Assessing Indonesian University Students’ Preferences on Mendeley Reference Manager for Scientific Writing

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Abstract—Writing for scientific paper might seem a frightening task to a new researcher. This research aims at assessing the preference of Indonesian university students in Mendeley reference manager for scientific writing. This research applied survey research to find data to decide the straightforward characteristics of Indonesian Mendeley community in scientific writing. The researchers analyzed the data by using one-way tables focusing on the preferences of Mendeley features, which include citing as you read, annotate as you read, organizing your content, and access your research anywhere. This research indicated that Indonesian university students prefer to use Mendeley Word plugin, but then rather inexperienced with Bibtex export with LaTeX that entails more strict skill. This research also showed many Indonesian university students were reasonably skilled importing papers either from desktop or website. This study also indicated that Indonesian university students prefer to access Mendeley using a mobile device. This research recommends the government and scholars as well as academician to increase the scientific publication trend, with policy support as an authorized control. Mendeley could be beneficial for learners’ literacy development through mostly two Mendeley features entails “cite as you read” and “annotate as you read.” Mendeley as one the Reference Managers encompasses a medium to facilitate student for automatic citing and referencing the sources properly. However, the scientific environment requires a serious awareness by related stakeholders to use Mendeley wisely.

Keywords—reference manager; mendeley desktop; mendeley web; mendeley mobile; automatic citing and referencing; scientific writing; writing assessment.

I. INTRODUCTION

As a new researcher, writing for scientific publication can seem like an overwhelming assignment requires the approach to balance between writing for extremely particular peers and serving for a public scientific audience [1]. The first publication is always critical to the next step of a research career needs the way to ensure scientific writing is distinctive to get noticed. Any scientific work has to be cited in the manuscript to give credits to other researchers and show the research history [2]. Any reference in references at the end section of the manuscript has to be synchronized with the citation in the text in our scientific work. Irrelevant self-citations tend to be irritating as well; therefore, before adding any reference, a researcher should consider reference, which is indeed relevant to make sure the reader locates the valid source [3]. Nowadays, there are many application or software available (like Mendeley) to help the researcher manage references accurately to produce lighter scientific writing.

Mendeley has been being one of the favorite reference managers with four main features, which includes cite as you read, annotate as you read, organize your content, and access your research anywhere [4]. By the feature of cite as you read, Mendeley enables users to generate citation and create a bibliography with a simple click using a plugin that is compatible with Word processing or Bibtex with LaTeX. Annotate as you read feature concern on the adding thoughts on documents and collaborating in annotating papers as well as sharing the annotated documents. Organize your content feature includes the making organization and browsing easy, capturing auto metadata, and importing papers from the website, existing library, and from the desktop. The other main feature is about access your research anywhere, which includes the availability of cloud backup, fast access using mobile, securely access with Mendeley desktop, and firmly access with Mendeley website.

Mendeley provides users to highlight the necessary information easily and lists the automatic references at the end section of the manuscript [5]. This tool is expected to
show the way scholars increase their scientific writing due to they may save time to search, organize, and cite all the related previous researches. Educating to cite appropriately is also expected to avoid the scholars to the inappropriate citation that may catch prevalence in scientific writing [6]. Mendeley is also a social research network to share thought or ideas for collaborative research. Consequently, this study aims at assessing the preference of Indonesian university students on Mendeley reference manager for scientific writing. Mendeley might be an introduction for learners to increase intelligence in reading and writing. The more learners get support in reading and writing at the school level, at home and in the community, the higher their ability to read and write [7].

II. MATERIALS AND METHOD

This study applied survey research for exploring the preferences of students on the use of Mendeley Reference Manager in scientific writing. Survey research is intended to find data to decide the clear-cut characteristics of a group [8]. The questionnaire was distributed to 100 respondents. However, nine respondents did not fill out the questionnaire. There were 9 of the 91 respondents were willing to participate in the interview session. The survey research is conducted to assess the preferences of respondent either in particular or worldwide extent. Currently, survey research is extensively conducted to expose the distinctiveness of respondents on a particular focus. The researchers adapted the survey instrument derived from the default features of Mendeley [9]. The items in the survey were divided into four categories that consist of (1) Cite as you read, (2) Annotate as you read, (3) Organize your content, (4) Access your research anywhere. Every respondent may tick more than one item for each category. The survey data collected from April 1, 2017, to July 1, 2017. Respondents of this research are the Indonesian Mendeley Community filled out the survey. The researchers analyzed the data by using one-way tables as one of the approaches to the analysis of survey data [10]. The data analysis was focusing on the preferences of Mendeley features used by Mendeley users.

III. RESULTS AND DISCUSSION

After conducting the survey research on students’ preferences toward Mendeley Reference Manager in scientific writing, the researchers analyzed the result based on the one-way tables approach. All the responses from the respondents are divided into four categories representing all the features of Mendeley. These categories are cite as you read, annotate as you read, organizing your content, and access your research anywhere.

A. Cite as You Read

Figure 1 below indicated the preference of Mendeley users on the category of ‘cite as you read.’ This category describes the Mendeley users’ acquaintance on items on citing while reading resources. This category consists of four items, they are I generate citation with just a few clicks, I create bibliographies with a simple click, Mendeley citation plugin is fully compatible with my Word, and I use BibTeX support with LaTeX.

Figure 1 above indicates that there were only twenty respondents chose an item of ‘I use BibTeX support with LaTeX’ showed that least of Mendeley users prefer to use BibTeX export with LaTeX. However, the majority of Mendeley users indicated that they prefer to use Mendeley word plugin for citation due to eighty-five respondents chose an item of ‘Mendeley citation plugin is fully compatible with my Word.’ This research indicated that the Mendeley users found easily generating citation and creating bibliographies because all the respondents tick both item of ‘I generate citations with just a few clicks’ and I create bibliographies with a simple click.’

For the feature’s category of ‘cite as you read,’ Mendeley provides a plugin for Word processing application to easily generate citation and create bibliographies at once while Mendeley users read. During the writing, a citation can be inserted to transfer references from Mendeley Desktop into the References section of the article [11], [12]. The majority of Mendeley users that prefer to use Mendeley Word plugin indicated the high level of easiness of this feature. By a word plugin, a user can insert and edit the citation [5], [13] manually. However, most of the respondents participated in this research were unfamiliar with BibTeX export with LaTeX. The use with LaTeX produce the technical and scientific records for scientific publication [14].

Five participants in this study reported their experience using Mendeley regarding the significance of “cite as you read” feature.” It seems that they are familiar with
The details of transcription is presented in Table 1 below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Interviewee</th>
<th>Indonesian</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P1</td>
<td>Saya suka menggunakan Mendeley untuk membuat sitasi otomatis sekaligus sinkron dengan daftar pustaka. Mendeley cukup compatible dengan aplikasi word saya. Saya kurang paham menggunakan Bibtex.</td>
<td>I like using Mendeley to make automatic citation as well as synchronize with bibliography. Mendeley is compatible with my word application. I do not understand using Bibtex.</td>
</tr>
<tr>
<td>2.</td>
<td>P3</td>
<td>Mendeley secara otomatis sinkron dengan daftar pustaka dan sangat mudah dioperasikan meskipun oleh pemula. Sebenarnya Mendeley compatible dengan MS Word meskipun sitasi di awal kalimat harus dimanualkan tetapi prosesnya sangat mudah. Saya tidak pernah menggunakan Bibtex.</td>
<td>Mendeley automatically synchronizes with the bibliography and is very easy to operate even by beginners. Mendeley is compatible with MS Word although the initial citation of the sentence must be modified, the process is straightforward. I have never used Bibtex.</td>
</tr>
<tr>
<td>3.</td>
<td>P5</td>
<td>Membuat sitasi dan daftar pustaka di Mendeley sangat mudah, ringan, dan sederhana. Begini sitasi selesai, daftar pustaka juga langsung selesai karena kedua paket yang sinkron. Proses sitasi dan daftar pustaka ini didukung dengan compatibility software ini dengan MS Word. Saya tidak terbiasa menggunakan Bibtex.</td>
<td>Making citations and bibliography in Mendeley is very easy, lightweight and straightforward. Once the citation is complete, the bibliography is also completed immediately because both of them are one synchronous package. This software compatibility with MS Word supports this citation process and bibliography. I'm not used to using Bibtex.</td>
</tr>
<tr>
<td>4.</td>
<td>P6</td>
<td>Mendeley memfasilitasi pengguna untuk generate sitasi dan membuat daftar pustaka sekaligus. Proses ini dapat dilakukan dengan mudah di MS Word, hanya dengan beberapa kali klik saja. Saya lebih familiar menggunakan aplikasi MS Word dan belum pernah mencoba menggunakan Bibtex.</td>
<td>Mendeley facilitates users to generate citations and create a bibliography at once. This process can be done easily in MS Word, with just a few clicks. I am more familiar with using the MS Word application and have never tried using Bibtex.</td>
</tr>
<tr>
<td>5.</td>
<td>P8</td>
<td>Pengguna Mendeley dimanjakan oleh kemudahan sinkronisasi antara sitasi dan referensi menggunakan Mendeley MS Word plugin. Meskipun mendeley juga mendukung Bibtex, namun saya belum sempat mencobanya.</td>
<td>Mendeley users are spoiled by the ease of synchronization between citations and references using the Mendeley MS Word plugin. Although Mendeley also supports Bibtex, I have not had time to try it.</td>
</tr>
</tbody>
</table>

Table 1 above shows that Indonesian university students talked that they like using Mendeley to make automatic citation as well as synchronize with bibliography. Indonesian students also reported that Mendeley is compatible with word application and they do not understand using Bibtex. Indonesian students experienced that Mendeley automatically synchronizes the citation with the bibliography and it is very easy to use even by beginners. Indonesian students reported that Mendeley is compatible with MS Word although the initial citation in the sentence must be modified. The recognized that making citations and bibliography in Mendeley is very easy. Once the citation is complete, the bibliography is also completed simultaneously.

B. Annotate as You Read

Figure 2 below indicated the familiarity of the Mendeley users on doing annotation while reading. There are three items in the category of ‘annotate as you read.’ These items concern adding thoughts on documents, collaborating in annotating documents, and sharing annotated documents.
Figure 2 above showed that all the respondents chose an item of ‘I add thoughts on documents, even from my mobile phones’ indicated the easiness of annotating documents by multi-device. This research also showed that although collaborating and sharing annotated documents were less popular, Mendeley users seemed to experience fairly on those items. Items of ‘I collaborate in annotating documents’ and ‘I share annotated documents’ were experienced more than a half of the respondents, they were ticked by fifty-four and sixty respondents respectively.

Adding thoughts or ideas on documents either from desktop or mobile was the most popular items in the category of ‘annotate as you read.’ This feature enables a Mendeley user to easily annotate documents either in desktop or mobile version as well as highlighting and adding notes [5]. However, adding thoughts on documents is not as popular as collaborating and sharing annotated documents. Due to more than a half of the respondents perceived the collaborating and shared documents indicates that Mendeley users are to some extent open in sharing thought or ideas on documents, but made private specific concerns. This research indicates that a tool such as Mendeley as a social research network impact the process of scholarly research [12], [15].

In the interview session, 4 participants revealed their experiences related to the theme "annotate as you read." The four four interview transcripts below represent three features in this theme. Interview transcripts that represent the theme "annotate as you read" can be seen in Table 1 below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Interviewee</th>
<th>Indonesian</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P2</td>
<td>Mendeley sangat memudahkan adding thoughts on documents, bahkan mudah dilakukan juga di handphone. Saya juga terkadang berkolaborasi dalam annotating documents and sharing annotated documents kepada kolega yang sebidang.</td>
<td>Mendeley dramatically simplifies adding thoughts on documents, even more accessible on mobile phones. I also sometimes collaborate in annotating documents and sharing annotated documents to a colleague who is a part.</td>
</tr>
<tr>
<td>2.</td>
<td>P5</td>
<td>Menambahkan gagasan pada dokumen merupakan hal yang sangat mudah dilakukan di aplikasi Mendeley. Meskipun mendeley juga mendukung fitur berkolaborasi pada annotating document dan mudah berbagi annotated document, saya tidak sering menggunakan.</td>
<td>Adding ideas to documents is very easy to do in the Mendeley application. Although Mendeley also supports collaborating on annotating documents and easily sharing annotated documents, I do not use them often.</td>
</tr>
<tr>
<td>3.</td>
<td>P7</td>
<td>Ketika dokumen dibaca di aplikasi Mendeley, setiap gagasan kita sebagai wujud sikap kritis membaca dapat langsung diketik sebagai notes. Saya bersama kolega terkadang berkolaborasi membuat catatan di doumen dan hasilnya juga saya terkadang share untuk mengetahui pendapat kolega sebidang terkait dengan gagasan tentang dokumen tertentu yang dibaca.</td>
<td>When documents are read in the Mendeley application, each of our ideas as a form of critical reading can be directly typed as notes. My colleagues and I sometimes collaborate to make notes on the document and the results also sometimes share to find out what my colleagues think about the idea of certain documents being read.</td>
</tr>
<tr>
<td>4.</td>
<td>P8</td>
<td>Gagasan yang tiba-tiba atau kebetulan muncul pada saat membaca dapat langsung direcord di dokumen. Jika saya sedang melakukan penelitian kolaborasi, dokumen yang sudah saya beri catatan tersebut saya bagikan ke sesame kolega dalam grup penelitian saya.</td>
<td>Sudden ideas or coincidence when reading can be recorded directly in the document. If I was doing collaborative research, the document I had given the note I shared with colleagues in my research group.</td>
</tr>
</tbody>
</table>

Table 2 above indicates that Indonesian students in higher education level experienced the ease of adding thoughts on documents, which is also supported by smartphone. Indonesian students revealed their experience that they sometimes collaborate in annotating documents and sharing annotated documents to their friend. Indonesian students also reported that they could type their ideas directly as notes while they are doing the critical reading. This feature seemed to be beneficial to students to keep noting down any ideas related to the document they are reading either individually or collaboratively.

C. Organize Your Content

Figure 3 below performed that items of Mendeley makes organization and browsing easy’ and ‘Mendeley helps me with auto captures metadata’ were the most popular for Mendeley users in this category. This research also showed that importing papers from existing library was more popular than importing papers and other documents from the laptop and the website. All the items in this category were highly perceived by Indonesian Mendeley users ranging from 75 to 91 numbers of ticks. The Figure 3 below showed that all the respondents chose the items of ‘Mendeley makes organization and browsing easy’ and Mendeley help me with auto captures metadata.’ This research indicated that Mendeley users experienced thoroughly that Mendeley makes organization and browsing easy as well as the capturing metadata. There were eighty respondents ticked the item of ‘I import papers from my existing library’ indicated that the majority of the respondents had another citation manager. Items of ‘I import papers and other documents from my desktop’ and ‘I import papers from the website’ were similarly favorite showed by 76 and 75 numbers of tick respectively. This research showed that many Mendeley users experienced import papers either from desktop or website.
Mendeley makes organization and browsing easy as well as the capturing metadata were the most popular items in the category of ‘organize your content.’ To a great extent, the capture dwells distant from ideal [16]. This research indicated many Mendeley users are importing papers from the existing library. Various popular reference management tools exist to help researchers increase research and publication trend [17]. Furthermore, this research also showed many Mendeley users were rather qualified to import papers either from desktop or website. The synchronization between desktop and web makes scholars tend to use Mendeley and other such reference manager to import documents for academic portfolio purpose [18].

Table 3 below shows the experience of Indonesian students in using Mendeley. They seemed to thank Mendeley which help them organizing the documents and metadata. The details of the interview, Table 1 below describes the importance of using Mendeley to help to organize documents and metadata in Mendeley Desktop.

### Table III

<table>
<thead>
<tr>
<th>No.</th>
<th>Interviewee</th>
<th>Transcription on Organizing Your Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P1</td>
<td>Mendeley memudahkan saya mengorganisasi folder, subfolder, dan dokumen. Mendeley juga sangat membantu dalam hal menelusuri referensi yang diinginkan. Dengan demikian, pengguna Mendeley yang masih pemula seperti saya dapat dengan mudah membuat kategori dokumen dan sekaligus mudah melacak file yang dikaartikan tumpang tindih.</td>
</tr>
<tr>
<td>4.</td>
<td>P8</td>
<td>Umumnya paper atau dokumen di akun Mendeley saya bersumber dari berbagai repository dan perpustakaan yang terlebih dahulu tersimpan di Desktop lalu saya upload masuk di Mendeley Desktop.</td>
</tr>
<tr>
<td>5.</td>
<td>P9</td>
<td>Beberapa paper di akun Mendeley saya bersumber langsung dari website jurnal. Paper atau dokumen tersebut saya tambahkan menggunakan fitur web importer.</td>
</tr>
</tbody>
</table>

Table 3 above describes that students reported their experience making folder and subfolder organization. Indonesian students also expressed that Mendeley is also very helpful to track the preferred references and avoid the documents duplication and overlap category. Besides, Mendeley seemed to spoil Indonesian students in detecting metadata just by copying the digital object identifier (DOI) in the required space. This interview also confirmed that
documents originating from reputable journals could be autocorrected. Indonesian student also talked that they use another citation manager before using Mendeley. They seemed to familiar with XML to import PDF file from other similar citation or reference manager. This interview also shows that Indonesian students experienced the ease of importing their pdf or citation collections saved in desktop and importing from journal website straightaway.

**D. Access Your Research Anywhere**

Figure 4 below showed that the category of ‘access your research anywhere’ is most popular compared to others. From four items available in this category, three items were ticked ninety-one by Mendeley users. Overall, all the item numbers of tick in this category were ranging from 85 to 91 indicated the most popular of feature for ‘accessing research anywhere’ compared to the other three categories.

![Access your research anywhere](image)

**Fig. 4: Access your research anywhere**

Figure 4 above showed that all respondents in this research chose items about the availability of cloud library backup, secure access on Mendeley desktop and Mendeley web. Majority of the respondents (eighty-five) also prefer to choose an item of ‘fast access Mendeley using my mobile application.’ In general, the category of ‘access your research anywhere’ was the most popular in this research. The category of ‘access your research anywhere’ is the most popular category compared to ‘cite as you read,’ ‘annotate as you read,’ and ‘organize your content.’ Three of four available items were marked ninety-one by Mendeley users in this category. All respondents in this research ticked items on the availability of library backup in the cloud and secure access to Mendeley desktop and Mendeley web. The majority of the respondents in this research also prefer to access Mendeley fastly using mobile application. The cloud document management system makes Mendeley easily accessible throughout the mobile, web, and desktop. Mendeley cloud storage enables users to create an account with 2GB cloud storage free for convenient access of collected publications. Also, Mendeley is compatible with Mobile apps, which includes iOS and Android devices for searching abstract and metadata. Mendeley mobile also supports to download available full-text for offline viewing [19].

All the interviewee in the interview session reported that they seemed to be fascinating to access their research anywhere. Indonesian students talked that they were accustomed to secure access either Mendeley desktop or Mendeley web. The details of the transcription is presented in Table 4 below.

### Table IV
**Transcription on Access Your Research Anywhere**

<table>
<thead>
<tr>
<th>No.</th>
<th>Interviewee</th>
<th>Indonesian</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P1</td>
<td>Akses Mendeley dari Desktop saya tidak pernah bermasalah. Dengan kata lain, akses mendeley dari desktop saya sangat aman meskipun desktop terserang virus atau malware.</td>
<td>Mendeley’s access from my Desktop has never been a problem. In other words, browsing access from my desktop is very safe even though the desktop has a virus or malware.</td>
</tr>
<tr>
<td>2.</td>
<td>P2</td>
<td>Mendeley dapat dengan aman saya akses dari dua browser yang paling sering saya gunakan, yaitu Chrome dan Mozilla Firefox. Selama saya menggunakan mengakses Mendeley Web, saya tidak pernah menemu hambatan dari segi keamanan mengakses akun Mendeley web saya.</td>
<td>Mendeley I can safely access from the two browsers I use most often, namely Chrome and Mozilla Firefox. As long as I use access to Mendeley Web, I have never encountered any obstacles regarding security from accessing my Mendeley web account.</td>
</tr>
<tr>
<td>3.</td>
<td>P3</td>
<td>Saya tidak pernah menemukan kendala mengakses mendeley, baik akses di Mendeley Desktop saya maupun akses di Mendeley web di browser. Keduanya dapat saya akses dengan aman.</td>
<td>I have never found a problem accessing Mendeley, either accessing my Mendeley Desktop or accessing Mendeley web in a browser. Both of them can be accessed safely.</td>
</tr>
<tr>
<td>4.</td>
<td>P4</td>
<td>Yang paling menyenangkan dan menenangkan hati saya</td>
<td>The most fun and comforting of my heart using</td>
</tr>
</tbody>
</table>
Mendeley is just a tool to enable users to access Mendeley using a mobile device. However, papers can be downloaded from desktop and website. Mendeley users prefer the features that they can access anywhere and use a different device. This research also showed that Mendeley Word plugin is somewhat unfamiliar with Indonesian students.

Mendeley is also acknowledged by providing very easy and fast access even from a mobile device. It seemed that it is undeniable because Mendeley gives this protection with cloud-based online storage facilities. It cannot be denied that Mendeley helped me keep my files online so I can access them when I can take the time.

Table 4 above indicates that Indonesian students experience on Mendeley’s access from Desktop. They reported that browsing access from the desktop is very safe even though the virus is infecting the desktop. Indonesian students also expressed that Mendeley secure to access from the two browsers that most computer users often used, they are Chrome and Mozilla Firefox. They talked that they have never encountered any obstacles regarding security from accessing Mendeley web account while they use access to Mendeley Web. It seems that Indonesian students feel secure storing their documents in Mendeley account which provide cloud storage due to the availability whenever needed. This cloud library feature serves as a backup of a personal library that they can access anywhere by multiple devices. Indonesian students reported that Mendeley helped them protecting their reference collection from threats of file damage, virus attacks, and even threats of device theft. Mendeley gives this protection with cloud-based online storage facilities. It seemed that it is undeniable because Mendeley helped students keep files online and provide access anytime. Mendeley is also acknowledged by providing very easy and fast access even from a mobile device.

IV. CONCLUSION

This research indicated that Mendeley users prefer to use Mendeley Word plugin, but somewhat unfamiliar with Bibtex export with LaTeX that requires more technical and scientific skill. This research also showed that Mendeley users are to some extent open to public issues, but keep private to particular concerns. This research also showed that Mendeley users were instead experienced importing papers bot from desktop and website. Mendeley users prefer to access Mendeley using a mobile device. However, Mendeley reference Manager is just a tool to enables scholars to cite appropriately; the scientific environment requires a serious awareness by stakeholders in research, which include government and scholars as well as an academician. Increasing the scientific publication trend requires policy support as an official control. Mendeley could be useful for learners’ literacy development through mainly two features consist of “cite as you read” and “annotate as you read.”

REFERENCES


