

# Evaluating the Usability of SEKAR Electronic Records Management System of Universitas Indonesia

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**Abstract.** Within the scope of a university that has a high archive volume, the Electronic Records Management System (ERMS) exists as a solution to facilitate the management and preservation of archives both in digital and non-digital format. In facing the challenges of Industry 4.0, with a high community need for information, this information needs to be obtained precisely and quickly. This research aims to determine the level of usability of SEKAR (*Sistem Elektronik Kearsipan* - Electronic Archiving System) for archivists, which is an ERMS managed by Universitas Indonesia. It is a web-based open source system created using AtoM 2.3.1. The research method used in the paper is quantitative descriptive with purposive sampling. The results show that the SEKAR system is very helpful in the work of archivists, allowing them to manage their archives more easily. Based on the three dimensions studied (learnability, errors, efficiency, memorability and satisfaction), SEKAR shows a good level of usability.

**Keywords:** ERMS · Electronic Records · Archive Repositories · Records Management · Usability

# 1 Introduction

The era of the fourth industrial revolution has been marked by digital developments and automation, including the records management system which supported by electronic sophistication. Records management in this era must be in accordance with the demands of Industry 4.0, which is based on digital technology. This era has created innovations in the management of records, namely collaboration between technology and the basic principles of records management.

In the world of records, the electronic records management system, also known as ERMS, is a system that manages all records regardless of their physical form. This means that both paper records and electronic records can be tracked in ERMS, in paper format, or as e-documents, e-forms, video files, audio files, CDs, DVDs, audiotapes or other types of electronic record. In short, a good ERMS is able to track all records in any form.

ERMS uses the basic principles of archiving both in determining the subject of record categorization in the system, maintaining the authenticity of the records, and determining the retention period of the records based on its value.

An electronic system that is reliable has the right information and is relevant to the type of system. For instance, the university's archiving system must contain information relevant to the university's archiving that owned the system's. The best electronic system is one that is able to provide convenience for its users. In the concept of HCI (Human-Computer Interaction) different perceptions of users of the system often occur, so effectiveness and work efficiency may not be achieved. Users may have difficulty using a system because they do not know or do not understand it well, the system may be too complicated, so it is difficult to learn, or it does not fit the user's needs [1].

Considering the importance of the role of records in supporting organisational activities in tertiary institutions, it is necessary to manage these effectively through records management. An electronic records system is a very important part of a college. This means the system developed must have a good level of usability, not only because it must be used by almost everyone at the university (students, lecturers, management and staff) but it must also assist them complete their activities easily.

Many factors influence this, one of which is in terms of usability, does SEKAR have a high/good level of usability for users? This is a question that deserves to be researched. From the formulation of these problems, the question in this study is how the use of SEKAR by archivists in the University of Indonesia by using the 5 (five) dimensions of the Nielsen model? So that the problem limitation of this article is that SEKAR's usability test focuses on the usability aspect of the Nielsen model, which consists of 5 (five) dimensions: learnability, effectivity, memorability, error, and satisfaction.

### 2 Literature Review

Electronic records are defined as "a record on electronic storage media, produced, communicated, maintained and/or accessed by means of electronic equipment" [2]. Examples of electronic records are e-mail messages, video and audio files, webpages, databases, and digital images. Electronic records can also be data on third party systems controlled by vendors; for example, blog posts, tweets and profiles posted to social networking sites, or customer data stored in applications hosted by software as a service provider (SaaS).

### 2.1 Electronic Record Management System (ERMS)

Records management is defined as a field of management that is responsible for the efficient and systematic control of the creation, receipt, maintenance, use and depreciation of records. Included in the process are also the capture and maintenance of evidence and information about business activities and transactions in the form of records [3]. The main function of ERM is to organize, manage, control, monitor and audit existing business documents in electronic form (both records that were originally in digital format or records that have digitized by media transfer). The ERM system also automatically tracks paper-based records and other physical formats.

Records management is defined as a process in which an organization determines what type of information is recorded, how to manage it through its retention period, and how it ultimately destroys or archives it [4]. The basic principles that apply in conventional records management also apply in electronic records management (e-records), but the latter has more unique management needs and requirements due to their electronic nature; for example, when implementing a shrinking policy, such as the total destruction of electronic files, and also when preservation of electronic files for the long term is made using a special technique referred to as long-term digital preservation (LTDP).

ERMS refers to systems that are designed for electronic record keeping, archiving, and storage. Many of these systems also have integrated document management capabilities [5]. ERMS is a system specifically designed to manage the maintenance and shrinkage of records. With it, the content, context, structure, and links between records will be preserved and allow for accessibility and support of those that have value as evidence [6]. A well-designed ERMS makes it easy for archivists to manage records and to find documents.

Principles of an electronic records management system [5] include: 1) accessibility and readability over time; 2) records appraisal; 3) audit trail; 4) authentic; 5) business classification scheme; 6) central repository; 7) file format; 8) metadata; 9) non-electronic records management; 10) search and retrieval; 11) security and access control; and 12) version control.

### 2.2 HCI (Human-Computer Interaction)

Sophisticated machines will not be valuable unless they can be used effectively by humans. The main aspects that must be considered in HCI design are functionality and usability [7]. The value of the functionality of a system can only be seen when the system can be used efficiently by users [8]. In addition, the usefulness of a system with certain functionalities is gauged by the range and level at which it can be used efficiently and effectively to achieve certain goals [9].

HCI is a design that produces the conformity between users, machines and services needed to achieve a certain level of performance both in quality and optimality of service [7]. User activities have three different levels: physical, cognitive, and affective. The physical aspect determines the interaction mechanism between humans and computers, while the cognitive aspect relates to the ways users can understand the system and interact with it. The affective aspect is a more recent problem and aims not only to make interaction a pleasant experience, but also to influence users in ways that make them continue to use machines by changing their attitudes and emotions [7].

The design of a user interface on a system that has a good appearance, and improvement in the usability of a system, can be achieved by using the Eight Golden Rules of Interface Design: consistency, providing shortcuts, providing feedback, closed dialog, preventing errors, reversing easy actions, giving control to users, and having short-term memory loads [8].

#### 2.3 Usability

Usability comes from the word 'usable', which is generally interpreted as meaning 'can be used correctly'. Something can be said to be useful if failures in use can be eliminated or minimized, thus providing benefits and satisfaction for users [10]. In interactions

Dimension	Details
Learnability	How quickly a user who has never seen or used a product or system can learn to do basic tasks
Efficiency	How quickly a user can complete a given task after learning about the use of the product or system to be tested
Memorability	How easily a product or system can be remembered by its users. When users have not used the product for a long time, then return to using the product, they can still use it effectively.
Error	How often users make mistakes when using a product or system; how serious the mistakes are and how users can handle the errors that have occurred.
Satisfaction	Measures the extent to which users are free from inconvenience and how they respond when using the product being tested. Satisfaction can be determined and measured by subjective judgments on a scale such as uncomfortable experiences, liking a product, satisfaction with the use of a product when doing different tasks, or even carrying out certain activities intended for specific purposes.

Table 1. Five Dimensions of Usability [9]

between humans and computers, usability is related to the ease and legibility of information and user-friendly navigation experiences. Discussions about user-friendly interfaces usually relate to system interface or software which can be used more efficiently and easily and provide a pleasant experience.

Usability in a system is a measure of whether users can access its functions effectively, efficiently, and satisfactorily in order to achieve certain goals. Usability evaluation is a very important aspect in the development of information systems and software, especially web-based software.

In an article published on the Nielsen Norman Group website entitled Usability Engineering [9] stated that five conditions must be met in order for a system to reach an ideal level of usability, namely learnability, efficiency, memorability, error and satisfaction (Table 1).

### 2.4 SEKAR

The digitalization of Universitas Indonesia's vital archives forms part of Universitas Indonesia Archive Office's Strategic Plan program in managing important and irreplaceable information, both in terms of the development and history of Universitas Indonesia, and with the aim of forming "Digital Archives". The Archive Office implements policies for the transfer of archive media into new media according to university conditions. The conditions in question include the physical archive itself, as well as the information contained in it, and the regulations imposed by universities and/or the government in implementing the media transfer process. This process is performed in the context of maintaining records that have important use-values. Media transfer activities also help the process of finding documents faster because of the system's ability to process archived data faster and more efficiently. All files that have been transferred are then contained in an archive repository called SEKAR (*Sistem Elektronik Kearsipan* - Electronic Archiving System).

SEKAR is an open-source application from ICA-AtoM 2.3.1, an application specifically built for describing archives in an archive institution. It was developed based on opensource-based applications in the field of archiving AtoM (Access to Memory). It has a search feature to facilitate users in the process of retrieving files. By referring to various international archiving standards and standards in the field of information technology, it is hoped that SEKAR will be able to support the dynamics of the university and support reliable university governance in order to help Universitas Indonesia achieve the status of best Asian university.

The Universitas Indonesia Archives Collection consists of various materials. Most are paper documents, others are in the form of photo documentation, video recordings, sound recordings, blueprints, and technical or architectural drawings. Paper documents can be categorized into various subjects such as Chancellor's Decrees, correspondence, memos, minutes of meetings, faxes, research data, publications, etc. Based on analysis on the SEKAR website, currently managed digital archives number 6,106, those in image format being 3,292, in text format 2,818, and in video format 1, which can all be traced alphabetically or based on recent uploads. In managing the digital archives, SEKAR uses a classification scheme based on the subject (with hierarchical terms), on organizational units, and on the language used in the archive (English and Indonesian).

On the front page of the website, five menu options are available for searching the records, which are based on the records information, records creator, organizational unit, classification, and digital file search. There is also a search box that is placed above the title bar. It is expected that users who access SEKAR can easily find the records in various ways according to what they understand. In addition, there is also a log-in menu in the upper-right hand corner. The SEKAR website has a minimalist and clean login screen. In addition, it is also responsive to adjusting to the accessing device. For example, if the SEKAR website is accessed using a cellphone, the main screen and login screen display adjust accordingly.

## 3 Research Methodology

Quantitative research with a descriptive approach was employed for this study. Data were obtained through surveys and distribution of questionnaires to archivists in the archival unit of various organizational units at Universitas Indonesia. Sampling was conducted using the purposive sampling technique. The scale used was a Likert scale, with each scale based on 1–5 answer categories, each of which was given a score or weight; i.e., the total score between 1 (strongly disagree) to 5 (strongly agree).

The population in the study was SEKAR users, namely archivists from 21 organizational units registered in the SEKAR system. The sample comprised 40 respondents, both men and women, who met the criteria of being archivists and having accessed SEKAR. Determination of the number of samples in the sampling quota was estimated by the researchers to be adequate to obtain the required data.

# 4 Results and Discussion

The level of usability of a system is reflected as a measure of one's acceptance of a product or system based on understanding and accuracy of one's actions/reactions to it. If an up-to-date system has an interface that is unable to represent the computing functions behind it and cannot fulfil the aspects that people need when interacting with it, this may mean that it is not accepted. Armed with a questionnaire consisting of 28 questions that have been answered by 40 SEKAR users (archivists from various faculties at the University of Indonesia), the results of the questionnaire are a reference in this study to provide conclusions on the level of usability of the SEKAR system. The questions posed are adjusted to the elements of the five usability dimensions [9]:

- Learnability aims to ensure that the system is easy to understand, easy to look for specific information, and easy to identify navigation mechanism
- Efficiency aims to ensure that the system looks for elements within easy to reach quickly and easy to navigate
- Memorability aims to ensure that the system looks for elements in easy to remember and easy to reestablish
- Errors aim to ensure that the system is looking for elements few numbers of error detections detected and easy to fix
- Satisfaction dimension to ensure that the system is pleasant to use and comfortable to use.

Next will be explained in detail the explanation of each dimension with the quantitative value of the score for each dimension from the results of the questionnaire answers that have been done previously.

### 4.1 Learnability Dimension

Usability is a measuring tool to assess whether users can access system functionality effectively, efficiently, and satisfactorily in achieving certain goals. One dimension that can be used to measure the level of use of a system or software is learnability; that is, how quickly a user who has never seen or used a product or system can learn to do basic tasks. The learnability dimension is measured using the following indicators (Table 2).

One indicator in the learnability dimension is the navigation and menus displayed on the system page, which should make it easy for users to find the content or information

No.	Indicators
1.	I can learn to use the features on SEKAR easily.
2.	I identify the function of each feature work properly.
3.	I can easily get information from SEKAR.
4.	Archive-related information is displayed in detail.

Table 2. Learnability Dimension Indicators

sought. SEKAR has a classification scheme that was developed according to the activities of the organization that regulates it, which aims to group digital files and to make it easier for users to find archives according to category.

This is in line with one of the principles in the electronic records management system, namely the business classification scheme (BCS), which is the overall structure used by organizations to organize, search, retrieve, store, and manage documents and archives [4]. In ERM, business classification schemes must be developed in accordance with the business activities conducted by the organization.

Based on the questionnaire, which had been answered by 40 respondents produced the following indicator scores (Table 3).

The learnability dimension of the SEKAR system receive total score of 650, made up of the total results of the questionnaire which consisted of four indicators answered by the 40 respondents. Using the rating scale calculation, the total score if each item obtains the highest score is (Fig. 1).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 4 \times 40 = 800$ 

From the graph above the SEKAR learnability dimension score of 650 is on the somewhat agree interval line.

This shows that SEKAR has fulfilled the learnability factor. It has an attractive appearance and is easy to understand, making it an ERMS that can be used optimally

Dimension	Score per-item
Learnability	167
	164
	166
	153

Table 3. Learnability Dimensions Scores



Fig. 1. Criterion Score of the Learnability Dimension

by archivists. Users can easily understand the operation of the system for their needs in managing and retrieving digital archives.

#### 4.2 Error Dimension

The error dimension is a dimension used to measure how often users make mistakes when using the system or product, how often the system displays errors, how serious the mistakes made by users are, and how users handle these errors. The dimensions of the error are measured using the following indicators (Table 4).

Based on the questionnaire using the indicators above, which had been answered by 40 respondents produced the following indicator scores (Table 5).

The dimension of error in the SEKAR system received a total score of 682, which was obtained from the total results of the questionnaire on the dimension of error, consisting of four indicators answered by the 40 respondents. Using the rating scale calculation, the total score if each item obtains the highest score is (Fig. 2).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 4 \times 40 = 800$ 

From the graph above the error dimension at SEKAR with a score of 682 is on the somewhat agree interval line.

This dimension considers how many mistakes users have made, how bad the mistakes were, and how easy it was to resolve them. This factor has indicators or criteria that can indicate that an application has fulfilled the error factor, as one of the factors in the success of the usability factor. The evaluation results show that SEKAR has fulfilled the error factor. Among others because of the availability of a search feature on the SEKAR

No.	Indicators
1.	I found an error or bug on SEKAR.
2.	There is a notification or help when an error occurs on SEKAR.
3.	I found a function on SEKAR that was not working properly.
4.	I feel bothered by the error occurs on SEKAR

Dimension	Score per item
Errors	176
	176
	168
	162



Fig. 2. Criterion Score of the Error Dimension

system that displays accurate results with keywords that are searched for; besides, users can easily download/obtain digital archives from the SEKAR system. The majority of SEKAR users agree that the lack of errors when accessing the system makes it a good value in the dimension of error.

### 4.3 Efficiency Dimension

The efficiency dimension measure to measure the speed in doing a certain task after studying the design of a system. There are 2 (two) indicators that can show that a system meets the efficiency dimension, namely: easy to reach quickly and easy to navigate. The efficiency dimension is assessed by using the following indicators (Table 6).

Based on the questionnaire using the indicators above, which had been answered by 40 respondents produced the following indicator scores (Table 7).

The Efficiency dimension of the SEKAR system obtained a total score of 864. The results were obtained from the total questionnaire scores on the dimension of error, consisting of five indicators answered by 40 respondents. Using the rating scale calculation, the total score if each item receives the highest score is (Fig. 3).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 5 \times 40 = 1000$ 

It is known that the efficiency dimension in the SEKAR system can be said to be good with a score of 864. These results are obtained from the total results of the questionnaire on the efficiency dimension consisting of 5 statements and answered by 40 respondents.

No.	Indicator
1.	I can easily access the menus and features available at SEKAR
2.	I can get information fast from SEKAR
3.	With SEKAR, it's easy and fast for me to find the archives I need
4.	SEKAR does not load a long time when accessed
5.	I can access SEKAR via smartphone

Table 6. Efficiency Dimension Indicators

Dimension	Score per-item
Efficiency	175
	172
	174
	175
	168

Table 7. Efficiency Dimensions Scores



Fig. 3. Criterion Score of the Efficiency Dimension

This explains that SEKAR has fulfilled the efficiency dimension. Where the menus and features available at SEKAR are easily accessed quickly and do not experience errors. In addition, the information available on SEKAR is actual and quickly obtained. In the archive search, the SEKAR system provides accurate information according to the keywords searched and does not experience difficulties in downloading documents. This is in line with Nielsen [9] which explains that the use of a system with certain functionality is the range and level at which the system can be used efficiently and adequately to achieve certain goals for certain users.

So, it can be interpreted that the effectiveness of a system is achieved when there is the right balance between the functions and uses of a system. From the results of this evaluation, it can be concluded that SEKAR users assess that the SEKAR system is efficient for use by them as archivists in managing archives and recovering the archives needed.

### 4.4 Memorability Dimension

The memorability dimension measure how fast users remember and reuse a SEKAR system when they return to using the system after some time leaving it. In this dimension, there are 2 (two) indicators that can show that the system meets the memorability dimension, namely; easy to remember (how users can easily remember browsing each feature and content contained in the system); and easy to reestablish (where users can easily re-access the system). The satisfaction dimension is assessed by using the following indicators (Table 8).

No.	Indicator
1.	I remember using SEKAR easily
2.	I remember every direction navigation to explore the features and content on SEKAR easily
3.	I remembered how to use SEKAR after not using it a few times
4.	I remember SEKAR's displays easily
5.	I remember the layout of the features available at SEKAR

 Table 8.
 Memorability Dimension Indicators

Based on the questionnaire using the indicators above, which had been answered by 40 respondents produced the following indicator scores (Table 9).

The Memorability dimension of the SEKAR system obtained a total score of 808. The results were obtained from the total questionnaire scores on the dimension of error, consisting of five indicators answered by 40 respondents. Using the rating scale calculation, the total score if each item receives the highest score is (Fig. 4).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 5 \times 40 = 1000$ 

From the graph above the dimension of memorability SEKAR, with a score of 808, is on the somewhat agree interval line.

Dimension	Score per-item
Memorability	152
	155
	163
	171
	167

Table 9. Memorability Dimensions Scores



Fig. 4. Criterion Score of the Memorability Dimension

This explains that SEKAR has fulfilled the efficiency dimension. Where the menus and features available at SEKAR are easily accessed quickly and do not experience errors. In addition, the information available on SEKAR is actual and quickly obtained. In the archive search, the SEKAR system provides accurate information according to the keywords searched and does not experience difficulties in downloading documents. This is in line with Nielsen [9] which explains that the use of a system with certain functionality is the range and level at which the system can be used efficiently and adequately to achieve certain goals for certain users.

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#### 4.5 Satisfaction Dimension

The satisfaction dimension measures the extent to which users are free from discomfort and how they respond to product use. Satisfaction can be determined and considered on scales, such as an uncomfortable experience, liking a product, satisfaction with using the product to do different tasks, or carrying out certain activities that help for certain purposes (such as efficiency or learning ability). The satisfaction dimension is assessed by using the following indicators (Table 10).

Based on the questionnaire using the indicators above, which had been answered by 40 respondents produced the following indicator scores (Table 11).

The satisfaction dimension of the SEKAR system obtained a total score of 836. The results were obtained from the total questionnaire scores on the dimension of error, consisting of five indicators answered by 40 respondents. Using the rating scale calculation, the total score if each item receives the highest score is (Fig. 5).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 5 \times 40 = 1000$ 

From Fig. 5 the graph above it can be seen that the dimension of satisfaction with SEKAR, with a score of 836, is on the somewhat agree interval line.

No.	Indicator
1.	With SEKAR, it was very easy for me to manage and search for information from the archives that I needed.
2.	SEKAR has an attractive appearance.
3.	The colour composition and feature location on SEKAR does not confuse me.
4.	I feel comfortable using SEKAR.
5.	I will use SEKAR again to meet my needs.

Table 10. Satisfaction Dimensions Indicators

Dimension	Score per-item
Satisfaction	163
	178
	161
	170
	164

Table 11. Satisfaction Dimension Score



Fig. 5. Criterion Score of the Satisfaction Dimension

The satisfaction dimension is used to measure the level of user satisfaction with the services provided by the SEKAR system. The evaluation results show that SEKAR has fulfilled user satisfaction for archivists, helping them to manage the digital archives. Archivists are happy with SEKAR because it provides significant benefits for their work. In addition, it has a responsive system design so that users can access it not only through a PC but can also via a mobile phone, which adds to user satisfaction with SEKAR because users can access SEKAR anywhere and anytime, not necessarily in front of a PC.

All five dimensions used to measure the level of use of the SEKAR system are as follows (Table 12).

Dimension	Score
Learnability	650
Error	682
Efficiency	864
Memorability	808
Satisfaction	836

Table 12. Score of Each Dimension

Using the assessment scale calculation, with the questionnaire comprising 13 questions given to 40 respondents, the total score if each item receives the highest score is (Fig. 6).

Highest score  $\times$  number of questions  $\times$  number of respondents = criterion score  $5 \times 23 \times 40 = 4,600$ 

With a total score from the data collection of 3,840, the criteria can be categorized as follows.

Based on Fig. 6 the graph above it can be seen that the level of use of SEKAR, with a score of 3,840, is on the interval line, GOOD. Therefore, it can be concluded that SEKAR has a good level of usage.

From the scoring of the three dimensions of each dimension of learnability at 650, Efficiency 864, Memorability 808, error at 682, and satisfaction at 836, the SEKAR system can be said to have a good level of usability. It is considered very helpful in doing work as an archivist. In addition, the system is also considered to have an attractive appearance in terms of colour, font and composition of images and text. The main screen, when first opening SEKAR, displays a menu that can help users to access various contents. This is an important part of the system, as it is the place where users interact with most of the choices displayed. The main screen is designed depending on the type and purpose of the system. It usually includes a search field so that users can easily find the content they need. In addition, because it is the starting point for users to start browsing a site, there is often a navigation element that provides access to various parts of the content.

In the SEKAR system, there is also a search field that makes it easy for users to find the digital content/files they need. This is in accordance with the Eight Golden Rules of Intensive Design [8], namely that the system is designed in such a way as to be as simple as possible, and that it provides short features and consistency in system design, namely the use of colors, fonts, and image composition. This is a factor that reduces short-term memory load so that users more easily recognize and use the system.



Fig. 6. Criteria Score of Usability

### 5 Summary

Based on the evaluation results of the electronic records management system, it can be concluded that SEKAR has a high level of usability based on the three dimensions studied, namely learnability, error and satisfaction. The system greatly helps the work of archivists in managing their files more easily. Besides this, users who access it also believe has an attractive appearance.

The level of difficulty and comfort of users in using SEKAR is reflected in the learnability aspect. The system scored well in this aspect, as it is quite easy to learn and understand when operating it, both on first access and on later occasions. However, there are also difficulties or obstacles found in the SEKAR navigation system. According to 40% of the respondents, navigation displayed too much at the side, which makes it quite difficult to use.

Errors that occur when using SEKAR can be seen from the results obtained from the error dimension analysis. In this respect, the system is very dependable, as there are rarely errors when users access it, both for ordinary activities, for downloading digital files and when searching for documents. However, based on the system analysis by the researchers, there is a menu on the main screen, which is part of the 'records creator' menu, which does not work, or the page does not display according to the commands written on the menu.

User satisfaction when accessing SEKAR can be seen in the aspect of satisfaction. This aspect also scored well. Almost all the respondents gave positive responses to this dimension. The SEKAR system is considered very helpful in their work as archivists.

From the analysis, it can be said that the SEKAR system is able to support the realization of multi-repository archives in the Universitas Indonesia environment and is a repertoire of archives for the university in particular, and the world of education in Indonesia in general.

In addition, from the research that has been done, supported by theory and quantitative data from the respondents, it is hoped that this research can contribute in providing suggestions and input for SEKAR developers. It is also hoped that this research can contribute to conceptual and theoretical developments in the study of digital archive system.

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all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

# **Bibliography**

- 1. Hayes, G. R. (2011). The relationship of action research to human-computer interaction. ACM Trans, 18(3), pp.15–34.
- International Organization for Standardization. (2020). Information and documentation— Principles and functional requirements for records in electronic office environments—Part 1: Overview and statement of principles (ISO Standard No. 16175-1:2020). https://www.iso. org/standard/74294.html
- International Organization for Standardization. (2016). Information and documentation— Records management –Part 1: Concepts and principles (ISO Standard No. 15489-1:2016). https://www.iso.org/standard/62542.html
- 4. Smallwood, R. F. (2013). Managing electronic records: Methods, best practices, and technologies. John Wiley & Sons.
- Adam, A. (2007). Implementing electronic document and record management systems. CRC Press.
- 6. Franks, P. C. (2013). Records and information management. American Library Association.
- 7. Te'eni, D., Carey, J., & Zhang, P. (2007). Human-computer interaction: Developing effective organizational information systems. John Wiley & Sons, Inc.
- Shneiderman, B., Plaisant, C., Cohen, M. S., Jacobs, S., Elmqvist, N., & Diakopoulos, N. (2016). Designing the user interface: strategies for effective human-computer interaction. Pearson.
- Nielsen, J. (2012). Usability 101: Introduction to usability. Nielsen Norman Group. https:// www.nngroup.com/articles/usability-101-introduction-to-usability/
- Palmer, J. W. (2002). Web site usability, design, and performance metrics. Information systems research, 13(2), pp. 151–167. https://doi.org/10.1287/isre.13.2.151.88

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