CHAPTER 7

Major Findings, Discussion, Recommendations and Conclusion

After developing a model KMS, analyzing the collected data regarding its usage by the Faculty Members/Experts, Research Scholars and Librarians as given in the preceding chapter, the present chapter dwells upon major findings, followed by Recommendations for future lines of research and finally Conclusion of the research topic.

7.1 Major Findings

As discussed earlier, Knowledge Management System is defined as the system supported with the technology responsible for managing the organizational assets i.e. identifying, capturing, storing, organizing, and disseminating both tacit as well as explicit knowledge to meet the organizational goals and objectives. The appropriateness of the KMS lies in its responsive, dynamic and interactive nature.

Though the concept is more of business corporations oriented than of academics, but the importance of KMS is no less in academia than in any other sector, as it has to play a great role in building the knowledge society which in turn concretizes the base of the knowledge economy. It is amply evident from the fact that the knowledge organizations particularly knowledge institutes produce much intellectual output than other business organizations. For such a notion the purpose of the present study was to design and develop a Knowledge Management System in the field of Social Sciences of AMU, Aligarh, to promote the proper management of intellect produced, and to promote the collective learning in teaching and research by providing a platform facilitating all the knowledge processes. For the purpose, evaluative studies were conducted to look into the awareness of KMS amongst the Faculty members and the corporate staff of Airtel, IBM, Access, Vmware, etc. Of the various available software packages, ‘Wordpress’ software was selected for developing the KMS Model. Finally PHP programming language was used for the customization of few modules.

Besides the design and development of a dynamic and responsive KMS in Social Sciences, which may be considered as a major finding itself, other related findings were obtained in view of the different parameters used for evaluation of the
aforesaid KMS Model, and are being reported after a thorough analysis and inquiry. It may be recalled that the following criteria of evaluation of KMS model have been applied:

(i) **Authentication of Registration**
(ii) **Precision**
(iii) **Objectivity**
(iv) **Coverage**
(v) **Design**
(vi) **Efficiency**
(vii) **Satisfaction.**

➤ The KMS under study provides facility of self registration to all categories of users including Experts, Researchers and Librarians. The provision of this facility was put to evaluation by the three categories of users. The results showed that 89.0% users strongly agreed to the fact that it was easy to register oneself in the given system, while only 11.0% users just agreed (but not so strongly) to the fact. However, the users in Librarians’ category (100%) agreed strongly to the easy process of Registration followed by research scholars (90%) and subject experts (13%). This is because of the fact that Librarians are more prone to systems’ registration followed by research scholars and subject experts.

➤ In any KMS the facility of self uploading of contents provides the backbone of the whole system as it promotes regular updating of the site, which is essential for the site to be successful in the long run. The facility of uploading the contents as provided in the KMS model was put to evaluation by the three categories of users namely Subject experts, Research scholars, and Librarians. This was necessary to be aware regarding the ease with which the whole process of uploading is performed by the KMS. Of the total respondents in the three categories, 91% strongly agreed that it was easy to upload the personal content in the KMS, while only 9% did not agreed so strongly. Amongst those who agreed strongly, Librarians were 100%, subject experts were 93% and research scholars were 87%. Thus the result seems to be satisfactory as only 9% agreed moderately while the remaining 91% agreed strongly with the fact
that the system is user friendly as far as the uploading of the contents in the KMS is concerned. It may thus be inferred that contents uploading component of the KMS under evaluation fulfils ‘Precision’ criterion of the evaluation process.

- For any system to run successfully and satisfactorily, it is most essential that the system should be updated as and when required. It implies that the process of updating the contents provided in the system must be as simple as possible. With this in mind, the data was collected from the three categories of users. The results revealed that overall 77% of respondents strongly agreed on the fact that it was easy to update/edit/delete their contents in their respective dashboards, whereas remaining 21% agreed and 2% respondents neither agreed nor disagreed on the same issue. It may be noted that of the 77% of total respondents who strongly agreed included all the Librarians (100%) under the survey. Thus from the results it can be put forth that the functionality of updating/editing deleting in the KMS is meeting the objectives of the ‘Objectivity’ criterion.

- Having studied/evaluated the components of the KMS with regard to self uploading and updating the contents, data was collected in order to know from the three categories of users whether they are easily able to manage their intellectual assets by the help of the two aforesaid components or not. From the results, it can be noted that 100% respondents (i.e. Subject Experts/faculty members, Research Scholars, Librarians) find KMS useful for managing their intellectual assets, hence fulfils the said criterion of ‘Objectivity’ of the KMS under study.

- An expert database is the key stone of the KMS model under study. In fact, the KMS model provides to the users of subject expert database a number of search options namely: by Country, by University, by Subject, and by Name, all these options have been provided in the database because of the fact that the system is mainly developed to tap the tacit knowledge of the experts. It is therefore imperative that the satisfaction rate of all the search techniques employed in the system be evaluated as far as the users are concerned. In the present study, while investigating about the searching options of the expert database, 94% of overall respondents strongly agreed on various search options while the remaining 6% of respondents agreed with the same. It may
thus be inferred that the present model is provided with an effective and efficient search facilities and hence fulfils the ‘Efficiency’ criterion.

- The Efficiency of any information retrieval system including KMS depends upon the efficiency of the search engine used. The data was therefore collected to find out the efficiency of the whole KMS including all its components. The collected data highlights that 74% of overall respondents strongly agreed on the efficiency of information retrieval of the KMS, as they find it easy to retrieve information from it. However, 24% of respondents only moderately agreed, whereas 2% neither agreed nor disagreed on the same. Amongst those who strongly agreed consist of Librarians with 80% contribution followed by research scholars with 77% and subject experts with 70% respectively, which confers the efficiency of the KMS model.

- The overall study revolves around the usefulness of the developed model of KMS. Of the total no. of respondents 72% strongly agreed that KMS in Social Sciences is useful for the researchers and other information seekers, while as 28% of all agreed on the same. The highest contributor to strongly agree ratings are research scholars with 80% of contribution followed by a subject expert with 67% and Librarian 60% respectively. It appears that the intellectuals working in different domains of Social Sciences are much aware of the need for such a platform, as they themselves felt satisfied with the utility of the inbuilt provision of such a platform provided by the KMS under study. They further felt that in the present times, every research-oriented institute needs to manage its intellectual output to promote its proper and timely usage. It therefore, from the results can be put forth that the site satisfy the needs of its intended audience, and hence fulfils the ‘Coverage’ criterion of the evaluation process.

- As the knowledge in general can be measured not only in quantity and quality but also the variety in which it is made available. The subject experts must be provided with the proper space wherein they can manage their data irrespective of its quantity and variety. In the study the overall data shows that 66% of respondents strongly agreed that the space for Experts and research scholars to contribute in present KMS is useful for productive research growth.
of the institution, 28% agreed, whereas only 6% neither agreed nor disagreed on the same.

- The basic purpose of KMS is to provide a platform not only for storage and updation of contents but also for discussion amongst the users of different categories. This discussion may take the shape of interaction between experts; interaction between experts and scholars, and even librarians and guest users. The data gathered from the respondents highlighted that 74% among all respondents strongly agreed that Interaction platform module is useful for knowledge sharing and collaborative learning, followed by 23% ratings of all respondents who agreed and 3% of those who neither agreed nor disagreed on the same. Among all the respondents, research scholars were highest (77%) among those who strongly agreed, thus reflecting that how interactive platform of the present KMS is going to be useful for knowledge sharing and collaborative learning.

- KMS as a whole provides an amalgamation of various knowledge processes as generation, discovery, storage, and dissemination. Evaluation on this count revealed that 100% of the respondents out of the study, agreed on the fact that KMS is a most effective platform for facilitating knowledge generation to its dissemination.

- In the present era much emphasis is given on the ‘Look and Feel’ of not only of the Libraries as a whole but also the systems/softwares including KMS. Today the idea is that the libraries should be attractive and comfortable for the users physically as well as intellectually; a few examples of attractive libraries and Knowledge Management Centre (KMC) at Malaysia\(^1\) are provided here under in figure 7.1, and 7.1 a:

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\(^1\) Knowledge Management Centre at Malaysia, (2018). Retrieved 22 August, 2018, from https://us16.campaign-archive.com/?e=&u=53a85c37f858d05c9b6cd429a&id=f5dd15b9b
Figure 7.1: Knowledge Management Centre, Malaysia

Figure 7.1 a: Knowledge Management Centre, Malaysia
On the basis of observation of a few KM systems and even Library management systems the present KMS model was developed and data was collected from different categories of users as to how they felt about its appearance and usability. 71.0% of respondents found it excellent, while 26.0% found it Average. Of those users giving Excellent rating, (80%) was given by Librarians, followed by Subject Experts (73.0%) and Research Scholars (67.0%) respectively. (Table 6.5)

- The crux of a Knowledge Management System lies in the fact that whether or not it provides easy access to the information available on the respective subject pages. The results from the (Table 6.12) shows that overall, 54% of respondents strongly agreed that it was easy to access the subject Knowledge from KMS while as 40% agreed and 6% neither agreed nor disagreed respectively. The highest contributors to 54% are faculty members followed by research scholars and Librarians. Thus, it can be recorded from the results of tables 6.5, and 6.12, that the present KMS came upon the expectations and hence met the set ‘Design’ criterion.

- After the testing/Evaluation of KMS, each respondent was asked about their overall satisfaction with KMS, it was found that 80% of overall respondents strongly agreed, and the rest 20% did not agree so strongly. The highest contributors were Librarians with 100% contribution followed by Research scholars with 83% and 73% of Faculty members respectively.

From the results it may be obviously concluded that the KMS fulfills the needs of the users and hence in return meets the ‘Satisfaction’ criterion used in evaluation process.

7.2 Discussion

It is worth relating the findings of the present study with some of the earlier researches conducted on roles, issues, challenges, design and development of Knowledge Management System(s) elsewhere in the world.

1. Similar to the present study, an earlier study reported by Grossman (2008), states that China had taken an initiative of compiling all the business

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knowledge by developing a single KM platform called *iBridge* with its main purpose to promote knowledge sharing and collaboration across the world. This was aimed to encourage greater levels of innovation in the system by using many new technical and social tools including blogs, community forums etc.

2. Same as the present study, **Khalifa, Yu, and Shen (2008)**, developed a model based on information system model to impact of KMS on organizational performance. A survey of 100 core organizations who already had implemented various functions was conducted with the core aim of testing the model to make it more effective and usable. Structural equation modeling was used for data analysis. Results recorded from the study revealed that KMS pays direct as well as indirect effects on performance of organizations.

3. **(Arntzen, Worasinchai and Ribière, 2009)**, conducted a study similar to the KMS model under discussion, in order to know how KM processes could contribute to improving educational performance. The study stated the main aim of setting up of KM initiatives in Bangkok University. Findings from the study explored that the benefits to the university were encouraging; as improvement in the educational community were witnessed by KMS supported cross-organizational learning and knowledge sharing processes.

4. **(Kumar and Gupta, 2012)**, discussed “Role of Knowledge Management Systems in multinational organizations”. They covered different aspects of KMS including knowledge creation and sharing. Case examples given therein explained the process of knowledge creation and also highlighted the Methods and techniques used for identifying and tapping tacit knowledge i.e. “structure conversation with the experts, storytelling, learning through conversation, learning through observation and making films, networks for sharing knowledge, special meetings for lessons learnt, learning in virtual...

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places, making experts take part in education process, creating situations for working together (tutor-pupil)”.

5. (Sarrafzadeh, Martin and Hazeri, 2006)\(^6\), conducted the study with main motive of knowing the perspectives of LIS professionals on KM and examine the “benefits, opportunities, and threats” of Knowledge Management on the line of work. The outcome of the study was same as also in the present study it was revealed that there is much awareness among LIS professionals about the KM, than the others and have the conscience of its positive implications for oneself and for the profession as well.

7.3 Tenability of Hypotheses

Apparent of the above results, the tenability of hypotheses checked, is presented below:

_Hypothesis 1:_

KMS being a new concept especially in academia, there is lack of awareness of KM amongst different categories of Users.

In the beginning of the present research it was envisaged that because of the KMS being a new concept in academics, there is lack of awareness among different categories of Users with regard to KMS. The assumption was also based on the fact that the concept of KM/KMS is basically related to corporate world; therefore academics especially in the field of Social Sciences will not be having complete awareness about it. The assumption was proved right at least partially when the collected data as shown in table 6.1 revealed that 33.0% of subject experts, 17.0% of research scholars and 100% of Librarians are aware of Knowledge Management System. Amongst librarians/LIS faculty the greater percentage of awareness is due to the fact that KM concepts and components form the part of the syllabi of library science courses. Using single proportion right tailed Z-test at 5% level of significance, the p-value for subject expert category and research scholar category is greater than 0.05 (0.411, 0.08), while as, in case of Librarian category the p-value is less than 0.05(0.002), thus in case of Subject expert and Research scholar categories null

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hypothesis is excepted while as in librarian category null hypothesis is rejected. The Null hypothesis for each of the user category is that “about 30% of users in academia are aware about KMS” and the alternative hypothesis for each user category is that “more than 30% of each user category are aware about KMS.” Thus hypothesis # 1 is proved for Subject experts and research scholar, user category and rejected for Librarian category.

**Hypothesis 2:**

**About 80% of Academic community in Social Sciences has not used any KMS for their studies and Research.**

While starting research, it was assumed that majority of academic community belonging to Social Sciences subject have not used any KMS for their studies and research. The assumption is based on a preliminary survey that KMS in Social Science in particular is not available yet, to the best of the knowledge of the investigator. The data collected and analyzed with regard to the usage of KMS as shown in table 6.2 proved the above assumption, as out of the three categories of users only 27% of subject experts followed by 20% of Librarians and 10% of research scholars were found to use any KMS for their study and research. Using Z-test for single proportion at 5% level of significance it is revealed that p-value is less than 0.05, hence the hypothesis that 80% of Academic community in Social Sciences has not used any KMS for their studies and Research stands accepted.

**Hypothesis 3:**

**Hardly there is any proper mechanism of knowledge sharing between experts, research scholars, and Librarians, except KMS.**

During the first stages of the present research it was believed that hardly there is any proper mechanism of knowledge sharing between experts, research scholars, and Librarians, except KMS. It can be witnessed from the results of table 6.3 that all the three categories of different users, fully agreed (100%) upon the fact that the knowledge pertaining to any discipline/subject be shared between Experts, Researchers and other Users and for so KMS is one of the most effective and proper mechanism. On applying the chi square test at 5% level of significance on table 6.3 it was revealed that hardly there is any proper mechanism of knowledge sharing
between experts, research scholars, and Librarians, except KMS, as chi-square p value is less than 0.05. Hence, hypothesis # 3 is proved.

**Hypothesis 4:**

**User friendliness of any KMS will attract the members of academic community to a great extent.**

It is to be said that the look and feel of any website/system attracts a maximum number of users to go through. It can be witnessed from the results of table 6.5; which revealed that 71.0% of users found it excellent, while 26.0% found it Average thus showing inclination towards excellent mode. The chi-square p value is significant at 5% level of significance, indicating that all the proportions from user category have same opinion from which it is revealed that the level of significance is 0.000 which is less than 0.05. Hence, hypothesis # 4 is proved.

**Hypothesis 5:**

**KMS developed for academic world must be equipped with self uploading and editing of contents.**

The KMS under evaluation is provided with the facility of self-uploading, updating/editing of contents, so as to promote regular updating of the site. The table 6.7 and 6.9 indicates the easiness in self uploading the personal contents to the system and easiness in updating/editing of the same. Out of the chi square test, on the data of the said tables at 5% level of significance it came to light that the level of significance is 0.000 which is less than 0.05. Hence, hypothesis # 5 is proved.

**Hypothesis 6:**

**KMS in Social Sciences will result in collaborative learning, resulting in enhancement of Knowledge.**

A well designed and dynamic KMS facilitates collaborative learning without physical barriers. Results from table 6.13 showed that 74% among all respondents strongly agree that Interaction platform module of the present KMS in Social Sciences is useful for knowledge sharing and collaborative learning, followed by 23% ratings of all respondents who agree and 3% of those who neither agree nor disagree on the
same. On applying chi-square test at 5% level of significance the p-value is less than 0.05, Thus hypothesis #6 is proved.

7.4 Recommendations and Suggestions

In the process of testing/evaluation of KMS model, some of the healthy suggestions were proposed by the respondents and by the investigator as well, are summarized as under:

1. The KMS in Social Sciences is found to be extremely useful for the whole academia in general and that of Social Sciences in particular. Therefore, the same should be launched with the first priority.
2. The proposed KMS model in Social Sciences should serve as a first point source for managing all the intellectual output of the research institutions in general and Aligarh Muslim University in particular.
3. The proposed KMS model facilitates the explicit knowledge sharing and tacit knowledge sharing on a single platform. Therefore, all the faculty members, research scholars, and Librarians must register themselves in the system to promote the same.
4. Although the organization of modules in the subject expert page is well set up, the need for some features as export, import of data pertaining to the expert is importantly required.
5. All the respondents are highly satisfied with searching techniques given in the subject expert database. Besides all the different approaches used, ‘Specialization Search’ must be incorporated.
6. It has been witnessed that generally, there is least awareness of KMS among all the respondents. The awareness programmes for KMS must be organized.
7. The issues of Intellectual Property Right and Copyright should also be covered in the user awareness programs.
8. Though the present KMS is designed for Social Sciences, the same may be made use of for other branches of knowledge as well.
9. In any case, the KMS under study may serve to be a model for developing and designing other KMSs to serve the research community of a given Institution/Organization/Subject not only for tapping explicit knowledge, but also the tacit knowledge, which otherwise will go waste.
7.5 Conclusion

The outcome of any research is full of life when it fulfills the objectives drafted for the study, for it is quite satisfying that all proposed objectives of the study have been achieved. The hypotheses settled were also proved/disproved using different statistical tests e.g. Z-test, single proportion right tailed Z-test, and chi square test. Though the concept of KMS is in fact in the realms of Library and Information Science, yet the present study has tried to cover thoroughly the concept of KM, KM Systems, KM models, etc. Prior to undertaking the design and develop the present KMS, a number of studies and surveys were conducted to explore their management systems. In the process at least 5 corporate organizations as well as faculty of Social Sciences of AMU were studied to investigate the perception of faculty members, research scholars, and Librarians about the KMS. Lastly the Model KMS was put to evaluation by the said category of Users.

From the present research, it is quite clear that the KM Systems are not only meant for the business organizations but have a great part to play in academia. Academic institutes are themselves reservoirs of knowledge, which needs proper identification, capturation, organization, and dissemination. Keeping all the parameters and requirements into consideration, the present Knowledge Management System in Social Sciences has been developed. This KM System not only manages the intellectual output of the institutes but also provides an interaction platform for the global community of experts, to explore their ideas, use their experiences to address the succession planning, and make use of it to inspire ideas for the benefit of scholars and the society at large. After the system is live it will be available for every researcher pertaining to the same field of interest. The developed system is more collaborative than that of a single person’s domain. In the whole process of the development it was made possible to make the system to be as a reservoir of the intellectual output of the institutes, rather than making it just as a gateway and giving the links to the other sources. It can be presumed from the overall ratings that the research community must have an authentic common display place to contribute the intellect, which in turn will be used for productive research growth of any institution. The system will, thus act as a concrete platform for the whole academic world. It is hoped that all quality research organizations whether Academic or Commercial will
have KMSs as their integral parts all over the globe to support collaborative research, teaching and learning in future.