

Analysis of Digital Archive Management Using Google Spreadsheets in the Educators and Education Personnel Section of the Education Office

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Abstract

This study examines the use of Google Spreadsheet as an innovative tool in managing digital archives in the Educators and Education Personnel Section of the Education Office Region I of South Jakarta. The background of this research stems from the increasing complexity of archive management due to technological advancements and the growing need for more efficient and secure archive systems. The use of cloud-based technology like Google Spreadsheet is expected to provide solutions to overcome challenges in managing digital archives, particularly in the processes of planning, maintenance, disposal, and supervision. The objective of this research is to explore the use of Google Spreadsheet in digital archive management and to identify the challenges and solutions that can be implemented to improve the efficiency and security of archive management within the education office. This study employs a qualitative approach with descriptive methods, gathering data through in-depth interviews with informants, direct field observations, and document studies. The research also highlights data security issues, which are critical in managing cloud-based digital archives. The findings reveal that using Google Spreadsheet offers several benefits in archive management, such as improving accessibility, speeding up recording processes, and reducing paper usage. However, some challenges were identified, including limited staff understanding of digital tools and potential data security risks. Based on these findings, the study recommends the development of formal Standard Operating Procedures (SOPs) and regular training for staff to ensure more effective and secure digital archive management. The study concludes that Google Spreadsheet is an effective tool for supporting the digital transformation of archive management, provided it is accompanied by appropriate policies and training. The novelty of this research lies in the development of a model for utilizing Google Spreadsheet as an integrated digital archive management platform with a focus on data security in a government office context. This research contributes significantly to formulating strategies for efficient and secure digital archive management in cloud-based work environments.

Keywords: google spreadsheets, digital archive management, archive management

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INTRODUCTION

As Arthur G. Doughty (1924) said that "Of all the existing state assets, archives are the most valuable assets. It is a national heritage from generation to generation that needs to be preserved and preserved. The level of civilization of a nation can be seen from the maintenance and

preservation of its archives" (Azmi, 2020). This shows that archives are not just a collection of old documents or historical records, but are a reflection of the values, identity, and cultural heritage of a nation. By maintaining and preserving archives, a nation shows appreciation for the history and heritage that has been formed by previous generations and that will be passed on to future generations.

The definition of archive refers to the storage of documents or letters, which are part of administrative work (Yuni Pratiwi et al., 2020). This job involves organizing documents so that it is easy to find and retrieve them when needed. According to Sedarmayanti (2008: 43), the role of archives is as the main tool of organizational memory, material or proof tool, basic material for planning and decision-making, as well as a barometer of an organization's activities and finally as an information material for other scientific activities (Nafhati Syadiyah & Jumino, 2019). Meanwhile, in terms of function, Huriyah (2023) stated that archives have four main functions, namely archives play an important role in the administration of the organization, archives as a necessity for life owned by humans, archives as evidence and sources of authentic information, and archives play a supporting aspect in decision-making (Huriyah, 2023).

Archive management must be done properly to support the achievement of the institution's goals. If the archive arrangement is not optimal, the work of the officers will be hampered because it can prolong the time in searching for important documents needed (Basya & Puspasari, 2021). The level of attention and allocation of resources provided for archives management reflects the organization's dedication to transparency and accountability in administrative management. As the times develop, practicality becomes a value that is sought by every individual and organization. For this reason, archive management must also follow these developments. Currently, archive management is more progressive and has received assistance from digitization (S. A. Putri et al., 2023).

The digital archival system basically follows a concept similar to traditional archival techniques. In traditional archiving, important documents are stored in physical cabinets. Meanwhile, in a computer-based archival system, there is a virtual cabinet that contains a virtual folder (Yulia Anggraini & Nurbaiti, 2023). It shows how technology has helped in adapting and modernizing filing systems. Digital archives provide a variety of benefits, including easy access and search for documents from anywhere, time and cost efficiency through easy indexing and modification, and minimal risk of physical damage. In addition, digital archives make it easier to share documents with clients via the internet and make data recovery easier compared to paper documents (F. A. Putri, 2022; Putri et al, 2023). Thus, digital archives are an efficient and effective solution in document management.

In recent years, cloud technology has undergone significant developments, offering more advanced security features and enhanced collaboration capabilities. Service providers such as Google have introduced stronger data encryption and two-factor authentication systems to protect user data. This improvement has a positive impact on the management of digital archives, allowing organizations to store, manage, and access archives more efficiently and securely. Google Sheets, as part of the Google Cloud ecosystem, leverages this technology to provide a reliable and flexible records management platform.

Coupled with the COVID-19 pandemic that has accelerated the adoption of digital technology in various aspects of work, including archive management, many organizations have been forced to turn to digital solutions to ensure operational continuity while working from home. In this regard, Google Sheets has become a vital tool, enabling remote collaboration and real-time access to archives from multiple locations. Changes in policies and work practices that support the digitization of archives have resulted in higher efficiency and better responsiveness to information needs.

The study found that integrating Google Sheets with other applications such as Google Drive and Google Forms can improve data management efficiency by up to 30% (Wang et al., 2023). In addition, the identification that cloud-based solutions can reduce operational costs by 20%, provides a compelling reason to consider Google Sheets as a viable alternative to archive management (Ibrahim, 2024).

In the context of supporting technology for digital archive management, the presence of

applications such as Google Sheets provides convenience in managing archives. Google Sheets, as an online and offline spreadsheet application, allows users to create, collaborate, and access spreadsheet formats from anywhere through a variety of devices. These applications are commonly used for processing, storing, and presenting data in the form of rows and columns. In addition, this application is also useful for calculating financial statements, analyzing data, and various other office work. This shows the important role of information technology, especially cloud-based applications such as Google Sheets, in supporting and strengthening the digital archive management process within the organization.

Other methods of managing digital archives, such as the use of archive-specific software or document management systems (DMS), often require high costs and intensive training for staff. In this context, Google Sheets offers a more economical and user-friendly solution. This comparison shows that Google Sheets has an advantage in terms of ease of use, flexibility, and integration with other cloud services. However, drawbacks such as reliance on a stable internet connection and limited features compared to professional DMS should also be considered.

The results of the Grand Tour Observation (GTO) to the Educators and Education Personnel (PTK) section of the Region I Education Office of the South Jakarta Administrative City revealed important information about archives related to schools in the area. The Region I Education Office, as an administrative implementing element, provides administrative services for the sub-district level Implementation Unit (Satlak), including the supervision of school principals, administrative staff, teachers, and other educators and education personnel. Effective and efficient archive management is the key to providing optimal services in rediscovering archives.

One of the innovations implemented by the Educators and Education Personnel (PTK) section is the use of Google Sheets for electronic archive management. This is a step forward compared to the traditional bookkeeping method that is still used by other sections. Electronic archive management through Google Sheets enables the storage, maintenance, and management of archives at lower costs and higher efficiency.

Data security is a critical aspect in the management of digital archives. Google Sheets offers several security features, including data encryption, role-based access control, and monitoring of user activity. Looking at the use of Google Sheets by the Educators and Education Personnel Section of the Education Office Region I of the South Jakarta Administrative City, the researcher is interested in seeing the extent to which archive management with Google Sheets can be used efficiently, transparently, and responsibly in data administrative management. This analysis also aims to help in ensuring that the archives stored are well maintained and can be easily accessed by interested parties. In addition, this study will also analyze the security measures implemented in the use of Google Sheets in the Education Department of Region I of South Jakarta. These measures include the use of secure accounts, access restrictions based on need, and regular data backups to prevent the loss of important information. This analysis highlights the importance of strong security practices in digital records management.

Several studies on the use of Google Spreadsheet have been carried out, including, Research conducted by Kadek Devi Kalfika Anggria Wardani, Ni Putu Ita Purnama Dewi, Anak Agung Ngurah and Eddy Supriyadinata Gorda, aiming to assist the administrative staff of the Bali Chamber of Commerce in managing archives digitally using Google Drive and Spreadsheets. The results of this study show that the administrative staff of the Bali Chamber of Commerce has understood how to archive documents using digital technology and is able to manage archives digitally well, showing an increase in data efficiency and accessibility. This implementation involves initial training, setting up a clear data structure, and regular monitoring to ensure smooth operations. These results reinforce the research findings that Google Sheets can be an effective tool in archive management (Devi et al., 2023). The research, conducted by Restu Lusiana, Wasilatul Murtafiah, Edy Suprpto, Davi Apriandi, Ika Krisdiana, and Reza Kusuma Setyansah, aims to equip village officials at the Kerik Village Office, Takeran District with skills in managing village data using Google Spreadsheet.

As a result, the trainees are now competent in managing village office data well during work. This success was measured by the enthusiasm of the participants and post-activity evaluation (Lusiana et al., 2024). Furthermore, the research conducted by Elvina Herawati, Saib Suwilo,

Herman Mawengkang, and Aghni Syahmrani, aims to assist SMA Negeri 15 Medan in documenting teaching data digitally using Google Sites, Google Drive, and Gmail. As a result, SMA Negeri 15 Medan can manage teaching data efficiently and effectively, supporting the quality education process (Herawati et al., 2023). Other research conducted by Muhammad Rezki, Yamin Nuryamin, Siti Nurdiani, and Muhammad Fahmi, this research aims to assist the KOPIA Raya Insani foundation in managing digital archives using Google Drive. As a result, the KOPIA Raya Insani foundation has become more skilled in managing digital archives and has easier and structured access to their documents and files (Rezki et al., 2023).

Unlike previous studies, this study offers an update with a focus on the use of Google Sheets not only as a training tool but also as the main platform for efficient, transparent, and responsible management of digital archives. In contrast to previous research that emphasized more on user training, this study explores the application of Google Sheets in various aspects of records management, including planning, maintenance, destruction, and supervision of records. All of these aspects are analyzed in the context of utilizing the latest Icloud technology, namely Google Sheets This finding highlights the potential of Google Sheets in modernizing and simplifying the archive management process in a dynamic work environment.

The research not only offers the most up to date, but also explores how Google Sheets applications can improve the organization, storage, and management of information. In addition, this research also emphasizes the application of Google Sheets as a tool that promotes efficiency and collaboration in a dynamic work environment. Thus, this research is expected to provide a new understanding of data management and digital archives using Google Sheets, as well as contribute to the development of information technology, especially in the field of archive management.

METHODS

In this study, a qualitative approach was chosen because it allows for an in-depth understanding of the phenomenon observed directly in the field. A descriptive method was applied to collect data related to archive management using Google Sheets in the Education Office of Region I of the South Jakarta Administrative City. This research focuses on intensive interaction with informants to gain insight into the process of planning, maintaining, destroying, and supervising archives. Through this method, existing practices can be identified and analyzed and the effectiveness of the use of Google Sheets in archive management can be evaluated.

The research was carried out by observing the work environment in the Region I Education Office, which is located in Block A Building, 11th Floor, Kebayoran Baru, South Jakarta. Data was collected through a series of interviews, direct observations, and relevant documentation studies. Data analysis begins from the first data collection and continues systematically through the process of classification, reduction, and data editing. This process makes it possible to present the data in a structured manner and draw conclusions from the research findings.

RESULTS AND DISCUSSION

Planning is a very important initial stage in every management activity in every agency, including in the Educators and Education Personnel section in the Education Office Region I of South Jakarta. In this context, planning an archive using Google Sheets requires careful preparation, in-depth analysis, diverse usage scenarios, and of course the right people, the right steps, and the right time. However, based on the theory put forward by Haidir et al (2020), it appears that the archive planning carried out by the Educators and Education Personnel section has not been fully implemented. This can be seen from the lack of SOP (Standard Operating Procedure) in place. However, the planning of the archive using Google Sheets has received a positive response from many parties, including all staff of the Educators and Education Personnel section as well as the school concerned.

Mabruri (2022) explained that the main feature contained in Google Sheets is that it can be

accessed by anyone, anywhere and anytime. This is certainly a supporting factor in this planning process, in addition to the support from the head of the Educator and Education Personnel section as the leader, support from all section staff, reliable human resources, supporting facilities and infrastructure, and costs. However, it should be remembered that this planning process also involves various parties, including the Head of the Educator and Education Personnel Section, namely Mr. Daryono and the PTK staff who are responsible for managing archives with Google Sheets, namely Mrs. Sulis and Mr. Wisnu. Therefore, there needs to be good cooperation and intense coordination between all parties involved.

In addition, planning archives with Google Sheets also requires routine maintenance, namely by backing up every month the data that enters the spreadsheet and then downloads and saves it to Google Drive or iCloud owned by the Educators and Education Personnel section. This maintenance is carried out regularly by the PIC (Person in Charge) to ensure that all data remains safe and secure. Finally, planning is also carried out by providing offline training for stakeholders, namely schools in the Kebayoran Lama District, Cilandak District, Jagakarsa District and Pesanggrahan District. This training aims to socialize governance in correspondence, especially archives in schools, so that it can provide convenience in controlling the flow of letters submitted by each school.

Thus, even though there is no SOP, archive planning with Google Sheets in the Educators and Education Personnel section is still going well and getting a positive response. This shows that with good cooperation, strong commitment, and the right use of technology, every agency can plan and manage archives effectively and efficiently. Archive maintenance, as defined in Government Regulation Number 28 of 2012, is an activity that aims to maintain the integrity, security, and safety of archives, both physical and informational. This stage is very important in managing archives using Google Sheets, especially considering that digital archives are still classified as a new type of archive and have different characteristics from conventional archives.

In the Educators and Education Personnel section, archive maintenance has been carried out well, although it is not fully in accordance with the SOP (Standard Operating Procedure). The maintenance of electronic archives can include the security of the archives themselves, the maintenance of the storage media, the management system, and the devices for the management of the archives. Rifauddin (2023) mentioned several activities to secure information in electronic archives, such as creating standard procedures in operation, performing hardware maintenance, and performing software maintenance (Pratama et al, 2024). However, the maintenance of archives in the Educators and Education Personnel section is carried out without SOPs. However, maintaining archives with Google Sheets has been done well, such as storing data in iCloud or Google Drive, scanning conventional archive files that are confidential and important, and then entering them into Google Sheets.

Although there are still some conventional archives, the maintenance of these archives is still carried out well, such as providing a room that has a good temperature and is not humid, has good air ventilation, and there are no leaks. In addition, archive maintenance is also carried out by creating an official procedure, so that when the maintenance is carried out, it can be clearly known and can be accounted for. Archive maintenance with Google Sheets is also carried out regularly every month, especially at the end of the month. The purpose of maintaining this archive is to maintain the availability of data owned by the Educators and Education Personnel section, as well as to maintain data that is sometimes sensitive and should not be known by many people. The obstacles faced in the process of maintaining this archive, such as the internet network that is often down and the high volume of work, can still be overcome with a culture of mutual responsibility for the archives in the Educators and Education Personnel section. Thus, this problem can be solved by requiring all staff to back up data.

Destruction of archives, as defined in ANRI Regulation Number 25 of 2012, is the activity of destroying archives that have no useful value and have exceeded the storage period. The purpose of the destruction of archives is to reduce the number of archives. Sattar (2021) mentioned several criteria for archives that can be destroyed, such as having no useful value, having expired their retention period and being destroyed based on the Archive Retention Schedule (JRA), there are no regulations prohibiting it, and it is not related to the settlement of a case. However, in the Educators and Education Personnel section of the South Jakarta Region I Education Office, the destruction of archives using Google Sheets was not carried out. On the contrary, destruction is only carried out for archives that are conventional. This is done with the aim that digital archive storage can be used as a valid and legitimate source of information if needed at any time.

The destruction of conventional archives is carried out without having an SOP (Standard Operating Procedure). This process involves sorting out which archive files are no longer valid, have expired their retention period, and are no longer considered important. After that, the files are taken to the Paper Shredder machine or paper shredder machine to be destroyed. The process of destroying this archive must be carried out with permission from the leadership, because the person responsible for the destruction process of this archive is the leader of the Educator and Education Personnel section at the Education Office Region I of South Jakarta.

However, in the process of destroying conventional archives, there are also obstacles, namely it is difficult in the process of sorting out which files are important, which files are still in use, and which files have expired their retention period. However, the staff in the Educators and Education Personnel section at the Education Office Region I of South Jakarta tried to face this obstacle by sorting letters based on the type of letter available, looking at the retention period of the letter, then arranging the letter according to the date and year of the letter so that it could facilitate the search or destruction process if needed at any time. Thus, even though there is no SOP, the process of destroying archives in the Educators and Education Personnel section is still running well and effectively.

Archival supervision, as defined in the National Archives Regulation of the Republic of Indonesia No.6 of 2019, is a process of activities in assessing the conformity between archival principles, rules, and standards with the implementation of archives. This supervision involves external archival supervision and internal archival supervision. Herawan (2019) mentioned several aspects of assessment in the supervision of the internal archives system, such as dynamic archive management and archival resources.

However, in the Educators and Education Personnel section, the archive supervision process using Google Sheets is carried out without SOP (Standard Operating Procedure). This oversight involves limiting who can access Google Sheets links and ensuring which types of letters can be seen by many people, especially schools, and which letters cannot be seen by many people except Educators and Education Personnel and the parties concerned. Although ideally supervision is carried out by following the procedures that have been explained earlier, such as supervising archives from the creation process to reaching the parties concerned, supervision in the Educators and Education Personnel section is still successfully carried out without SOPs. From the community as users, they also feel safe using this Google Sheets application because they already trust the staff in the Educators and Education Personnel section. However, they hope that supervision and maintenance will continue to be carried out to prevent data skimming so that all data contained in the Educators and Education Personnel section is safe and maintained.

Supervision is also generally carried out by the Educators and Education Personnel section at the South Jakarta Region I Education Office once a month. However, because Google Sheets is used every day, maintenance is also carried out every day to check whether there are data

errors or other things that may occur.

The purpose of monitoring archives with Google Sheets is to maintain the security of data owned by the Educators and Education Personnel section in the Education Office Region I of South Jakarta and to maintain personnel data in 4 sub-districts. Regarding the access link for students who carry out Field Work Practice (PKL), this link will be deleted if the validity period of the street vendor has expired. This aims to prevent the leakage of personnel data in the Educators and Education Personnel section in the South Jakarta Region I Education Office. Thus, even though there is no SOP, the archive supervision process in the Educators and Education Personnel section is still running well and effectively.

It also shows that the South Jakarta Region I Education Office Department strongly maintains data security, which is a critical aspect in the management of digital archives. Additionally, the study shows that Google Sheets offers several security features, including data encryption, role-based access control, and monitoring of user activity. The results show that the use of secure accounts, access restrictions based on need, and the implementation of regular data backups significantly improve the security and integrity of archival data. Users reported a higher level of trust in the system after the implementation of these measures, which highlights the importance of robust security practices in digital records management.

CONCLUSION

These applications play a significant role in modernizing records management. Even without a formal SOP, the use of Google Sheets has received a positive response and contributed to improving work efficiency. From the aspects of planning, maintenance, destruction, to archive supervision, all these processes have been analyzed and integrated with cloud technology, namely Google Sheets, which shows improvements in the organization and management of information. In addition, the use of Google Sheets in the management of digital archives in the Education Office of Region I of South Jakarta provides an effective and efficient solution. Evolving cloud technologies, including improved security and collaboration features, enable Google Sheets to offer a reliable and accessible records management platform. So Google Sheets not only facilitates better data storage but also promotes collaboration between staff, which is crucial in a dynamic work environment. Although there are obstacles such as dependence on a stable internet connection and data security risks. For this reason, it is recommended that agencies develop formal SOPs that include strict data security protocols and provide regular training for staff so that they can be successfully integrated into the organization's digital records management system. Performance evaluation and user satisfaction showed significant improvements in work efficiency and data accessibility, reinforcing the validity of these findings. Thus, digital archive management is not only efficient but also safe and secure, supports effective teamwork, and meets the need for accessibility and collaboration in today's digital era.

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