics, 2024a&b; AWS, 2024; Cloudian, 2024; CybeReady, 2024; Delen, 2014; Data Code Design, 2024; Hotjar, 2024; IBM, 2024; JavaTpoint, 2024; QlikTech

International AB, 2024; Rod Pierce, 2024; Tableau, 2024; UNESCO, 2024) discussed in section 3.1. and 3.2 as well as inspired by the works of the European Commission (2024) and Science Europe (2024), this thesis study evaluates DM performance as shown in the following Table 5.

Table 5. Evaluating DM Performance in R&D and NGOs.

| DM Component | DM Performance Evaluation | |
|---|---|---|
| | **Evaluation Question** | **Evaluation Criteria. To what extent:** |
| **Data Collection** | How primary data is produced and/or how secondary data is collected? | • Utilized the appropriate methods and tools/software for collecting data.<br>• The collected data is reliable. |
| **Data Cleaning** | How is data cleaned? (i.e., fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset) | • Used the appropriate methods and tools/software for cleaning data. |
| **Data Integration** | How is data integrated? | • Used data interoperability techniques/software that enable data exchange and integration across different platforms, sources, and formats. |
| **Data Storage** | How is data stored and backed up? (i.e., use cloud storage, external hard drives, and network-attached storage to record and preserve digital information for ongoing or future project operations) | • Used the appropriate tools/software for storing data. |
| **Data Analysis** | How is data analyzed? | • Used the appropriate methods and tools/software for analysing qualitative and quantitative data. |
| **Data Sharing** | How is data shared? (i.e., make the same data resources available to multiple users or partner organizations) | • Used the appropriate tools/software to share data while respecting privacy. |
| **Data Protection** | How is data protected? (i.e., safeguard the privacy/security of sensitive data) | • Implemented data security (e.g., physical security, network security, and security of computer systems and files) measures to protect the data from unauthorized access, modification, or loss as well as recover the data in the event of an accident. |

| | | |
|---|---|---|
| **Data Dissemination** | How is data disseminated? | • Released reports on the organizational website and social media, as well as gave interviews and/or published reports in international media/journals.<br>• Utilized appropriate tools/software to produce attractive presentations (i.e. visualization) for the project reports.<br>• The number of:<br>reports and/or interviews; report reading on the organizational website; visitors on the organizational website; followers on social media, etc. |

As described in Table 5, each component of DM performance can be evaluated based on the specific questions and evaluation criteria. The criteria include the utilization of appropriate methods and tools/software for doing the specific DM tasks such as from data collection to data dissemination.

### 3.3.2 Improving DM Performance in R&D and NGOs

Similar to the way of DM performance evaluation, improving DM performance should be done by improving each component - collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data - of DM. DM performance improvement could be achieved after evaluating a specific (e.g., case organization) R&D or NGO's DM performance.

However, in general, *Data collection* can be improved by defining data objectives/needs before starting to collect data and validating data reliability via cross-reference information from diverse reputable sources (LinkedIn, 2023a). According to OECD (2015, p.190), "A data collection process should strive to minimise the burden and cost and maximise timeliness, the response rate and accuracy.".

*Data cleaning* can be improved by using automated tools and scripts (e.g., pandas in Python or dplyr in R) to perform common data cleansing tasks, documenting the task process, as well as handling missing values appropriately via appropriate methods and techniques (LinkedIn, 2023b).

*Data integration* can be improved by using API-based integration which allows for communication and data exchange between different software applications and systems, utilizing low-code/no-code integration platforms that can be built by users with minimal coding techniques etc. (Remedi, 2023).

*Data storage* can be improved by utilizing could computing services (e.g., HashRoot cloud managed service) which makes automation, security, performance monitoring and cost management possible (HashRoot, 2021). Additionally, cloud services like Google Drive or Dropbox can be used to back up data for restore it in case of data loss (Leadspace, 2024).

*Data analysis* performance can be improved by constantly learning new tools/software and techniques (e.g., coding languages, libraries, platforms) that handle different types of data, perform complex calculations, and create interactive visualizations (LinkedIn, 2024). OECD (2015, p.180) doesn't recommend specific methods for surveys or data analysis, " as the variety of national circumstances is too great to permit the preparation of standard rules of approach to respondents, or of standard questionnaires or sampling techniques.".

*Data sharing* can be improved by careful consideration of the ethical, legal, and practical issues including data ownership, anonymization, as well as using appropriate platforms to share the data.

*Data protection* can be improved by following data privacy guidelines and regulations, using appropriate technologies such as encryption, authentication, authorization, and backup, as well as regularly reviewing and updating data security practices (LinkedIn, 2023c).

*Data dissemination* can be improved by assessing the user's needs (e.g. expectations), using appropriate tools/software to produce attractive presentations (i.e. visualization) for the project reports, as well as increasing the number of reports on international media/journals, on the organizational website and social media and so on (Hotjar, 2024; LinkedIn, 2023a; UNESCO, 2024).

In summary, there are different ways to improve DM performance concerning each element of DM components. An organization should choose the appropriate way according to its capacity for human and financial resources.

The next section describes the role of NGOs in exposing human rights abuse and the future of DM in this area.

## 3.4 The Role of NGOs in Exposing Human Rights Abuse and the Future of DM in this Area

NGOs such as Amnesty International, Human Rights Watch, International Federation for Human Rights, and Reporters Without Borders etc. have played important roles in exposing human rights abuse around the world. They often operate in situations when the state is either unwilling or unable to protect the rights of its citizens, or even the state itself is the perpetrator of violations. They have advocated for justice, accountability, and reform by documenting, investigating, and reporting on violations of international law and human dignity. They disseminate their findings (e.g., reports, and press releases), organize campaigns, and lobby governments and international institutions. By doing so, they raise awareness, mobilize public opinion, and pressure governments to stop human rights violations (Meernik, Aloisi, Sowell, and Nichols., 2012).

NGOs have contributed to the development of international human rights laws and standards, as well as the establishment of mechanisms for monitoring and enforcement. They made important contributions to the establishment and strengthening of the international human rights system including the UN human rights system (Van Tuijl, 1999). In this way, they have influenced the policies and actions of governments, and corporations. For example, in December 2022, US President Biden signed the Uyghur Forced Labor Prevention Act into law. According to this law, the United States Department of Homeland Security (2022) prevents the importation of goods produced using forced labour in ETR (a.k.a. Xinjiang). The European Union also looks to follow the US action on forced labour and has proposed a far-reaching ban on the sale of goods made with forced labour (Vanderford, 2022). In Europe, companies including H&M etc. are under increasing pressure to prove their supply chains are not related to forced labour. H&M announced no longer sourcing cotton from ETR where China is committing human rights violations (Smith, Scholz & Williams, 2022). The company’s decision to terminate cotton sourcing from ETR only took place after an NGO, namely Better Cotton

Initiative's (BIC) decision to suspend its activities in the region. Importantly, the BIC made such a decision based on forced labour reports by media (BBC, 2021; Shepherd, 2021), human rights activists, NGOs (UHRP, 2023; Business & Human Rights Resource Centre, 2023), and United Nations (OHCHR, 2022).

The improved DM performance can strengthen the NGOs' role in exposing human rights abuse in the future. At the same time, NGOs face challenges in terms of DM. For example, how to protect data related to human rights abuse. Such data can include testimonies, photographs, videos, legal documents, and other evidence that can be used to expose perpetrators. Also, in the age of misinformation and digital manipulation, it is especially important to ensure the reliability of data.

## 3.5 Conceptual Framework (CF) of this Thesis

Conceptual framework (CF) summarizes good practices found in existing literature. CF provides a theoretical approach to solving problems such as improving performance relevant to a particular project. CF of this thesis is to evaluate and improve the DM performance in R&D and NGOs especially devoted to human rights issues.

The CF for this thesis is presented in Table 6. It consists of three main themes namely Data, DM, and the performance evaluation and improvement of DM which were discussed above. These discussions are put together to build the foundation for conducting a Current State Analysis (CSA) of DM Performance in the case organization: Uyghur Rights Monitor (URM). Each theme addresses a set of questions which are relevant when conducting CSA of URM's DM in Section 4 of this thesis.

Table 6. The Conceptual Framework (CF) of this Thesis.

| **Data and Data Management (DM)** | **DM Performance Evaluation** | **DM Performance Improvement** |
|---|---|---|
| Astera, 2024; Australian Bureau of Statistics, 2024a&b; AWS, 2024; Cloudian, 2024; CybeReady, 2024; Delen, 2014; Data Code Design, 2024; Hotjar, 2024; IBM, 2024; JavaTpoint, 2024; QlikTech International AB, 2024; Rod Pierce, 2024; Tableau, 2024; UNESCO, 2024.<br>Website address of the tools/software used in DM. | Astera, 2024; Australian Bureau of Statistics, 2024a&b; AWS, 2024; Cloudian, 2024; CybeReady, 2024; Delen, 2014; Data Code Design, 2024; Hotjar, 2024; IBM, 2024; JavaTpoint, 2024; QlikTech International AB, 2024; Rod Pierce, 2024; Tableau, 2024; UNESCO, 2024; European | HashRoot, 2021; Hotjar, 2024; Leadspace, 2024; LinkedIn, 2023a; LinkedIn, 2023b; LinkedIn, 2023c; LinkedIn, 2024; Remedi, 2023; UNESCO, 2024. |

| | | |
|---|---|---|
| | Commission, 2024; Science Europe, 2024. | |
| Key questions:<br>1. What is data?<br>2. What is Data Management (DM)?<br>3. What are the components of the DM cycle and their definitions?<br>• Data Collection?<br>• Data Cleaning?<br>• Data Integration?<br>• Data Storage?<br>• Data Analysis?<br>• Data Sharing?<br>• Data Protection?<br>• Data Dissemination?<br>4. What are the tools/software used in DM? | Key question:<br>5. What is the best practice for evaluating DM performance in R&D and NGOs? | Key question:<br>6. What is the best practice for improving DM performance in R&D and NGOs? |
| - Answering the questions:<br><br>There is no unified definition of data. Data can be divided into different categories. This thesis defines Data Management (DM) as the process of collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data with the maximum capacity of an organization to achieve organizational goals. Some of the DM tools/software can be used to do more than one DM task. The selection and usage of DM tools should be based on the capacity and needs of an organization. | - Answering the questions:<br><br>Each component of DM performance can be evaluated based on the specific questions and evaluation criteria. The criteria include the utilization of appropriate methods and tools/software for doing the specific DM tasks such as from data collection to data dissemination. | - Answering the questions:<br><br>There are different ways to improve DM performance concerning each element of DM components. An organization should choose the appropriate way according to its capacity for human and financial resources. |

As presented in Table 6, in the first theme, the concepts of data, data management (DM), and the components of DM (i.e., data collection, data cleaning, data integration, data storage, data analysis, data sharing, data protection, and data dissemination) were defined. These concepts must be addressed, as they are the core elements of Data Management.

In the second theme, best practices for evaluating DM performance were addressed. In the third theme, best practices for improving DM performance were addressed. These themes are relevant to the thesis because they are an integral part of Data Management.

Guided by this conceptual framework, the next section of this thesis conducts the current state analysis of the case organization´s DM performance. More specifically, following this logic, the case organization´s current DM performance is evaluated.

# 4 Current State Analysis of DM Performance in the Case Organization

This section reports the results from the current state analysis (CSA) of DM performance in the case organization. First, it describes the case organization´s current DM practices. Second, it evaluates (analyzes) the current DM performance to find out the strengths and areas that should be improved, as well as to select the areas for improvement.

## 4.1 Overview of the Current State Analysis

The goal of CSA is to identify and analyze the case organization´s current DM performance. The analysis reveals the strengths and areas that should be improved for current DM performance and enables to selection of the areas for improvement. CSA was done by conducting in-depth interviews with the key stakeholders of the case organization and triangulating the findings from the interviews with secondary sources i.e., existing knowledge and best practice for evaluating DM performance.

The CSA starts by describing the case organization's current DM practices concerning each component of DM including data collection, data cleaning, data integration, data storage, data analysis, data sharing, data protection, and data dissemination. It was done based on in-depth interviews with the case organization's team.

Then, the DM strengths and areas that should be improved are analyzed to select the performance improvement areas for initial proposal building in Section 5 of this thesis. This evaluation revealed the strengths and the improvement areas of DM performance. Based on the results, the CSA within the logic of CF leads to the initial proposal building in Section 5 that should fit the context and challenge of the case organization.

## 4.2 Description of the Current DM Practices

This section describes the case organization´s DM practices involved in each component of DM.

### 4.2.1 Data Collection

The case organization collected data mainly from secondary sources, i.e. data collected by someone else earlier. This is illustrated in the following quote:

> “The primary data sources for the URM are publicly available information about the genocide in the Uyghur region [ETR]. These include, but are not limited to, government reports produced by China, news articles, corporate records, leaked documents (for example, Xinjiang Police Files), and government websites.” (Appendix 2: Interview 1).

In terms of the data collection method, URM followed a specially designed template as described in the following quote:

> “The researchers follow instructions given by the lead researcher to look for necessary information in those sources and document them accordingly in a template designed for URM works.” (Appendix 2: Interview 1).

The case organization ensured the reliability of data by extensively reviewing up-to-date relevant publications in various languages concerning the organization’s specific data needs, e.g. producing a policy brief on a specific topic. This is illustrated in the following quotation:

> “URM closely follows up with the most updated reports and research articles published on the Uyghur genocide. When there is a need to write a policy brief on a specific topic, the URM team members spend a significant amount of time reading and reviewing relevant literature in various languages, including Chinese and English, and then identify the most relevant resources to enhance the reliability of the report in progress.” (Appendix 2: Interview 1).

The case organization also uses the triangulation method to validate and enhance the data quality. (Appendix 3: Interview 2; Appendix 4: Interview 3).

### 4.2.2 Data Cleaning

At the case organization, Dada Cleaning is carried out manually as illustrated in the following line:

> “Most URM data are qualitative. In multiple languages, it contains words, infographics, photographs, government notices, etc. Therefore, the URM

> researchers manually carry out the data cleaning process. This includes reviewing the data, fact-checking, and translation of the data." (Appendix 3: Interview 2).

Data is cleaned manually because most of URM's data is qualitative by nature.

### 4.2.3 Data Integration

At the case organization, Data Integration is conducted manually by using Microsoft Word. A senior researcher drafts a report, i.e. a policy brief which is the main output/product of URM, based on the data provided by other researchers. The data integration process is illustrated in the following quotation:

> "Data integration is done manually, effectively using Microsoft Office programs. Researchers can choose different platforms, such as Endnotes. However, in the end, when senior researchers review and combine data, the main tool is Microsoft Word. … Hence, the main researcher responsible for the writing process starts drafting the report. If there is anything unclear about the data or the sources provided by other researchers, the senior researcher leaves comments or question marks." (Appendix 3: Interview 2).

The draft is internally circulated among researchers for clarifying data or its sources, as well as for necessary edits and corrections (Appendix 3: Interview 2).

### 4.2.4 Data Storage

Data at the case organization is stored in three different locations namely a cloud drive, a personal computer, and a hard drive. (Appendix 4: Interview 3).

### 4.2.5 Data Analysis

The case organization mainly carried out qualitative Data Analysis in three different ways: the process-tracing method, discourse analysis, and network analysis. This is illustrated in the following quotation:

> "…Qualitative data is generally analyzed using a process-tracing method. The primary aim is to explore the evolution of certain phenomena over time, like the Chinese government's labor transfer programs, to identify critical events, changes in discourse, transformation of side events, and factors affecting that process. URM also utilizes discourse analysis, where it analyzes speeches of government officials to find evidence for the complicity in the genocidal policies [in ETR]. Another critical method used in the URM research is network analysis, which explores the relationship between different agencies involved in specific programs or campaigns." (Appendix 4: Interview 3).

By using the triangulation method, the case organization increases the validity of its reports and avoids errors (Appendix 4: Interview 3).

### 4.2.6 Data Sharing

The case organization shared data with other users and partners via safe communication channels as described in the following line:

> "If any of the users or partner organizations ask for further clarification on the policy briefs or request access to some of the original materials, it is provided with complete transparency using safe communication channels, such as Signal or Protonmail." (Appendix 5: Interview 4).

The case organization shares data on the requests of users or partner organizations (Appendix 5: Interview 4).

### 4.2.7 Data Protection

The case organization protected data by using VPN services, and password lock, as well as regularly backing up data in a hard drive and a safe cloud environment. This is illustrated in the following quotation:

> "URM is highly aware of the sensitivity of the data and, therefore, uses VPN services in the data collection process and stores data in a protected environment from malware attacks. With a password lock, URM files are

> regularly backed up in a hard drive and a safe cloud environment to avoid data loss. Only authorized users can access the files and can modify content." (Appendix 5: Interview 4).

The case organization claimed that, currently, it does not need sizable data storage. However, that might not be the case in the future when URM deals with a bigger amount of data (Appendix 5: Interview 4).

### 4.2.8 Data Dissemination

The case organization disseminated data, i.e., policy briefs and infographics, by publishing them on its organizational website, sharing them on social media, as well as engaging with key journalists and relevant partners. This is illustrated in the following quote:

> "URM publishes its policy briefs and infographics on the URM website – www.uyghurrightsmonitor.org. Apart from that, URM also shares its findings with wider stakeholders using social media platforms such as Twitter and Instagram. URM also engages with journalists and relevant stakeholders to disseminate the findings of the report briefs. URM researchers conduct stakeholder mapping to identify key actors and reach out to them to introduce URM's work and ask for their feedback." (Appendix 6: Interview 5).

The case organization also has welcomed other organizations to use its infographics in their presentations or reports which have gained significant support and recognition (Appendix 6: Interview 5).

## 4.3 Analysis of the Current DM Performance

Based on the case organization´s current DM practices that are described above, this section analyses the organization's DM performance.

In terms of Data Collection, the case organization focused on secondary sources that were previously collected by someone else. This means that the case organization lacks

its own produced data, i.e. primary data that can be collected/produced via surveys, interviews, and observations that are specially designed for understanding and solving a specific research question. The case organization's utilization of a data collection template enhances the organization's data collection efficiency according to certain standards. The case organization collects reliable data thanks to its researcher's ability to extensively review up-to-date relevant literature published in Chinese and English language as well as to use the triangulation method for validating and enhancing the data quality.

At the case organization, researchers carried out Data Cleaning manually because most of its data is qualitative by nature. The researchers are familiar with data cleaning processes such as reviewing, fact-checking, and translating the data.

The case organization conducted Data Integration by using Microsoft Word and circulating the research report internally among researchers for clarifying data or its sources, as well as for necessary edits and corrections.

The case organization was able to Store Data in three different locations such as a cloud drive, a personal computer, and a hard drive, in case of data loss.

Researchers at the case organization mainly carried out qualitative Data Analysis in three different ways: process-tracing method, discourse analysis, and network analysis. By doing so, the case organization has revealed evidence of the Chinese government's complicity in human rights abuses including genocidal policies in ETR.

The case organization has Shared Data with other users and partner organizations via communication channels including Signal or Proton mail.

Data Protection at the case organization was done by using VPN services, password lock, as well as regularly backing up data in a hard drive and a cloud environment. In this way, the case organization has so far managed to prevent unauthorized data access, modification, and data loss. Currently, as a newly established organization, the case organization believes that it does not need a more sizable data storage. However, the case organization realized that in the future it might need a larger data storage for dealing with a larger amount of data.

The case organization has Disseminated Data, i.e., policy briefs and infographics via various channels such as on its organizational website, on social media, by cooperating with key journalists, and relevant partners/organizations. By doing so, the case organization has gained support and recognition which helps the organization achieve its goals to "… unveil atrocity crimes committed by the Chinese Communist Party against Uyghur and other Turkic people living in the Uyghur region [ETR]. … and holding the perpetrators accountable." (Appendix 6: Interview 5). However, the case organization doesn't have established numerical indicators to measure data dissemination improvement.

### 4.3.1 DM Strengths and Areas Should be Improved

Based on the previous analysis of URM's current DM performance, this section summarizes the strengths of the DM and areas that should be improved as shown in Table 7 below:

Table 7. URM's DM Strengths and Areas Should be Improved.

| **DM Component** | **Analysis of the Case Organization´s Current Data Management (DM) Performance** | |
|---|---|---|
| | **DM Strengths** | **Area/s Should be Improved** |
| **Data Collection** | • Data is collected by the utilization of a specially designed template.<br>• URM collects data by utilizing its researcher's ability to extensively review up-to-date relevant literature published in Chinese and English language as well as to use the triangulation method. | • Consider the collection of primary data, i.e., its own produced data which can be produced by conducting surveys, interviews, and observations. |
| **Data Cleaning** | • URM researchers are familiar with qualitative data cleaning processes such as reviewing, fact-checking, and translating the data. | • N/A |
| **Data Integration** | • Data integration by using Microsoft Word and circulating the research report internally among researchers for clarifying data or its sources, as well as for necessary edits and corrections. | • N/A |
| **Data Storage** | • Data storage by placing them in three different locations such as a cloud drive, a personal computer, and a hard drive, in case of data loss. | • Consider not using a personal computer for storing sensitive data. |
| **Data Analysis** | • URM researchers are acquainted with different methods of qualitative data analysis namely | • N/A |

| | | |
|---|---|---|
| | process-tracing method, discourse analysis, and network analysis. By doing so, URM has revealed evidence of the Chinese government's complicity in human rights abuses including genocidal policies in ETR (a.k.a. Xinjiang). | |
| **Data Sharing** | • During data sharing, URM has respected data privacy by using safe communication channels including Signal or Proton mail. | • N/A |
| **Data Protection** | • URM has protected data by using VPN services, password lock, and regularly backing up data in a hard drive and a safe cloud environment. In this way, URM prevented unauthorized data access, modification, and data loss. | • A larger data storage for dealing with a growing amount of data in the future. |
| **Data Dissemination** | • Data (i.e., policy briefs and infographics) Dissemination via various channels such as on its organizational website, and by cooperating with key journalists, and relevant partners. | • Development of indicators to measure data dissemination improvement such as yearly increase in the number of:<br>- published policy briefs/infographics and/or interviews<br>- positive feedback from users/audiences including donors, policymakers, partners, the public, and academic institutions.<br>- policy briefs/infographics reading/downloading on the URM website<br>- visitors to the URM website<br>- URM followers on social media |

As shown in Table 7, the case organization has strength in all components (e.g., from Data Collection to Data Dissemination) of DM. However, URM should improve its performance regarding primary data collection, larger data storage, and the establishment of numerical indicators to measure data dissemination progress.

### 4.3.2 Selected Areas for Improvement

Based on the findings from Table 7, this thesis selected the following areas of DM performance that should be improved. At the same time, explain the reasons for the selections.

#### 4.3.2.1 Collection of Primary Data

URM has not collected primary data, i.e., its own produced data. Primary data can be collected/produced via surveys, interviews, and observations. It is important to collect primary data because it is authentic and up-to-date. This statement is supported by Formplus' (2024) vision, which claims that: "Primary data is very reliable because it is usually objective and collected directly from the original source. It also gives up-to-date information about a research topic compared to secondary data." At the same time, collecting primary data is costly and takes time. However, the triangulation of secondary data, which was collected efficiently by URM, with the primary data can increase the productivity and quality of URM's output/reports and consequently help URM to achieve its organizational goals while enhancing accountability &social impacts.

#### 4.3.2.2 Access to a Larger Data Storage

URM needs to access larger data storage because that might be the forthcoming necessity of storing/backing up huge data to protect against data loss due to disaster, failure, or fraud.

#### 4.3.2.3 Establishment of KPIs to Measure Data Dissemination Improvement

The numerical indicators can be:

- the yearly published number of policy briefs/infographics and/or interviews

- positive feedback from users/audiences including donors, policymakers, partners, the public, and academic institutions

- policy briefs/infographics reading on the URM website per year

- number of visitors to the URM website per year

- number of URM followers on social media

It is important to establish the numerical indicators because they:

- remind URM to continuously increase the research output, i.e., policy briefs/infographics which unveil the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people living in ETR and hold the perpetrators accountable.

- encourage URM to keep positive feedback from users/audiences. Audiences' satisfaction reflects the level of achievement of URM's organizational goals i.e. accountability &social impacts.

- encourage URM to increase the visibility of its achievements through its website and social media.

The next section of this thesis builds initial recommendations for improving URM's DM performance.

# 5 Initial Proposal (Recommendations) for Improving the Case Organization's DM Performance

This section builds the initial proposal for improving performance in the case organization´s selected DM areas. It is done by merging the results of CF (in Section 3), CSA (in Section 4), and input from the key stakeholders (the case organization´s team) on the co-creation of improving the DM performance (Data 2, in Section 5).

## 5.1 Overview of the Initial Proposal Building Stage

The initial proposal for improving the case organization´s DM performance is created in the following steps. First, the existing knowledge and best practices for evaluating and improving DM performance in NGOs were reviewed and summarized in CF. Second, based on the in-depth interviews (1-5) with the case organization´s team, the CSA was conducted. The CSA revealed the strengths of the case organization's DM practices and the DM areas that should be improved. Third, an in-depth interview (6) was conducted to invite the URM team to input their considerations on the co-creation of improving performance in the selected DM area. The case organization´s input was recorded as Data 2.

After all, the initial proposal was created that aims to improve the case organization´s performance in the selected DM area. The Proposal addressed the improvement of each component of DM practices such as collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data. It was built by integrating the existing knowledge and best practices for improving DM performance, the current DM practices in the case organization, and the case organization´s input on improving DM performance. The involvement of the case organization´s team, which is also the validator of the final proposal, ensured that the case organization´s voices and considerations were included in the initial proposal. This makes the DM performance improvements in the selected DM area as suitable as possible for the case organization.

## 5.2 Input (Data 2) from the Stakeholders to Co-create the Initial Recommendations

After conducting the CSA on the case organization´s DM performance, an in-depth interview (see Appendix 6) was sent to the case organization´s team via e-mail. The interview asked the team to input their thoughts on how to improve performance in the selected DM areas. Their input was recorded as Data 2 (see Appendix 6) and used for

building the initial proposal. The inclusion of the inputs from the case organization´s team in the initial proposal building makes the final DM improvement proposal as suitable as possible for URM.

In terms of improving the performance in primary Data Collection, the URM team considered the bulk downloading of reliable primary data from a pool as the solution. The data pool is in Chinese language and available from the case organization´s partner organizations. This is illustrated in the following quote:

> “We think the URM team can further enhance the ability of collecting primary data by bulk downloading useful sources in Chinese language. … We have been partnering with relevant oganizations that have a pool for [of] primary data in Chinese language to collaborate in terms of using reliable materials that might no longer be publicly available or have limits in term of accessability.” (Appendix 7: Interview 6).

However, currently, the case organization lacks competence in collecting the primary data from the data pool. (Appendix 7: Interview 6).

Pondering the possibility of Data Storage, the case organization pointed to the need for storing a larger amount of data in the future. Therefore, the case organization also considered improving Data Protection by obtaining protected and encrypted data storage. (Appendix 7: Interview 6).

Also, the case organization contemplated that Data Dissemination should be improved by appointing a new team member who is responsible for disseminating the case organization´s reports on social media and collecting follow-up feedback. This is illustrated in the following quotation:

> “We might need a social media/engagement team member who helps to disseminate the findings of URM reports and follow up with relevant stakeholders to get more feedback to our work.” (Appendix 7: Interview 6).

At the same time, due to the case organization´s limited capacity, there is no social media strategy which caused the underutilization of the organization’s social media accounts. (Appendix 7: Interview 6).

Additionally, the case organization has not considered improving Data Dissemination by utilizing any KPIs such as the number of published reports, the number of interviews with journalists, and keeping positive feedback from its audiences etc.

By considering the inputs from the case organization´s team, the following section builds initial recommendations.

## 5.3 The Initial Recommendations

This section describes the initial recommendations for improving the case organization´s performance in the selected DM area as shown in the following.

### 5.3.1 Collection of Primary Data

The case organization should develop its competencies, by training its team members, in collecting reliable primary data from the data pool available from the case organization´s partner organizations.

At the same time, the case organization should consider starting to collect its own primary data by conducting surveys and interviews with the witnesses of China's oppression of Uyghurs and other Turkic people of ETR. Primary data is reliable and gives up-to-date information about a research topic (Formplus, 2024). Using primary data in project reports helps URM to achieve its goal while enhancing its accountability and social impact.

### 5.3.2 Access to a Larger Data Storage

The case organization should consider obtaining protected and encrypted larger data storage that might be needed in the future to process the increasing amount of data and to safely back up data to prevent loss.

The case organization could enlarge data storage by using several free cloud storage (e.g. Google Drive, Dropbox, and One Drive) that have limited capacity.

If the case organization's financial situation allows, it should also consider purchasing one of the following data storage such as external hard drives (e.g., Seagate Backup Plus, and Western Digital My Passport) and network-attached storage (e.g., Synology DiskStation, and Buffalo TeraStation 5200DN).

### 5.3.3 Establishment of KPIs to Measure Data Dissemination Improvement

The case organization should train and appoint a team member to take care of disseminating the case organization´s reports on social media and collect audience feedback.

Meanwhile, the case organization should consider utilizing the numerical indicators that measure the improvement in data dissemination as shown in Table 8 below.

Table 8. Recommended KPIs for Measuring Improvement in the case organization's Data Dissemination.

| **Data Dissemination** | |
|---|---|
| **Objective** | **KPIs of Measuring Improvement** |
| URM project reports (policy briefs/infographics) delivered to audiences | X number of published reports on URM's website |
| Increase URM visibility in the international media | X number of interviews given to key journalists |
| Audiences' satisfaction with URM's work | Keeping positive feedback, i.e., 4 out of the 5-point Likert scale survey |

Using the KPIs, as shown in Table 8, could help the case organization to keep track of its project output/report, encourage it to retain its visibility in international media, as well as remind it to track feedback from audiences. These indicators might help the case organization not only achieve its goal but also enhance its accountability and social impact.

The validation of the initial recommendation is discussed in the following section.

# 6 Validation and the Final Recommendations

This section presents the validation of the initial recommendations that were built in section 5. Final recommendations for improving the case organization´s DM in the selected area are presented at the end of this section.

## 6.1 Overview of the Validation Stage

Validation is done based on the feedback from the case organization´s team. The team's input was included in the process of co-creating the initial recommendations in Section 5 of this thesis. This means that the validation stage is done by updating the contents of the initial proposals according to the feedback. The case organization was involved both in the creation of initial recommendations and validation of them. That involvement makes the final recommendations of improving performance in the selected DM area as much as suitable for the real situation of the case organization.

## 6.2 Input (Data 3) from the Stakeholders

This section describes the feedback, i.e., opinions and suggestions from the case organization´s team concerning the initial proposals for improving performance in the selected DM areas. The validation of the initial recommendations, which are based on Data 3, are summarized in Table 9 below.

Table 9. Feedback (Data 3) Summary of the Initial Recommendations.

| Recommendations Title | Feedback | Descriptions (see Appendix 8: Interview 7) |
|---|---|---|
| Collection of Primary Data | Positive and constructive | "We highly appreciate the recommendation on the collection of primary data. With the current capacity of URM, it is not feasible to collect first-hand data via interviews. However, in the near future, the URM will invest more in the collection of primary data…" |
| Access to a Bigger Data Storage | Positive and constructive | "The data storage recommendations are adequate. However, given the URM's current need and financial situation, free cloud storage might work better." |
| Establishment of KPIs to Measure Data Dissemination Improvement | Positive and constructive | "Numerical indicators make the impact of URM measurable. Therefore, we welcome the recommendations mentioned above. It might also be useful for URM to keep track of its website visitors, social media followers …" |

As shown in Table 9, the key stakeholders appeared satisfied with all initial recommendations on improving the selected DM areas while making some constructive comments. The case organization has highly appreciated the initial proposal for collecting the primary data while concerning its ability to collect first-hand data via interviews due to the case organization´s limited capacity. The case organization acknowledged that the data storage recommendations for using free cloud storage are suitable for them, but they do not opt for purchasing paid data storage due to the case organization´s current financial situation and limited data storage needs. The case organization welcomed the initially recommended numerical indicators for measuring data dissemination improvement while suggesting more indicators such as tracking of the case organization´s website visitors, and social media followers.

Overall, some initial recommendations such as collecting the primary data via interviews and purchasing paid data storage are not feasible due to the case organization´s limited capacity and finance. These constraints are in line with Wuta's (2023) view on NGOs' shortcomings in DM such as limited budget and capacity.

## 6.3 The Final Recommendations

This section presents the final recommendations for improving the case organization´s performance in the selected DM areas as seen in the following. The final recommendations are built by validating the initial recommendations while taking into account the case organization´s restraints such as limited organizational capacity and financial shortage.

### 6.3.1 Collection of Primary Data

The case organization should develop its competencies, by training its team members and spending more time, in collecting reliable primary data from the data pool available from the case organization´s partner organizations. Additionally, the organization should set up automated notifications to receive information on the most recent publications.

### 6.3.2 Access to a Larger Data Storage

The case organization should consider obtaining protected and encrypted larger data storage that might be needed in the future to process the increasing amount of data and

to safely back up data to prevent loss. The case organization should enlarge data storage by using several free cloud storage such as Google Drive, Dropbox, and One Drive.

### 6.3.3 Establishment of KPIs to Measure Data Dissemination Improvement

The case organization should train and appoint a team member to take care of disseminating the case organization´s reports on social media and collect audience feedback.

Meanwhile, the case organization should consider utilizing KPIs that measure the improvement in data dissemination as shown in Table 10 below.

Table 10. The Final Recommendation for using KPIs for Measuring Improvement in the case organization´s Data Dissemination.

| **Data Dissemination** | |
|---|---|
| **Objective** | **Indicators of Measuring Improvement** |
| URM project reports (policy briefs/infographics) delivered to audiences | • X number of published reports on URM's website<br>• X number of visitors on the URM website that can be measured by using Google Analytics |
| Increase URM visibility in the international media | • X number of interviews given to key journalists<br>• X number of followers on URM's social media |
| Audiences' satisfaction with URM's work | • Keeping positive feedback, i.e., 4 out of the 5-point Likert scale survey<br>• X number of social media engagements such as likes and comments |

As shown in Table 10, the case organization should develop better strategies such as using KPIs to enhance the visibility of its project reports and social media content as well as conducting regular surveys to track feedback from its audiences. The strategies might help URM not only achieve its organizational goal but also enhance its accountability and social impact.

The following section is the conclusion of this thesis.

# 7 Conclusions

This is the final section of the thesis that summarizes the key findings and the results of the project. This section consists of four parts namely executive summary, thesis evaluation, managerial implications of the case organization and final words. Details of each part are described as follows.

## 7.1 Executive Summary

The objective of this thesis was to propose recommendations for the Uyghur Rights Monitor (URM) to improve performances in the selected Data Management (DM) areas. As a newly established voluntary organization of three researchers, the case organization is dedicated to investigating and exposing human rights violations in East Turkistan (ETR, a.k.a. Xinjiang Uyghur Autonomous Region). By producing evidence-based policy briefs based on extensive qualitative data, the case organization aims to unveil the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people living in ETR and hold the perpetrators accountable. The case organization's policy briefs expose the agencies behind the planning, decision-making, implementation, and whitewashing of the crime in ETR. The case organization does not have a stable income or long-term donor, and its main activities, e.g. producing the policy briefs, are funded through project-based grants. Improving the case organization's DM performance might support the organization's efforts to expose human rights abuse in ETR and hold the perpetrators accountable. Additionally, the DM performance improvement could increase the credibility of the case organization to its audiences including donors, policymakers, partners, the public, and academic institutions.

This thesis was conducted by utilizing applied action research with qualitative methods. By selecting URM as a case organization, this thesis collected data (1,2,3) through semi-structured in-depth interviews with the the case organization´s team. The results from the team interviews are more reliable compared to individual interviews. Because the case organization's opinion reflects the organization's reality concerning DM practices. The project was carried out according to the pre-established research design stages such as the literature and best practice review, followed by CSA, as well as building the initial and final proposal.

The conceptual framework building, which was done by combining existing knowledge and best practices for evaluating and improving DM performance (see CF) and the findings from in-depth interviews with the case organization´s team (Data 1, CSA), revealed the case organization's DM strengths and the areas that should be improved.

CSA found that the case organization has strength in some components of its Data Management cycle (i.e., data collection, data cleaning, data integration, data storage, data analysis, data sharing, data protection, and data dissemination). At the same time, CSA revealed that the case organization should improve its DM performance regarding primary data collection, data storage, and data dissemination.

The building of the initial recommendations for improving the case organization´s DM performance was focused on three areas namely *Collection of Primary Data, Access to a Larger Data Storage, and Establishment of KPIs to Measure Data Dissemination Improvement*. The initial recommendations were built by merging the results of CF (in Section 3), CSA (in Section 4), and input (Data 2, in Section 5) from the case organization´s team on the co-creation of improving the DM performance. By summarizing good relevant practices found in the existing literature, CF provided a theoretical approach to conducting CSA. The inputs from the case organization´s team, which is also the validator of the final recommendations, ensured that the case organization´s voices and considerations were included in the initial recommendations. This makes the performance improvements in the selected three DM areas as much more suitable as for the case organization.

Validation of the initial recommendations and creation of the final recommendations were done based on the case organization´s feedback (Data 3), i.e., opinions and suggestions concerning the initial proposals. The validation stage was achieved by updating the contents of the initial recommendations according to the feedback. The final recommendations consider the case organization´s restraints such as financial shortage.

Implementing the recommendations could help URM not only enhance its accountability and social impact but also achieve its organizational goal: expose human rights violations in ETR, unveil the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people of ETR, and hold the perpetrators accountable.

## 7.2 Evaluation of the Thesis Project vs. the Objective

The objective of this thesis was to create recommendations for the Uyghur Rights Monitor (URM) to improve performance in the selected Data Management (DM) areas. The expected outcome was detailed recommendations on how to enhance performances in the selected DM areas. By implementing the recommendations, URM could not only enhance its accountability and social impact but also achieve its organizational goal: unveil the Chinese Communist Party's human rights violations in ETR and hold the perpetrators accountable.

This thesis project was executed by following the clear logic of pre-established research design stages and data collection rounds. The stages are Existing Knowledge, CSA, building Initial Recommendations, validation and then the production of Final Recommendations. The literature reviews were done on core concepts including Data, DM, and the good practices of evaluating and improving DM performance in the context of NGOs in human rights. These reviews were summarized in the CF which served as the theoretical framework for conducting CSA on DM performances in URM.

The initial recommendations for improving URM's DM performance in the selected area were created by merging the results of CF, CSA, and input (recorded as Data 2) from the URM team on the co-creation of improving the DM performance. Data 2 was collected via in-depth interviews with the URM team. The input from the URM team, which is also the validator of the final recommendations, ensured that the URM's voices and considerations were included in the initial recommendations. This makes the performance improvements in the selected DM areas as much more suitable as for URM. In addition to the in-depth interviews, collecting Data 2 via online discussion with the URM would bring more views and suggestions to the initial recommendations.

The final recommendations for improving URM performance in the selected DM areas were the outcome of validating the initial proposal with the stakeholders, i.e. the URM team. Validation and then the creation of the final recommendations was done based on the URM team's feedback (recorded as Data 3), i.e., opinions and suggestions concerning the initial proposals. The validation and creation of the final recommendations were achieved by updating the contents of the initial recommendations according to the feedback. Conducting an additional validation through online discussion with the URM would improve the final recommendations.

## 7.3 Managerial Implications to the Case Organization

This thesis project revealed that the case organization has strength in the performances of all DM components: from Data Collection to Data Dissemination. The case organization has achieved its organizational goal despite its capacity restraints, i.e., three voluntary-based researchers and limited finance. However, as described in the final recommendations, there are still DM areas that should be improved.

To implement the final recommendations of improving performances in the selected DM area, the case organization should pay attention to developing its competencies in relevant DM skills. The competencies can be developed by training and then enhancing the case organization´s team members' ability to collect reliable primary data as well as to take care of disseminating the case organization´s reports on social media and collecting audience feedback.

## 7.4 Final Words

The role of inclusive work culture in improving DM performances in NGOs is beyond the scope of this thesis project. However, an inclusive work culture deals with employees who are critical for organizations to achieve their goals. Such a culture might be even more relevant to NOGs which have constraints on budget and capacity (Michael K. Wuta, 2023) as well as depend on employees who voluntarily accept below-market or even no compensation for their work because they believe in the mission of the agency (Yawson and Sutherland, 2010). "Their [employees] personal values motivate them to do good and to contribute to society through the agency's programs. … Such motivated individuals come to the agency already equipped with a clear, albeit personal, idea about how to accomplish the organization's goals." (Kaplan, p.358). Thus, conducting project research on the role of inclusive work culture in improving DM performance could enrich the findings of this thesis study.

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**WRITTEN STATEMENT**
**on the use of AI-based tools in this thesis**

ATTACHMENT to the Master´s Thesis

**WRITTEN STATEMENT**
**on the use of AI-based tools in this thesis**

**by ___Parhad Keyim Idikut___, the student of BI Master´s Degree Programme**

**Thesis title: _____ Improving Performance of Data Management of an NGO Working in Human Rights: The Case of Uyghur Rights Monitor (URM)__**

According to the *"Guidance for addressing the use of AI-based tools in studies at Metropolia Business School (for written submissions)"* from August 2023, I make this statement on the use of AI-based tools in my submitted Master´s thesis.

1) Which AI-bases large language models or other AI-based tools I used

   None

2) In which parts of the thesis which tools were used, and for which tasks *(please make a list)*

   None

3) What portion of the text was helped with these tools, for each use

   None

4) Which prompts were asked, exactly *(please indicate the page number in the text where used)*

   None

5) Here, I describe what continues an ethical and reliable use of AI-based tools that I used *(use, for example, the recommended documents from "MBS Guidance" referred to above)*

   None

6) Here, I describe how ethically and reliably I used the AI-based tools in my thesis submission

   None

This written statement makes part of my thesis and is done to help in evaluation and assessment.

____27.4.2024 ___Helsinki_____
*(Data and place)*

____Parhad Keyim Idikut_____
*(Signature)*

# Data1: Interview 1

In-depth Interview 1

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

FOR THESIS WRITING PURPOSES ONLY.
CONFIDENTIAL, i.e. your Name is Not required.
PLEASE ANSWER THE QUESTIONS AS MUCH AS IN DETAIL.
HIGHLY APPRECIATE YOUR COOPERATION AND HELP.
Correspondence: Mr. Parhad Keyim Idikut, Metropolia University of Applied Sciences
parhad.idikut@metropolia.fi

**Sent: 29.2.2024**
**Received: 20.3.2024**

**01 Could you introduce your organization URM? (in terms of organizational goals & the number of team members and financial situation etc.)**

Uyghur Rights Monitor (URM) is a platform that aims to unveil atrocity crimes committed by the Chinese Communist Party against Uyghur and other Turkic people living in the Uyghur region. The primary aim of the organization is to explain rights violations in the region with evidence-based policy briefs, with effective means, and contribute to the understanding of mechanisms and officials behind the genocide, which is essential in holding the perpetrators accountable. The URM is a newly established, self-organized, and volunteer-intensive platform with three researchers as founding members and volunteers. In terms of financial situation, the URM does not have a stable income or long-term donor. The research and report writing activities are funded through project-based grants.

**02 For your project, how do you produce primary data? (in terms of methods and tools/ software & reliability of the data etc.)**
Primary data refers to data that has been generated by the researcher himself/herself, surveys, interviews, and observations, specially designed for understanding and solving the research problem at hand.

The primary data sources for the URM are publicly available information about the genocide in the Uyghur region. These include, but are not limited to, government reports produced by China, news articles, corporate records, leaked documents (for example, Xinjiang Police Files), and government websites. The researchers follow instructions given by the lead researcher to look for necessary information in those sources and document them accordingly in a template designed for URM works. Then, the primary data is reviewed, organized, and analyzed by the senior researcher.

**03 How do you collect secondary data? (in terms of methods and tools/ software & reliability of the data etc.)**
Secondary data means data collected by someone else earlier. It can include government publications, websites, books, journal articles, internal records etc.

URM closely follows up with the most updated reports and research articles published on the Uyghur genocide. When there is a need to write a policy brief on a specific topic, the URM team members spend a significant amount of time reading and reviewing relevant literature in various languages, including Chinese and English, and then identify the most relevant resources to enhance the reliability of the report in progress. The secondary data is closely analyzed with the available primary data collected by the URM and merged to produce cutting-edge first-hand materials for the policy briefs URM seeks to produce.

# Data1: Interview 2

In-depth Interview 2

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

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HIGHLY APPRECIATE YOUR COOPERATION AND HELP.
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parhad.idikut@metropolia.fi

**Sent: 7.3.2024**
**Received: 20.3.2024**

**01 How do you Clean Data? (in terms of methods and tools/ software)**
Data Cleaning refers to fixing or removing incorrect, corrupt, incorrectly formatted, duplicate, or incomplete data within a dataset.

Most URM data are qualitative. In multiple languages, it contains words, infographics, photographs, government notices, etc. Therefore, the URM researchers manually carry out the data cleaning process. This includes reviewing the data, fact-checking, and translation of the data. The triangulation method is used to validate and enhance the data quality used in the report writing. The useful data is transformed into a draft that will be used in the report writing. The redundant data is also stored in a separate file, with an expectation that it might be useful in future research.

**02 How do you Integrate Data? (in terms of methods and tools/ software)**
Data Integration means the use of data interoperability techniques/software that enable data exchange and integration across different platforms, sources, and formats.

Data integration is done manually, effectively using Microsoft Office programs. Researchers can choose different platforms, such as Endnotes. However, in the end, when senior researchers review and combine data, the main tool is Microsoft Word. The end goal of data integration is to transform the collected and analyzed data into a policy brief and infographic that will be published for a greater audience. Hence, the main researcher responsible for the writing process starts drafting the report. If there is anything unclear about the data or the sources provided by other researchers, the senior researcher leaves comments or question marks. Once the draft is ready, then it is circulated between the researchers for necessary edits and corrections. URM also produces infographics based on the findings. The infographics' structure and content are preliminarily designed by one of the researchers and then reviewed internally before passing it to the graphic designer.

# Data1: Interview 3

In-depth Interview 3

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

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Correspondence: Mr. Parhad Keyim Idikut, Metropolia University of Applied Sciences
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**Sent: 11.3.2024**
**Received: 20.3.2024**

**01 How do you Store and back up Data?**
Data Storage refers to the use of cloud storage, external hard drives, and network-attached storage to record and preserve digital information for ongoing or future project operations.

The data collected by various researchers are stored in three different locations: a cloud drive, the personal computer of one of the researchers, and backed up in a hard drive.

**02 How do you Analyze Data? (in terms of methods and tools/ software)**
Data Analysis means the use of appropriate methods and tools/software for analyzing qualitative and quantitative data.

URM generally works with qualitative data. However, sometimes, it also encounters statistical data from government reports that are relevant to the research. Qualitative data is generally analyzed using a process-tracing method. The primary aim is to explore the evolution of certain phenomena over time, like the Chinese government's labor transfer programs, to identify critical events, changes in discourse, transformation of side events, and factors affecting that process. URM also utilizes discourse analysis, where it analyzes speeches of government officials to find evidence for the complicity in the genocidal policies. Another critical method used in the URM research is network analysis, which explores the relationship between different agencies involved in specific programs or campaigns. As mentioned in one of the above questions, URM uses the triangulation method to increase the validity of its reports and avoid errors or incorrect information.

# Data1: Interview 4

In-depth Interview 4

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

FOR THESIS WRITING PURPOSES ONLY.
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Correspondence: Mr. Parhad Keyim Idikut, Metropolia University of Applied Sciences
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**Sent: 12.3.2024**
**Received: 20.3.2024**

**01 How do you Share Data? (in terms of methods and tools/ software & respecting privacy)**
Data Sharing means making the same data resources available to multiple users or partner organizations while respecting data privacy.

If any of the users or partner organizations ask for further clarification on the policy briefs or request access to some of the original materials, it is provided with complete transparency using safe communication channels, such as Signal or Proton mail.

**02 How do you Protect Data? (in terms of the privacy/security of sensitive data)**
Data Protection refers to implementing data security (e.g., physical security, network security, and security of computer systems and files) measures to protect the data from unauthorized access, modification, or loss as well as recover the data in the event of an accident.

URM is highly aware of the sensitivity of the data and, therefore, uses VPN services in the data collection process and stores data in a protected environment from malware attacks. With a password lock, URM files are regularly backed up in a hard drive and a safe cloud environment to avoid data loss. Only authorized users can access the files and can modify content. As a newly established organization, URM does not need sizable storage; however, in the future, it might have to take data protection more seriously, especially when dealing with a large amount of data that needs a significant amount of storage.

# Data1: Interview 5

In-depth Interview 5

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

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Correspondence: Mr. Parhad Keyim Idikut, Metropolia University of Applied Sciences
parhad.idikut@metropolia.fi

**Sent: 13.3.2024**
**Received: 20.3.2024**

**01 How do you Disseminate Data?**
Data Dissemination means publishing reports on the organizational website and social media, giving interviews and/or publishing reports in international media/journals, as well as using appropriate tools/software to produce attractive presentations (i.e. visualization) for the project reports.

URM publishes its policy briefs and infographics on the URM website – www.uyghurrightsmonitor.org. Apart from that, URM also shares its findings with wider stakeholders using social media platforms such as Twitter and Instagram. URM also engages with journalists and relevant stakeholders to disseminate the findings of the report briefs. URM researchers conduct stakeholder mapping to identify key actors and reach out to them to introduce URM's work and ask for their feedback. URM also welcomes organizations to use its infographics in their own presentations or reports, which have gained significant support and recognization by far.

**02 How would you rate your overall satisfaction with Data Management performance at URM?**

1 = Very dissatisfied  2 = Dissatisfied  3 = Neutral  4 = Satisfied  5 = Very satisfied

We are satisfied (4) but also think URM needs to have a robust data policy for sustainable long-term development.

**Note: Data Management (DM)**
**refers to the process of collecting, cleaning, integrating, storing, analyzing, sharing, protecting, and disseminating data with the maximum capacity (e.g., the number of trained employees and financial situation etc.) of an organization to achieve organizational goals.**

## Data 2: Interview 6

In-depth Interview 6

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

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Correspondence: Mr. Parhad Keyim Idikut, Metropolia University of Applied Sciences
parhad.idikut@metropolia.fi

**Sent: 25.3.2024**
**Received: 3.4.2024**

Based on the interviews (1-5), this thesis analyzed URM's Data Management (DM) performances. The findings suggest that URM has strength in all components (e.g., from Data Collection to Data Dissemination) of DM. However, the findings also suggest that some areas should be improved, as shown in the following table:

| DM Component | Analysis of URM's Current Data Management (DM) Performance | |
|---|---|---|
| | **DM Strengths** | **Area/s Should be Improved** |
| **Data Collection** | • Data is collected efficiently thanks to the utilization of a specially designed template.<br>• URM collects reliable data thanks to its researcher's ability to extensively review up-to-date relevant literature published in Chinese and English language as well as to use the trianqulation method. | • Collection of primary data, i.e., its own produced data which can be done by conducting surveys, interviews, and observations |
| **Data Cleaning** | • URM researchers' familiarity with qualitative data cleaning processes such as reviewing, fact-checking, and translating the data. | • N/A |
| **Data Integration** | • Effective in data integration by using Microsoft Word and circulating the research report internally among researchers for clarifying data or its sources, as well as for necessary edits and corrections. | • N/A |
| **Data Storage** | • Effective in data storage by placing them in three different locations such as a cloud drive, a personal computer, and a hard drive, in case of data loss. | • N/A |
| **Data Analysis** | • URM researchers are acquainted with different methods of qualitative data analysis namely process-tracing method, discourse analysis, and network analysis.<br>• By doing so, URM has revealed evidence of the Chinese government's complicity in human rights abuses including genocidal policies in ETR (a.k.a. Xinjiang). | • N/A |
| **Data Sharing** | • During data sharing, URM has respected data privacy by using safe communication channels including Signal or Proton mail. | • N/A |
| **Data Protection** | • URM has protected data effectively by using VPN services, password lock, and regularly backing up data in a hard drive and a safe cloud environment. In this way, URM prevented unauthorized data access, modification, and data loss. | • A big data storage for dealing with a large amount of data in the future. |
| **Data Dissemination** | • Effective Data (i.e., policy briefs and infographics) Dissemination via various channels such as on its organizational website, on social media, by cooperating with key journalists, and relevant stakeholders/organizations.<br>• By doing so, URM has gained significant support and recognition which has helped it to achieve its goals of unveiling the Chinese Communist Party's atrocity crimes against Uyghur and other Turkic people living in ETR and holding the perpetrators accountable. | • Development of indicators to measure data dissemination improvement such as yearly increase in the number of:<br>- published policy briefs/infographics and/or interviews<br>- positive feedback from users/audiences including donors, policymakers, partners, the public, and academic institutions.<br>- policy briefs/infographics reading/downloading on the URM website<br>- visitors to the URM website<br>- URM followers on social media |

In-depth Interview 6

**Now, this thesis invites you to input your thoughts on how to improve DM areas shown in the table above.** Your input will be valuable for building an initial recommendation for improving URM's DM performance in the selected area. Please Input your thoughts/ideas as much as possible.

**Thus, how could you:**

**01 Improve Primary Data Collection?**

We think the URM team can further enhance the ability of collecting primary data by bulk downloading useful sources in Chinese language. However, this requires a competence in the field which the URM lacks for now. We have been partnering with relevant oganizations that have a pool for primary data in Chinese language to collaborate in terms of using reliable materials that might no longer be publicly available or have limits in term of accessability. So, building up an interface or a safe cloud environment for collecting more data can improve the capacity of URM.

**02 Improve Data Protection (in terms of accessing big data storage)?**

Protected and encrypted storage is much needed for the URM, but probably in the future when the organization has a larger amount of data to store.

**03 Develop numerical indicators to measure data dissemination improvement?**

As URM is newly established, its social media accounts are not actively used. There is no social media strategy for now, as the team's capacity is limited. We might need a social media/engagement team member who helps to disseminate the findings of URM reports and follow up with relevant stakeholders to get more feedback to our work.

## Data 3: Interview 7

In-depth Interview 7

**Questionnaires to stakeholders in Uyghur Rights Monitor (URM)**

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**Sent: 11.4.2024**
**Received: 17.4.2024**

By considering URM's input (interview 6), this thesis built **initial recommendations** for improving DM performance in the selected areas as shown in the following.
**Now, this thesis invites you to give your opinions and suggestions on the initial recommendations shown below. The final recommendations will be validated according to your feedback.**

**1. Collection of Primary Data**

URM should develop its competencies, by training its team members, in collecting reliable primary data from the data pool available from URM's partner organizations.
At the same time, URM should collect its own primary data by conducting surveys and interviews with the witnesses of China's oppression of Uyghurs and other Turkic people of ETR. Primary data is reliable and gives up-to-date information about a research topic (Formplus, 2024). Using primary data in project reports helps URM to achieve its goal while enhancing organizational accountability &social impacts.

**Please input your opinions and suggestions here:**

We highly appreciate the recommendation on the collection of primary data. With the current capacity of URM, it is not feasible to collect first-hand data via interviews. However, in the near future, the URM will invest more in the collection of primary data, both from publicly available sources and victims of China's genocide.

**2. Access to a Large Data Storage**

URM should consider obtaining protected and encrypted large data storage that might be needed in the future to process the increasing amount of data and to safely back up data to prevent loss.
URM could enlarge data storage by using several free cloud storages (e.g. Google Drive, Dropbox, and One Drive) that have limited capacity.
If URM's financial situation is allowed, it should also consider purchasing one of the following data storages such as external hard drives (e.g., Seagate Backup Plus, and Western Digital My Passport) and network-attached storage (e.g., Synology DiskStation, and Buffalo TeraStation 5200DN).

**Please input your opinions and suggestions here:**

The data storage recommendations are adequate. However, given the URM's current need and financial situation, free cloud storage might work better.

### 3. Establishment of Numerical Indicators to Measure Data Dissemination Improvement

URM should train and appoint a team member to take care of disseminating URM's reports on social media and collect audience feedback.
Meanwhile, URM should consider utilizing the numerical indicators that measure the improvement in data dissemination as shown in the following Table.

| Data Dissemination | |
|---|---|
| **Objective** | **Indicators of Measuring Improvement** |
| URM project reports (policy briefs/infographics) delivered to audiences | X number of published reports on URM's website |
| Increase URM visibility in the international media | X number of interviews given to key journalists |
| Audiences' satisfaction with URM's work | Keeping positive feedback, i.e., 4 out of the 5-point Likert scale survey. |

Using the numerical indicators, as shown in Table, reminds URM to keep track of its project output/report, encourages the organization to retain its visibility in international media, as well as reminds it to track feedback from audiences. The indicators might help URM not only achieve its goal but also enhance its accountability and social impact.

**Please input your opinions and suggestions here:**

Numerical indicators make the impact of URM measurable. Therefore, we welcome the recommendations mentioned above. It might also be useful for URM to keep track of its website visitors, social media followers, reach/report statistics and develop better strategies to enhance visibility of URM reports and social media content.