

**USABILITY STUDY ON THE ONLINE FINDING AID (OFA)
OF THE NATIONAL ARCHIVES OF MALAYSIA**

BY

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**A dissertation submitted in fulfilment of the requirement for the
degree of Master of Library and Information Science (MLIS)**

**Kulliyyah of Information and Communication Technology
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ABSTRACT

The role of the National Archives of Malaysia is to keep, preserve and provide access to archival materials. To fulfil that role, the National Archives of Malaysia has held an online finding aid system named OFA to facilitate users to find and access the archive materials. The online system has significant disadvantage since researchers are unable to download and make online payment, despite the fact that this service is needed for an online finding assistance. However, there are useful services provided such as online searching, PDF view and online reservation. From the mentioned scenario, this study will investigate user perception on usability of the OFA. This study uses a research framework that will test Jacob Nielsen's five usability attributes (Learnability, Memorability, Efficiency, Error, Satisfaction) with the 'Intention to Use' from the Technology Acceptance Model (TAM) to find out their relationship in OFA usability study. The researcher has collected 65 respondents' feedback through questionnaires and their opinion for OFA improvement. This research has described the finding through quantitative method using statistics test result to determine the perception of users on OFA of and unravel the factors that influence the use of it based on Nielsen's five usability attributes. It is found that the user's perception on OFA is 'moderate' use and the Nielsen's usability factors that influence on OFA usage based on percentage Likert scale score are preceded by Learnability, followed by Memorability, Satisfaction, Error, and Efficiency. The study also has shown that users want several improvements to the system. It was proved by 83% of the respondent answers the open-ended question wants the system to be improved that includes functionality, interface, network, and accessible content. Based on the research findings, this study suggested that the National Archives of Malaysia upgrade the efficiency of the OFA, such as the ability to download digital materials and access to more digital archives to increase its usage level. The study also suggested the OFA aggressively promoted to its targeted and potential new users primarily through a social media campaign as an effort to attract and increase the use of OFA.

ملخص البحث

يتمثل دور الأرشيف الوطني الماليزي في حفظ المواد الأرشيفية وحفظها وإتاحة الوصول إليها. ولأداء هذا الدور، انشأ الأرشيف الوطني الماليزي نظام المساعدة على البحث الإلكتروني OFA لتسهيل على المستخدمين العثور على مواد الأرشيف والوصول إليها. لكن النظام عبر الإنترنت فيه عيب كبير لأن الباحثين غير قادرين على تنزيل وإجراء الدفع عبر الإنترنت، على الرغم من أن هذه الخدمة مطلوبة للمساعدة في العثور على الإنترنت. ومع ذلك، هناك خدمات مفيدة مقدمة مثل البحث عبر الإنترنت وعرض PDF والحجز عبر الإنترنت. من السيناريو المذكور، قامت هذه الدراسة بالتحقيق في إدراك المستخدم بخصوص سهولة استخدام نظام المساعدة على البحث الإلكتروني OFA وتدرس العلاقة بين "نية الاستخدام" وسمات سهولة الاستخدام في Nielsen. قام الباحث بجمع ملاحظات 65 من المستجيبين من خلال الاستبيانات وآرائهم لتحسين OFA. وقد وصف هذا البحث النتيجة من خلال الطريقة الكمية باستخدام نتيجة اختبار الإحصاءات لتحديد تصور المستخدمين عن OFA وكشف العوامل التي تؤثر على استخدامه بناء على سمات سهولة الاستخدام الخمس لشركة Nielsen. وجد البحث أن تصور المستخدم عن نظام OFA "معتدل" وأن عوامل سهولة الاستخدام Nielsen التي تؤثر على استخدام OFA تسبقها قابلية التعلم، تليها قابلية التذكر والرضا والخطأ والكفاءة. وجد البحث أيضاً أن 83% من المستجيبين يجيبون على السؤال المفتوح الذي يفيد بأن النظام يحتاج إلى تحسين وترقية وواجهة وشبكة والمواد المتاحة في النظام. واستناداً إلى نتائج البحث، تقترح الدراسة أن يقوم الأرشيف الوطني الماليزي بترقية كفاءة نظام المساعدة على البحث الإلكتروني OFA من حيث إمكانية تنزيل المواد الإلكترونية والوصول إلى المزيد من مواد الأرشيف الإلكتروني لزيادة معدل استخدام النظام. كما اقترحت الدراسة أيضاً الترويج لـ OFA بقوة لجذب المستخدمين الجدد المستهدفين والمحتملين في المقام الأول من خلال حملة وسائط اجتماعية كجهد لجذب وزيادة استخدام OFA.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Library and Information Science.

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Nor Sa'adah Md. Nor
Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Library and Information Science.

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.....
Abd Rahman Ahlan
Dean, Kulliyah of Information and
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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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Signature.....*Afham J*..... Date..... 3 October 2022.....



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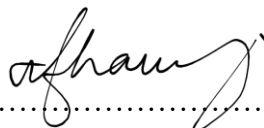
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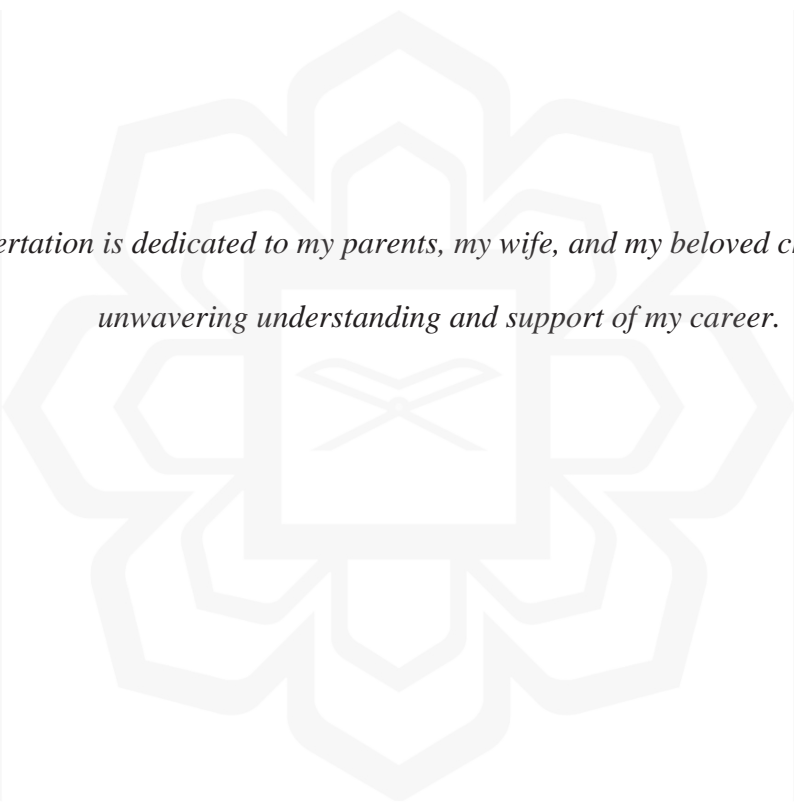
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*This dissertation is dedicated to my parents, my wife, and my beloved children for their
unwavering understanding and support of my career.*

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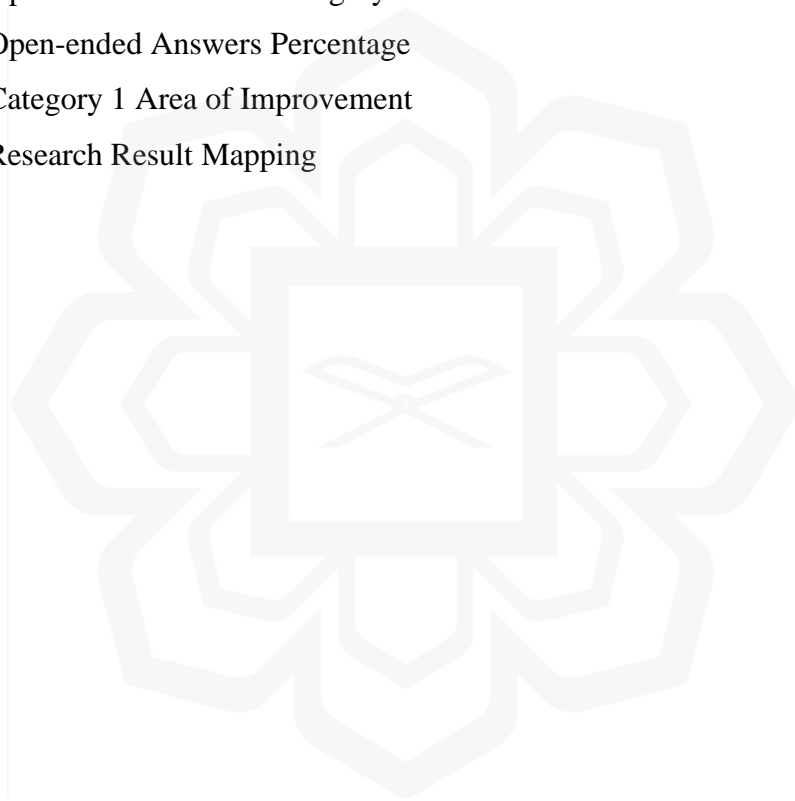
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CHAPTER ONE

INTRODUCTION

1.1 OVERVIEW

The digital archives are established to preserve historical information and to make it accessible online. In making a digital archive accessible online, it must be supported by an online system called online finding aid that assists users to find relevant information from the digital archives. In that scenario, the online finding aid is an important tool for the archives providing online access to archival collections. From the perspective of users, they want an online platform that is effective and able to carry out information searching activities to fulfil their needs. The usability of the online finding aid becomes crucial, especially in the era of online learning. Therefore, the online finding aids in Malaysia should be studied and discussed to understand the issues and explore future opportunities. This chapter will explain the background of the study and problem statement to support the research objectives, scope, and limitations.

1.2 BACKGROUND OF THE STUDY

Archival materials, also known as archives, are the documentary by-product of human activity retained for their long-term value (International Council on Archives, 2016). According to the Malaysian National Archives Act 2003 (Act 629), archives can be defined as *'records which are preserved for their permanent and enduring national and historical value or both'* (Government of Malaysia, 2003). Archives contain primary source documents that have accumulated throughout an individual or organization's lifetime. Archives encompass written documents, electronic resources (including websites and email), photographs, films, videos, and sound recordings. The archives are kept and preserved, showing the roles of a person or organization, acting as proof of existence or event, or acting as evidence of right. Therefore,

archives are kept and well preserved by the archival institutions, whether in the national and state-level department, municipality, university, or private institution. Most of the archive institutions traditionally acquire, conserve, preserve, and provide access to the archives. The archives users will come to the archive institution to find and do research on the archives collection such as manuscripts, files, maps, agreements, gazettes, photographs, and other documents for their work.

Since the 1960s, the National Archives of Malaysia (NAM) played a vital role in providing access and reference to all researchers, the so-called 'Finding Aid' facilitated access to the archives. At that time, it was a finding aid commonly in a printed form such as manual catalogue, accession list, index cards and thematic or sources guidebooks. It was a usual practice for the archives to publish such finding aids every year and served the users in the research room. At the same time, other information institution in Malaysia also provided reference services or finding aids for their own archives collection such as the National Library, public university academic library, newspaper agency archives, and commercial and private collection archives. As the technology evolved, the archives also embarked on digitization projects to digitize their collection for easy access and preservation. The archives digitized collection then is made available in their digital archive portal for online access. As a result, the digital archives and its finding aid served its user without border.

Information and Communication Technology (ICT) advancements required archives institutions to provide digital facilities for users to find and access the archives collection conveniently. The online finding aids and digital archives are increasingly essential to meet various research needs in line with current technological development. The challenges for the reference service institutions are the additional set of remote users, who access the reference service online, who are more demanding, less patient and have greater expectations (Vijayakumar & Vijayakumar, 2005). The question is whether the reference service institution

such as archives can fulfil the demand of researchers to provide and improve online access services. For archive institutions, the descriptive metadata now serves as the primary online finding aid elements for the digital archives so that it can be found and accessed by the users. The study of the existence and relevancy of various models of the finding aid in the for decades in other parts of the world have been actively discussed (Cox, 2007). The usability study of the online finding aids from a user's perspective on content and arrangement also has been published in other parts of the world (Coup, 2021). But, for archive institutions in Malaysia, the study to discuss the local context of the online finding aid has not yet been published. This research will study the online finding aid usability based on local institutions and contribute its findings to the benefit of archival management and system development.

1.3 DEFINITION OF TERMS

The following are definitions of terms in this research:

1.3.1 Computerized Archival System and Services (COMPASS)

COMPASS is an intranet client-server system developed by NAM in 1998 to meet the needs of archiving work starting from registration of acquisition of archival materials, preservation of materials in repositories, conservation in laboratories, storage location, and providing search and access to archival materials for researchers. This system was first introduced in 1998 and used until now at the Research Hall of NAM.

1.3.2 Online Finding Aid (OFA)

Online finding aid is an online tool provided by archive institutions that help users to find information in a specific record group, collection, or series of archival materials through the internet. The National Archives of Malaysia has its own online finding aid called OFA,

implemented since 2015 and serves as a search and access portal for researchers in finding archival material. The metadata of NAM's OFA is shared from COMPASS and the digitized archival materials are also linked to the OFA for online access. The OFA can be accessed through URL: <http://ofa.arkib.gov.my/>.

Figure 1.1 OFA National Archives of Malaysia – front page



1.3.3 Usability

Usability means the degree to which something is able or fit to be used. The word “usability” also refers to methods for improving ease of use. According to ISO 9241-11:2018 Ergonomics of human-system interaction — Part 11: Usability: Definitions and Concepts define usability as “the extent to which a product can be used by specified users to achieve goals with effectiveness, efficiency and satisfaction in a specified context of use” (International Standard Organization [ISO], 2018). Usability also can be defined as a quality attribute that describes how easy it is for a user to navigate through the website (Mustafa & Al-Zoua’bi, 2008).

1.3.4 Learnability

Learnability can be defined as the quality of products and interfaces that allow users to quickly become familiar with them, and able to make good use of all their features and capabilities. Learnability is a fundamental usability attribute because most systems need to be easy to learn, and it affects the first impression of a system. Ease to learn means that a user must learn how to use a system as quickly and as easily as possible.

1.3.5 Memorability

Memorability means the quality or state of being easy to remember or worth remembering. Memorability of a system applies to users who have already become familiar with a system, but then seldomly use the system. Memorability measures how well users can remember different functions after they have learned the functions.

1.3.6 Efficiency

Efficiency means how fast a user can perform a task once they have learned to use a system. According to ISO 9241-11:2018, efficiency is defined as “resources spent by user in order to ensure accurate and complete achievement of the goals” (ISO, 2018). With regards to software products and information systems, the key measured resource normally is time spent by user to achieve the goals.

1.3.7 Error

Error can be defined as a function performed by a user that does not lead to the aimed result. The term ‘Error’ specifically used in this research refers to the Nielsen usability attributes, which means the user interface should be straightforward enough so that the users only make as few errors as possible (Nielsen, 1993).

1.3.8 Satisfaction

Satisfaction means how pleasing the system is to use. It affects the user's motivation and thus the effectiveness of use. This element has similarities with the emotional aspects of the user experience, and it can be related to visual design, trends, brand image and feelings.

1.4 PROBLEM STATEMENT

Finding aids are developed and disseminated to describe the structure, context, and content of an archive collection. Finding aids are instruments that assist users in locating information within a particular record group, collection, or series of archival documents (The U.S. National Archives and Records Administration, 2016). Traditionally, users will utilise the finding aids in the archives reading room or research hall to locate the needed archival information. Registers, inventories, record accession lists, catalogues, calendars, indexes, and guides are examples of traditional finding aids.

Through digital technology, the traditional archival finding aid has transitioned from static documents and publications in the reading room into an online interface. Most of the online finding aids consist of descriptive metadata of the archives that explained the record group, record series and the archival item itself. Online archival description or descriptive metadata represents a significant step forward. It facilitates an enhanced discovery through remote interaction with collections and allows for broader and easier access to previously isolated archival materials.

However, current user expectations increasingly demand that the online finding aid act as the only point of access to archival collections in today's digital age. The fulfilment of the expectation has become a considerable responsibility for archivists to attend to (Walton, 2017). Former Director-General of the National Archives of Malaysia, Dr Samsiah Muhamad has proposed that the agency could provide information about its holdings and develop online

finding aid for government agencies, universities, and other organizations for national research. This networking should bring large amounts of data and information on sources directly to users, thus enabling them to identify relevant research materials even before visiting the archives. If this happens the demand for access to information about the archives' holdings directly from the institutions would increase (Muhamad, 1996).

The National Archives of Malaysia has developed so well in preparing a computerised, intranet client-server finding aid called COMPASS in 1998, and shifted to the OFA in 2016. Both services use the same datasets pioneered by COMPASS. The OFA now also serve as a digital archive of the National Archives of Malaysia, and users can search and access the digitised archives. Since then, online users utilised the OFA to search archival material by keyword search and browsing through the collections. During the transition period, the National Archives of Malaysia successfully digitised a total of 3,540,000 pages throughout 2014 (National Archives of Malaysia, 2014). The record groups consist of photographs and government official records which are available from selected files and publications. The *Straits Settlement*, *Selangor Secretariat*, *High Commission Office*, *British Military Administration*, and *Malayan Union* are among other popular record series for archives research. Users can browse a preview of these digital materials in PDF versions. However, it is a significant disadvantage since researchers are unable to download and make online payment, despite the fact that this service is needed for an online finding assistance. Before visiting the National Archives of Malaysia, researchers can simply conduct a search, access a PDF preview, study the descriptive information, and make an initial reservation for the requested materials.

In the case of library institutions, Ithaka S+R and Association for Research Libraries report on the sustainability of digital collections observed that libraries need to invest more resources in understanding their users. The report declares, "As the web only continues to grow

and provide many alternative information sources for those who seek them, developing robust strategies not just for ‘passive’ discovery but for ‘active’ outreach may be called for” (Maron & Pickle, 2013). Hence, to improve the quality of the archival services, a proper evaluation is required for both the online finding aid and digital services based on users’ and providers’ points of view.

Archives are rapidly transforming into the digital form and consequently, provide online access to remote users is vital. The changes bring new challenges for archivists since little is known about the usability of the archival descriptive standards and the online finding aids interface to the users in fulfilling their research needs (Walton, 2017). Besides, the changes of technology and the learning environment, especially during the total lockdown effect from the COVID-19 pandemic, has increased the use of e-resources, online databases, digital libraries, and other online resources under the ‘quarantine or work from home’ maxim through the digital transformation (Zhou, 2021). Thus, students and academicians as an online learning tools users are urged to become capable of handling a fully digital environment. Hence, this study is designed to look at the user perception on usability of the OFA as an online reference service from the National Archives of Malaysia. The findings will help the National Archives of Malaysia to improve its archival services further.

Another aspect that motivates to conduct this study is limited official reports from the National Archives of Malaysia in highlighting the use of the OFA. Referring to the annual report of the National Archives of Malaysia for the past six years (2015-2020) available on their official website, the National Archives of Malaysia only reported general use of archival materials as follows:

Table 1.1 National Archives of Malaysia Report (2015-2020)

Items	2015	2016	2017	2018	2019	2020
New Researcher Registration	5,193	8,798	3,935	4,167	4,941	2,113
Attendance of Researchers to the Research Hall	7,352	8,083	6,760	7,487	8,302	3,260
Requisition for Archival Materials in the Research Hall	38,257	65,781	58,252	65,525	68,898	66,471

Based on figures from the annual reports above, the National Archives of Malaysia only reported the number of researchers who attended the research hall. There was no information provided about the number of researchers who used the OFA or accessed archival material through the OFA.

In comparison before implementation of the OFA, in 2015 the annual report recorded 5,193 new researcher registrations and it was the second highest number of new researcher registrations in the previous six years (2015-2022). Since the implementation of OFA in 2016, the number of researcher registrations and archival materials accessed at the research hall have increased, but at the same time the annual achievement has fluctuated (National Archives of Malaysia, 2015-2020). In addition, the number of registered researchers decreased in 2020 compared to the previous year. This could be due to the Malaysian government's Movement Control Order (MCO) restrictions imposed to control the spread of the COVID-19 pandemic; however, the MCO should not prohibit the use of OFA and should spur its use instead.

According to National Archives data, there has been no significant increase in the number of new users or uses of archival materials since the implementation of OFA,