

# User Feasibility Study on the Digitization of Jawi Imprints Collection

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**Abstract**— Jawi literature is recognized as a Malay literary heritage, a rare and scarce collection that resulted in a call for preservation. One of the promising ways of preservation today is the technology of digitization. To date, studies have been published on the digitization of Jawi literature primarily concerning Malay Jawi manuscripts collection. Meanwhile, the Jawi imprints were discussed far less frequently. Thus, this study brings users to the forefront of the research in assessing their perceptions on digitization technology for Jawi imprints collection. This study employed a quantitative analysis and collected data from respondents through a questionnaire. The findings indicated that from users' perception, the digitization technology is probable for Jawi imprints collection, based on the measurement of their awareness, acceptance, and readiness. Further, the voluntary answers from respondents when they were asked to appraise any opinion that they wanted to add regarding the digitization of Jawi imprints collection have ascertained the importance to fulfil this effort together with lengthy commentaries. This study has contributed significantly to understanding the current status of the usage of Jawi imprints collection as well as users' perceptions towards the digitization for this collection.

**Keywords**—Digitization, Jawi imprints collection, User feasibility

## I. INTRODUCTION

The potential of digital technologies in safeguarding and preserving valuable assets have been established over time, predominantly in preserving the increasingly threatened heritage [1]. Technological advancements in digitization have been promoted by important world bodies such as UNESCO, which linked digital technology to the promotion of national and sustainable development and to the human right of information. United Nation Sustainable Development Goals (SDGs), under IFLA calls for “providing documentation and preservation of cultural heritage for future generation” which aims the eleventh agenda, to make the world a better place [2].

Many preservation efforts have taken, in which attention been given to the heritage of the nation's document treasures. For example, in Srinagar, [3] carried out a survey on preservation status of rare documents revealed that around 111 individuals or families and religious institutions to be having rare resources and be recorded. Meanwhile in Morocco, the Hassan II Prize program motivated holders of historic

manuscripts and archival documents to disclose their holdings, to gain access to records in private collections [4].

A recent program which named DREAMSEA, is a program that established a digital repository for Southeast Asian manuscripts and their contents run by a collaborative group in Indonesia and now have digitized more than 2,000 manuscripts from Indonesia, Thailand, and Laos. This program highlights the importance of protecting the literary heritage and safeguarding cultural diversity of Southeast Asian, which many of them are in unfavorable conditions and their future existence is threatened [5].

The application of technology specifically refers to digitization has been addressed to the domain of preservation of literary heritage in many regions. This study focuses on Jawi imprints (JI) collection, a collection of Malay literary heritage that is always discussed for its worthy value and uniqueness. This collection is said as an expression of Malay intellectuals' legacy and valuable treasure to be preserved and protected. Previously, the discussion of preservation mostly covered on the collection of Malay handwritten manuscripts. Because many manuscripts are or will be damaged, their contents may disappear forever [5]. That thought also occurs for JI collection, which have the characteristic of being rare and scare.

What one thinks about implementing digitization technology for the JI collection is the center point of this study. This study brings users, as a forefront of research because user-response can provide essential foundation for design strategies in the future. Most studies on digitization previously done in the population of information experts and stakeholders, so, this study will present data on users' position, perhaps will help in considering how the potential audience of digitized Jawi collection see towards its implementation in the future.

## II. BACKGROUND

Jawi literature has long been a subject of research by scholars, particularly about being among the Malay heritage. However, most studies regarding Jawi literature highlight the issues on the rarity and scarcity of this collection. For example, [6] expressed their disappointment in the current scenario where many Jawi literature cannot compete for its publications and has shut down publishing operations. It may deteriorate the general public's interest in exploring and learning Jawi for Islamic

knowledge and exploring traditional Malay cultures primarily written in Jawi [6]. This scenario explains why many studies on Jawi literature highlight a call towards preservation.

In [7] stated that Jawi literature is indeed “the most important product of local wisdom in Malay Islam and a valuable inheritance that needs to be preserved”. Meanwhile [8] mentioned “the importance to preserve the Jawi literature is to restore the Jawi script as the heritage and identity for Malays”. Among the few techniques of preservation mentioned is teaching and learning Jawi literature activities. This is in line with [6], who said that sending children to Islamic schools contributed as one of the preservation techniques of Jawi. In [8] also added the need to use the latest technology to nurture the interest among younger generations towards Jawi literature. Therefore, the preservation of Jawi literature is a domain that requires extensive studies to recognize the capable methods and techniques.

To date, many traditional education schools called *pondok* and Islamic institutions like *masjid* and *surau* in Malaysia are still using Jawi literature for the *kitab* Jawi classes. A study [9] explained the method usually employed is what so called *Collective Learning Process* whereby the teachers and the students open the same specific Jawi book; the teacher recites and explains while the students pay close attention and take important notes. Previous literature also shown that there were academicians, researchers, and students in higher institutions locally and even foreign gave attention and reference for *Jawi* literature in various fields of study [8, 10, 11, 12]. Relatively, there is no comprehensive data reported on the active use of Jawi collection.

The advances and rapid growth of technology contribute to preserving documentary heritage efforts worldwide. Many studies agreed that digitization is the best solution to preserve the content of rare documentary sources [3]. It enhances access and reduces the handling of original documents [13]. Hence, the researcher views that digitization has made it possible for Jawi collection to preserve Malay literary heritage.

To date, studies have been published on the digitization of Jawi literature, primarily concerning Malay Jawi manuscripts collection. Among online repositories that served Malay manuscripts existed today are the British Library's Digitised Manuscripts site [14], the Digital Repository of Endangered and Affected Manuscripts in Southeast Asia or known as DREAMSEA centered in Indonesia [5], and the *Katalog Induk Manuskrip Melayu* (translate: Union Catalogue of Malay Manuscripts) provided by the National Centre for Malay Manuscript of Malaysia's National Library [15]. The Universiti Malaya (UM) used to run a website called *MyManuskrip* on which hosted a significant amount of Malay manuscripts; a project that started around in the late 2000s and pulled somewhere in 2014 or '15, without warning or explanation [16]. The presence of a digitized version of Malay Jawi manuscripts as narrated above is because of the awareness from various parties about the unfavorable conditions of manuscripts. It prompted digitization efforts, with the thought that if the manuscripts are damaged, their contents may disappear forever. This study believes that the situation also happens for JI

collection, in which their digitization matters are discussed far less frequently.

Previous studies conducted on digitization do not adequately report the users' perceptions toward the implementation of digitization for documentary heritage collection [17]. So far, few studies have been carried out that report librarians' and information institutions' perceptions and experience on digitization projects [18, 19, 20]. Some of them also provide vital data to the administrators and stakeholders, either libraries or other information institutions, to acknowledge users in the development process and to survey them to evaluate the digitization projects in the future [4, 21, 22]. From here, this study stands that the study of experts cannot replace the study of users. The absence of users' analysis risks eliminating the variance of thinking among them.

The issues elaborated above related to Jawi collection and digitization have directed this study to assess users' perceptions on the digitization technology for Jawi literature, especially JI collection. By exploring how users aware the viability of digitization, accept and ready to use the digitized materiality of Jawi literature, would ascertain the sustainability of digitization technology for documentary and literary heritage.

### III. RESEARCH METHODOLOGY

This study used a quantitative survey research design to assess users' perception on the potential of digitization for JI collection. It collects numerical measures, which enabled the researcher to capture as much information as possible from the population of Jawi users to describe the usage status of Jawi collection and their perceptions towards digitization under investigation. The survey instrument that had been developed was composed of closed-ended and open-ended questions. This study included open-ended questions in the survey to capture data in the form of text responses written in respondents' own words and to compliment the overall perceptions of Jawi users towards the digitization.

Fig. 1 shows the study phases from the literature review process which was the most important process as the main reference and guidance to identify problems and issue around the topic. For example, this study identified there is no comprehensive data on the users of Jawi collection. After that, the research objectives and research questions were set. By adapting from previous studies related with digitization projects, digitized materials like electronic books (e-books) and digital resources collection [18, 17, 21, 23, 24], a conceptual framework was specified, and a questionnaire was developed and validated. Two sampling techniques were applied since this study administered through online where anyone can open the shared link and answer the questions including non-user of Jawi collection. Lastly, after collecting the data and screening process, the analysis was done with the appropriate instrument before this study submitted.

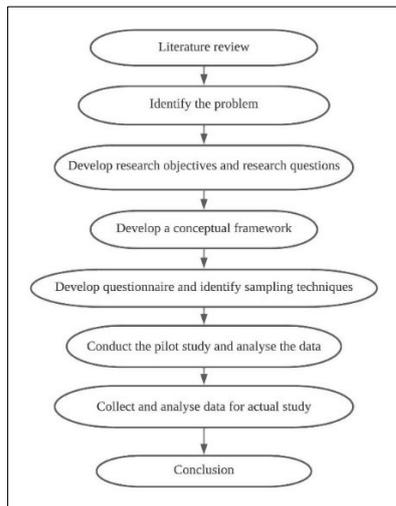


Fig. 1 Research design

#### IV. PURPOSE OF THE STUDY

The purpose of this study is to assess users' perceptions on the digitization technology for Jawi literature, especially JI collection. By exploring how users are aware of the viability of digitization, accept and ready to use the digitized materiality of Jawi literature, would ascertain the sustainability of digitization technology for documentary and literary heritage. The following are the objectives of the study:

1. To investigate the usage status of Jawi imprints (JI) collection.
2. To examine the perceptions of the users towards the viability of digitization for Jawi imprints (JI) collection.

#### V. CONCEPTUAL FRAMEWORK

Several studies adopted certain theoretical frameworks to examine user perception towards technology transformation like Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Information System Success Model (ISSM), Digital Library Use (DLU) as well as Theory of Planned Behavior (TPB). The perceived output from users towards the application of technology in information resources has mostly been discussed referring to existing digital resources of collection. However, it is a different case for JI collection which even need a very first step to be in digital format. Thus, this study chose not to explicitly use any of the frameworks mentioned above but propose a new framework which derived from previous frameworks to suit the context of this study.

Based on research objectives and literature review, the conceptual framework Fig. 2 was used in examining users' perception towards the viability of digitization for JI collection. They are perceived awareness, acceptance, readiness, and appraisal towards the digitization for JI collection. These areas of perception were adapted and extended from previous studies related with digitization projects, digitized materials like electronic books (e-books) and digital resources collection [18, 17, 21, 23, 24]. Studies show that perceived awareness,

acceptance and readiness of digitization and digitized materials have significant influence on the users thinking or agreeing, either negative or positive towards the implementation. Asking respondents to write appraisal using their own words reflects the emphasis of the viability of digitization from users' thinking.

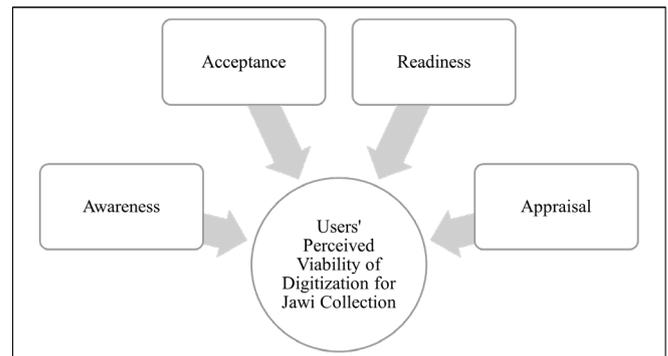


Fig. 2 The conceptual framework of users' perceived viability of digitization for Jawi collection.

#### VI. FINDINGS

##### A. The usage status of Jawi imprints collection

The usage status of JI is related with activities and experience that users responded to distributed questionnaires. It is aimed to know the usage status of JI collection among users. Therefore, this study asked respondents to describe their involvement as a user, their activities in using, and knowledge about getting access to the collection. The responses were analyzed in this study to be able to determine the usage status of JI collection among users.

##### 1) The users of Jawi collection

The distributed questionnaire is inquiring about how the respondents described themselves as the users of JI collection. There are six options given which were (1) Reader, (2) Teacher, (3) Collector, (4) Researcher, (5) Student, and lastly (6) Other which an additional option that allowed respondents to enter their own description.

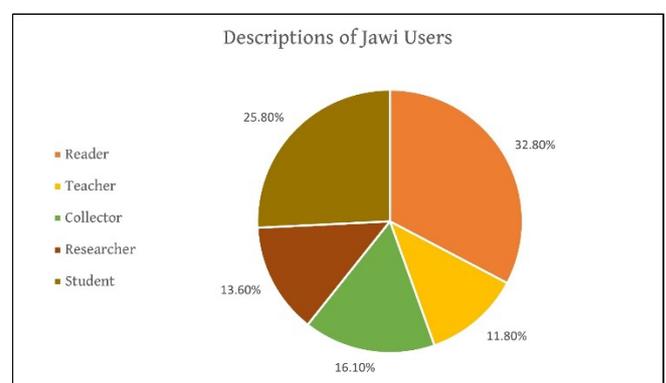


Fig. 3 Description of Jawi users

Fig. 3 shows that most of them preferred to describe their involvement with JI collection as a Reader with 159 individual responses equals to 32.8%, accordingly, followed by Student (125, 25.8%), Collector (78, 16.1%), Researcher (66, 13.6%)



TABLE 1 Awareness towards the viability of digitization for Jawi imprints

S/no	AWARENESS "Digitization for Jawi imprints ..."	Response scale (%)					Mean	Std. Deviation
		SD 1	D 2	N 3	A 4	SA 5		
1	improve individualized learning	3.8	1.9	13.1	26.3	54.9	4.27	1.013
2	supports communication and cooperation between teachers and students	2.3	1.9	11.7	30.5	53.5	4.31	.920
3	helps the construction of classical knowledge in depth	2.8	2.3	11.7	30.5	52.6	4.28	.958
4	increases access across cultural heritage and authentic exploration	1.4	1.9	8.9	27.2	60.6	4.44	.842
5	brings connection to communities	1.4	1.4	16.9	29.6	50.7	4.21	.890
6	increases the value of existing research	1.4	.9	10.8	25.4	61.5	4.45	.832
7	unlocks the potential to create new research content	.9	.9	10.8	27.7	59.6	4.44	.797
8	contributes to the preservation and protection of rare resources	1.9	2.3	4.7	17.8	73.2	4.58	.841

2) Users perceived acceptance towards the digitized Jawi imprints collection

The result presented in TABLE 2 shows the perceived acceptance of Jawi users towards digitized materials, measured by five items which reveals the acceptance outcomes of users' perception towards the viability of digitization for JI collection. The respondents were asked to indicate the level of agreement relating to how they perceived would accept the digitized version of Jawi collection. This describes the individual accessibility, enhancement in related performance, reference and sharing, and comparison acceptance with the printed version. Overall, the mean score is between M = 3.40 and 4.58 with SD = 0.638 to 0.979. The results show that largely the respondents have strongly positive acceptance towards digitized materiality of Jawi imprints based on four items; accessibility, enhancement in related to; research/ task or study performance, reference and sharing. However, when comparing their acceptance of digitized materiality with the printed version, it indicates less or neutral agreement with 51.6% individual responses.

TABLE 2 Perceived acceptance of Jawi users towards digitized materials.

S/no	ACCEPTANCE "Digitized Jawi imprints collection would ..."	Response scale (%)					Mean	Std. Deviation
		SD 1	D 2	N 3	A 4	SA 5		
1	improve my access to out of printed materials	0	1.9	7.5	21.1	69.5	4.58	.713
2	enhance my research/ task/ study performance	1.4	1.9	12.2	30.5	54.0	4.34	.868
3	make it easier for reference	.5	.9	8.0	25.8	64.8	4.54	.724
4	enable me to share materials with others.	0	1.4	3.8	31.5	63.4	4.57	.638
5	I think I would accept the digitized version of Jawi collection like the printed version	4.7	5.2	51.6	22.1	16.4	3.40	.979

3) User's perceived readiness towards the digitization for Jawi imprints collection

A series of questions was asked about the users' readiness towards digitization of JI collection. They may deal with digitized Jawi collection in previous. This section shows individual responses in terms of readiness in the context of their experience or becoming in using digitized version of JI.

Based on the results in Fig. 6, it shows the high positive responses which over 60% of users towards the first four items in the perceived readiness towards using digitized JI. The breakdown is, 68% of them have used at least once digitized version of Jawi materials and 62% currently have at least one digitized Jawi book. When asked about the usefulness of digitized JI,

80% responded yes whilst only 5% no and the rest 15% not sure. The highest percentage of individual responses saying that they have ever thought about the digitized version of JI collection, with total of 83% respondents.

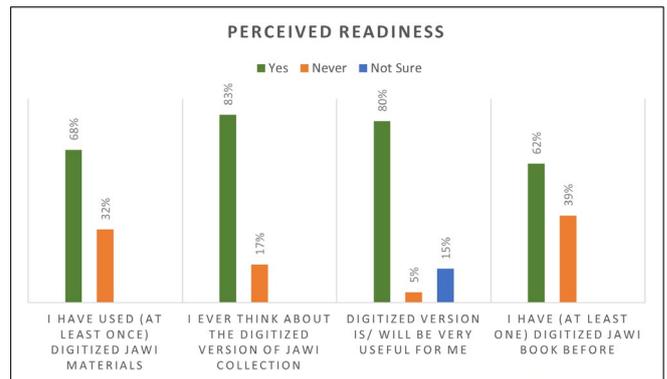


Fig. 6 Perceived Readiness Towards the Digitization for Jawi Imprints Collection

Another question asked was the reason why users are using or will use digitized Jawi collection, by selecting multiple answers given as well as can add other answer in "Other". There are five options given: 1) no printed version, 2) easy to access, 3) want to search across the content, 4) easy for referencing and lastly 5) prefer not to answer which imply a portion those who never have used or even never got a thought about digitized version of JI. The results as shown in Fig. 7. The individual responses indicate that users are well known the advantages of digital format of JI. The most preferred reason is about the easiness for accessibility and reference. The next most important reason too is due to no printed version exists which can be buy from bookstores or borrow from libraries, in fact that JI is a rare collection. The feature of digitized materials that enables users to search across a whole content is other reason why digitization is viable for Jawi imprints collection. There are six individual responses on "Other", with elaboration as following: 1) can access from my mobile phone; 2) for *talaqqi* (class), I prefer to use printed version; 3) I am not sure how its look like; 4) Clear appearance; 5) Can zoom and enlarge the text for reading; and lastly, 6) I am not using the digitized version because I am a student that highly use the printed one. I want to make *dhobit* (note) during class.

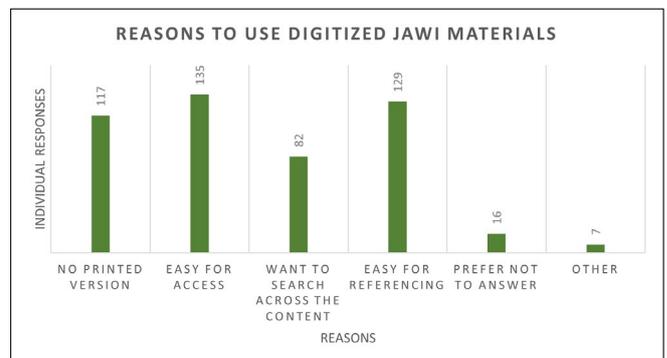


Fig. 7 Reasons to use digitized Jawi collection.

The survey also asked respondents what are among personal shortcomings when using or to use digitized materials, with five options of answer with an Other to self-elaborated answer. Those five are: 1) online access problems; 2) difficult to read from screen; 3) not good in handling devices; 4) prefer not to answer which an option given for those who may not have any idea what digital materiality is about and lastly, 5) no shortcoming so far which shows that highly support the viability of digitization efforts. The results as shown in Fig. 8. The main shortcoming selected by respondents is about difficulty in reading from screen and online access problems. However, the is also high selected with 54 individual responses saying no shortcoming so far. Meanwhile regarding not good in handling device though important, still is not ranking as highly as a reason for personal shortcoming, which may well indicate or confirm the increasing of technology literate today. In this question, a total of 27 individual responses for Other, the details can be categorized as following: 1) Cannot make *dhobit* (note); 2) Usually sell with high price; 3) Eye-stress look at screen; 4) Loss of focus and sentimental feeling; 5) PDF usually be set up cannot print out; 6) I don't like scrolling activities; 7) Sometimes there is incorrect content due to scanning process and result; and lastly 8) about PDF file too large to download, then easy to loss if not well manage in personal keep.

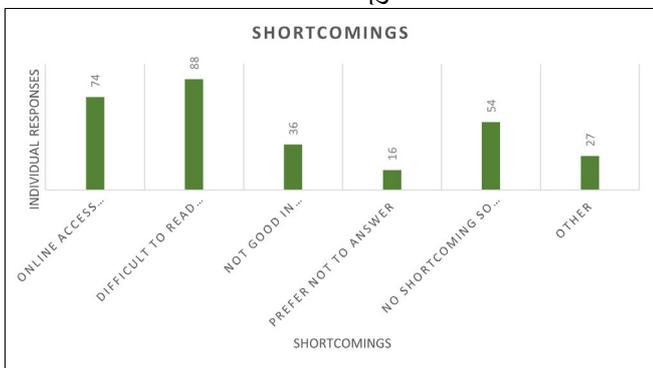


Fig. 8 Response on shortcomings when using or to use digitized materials.

#### 4) Users' appraisal on the digitization for Jawi imprints collection

In the final part of the questionnaire, the respondents were able to offer their opinions on the digitization of JI collection. This was not a required question, just an open-ended question to complement the overall perception of Jawi users towards the viability of digitization for JI collection. Out of 213 returned questionnaires, the total number responding to this question was 168 individual responses. The other 45 were not leaving any comments and just left it blank.

The content analysis from those 168 responses generated five major themes to group the appraisal responses on JI digitization. There were: (1) Importance and benefits, (2) Features and suggestions, (3) Preference, (4) Issues or challenges and lastly, (5) Others. Some respondents gave long answers and can be coded to more than one theme. TABLE 3 shows the breakdown analysis of users' appraisal.

TABLE 3 The breakdown analysis of users' appraisal

No.	Themes	Explanation	Frequency
1	<b>Importance and benefits</b>	Respondents addressed the importance of digitization implementation for Jawi imprints collection. The importance comprised about the preservation and protection of Jawi old materials, the accessibility, and the need to have united action with authority, to name a few.	82
2	Features and suggestion	About the digital collection features that some responses said as successful, beneficial, and not a kind of "taken for the granted projects". For example, they suggested having a specific repository handled by expert in knowledge management, funded by the authority with collaboration with those who are really know Jawi collection, not only those in universities, but including those in traditional institutions. For instance, they relate how to implement this effort with current established online repositories for Malay manuscripts in Europe like British Library, Leiden University Library and so on. Other comments that seem related, the implementation of the Jawi database also needs tools like transliteration to gain more interest from those who do not know how to read Jawi.	23
3	<b>Preference</b>	Preference of the printed version instead of the digital one. When there is no printed version, and there is the digital one, they will print it out. The most reason reported about this kind of preference is that printed versions make them easy to do notes in text or called ' <i>dhobit</i> '.	20
4	<b>Issues or Challenges</b>	Respondents expressed issues and challenges that related with discouragements to use the digitized version of Jawi materials in certain cases for example for learning class known as <i>talaqqi</i> with commentary about the value of the kitab. Some responses addressed the issues of discomfort using digital versions. Not good for eyes, not suitable for senior citizens who also use Jawi for classes in surau, don't like scrolling activities, and connection to internet problems. There was a very detailed comment about the quality of the scanned item he experienced, sometimes not clear. If clear, the size of the files too big and not compatible with devices.	36
5	<b>Other</b>	This includes a group of minor patterns of appraisals like a single word of response, not directly related with digitization, praise this study and express the hope to achieve a successful implementation.	27

As a conclusion, most users asserted that they support the implementation of digitization for Jawi collection by commenting on the value of Jawi scripts, the value of Malay intellectuals' knowledge, and the value of learning Jawi tradition.

## VII. DISCUSSION OF THE RESULTS

### A. The usage status of Jawi imprints collection

This study attempted to comprehensive data about the usage status of JI collection before discussing how its community thinking on the digitization.

The findings showed that most of the respondents choose to describe themselves as a "Reader" of Jawi materials, compared to other options; Student, Collector, Researcher and Teacher. Although the difference of percentage not so big, these findings indicated that the activity of reading Jawi materials is still happened even though there were many previous studies stated that not many can read Jawi [6, 9, 25]. With those statements, many programs and initiatives conducted to encourage the literacy of Jawi script, like promoted and done by National Library of Malaysia and Dewan Bahasa dan Pustaka.

As a "Student", was the second highest preferred answer. This finding in accordance with previous studies narrated that Jawi collection are actively use for the purpose of learning, especially in traditional education institutions and so-called Islamic centers like *masjid* and *surau* [6, 8, 9]. Later on in the final questions, we can find the returned responses regarding the appraisal and opinions on digitization related with activities from the views of students that less prefer using digital material during class because the challenges writing notes.

The option "Researcher", "Teacher" and "Collector" also got selected although only in small numbers. It is acceptable since it is logical that in a community, the number of teachers is less than students. In other words, when there are students, there must be a teacher. Describing as a "Researcher" was chosen by all respondents with demographic background; non-Malay and current location is other than Malaysia.

Regarding the purpose of using Jawi collection, the results of this current study seem slightly differ from the first question, where the most selected answer was "Reference" instead of "Leisure reading". After getting the results of the first question, which Reader is the highest chose, the researcher expected that "Leisure reading" as the highest selected answer for RQ1b. These findings indicated that the role of JI collection as reference materials, which are beyond an ordinary reading material. For instance, this study consistent with previous studies regarding using Jawi collection for the purpose of Islamic class or learning activities [6, 8, 9]. This study added up about the usage of JI collection, which in terms of for Research and Work. These two activities were selected most by those who describe themselves as a Researcher and a Teacher. There were also responses selected Other, by giving descriptions: Islamic and traditional medicine, Children's education, as librarian to share with who needs the material, self-reflection, and work of arts.

After getting data about the activities using JI collection, the study tried to identify how users get the materials, since this collection usually known as rare and scarce. [26] in preparing his work entitled *A Concise Handlist of Jawi Authors and Their Works* acknowledged that his research entirely based on the studies and publications of the late Haji Mohammad Shaghir Abdullah, Ian Proudfoot's *Early Malay Printed Books*, Vladimir Braginsky's *The Heritage of Traditional Malay Literature*, and other individuals. He also recorded that the data on printed editions of classical Jawi works were obtained from catalogue of Jawi books offered for sale by Syarikat Jaffar Rawas Sdn Bhd and other bookstores in Kelantan. It was a decade ago, thus, how about today?

By asking the respondents to state as much as they can for a question "In previous, I get Jawi materials from", the returned responses can be categorized into six main themes which are (1) bookstores, (2) related programs or events, (3) family heritage, (4) library repositories and holdings, (5) online platform including marketplace, and (6) certain individuals. This result indicated that the activities of selling and buying JI collection still happened today even not much as other reading materials in market. For instance, those responses also in accordance with what have been recorded by [26] regarding getting Jawi materials. With these findings, it is proved that this Malay literary heritage collection has a commercial value that can contribute to nation's economy.

### B. Perceptions of users towards the viability of digitization for Jawi imprints collection

To examine users' perceptions towards the viability of digitization for JI collection, the combination of perceived awareness, perceived acceptance, perceived readiness and appraisal were used as the measurement. The study revealed that from users' perceptions, technology of digitization is highly viable, based on strongly agreeing to all statements of agreement in the questionnaire, except for one statement under acceptance, received Neutral level. The highest statement that received strongly agree amongst users is about the potential of digitization for preservation and protecting Malay resources. This result showed that users are aware with the benefits of this technology to safeguard the heritage, just like in the mind of stakeholders and librarians as reported by previous studies [19, 3, 27]. For instance, the findings indicated that digitization get recognition from users to embrace JI collection in terms of their possibility increasing the number and value of existing research, improving communication between Jawi community, helping the construction of classical knowledge, as well as for accessibility. In other word can be said that in the users' perception, they appreciate the potential of digitization to open various of great horizons.

However, in the part of perceived acceptance which was asking the agreement for "I think I would accept the digitized version of Jawi collection like the printed version", received high responses on "Neutral", which means in the middle of accepting or not. The reasons can be found from answers given in the final part of questionnaire, which about respondents gave their voluntary opinions. As most respondents are Student background, they share their preferences to use printed version

during classes because convenient to make notes or known as “*dhobit*”. It also correlates with how users perceived their ability to handle devices and users’ comfort reading from the screen, as some of them elaborated in the open-ended question.

The breakdown of open-ended responses about asking appraisal confirms the emphasis of the viability of digitization for JI collection from users’ thinking. There were opinions and commentaries which include their expressions on the importance to implement that digitization, action of urgency and responsibility, the suggestion about features and hopes how it can become reality, also issues regarding preference as well as comfort. In this sense, users seem to be familiar with digitized materials so that influence their welcoming to the implementation of JI digitization. There were responses given based on the respondents’ experience using Jawi printed materials which amongst Student; they describe their activities during classes about taking notes or so called “*dhobit*”. These appraisals can be attached to studies that reported experience, lessons, and foundation to improve the implementation of digitization activities [18, 23, 24].

The uniqueness of Jawi collection, especially literature written by Malay Muslim intellectuals in the past also received concern from respondents as it can be lost and forgotten if no implementation taken [11, 12, 28]. They highlight the significance of digitization efforts to serve this purpose and bring force to authority to do the implementation, even by suggesting a collaboration of experts and none of them. The in-depth analysis on these responses may contribute to proposing guidelines and principles of digitization JI implementation in future.

### VIII. CONCLUSION

The potential and benefits of digitization have been discussed as one of best way for preservation. This study addressed this technology for Jawi collection, which well known as a Malay literary heritage, focusing on the current status of usage of this collection today and how viable the technology (digitization) is from the perceptions of users.

In examining the perceptions, this study concluded that the digitization is highly viable for JI collection in thinking of users, based on high strongly agree in all statements. The responded appraisal in open ended question from users corroborate the viability, associated with importance, suggestion and implementation, preference, comparison with printed version, and certain related issues.

Overall, the future of the JI collection should focus on preservation, accessibility, research opportunities, collaboration, and cultural appreciation. By realizing these aspirations, the collection can be cherished, studied, and enjoyed by people worldwide, ensuring the legacy of Malay literary heritage continues to thrive.

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