INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH AND KNOWLEDGE
ISSN-2213-1356 www.ijirk.com

Skills of academic staff on Reference Management Software (RMS): a survey at Jomo Kenyatta University of Agriculture and Mount Kenya University

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Abstract

This paper presents a study done at Jomo Kenyatta University of Agriculture (JKUAT) and Mount Kenya University (MKU), Kenya, intending to establish academic staff's ICT skills and its effect in the adoption of the software. The sample encompass the responses of academic staff at JKUAT and MKU. Descriptive survey design has been employed through questionnaires. There seems to be a low uptake of RMS among academic staff, the general awareness is high but they lack the skills needed to navigate the tools. Librarians need to do a lot in terms of training and support. Data gathered from this study can be used as a basis for a more intense comparative survey in different universities in Africa. This is the first survey carried out on the academic staff.

Keywords: *Reference Management Software, Academic Staff, Bibliographic Management Software, Mendeley, Zotero, EndNote, Reference Manager*

Introduction and Background

Reference Management Software are in a general sense programming groups inferred for scientists and makers to use for accountability (Francese, 2014). The inspiration driving Bibliographic Management Software is to assemble, create, incorporate and allude to references in the midst of the route toward making academic substance either for an investigation result or report.

Manual referencing involves filing all used articles and entering them individually in text and then arranging them alphabetically into a reference list which is a difficult, tiresome and time-consuming process (Sherwood, 2018). Using RMS only requires introducing all readings into a library in the relevant referencing software. It saves a lot of time in terms of referencing for you only need to click on the relevant button and all the resources used are automatically organized, sorted and inserted into the reference list.

Nitsos et al. (2021), noted in their survey that very few students use RMS and even after the introduction of Mendeley in their institution, they were not aware of that fact. This shows that libraries have a lot to do in terms of training and awareness of the tools in order to have an uptake in the adoption and use of the RMS.

To streamline reference and referencing issues, different programming devices which engage the researcher to create and administer bibliography easily are available in open source and commercial software (Carpenter, 2014). There are diverse programming groups like EndNote and Reference Manager which are for commercial while Mendeley and Zotero are open source which are used for successful organization of references.

The software packages can be used as work zone foundations for referencing and furthermore to store inventories online which can be gotten to wherever, at whatever point. As established by Bryson (2012) when working on project involving a lot of references then one should find it valuable using the RMS. In addition, referencing control software also can be used for storing and annotating PDF files and citations, looking and sorting through citations and notes, organizing through folders or tagging, sharing references for coaching or venture purposes, collaborating with colleagues through written files and social networking, backing up of citations and notes online, and synchronizing paintings among devices.

Kumar (2017) looks at universities as research centers and so the need for universities to emphasize on education of academic staff and scholars in the significance of legitimate referencing and reference style in their insightful substance.

Literature Review

Sarrafzadeh and Khaleghi (2017) studied extent of assistance and training offered for the citation management software by Iranian academic libraries. The study found that only 38 percent of universities had the departments organizing for trainings, while the rest of the university's faculty associations had arranged for the trainings. In more than 90% of the public universities training was done face to face and the classes are either free or one pays some small amount of cash. Scholarly website was the source of data collection for the research hence locking out universities that are operative in referencing management tools training but have not displayed their activities on RMS training on their websites.

The function of libraries in rendering support to scholars is something that needs attention. According to East (2001) libraries have come to be seen as the center of expertise in academic institutions in matters related to RMS. Danner and Pessu (2013) did a study at the University of Benin, Benin City, Nigeria to establish ICT skills among Students in Teacher Preparation Programs. The research findings indicate that 81% were computer skilled while 19 percent were not. The research findings further show that of the eighty one percent (81%) who were computer

skilled, fifty one percent (51%) had non-official computer training and learned the skills from cronies, family, and regular use of the computer. Thirty percent (30%) got some form of official computer training from private computer schools. None of them had any satisfactory certificate in computer studies. The data analysis further showed that eighty five percent (85%) used the computer at cyber cafes with only fifteen percent (15%) using computers in their homes. That research only looked at the ICT skills among students and left out the staff. To establish the skills of different categories of researchers in the use of RMS is very important. The survey only looked at the skills of the students and did not put the academic staff into consideration.

Fakkirappa Kattimani and Naik (2013) did a survey at the engineering college libraries associated with Visvesvaraya Technological University (VTU), Belgaum in Karnataka state, India to assess the competences in librarianship and information communication and technology (ICT) skills between different levels of library professionals. Most library staff were found to be having low level of computer technology due to the management not encouraging them to upgrade their ICT skills and lack of allocated finances for library staff training. This survey was very important as the function of libraries, and reference librarians in providing information and support on managing RMS is very important. Only that the research only concentrated on library staff. We again see that the academic staffs are not factored in the survey.

Madhusudhan (2016) conducted a survey among the students of Library and Information Science at the University of Delhi on how online referencing software fit into the intellectual and research process. The most evident obstruction is that they have never utilized the online devices (47 %), trailed by significant trouble of respondents looked because of absence of preparing (35 %), absence of reference styles learning (30 %), dialect challenges (27 %), absence of specialized help (23 %), absence of terminals (20 %), directions in online reference device isn't clear (17 %), web data transmission (15 %), mechanical issues (8 %). It is to be noticed that they see the absence of fundamental PC aptitudes as a mechanical issue. A few students have likewise demonstrated different troubles, for example, not discovered list of sources for drop down menu and pull up the choice, and also style drop down menu when utilizing the online reference devices (3%). This survey only focused on students of Library and Information Science and did not facture in the academic staff.

Morris (2013) carried out a study on the steps to accessing free RMS. The results from the received completed questionnaires, revealed that after 12 month of the institution accessing Son of Citation and Zotero referencing tools, 85% of the respondents had used the tools. 52.5% had only used Zotero, 17.5% had only used Son of Citation only, 12.5% had used both Zotero and Son of citation and 2.5% others. Only 15% chose to reference manually and they further said that their choice was guided by lack of access to computers and lack of the necessary skills. They also indicated that they had not had time to attend trainings and thorough trial with the computers. They therefore needed training so as to understand referencing properly before using it. Training is therefore paramount to the adoption and use of the RMS. The study is only limited to students and left out the academic staff which therefore calls for a need to look at the academic staff and the RMS which this present study did.

According to Vardi (2012) extreme thorough in referencing in academic writings involving research articles or assignments had always presented challenges. This is also evident in a research done by Beauchemin-Roy et al. (2019)among university students which established that new students joining universities feel less efficient in their referencing skills compared to more advanced students. The introduction and training of on the RMS by librarians is therefore paramount and a savior to the referencing challenges and a surety of accuracy and consistency in referencing academic writings. His survey involved the justification of introducing RMS to students and did not take the academic staff into consideration.

McMinn (2011) emphasizes on the importance of library's roles in the training and uptake of the RMS. His study on the library support and training queries the libraries rather than addressing directly the users. There is therefore a need to look at the users and, in this case, the academic staff.

In spite of this great interest for RMS distribution in libraries, there are almost no studies about the connection between RMS and the academic staff and their skills in navigating the tools. A lot of effort is put in students and library staff, but none on the academic staff and their skills on RMS.

Methodology

The study employed a descriptive survey design. The survey used 151 respondents. The sample embraced 92 JKUAT academic staff and 59 MKU academic staff Stratified. Simple random sampling was used to select academic staff from various departments from the two selected universities. Questionnaires were used by the researcher as instrument of collecting data from the respondents. Both qualitative and quantitative data were collected. Descriptive statistics was used to analyze quantitative data gathered while qualitative data was presented in textual form, tables, bar graphs, and pie charts.

General Distribution by University and Academic Positions

		Count	%
University	Mt Kenya	55	45.1
	JKUAT	67	54.9
Academic position	Professor	14	11.5
	Associate professor	7	5.7
	Senior lecturer	11	9.0
	Lecturer	46	37.7
	Assistant lecturer	16	13.1
	Tutorial fellow	23	18.9
	Graduate Assistant	5	4.1

Results and Discussions

Academic staff's computer skills were determined so as to determine their competence in accessing and using RMS. Academic staffs were asked to indicate if they had adequate computer skills. This section of the report provides the number of respondents with adequate computer skills, and competencies in tables the table below.

Respondents' ICT Skills

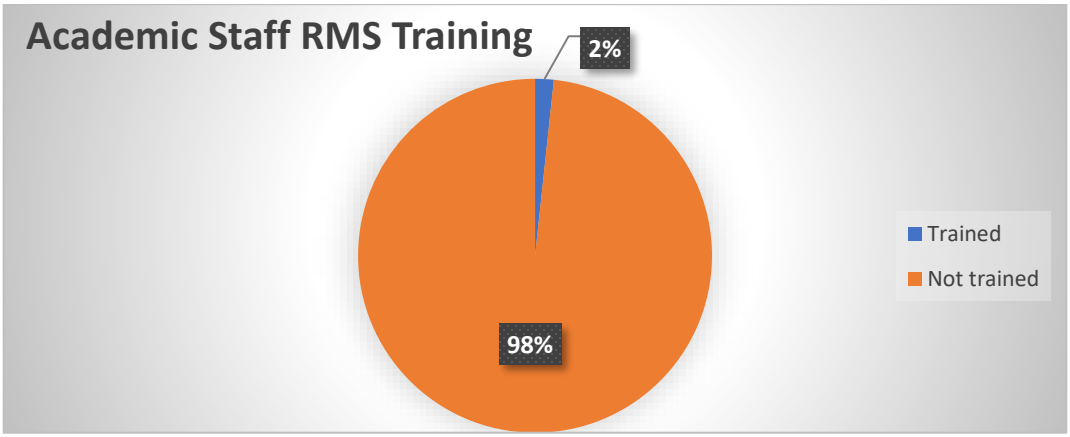
	Yes		No	
	Count	%	Count	%
Do you have adequate computer skills?	119	100.0	0	0.0

From the table above, it is seen that 100% of faculty members had satisfactory fundamental PC abilities. Universities are in the process of going digital and even offer some courses online so it is expected that most if not all academic staff have adequate computer skills. This shows that universities have taken the initiative to

arrange training courses on adequate computer courses for academic staff. This is positive since apart from using the computer for teaching it showed that the academic staff could easily be trained on how to access and use the RMS since they were already computer literate. Accessing the reference management software needs computers and therefore the need for academic staff to be computer literate. According to Fakkirappa, Kattimani and Naik (2013)Universities need to arrange computer training courses for their staff because lack of it leads to computer illiterate staff which hinders most of university operations which have gone digital. It is therefore mandatory for universities to arrange training courses so that the academic staffs have adequate computer skills.

Academic Staff RMS Training

Adoption of RMS can only be implemented if the academic staffs have the required computer skills through training. Therefore, the effectiveness of academic staff in accessing and using the reference management software depends on the universities arranging trainings for them. Academic staffs need training on the aspects of accessing and navigating the reference management software and the entire process of how to use it. It was hence critical to establish if academic staff had been subjected to training on details of reference management software considering that training connects ability and adoption of reference management software. Faculty members were asked to determine if they had taken part in any course or workshop on reference management software. The reactions are summed up and introduced in the figure below.



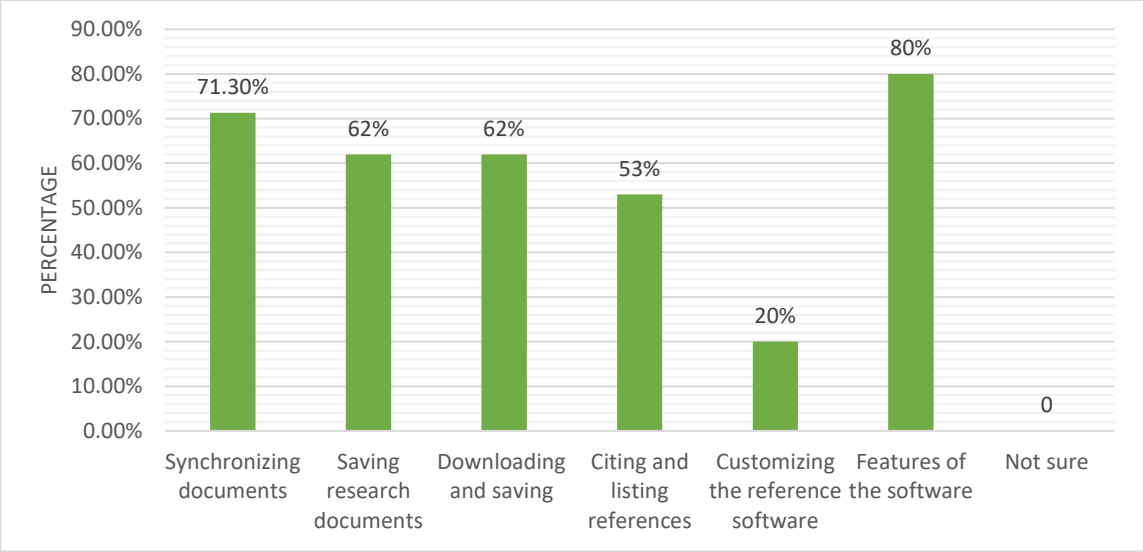
Academic Staff Training on RMS

The figure above shows that only 2% of academic staff had undertaken training on RMS whereas 98% had not. This does not ogre well since only 2% of them had been trained on access and navigation of RMS while an overwhelming majority (98%) had not received any form of training. The picture that emerges from respondents is that universities have either not arranged RMS training for their academic staff or it's the staff that have ignored the trainings and therefore not attended.

Sarrafzadeh and Khaleghi (2017) sensitized on universities arranging trainings on reference management software so as to encourage adoption. Academic staffs have a responsibility in adoption of reference management software due to their position to conduct lifelong research. This study has shown that academic staffs in Kenya have not been trained on reference management software which has therefore created a barrier in the adoption. Failure to involve the faculty members in training identified with their utilization imparts a costly expense to their acceptance.

Aspects in Which Academic Staff Required Training

Faculty members had gotten no chance to go through training as portrayed in the past segment, training on the necessary skills is therefore emphasized. Academic staffs require a wide range of training on reference management software so as to ensure adoption. To set up the training needs of faculty members in reference management software, these staff were furnished with an opening to choose from a multiple choice list the sections they needed training on. Their decisions are introduced in the figure below.

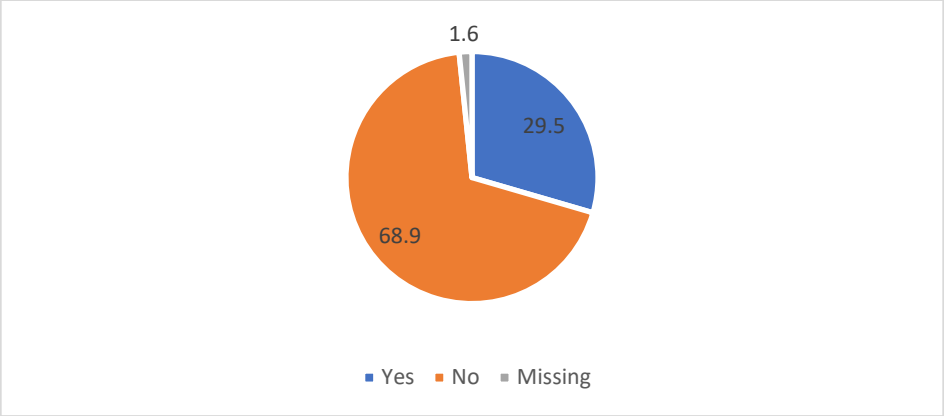


Additional Training Required for RMS Usage

The figure above demonstrates that there are several areas considered for training but most importantly, training on the procedure for synchronizing documents (71.3). The areas mentioned are essential activities and since the academic staff indicated need for training in them shows little or no training on reference management software navigation as shown in the previous section. The lack of training is a major setback in the use of reference management software. More than three quarter of the respondents need to be trained in different aspects of reference management software Madhusudhan (2016) in his research also observed that most students heard issues with different aspects of the tools and therefore needed training in all the aspects of RMS. This high percentage shows the facts that academic staff had not attended trainings on the important aspects that define the use of the RMS. This is a major obstruction to the adoption of reference management software since usage depends on the knowledge of the different aspects of the tools and how to navigate them. Adoption of reference management software requires that the stakeholders train and understand the aspects needed to navigate the tools.

Support from Institutional Library

The study sought to determine if the academic staff got any support from their respective institutional libraries. Adoption of reference management software can only be successful if library staff give a priority to training it's use of RMS. Library staff are required to offer support to the academic staff to acquire necessary skills to navigate the reference management software. To establish if the academic staff had gotten any support from their institutional libraries, staff were asked to state whether they got any support. The resulting findings are presented in the figure below.

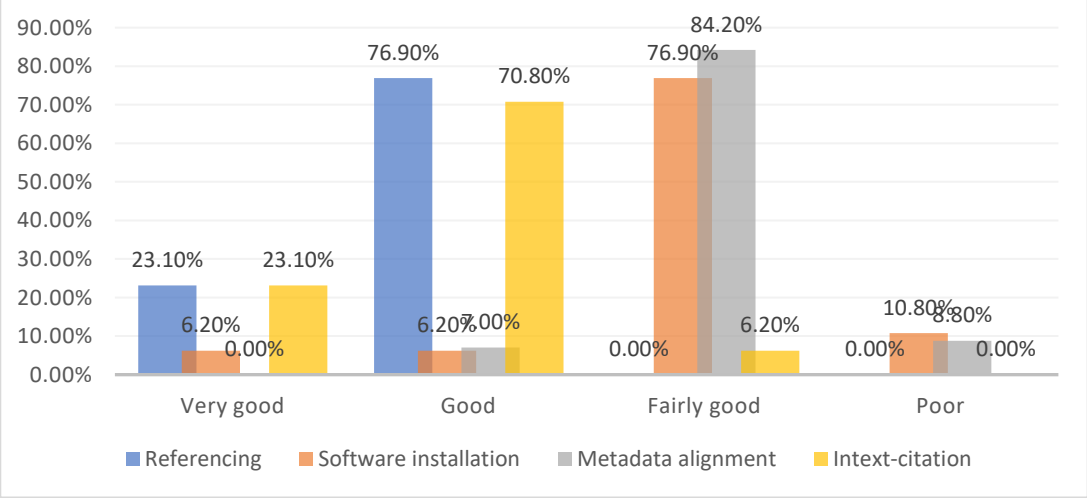


Support from your institutional library in using RMS?

The figure above shows a high percentage (68.9) of lack of support from the respective libraries, which could be because libraries don't attend to the academic staff or the academic staff don't consult the library staff. On emphasizing on institutional libraries support and training on RMS Sarrafzadeh and Khaleghi (2017) observed that out of eighty Iranian public universities only twelve universities were most supportive in terms of RMS training. The rest of the universities did not have training programs. This is therefore an obstacle that could have been brought about by institutional librarians not offering the support needed by the academic staff in navigating the tools. This could also be because the academic staff prefer to consult their fellow academic staff whom they share the same status and not library staff whom some could see as inferior and can't therefore offer much. This is an underlying obstacle to the use of the reference management software. For the adoption to occur there should be some interactive sessions between the library staff and the academic staff on the navigation and practice of any training that was attended if any on reference management software.

Competency Level in Different Aspects of RMS

Competency level in various aspects of referencing management software is key to the adoption, since one can only navigate if they are competent with the aspects that drive it. Academic staffs are required to have knowledge on how to go about the reference management software and therefore it was necessary to find out their level of competence in various areas. Academic staffs were requested to indicate the aspects they were conversant with and the results are shown in the figure below.

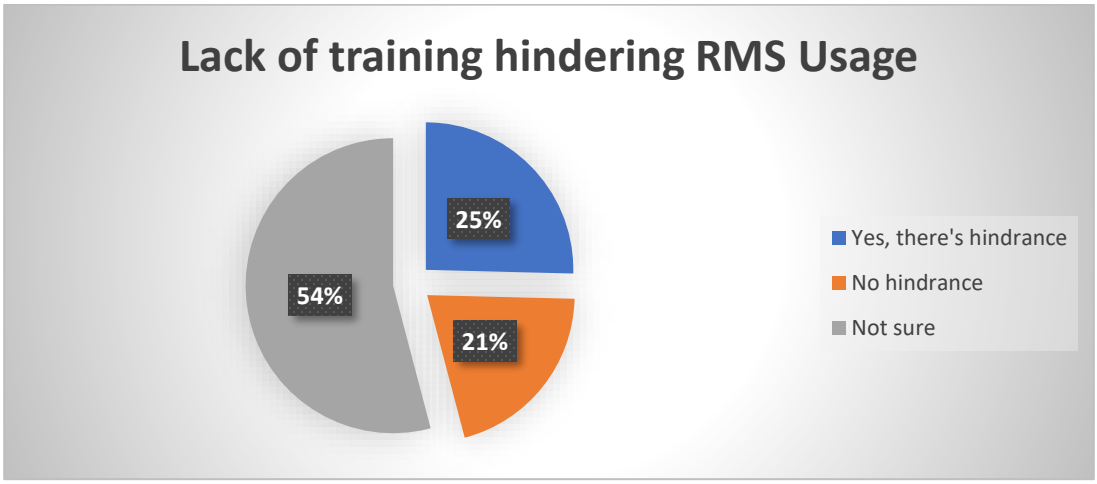


Competency Level in Different Aspects of RMS

The figure above shows that relatively high percentage of respondents is just good in referencing (76.9) and in-text citation (70.8). This indicates that most academic staff can only averagely reference and cite using the reference management software but still needed assistance. Majority of the respondents indicated very little knowledge as pertains installation of the software and metadata alignment at 6.2% and 7.0% respectively on the category of good. Additional request uncovered that a little percentage of the academic staff are able to accomplish different exercises associated with the RMS. This findings support the view conveyed by Fakkirappa Kattimani and Naik (2013) that Most staff had low level of computer technology due to the management not encouraging them to upgrade their ICT skills and lack of allocated finances for library staff training. Low competency level could be because of lack of training of academic staff by the institutional libraries or again the issue of communication breakdown due to the difference in ranks where the academic staff feel superior and therefore cannot consult the junior library staff. The responses therefore indicate that academic staff can only attempt to reference and cite and therefore are not aware that the tools can do much more and therefore low usage and adoption. In order for the adoption of referencing management software to be successful, academic staff should be enlightened and therefore be competent on all the aspects of reference management software so as to know its value in research. This demonstrates that lack of training complicates Reference Management Software adoption in Kenya.

Lack of Training Hindering RMS Usage

Training is very important in the adoption of reference management software and lack of it indicates negative adoption. It is therefore mandatory to undergo some training but as seen previously in table 4.13 relative high number (98%) had not attended any training. It was therefore necessary to find out if lack of training hinders use of referencing management software. Academic staffs were asked to indicate if lack of training hinders them from using the reference management software and the reactions are as indicated in the figure below.



Lack of Training Hindering RMS Usage

The figure above indicates that most respondents (54. %) are not sure whether lack of training hinders use of reference management software. This could have been brought about by lack of training and so are not sure if by attending trainings they will be able to use the tools or not. Most of the respondents were not sure if lack of training affects usage of the reference management software. These respondents were followed by a small percentage (25%) which accepts that lack of training has hindered them from using reference management

software. As seen in the figure above, it is evident that lack of training leads to confusion and lack of understanding of the usage of the reference management software and so leads to lack of adoption.

Conclusion

Further the study sought to establish the skills and training that faculty members had to empower them access and navigate the RMS in their research works. Only 2% of the academic staff had received training on RMS and this shows failure by the library staff to arrange for training sessions for the academic staff. The consequences of the inability to have faculty members attend to RMS affiliated workshops and training is low adoption among academic staff.

The results also discovered that most of the faculty members did not have the ability to execute some specific tasks. This is shown by the academic staff requiring training in every aspect of the RMS. The lack of adequate skills implies that they were unlikely to execute important activities relating to RMS. The lack of adequate skills is due to the absence of support from institutional libraries (68.9%). Lack of skills due to inadequate training, results to low usage and finely low adoption of the RMS. The survey further concluded that the faculty members lacked the necessary skills to utilize the RMS due to lack of training opportunities.

Recommendations

The study recommends series of trainings for the researchers in every aspect of the RMS as they lacked the skills to navigate and accomplish their research needs using the tools. The training sessions should be geared towards building capacity of the researchers to optimize the use of RMS.

Acknowledgement

This study was made possible by the academic staff of both JKUAT and MKU.

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