Chapter 6

Conclusions and Recommendations

This chapter especially focuses on the conclusions and recommendations of this research. The chapter starts with the section Conclusions, which includes the detail conclusions of each and every objective as sub sections. This section initiates with the first objective of this research that is ‘to study the challenges faced by research scholars’, in a sub section 6.1.1. Then conclusions related to the next research objective that is ‘to study the awareness and use of available online research tools’ are discussed in the next sub section 6.1.2. The conclusions of the third objective that is ‘to study the need of the Knowledge Management in Academic Research’, are elaborated in the sub section 6.1.3, finally the conclusions of next objectives related to the ‘to study the Knowledge Management Approach for Developing Research Community’, has been described in the sub section 6.1.4.

This chapter further adds few important suggestions based on this research outputs in section 6.2, that is, Suggestions for the Universities, UGC and the Government of India. Finally the chapter concludes with the Recommendations for Future Research in a section 6.3, which explores ideas related to the future scope and recommendations of this research

6.1 Conclusions

The research has achieved its main goal of studying the challenges faced by management science research scholars following the scientific process of the research methodologies. The research has proved that the research scholars are facing challenges at various stages of research and various specific challenges are also highlighted by the respondents. This research has also proved that there is need of KM System for research community at Institute or University level. Finally this research has proposed KM model and KM System especially for the research community; which can help research community to enhance KM adoption at University level and further for integration of KM System at National level through NKN.
6.1.1 Challenges Faced by Research Scholars:

The objective of studying the challenges faced by the management science research scholars during research has been accomplished through conducting questionnaire survey. The research has started with an investigation of challenges faced by research scholars at different stages of research, challenges related to library sources, Internet, online research tools and online information sources. The research has focused few specific important challenges too. After that the researcher has investigated the basic challenges faced by the research scholars that are discussed independently:

✓ The research was focused especially on the management science research scholars and the descriptive statistics shows that, research has covered different categories of research scholars like; whose Ph.D. registration is in Process, who have Latest Registered for Ph.D.; those who have registered for Ph.D. from last 1 to 3 Years, 4 to 5 Years and more than 5 years. It has also considered Ph.D. awarded research scholars and research supervisors. Hence it can be concluded that this research has covered all categories of research scholars to get unbiased and more useful research output.

✓ In the descriptive statistics, research shows that, more than 50% of the research scholars have visited up to three libraries during their research to collect research information, 23.7% visited 4 to 5 libraries and just 10% have visited more than 5 libraries. At the same time, 51% of the research scholars are saying that the library resources available in these libraries are sufficient.

✓ The research outcomes, as per the hypothesis H1 show that, the most of the research scholars have agreed that they are facing challenges during their research.

✓ As per the descriptive statistics, the research shows that, 77.6% of the research scholars are having lack of research methodology training, 75% of the research scholars are having problem to interact with research experts, 72% research scholars are facing problem of Literature access and availability, 65% of research scholars have agreed with cost associated with research work as a challenge for them. But most important thing is that more than 50% of the
research scholars agreed for ‘the lack of confidence doing research and lack of code of conduct in research’. The thoughtful note should be taken for the same and as per needs; the solutions should be augmented for the research community.

✓ As per the hypothesis H1-A, the research output shows that, the Research scholars have agreed that they are facing various challenges in their research like Lack of training of Research or Research Methodology, Lack of Research Level Interaction with expertise in their discipline, Lack of Literature's availability and access, Lack of confidence doing research, Lack of code of conduct in Research / Research Process, Cost associated with Research Work & Research Publications, Time constraints and stress of workload; these are the few mentioned challenges in questionnaire and further discussed with the research scholars. But as per the research outputs, ‘Time constraints and stress of workload’ is the most important and biggest challenge for the research scholars during their research. Hence all research scholars are suffering from the time constraint and workload stress related problem during their research, and specific solutions should be offered for these issues to increase the quality of research.

✓ As per the hypothesis H1-B, it can be concluded that the Research scholars are expressing that they are suffering from lack of online information resources and facilities. Hence the research scholar’s requirements of online information resources and high tech infrastructure should be made available.

✓ As per the hypothesis H1-C it is found that, the ten stages of the research are not having equal magnitudes in difficulty levels. The Research scholars have proverb that they are facing the major hurdles during the five stages of the research in the research process, namely Review of literature, Primary Data Collection, Secondary Data Collection and Research Methodology Selection.

✓ As per the research study, it is found that the Research scholars need online training of research methodologies and research tools like R, IBM SPSS, and Advanced MS-Excel. So the solutions should be provided to the research scholars for these issues.
Hence it can be concluded that the key challenge faced by research scholars during their research are time constraints and stress of workload, lack of information resources and facilities, lack of high-tech ICT infrastructure and communication network, Lack of centralised system for research, lack of research level communication and expert interaction, Lack of Research training and various tools training and so on. Also it should be noted that the researchers are facing problems at each and every stage of the research.

6.1.2 Awareness and Use of Available Online Research Tools

- In the descriptive statistics, research shows that 56.1% of the research scholars are not having any single online research publication, while 34.4% of the research scholar are having 1 to 3 and rest are having more than 3 online research publications, hence it can be concluded that research scholars are unaware about the online research tools and applications.

- As per the study it can be concluded that the most of the research scholars are not having online international research publications.

- The objective of studying the awareness and use of available online research tools during research by the management research scholars has been accomplished by this research. The research outcome has stated that the most of the Research scholars are using Internet as the research information resource, but they are unable to get proper information related to their research topic and they are unable to get current status of their research topic through Internet.

- As per the hypothesis H2, the research scholars responses shows that they are not aware about using available online research tools or applications like Mendeley Desktop, Research Gate, Google Scholar, Academia.edu, etc.

- As per the study of co-relation between the online research tools and applications and online international publications of research scholars. The researcher has found that there is a significant relationship between use of the online research tools or applications (Mendeley Desktop, Research Gate, Google Scholar) and number of online research publications of the research
scholars; hence it was found that the research scholars who are not using these research tools or applications are having less number of online international research publications.

6.1.3 Need of the Knowledge Management in Academic Research

✓ The objective of providing required background of research and challenges faced by research scholars to simplify understanding and developing the KM model of the research and to identify the various areas of KM that may require more research and investigation has been achieved. This has been accomplished through conducting an extensive review of KM literature that highlights KM concepts and discusses technological, cultural and managerial aspects of KM implementation and application in the context of research community. The research has started with an investigation of important KM principles, methods, tools and techniques. Then the researcher has investigated the unique features of research community and discussed the associated motivations and challenges affecting KM adoption in the knowledge-intensive environment of university research.

✓ The objective is studying the need of Knowledge Management System for Research community, and the research results give clearly indications that there is a need of Knowledge Management System for Research community. The online KM system is needed for research community, to share idea and knowledge among research scholars, for direct interaction with expert guidance during research process, to search and access various types of research publications, to provide the Online Group Formation facility to the research community from various universities / Institutes.

✓ The research study also determines that there is need of a national level Unique Research Scholar Identification Number System to identify each research scholar uniquely throughout the nation. The research also provides an idea that the research community requires the online training of Research Methodology and Research Tools like IBM SPSS, R, MatLab, etc.
The research outcomes are very clear about the KM system for research community, which indicates that the online KM System is a contemporary need of the research community in this ICT era, it will help research scholars in their research in different ways and also it can improve the quality and quantity of the management research.

The research scholars’ impression is that the KM System with the given online solution will help them in various challenges during the research. The descriptive statistics of the research shows that the 92.6% research scholars are agreed that there is need of system to share ideas and knowledge, 95.5% are considered that there is need of system for direct interaction with experts for guidance, 97.4 have expressed that it would be needed as better solution for online access and searching of various types of research publications, 91% of research scholars are approved that it is required for the formation of research groups in various universities, 80.5% research scholars conveyed that the Unique Identification Number for the research scholars is useful to identify them and their research uniquely throughout the nation.

This research study also elaborates the usages of KM System and ICT infrastructure for solving various problems of research community, like knowledge and information gap due to lack of interaction, communication problem due to geographical distances, shortages of training and development programmes, and wastage of time, money and energy. Hence KM system would be an impeccable solution for these problems.
6.1.4 Knowledge Management Approach for Developing Research Community

The researcher has explained few subordinate or dependent objectives of the main objectives; the details are given in the Chapter 3, sub section 3.3.1.2 that is the subordinate objectives. The conclusions of these subordinate objectives are explained below respectively and sequentially:

I. The objective of providing required background to develop the KM model, to simplify, to understand and, to identify the various areas of KM, that may require more research and investigation, that has been achieved in this research. This has been accomplished through conducting an extensive review of KM literature, various aspects of KM implementation and application in the context of research community. The research has started with an investigation of important KM principles, methods, tools and techniques. Then the research has investigated the challenges and required unique features for KM of research community.

II. The objective of investigating the existing KM models has been accomplished through an extensive review of KM models in the literature. This has helped the researcher to investigate problems of existing KM models used in universities and R&D organizations and identified the opportunities for improvements. The results have shown that, although many KM models have been developed for KM but these cannot be adopted for the implementation of KM in research organisations as these models have many shortcomings that may prevent them from being used in the existing form and successfully in Universities. For example, many of these KM models are specifically business organization oriented and may lack necessary components and processes of KM or may not consider the special characteristics, requirements and situations of the research community.

III. A primary KM model has been developed on the basis of analysis of KM literature and study of the requirements suggested by the research scholars, to identify the main components required in the proposed KM model. The review and analysis of previous KM models has helped to address the key
characteristics required in the KM model and to provide a useful method for KM in universities for research community. Further the KM Model has been elaborated with the KM process, to explain what activities should be followed for adoption of KM in Universities.

IV. Further effort has been taken to accomplish the aim of transferring the primary KM model into the KM System based upon the literature review of KM System in Universities and R&D organizations and the suggestion given by the research scholars. Questionnaires Survey has been conducted with a sufficient number of research scholars, to know what facilities would be avail with them for the research. To propose KM System for university level and to explore more important components and details of KM System. The incorporation of recommendations and findings resulted from the questionnaires survey and further review of KM literature has helped to refine and enhance the proposed KM System in terms of user friendliness, comprehensiveness, usefulness, reliability, applicability and alignment with the characteristics of research community within university.

V. Finally the Model for National level Integration of KM System has been developed to fulfill the research objectives of providing a structured and practical method for KM implementation and application at national level research community. It includes structure of KM System and important components required for a successful adoption of KM at national level for research community.

VI. The achieved results and findings have received high interest from research scholars, especially throughout the presentation of the study in a number of subject-related journals. It was stated by many reviewers and participants that by applying the proposed KM Model, KM process and KM System, knowledge can be managed more effectively and efficiently for the research community.

VII. It is nice to express here that, the IGI-Global publication editorial team is so impressed by this research topic, the researcher is now engaged with project to publish research handbook based on similar subject.
6.2 Suggestions for the University, UGC and Government of India

- The university research is the important knowledge asset for the country and Government of India must focus on the research organizations and universities to improve the quality of research to ease the social and personal life of people and to improve the global research contribution of India (Thompson Reuters 2010 report shows 3.5%).

- To improve the research quality, universities must provide the research facilities and high-tech infrastructure to the research scholars. The research scholars should be motivated for the high quality, innovative, industry oriented research. And for the same, UGC should promote the KM System within universities.

- The research scholars are facing various challenges during research like availability of information resources, expertise training in research, expert interaction and so on as discussed in the research conclusions. There is need of the national level centralised research Knowledge System to share resources, to avoid the repetitions or duplications of the research. The proposed online KM System in this research may be adopted for the progress of the university level research.

- The individual research knowledge available in universities and research institutes can be managed effectively using proposed KM System for research community, to exchange research knowledge, to collaborate research knowledge within research community in university, to share research knowledge and to promote high quality research. Hence Universities must try for the implementation of KM System.

- As per the researcher’s study and literature review, there is not a single university in the world using such kind of KM System for the research community proposed by this research. Hence India can be the first country to develop and implement this KM System at University level. Next to that, these university level individual systems can be integrated in future. Hence UGC
and HRD Ministry, Govt. of India should think on this project positively and implement this as early as possible for the development of nation and society.

- The National Knowledge Network (NKN) Programme of the Government of India, the ambitious project of National Information Center (NIC) can make available nationwide hi-tech wide area network and infrastructure, which can be effectively used for the national level integration of the KM System. These available facilities can be utilized to integrate the university or research institute level KM System to build the national level research community. Hence UGC can utilise the NKN Programme infrastructure and Network for future work.

- This National level Integration of KM System will help the research scholars for the knowledge management of research, to collaborate, verify, access, cite and search the research publications. This will also help the research community to get the current status of the particular research topic, to avoid plagiarism, to avoid duplication of research topic, to interact with expert in particular research domain.

- The NKN and the integration of the KM system will enable the centralisation of the national level research knowledge and output efficiently due to which industry and academia relations can get improved. The industry would get proper idea about the current research status of the required domain. This would help to collaborate efficiently with industry and promote the industry oriented research.

- India is a second largest country as per the world’s population; the research is the most important factor for development of each country and for enriching the life style of the human being. The huge number of research experts, technical experts, subject experts, community level research knowledge and innovative research outputs of the university research would get a global platform due to the national level KM System. The global industry can get focus on this as an important research resources for their innovative business development. This can help the nation to increase the job opportunities in research domain.
6.3 Recommendations for Future Research

This research is focused on the challenges in management science research practices, means scope of the research is limited to the management science research scholars only; so future research can focus the same research that is, to study challenges faced by research scholars from different disciplines like health and medical science, Social sciences, Engineering and Technology, etc. This type of research also can be focused by the government departments too, for different disciplines and research domains altogether, to get idea of challenges faced by these specific area wise research community groups. Because the research publications and online information resource facilities availed by different universities, departments, institutes and various disciplines may vary. Further study can also be focused on the specific challenges and more innovative solutions for the problems faced by the research scholars.

The proposed conceptual KM model is designed to provide a useful and controlled method that can solve problems of research community that can provide more facilities and encourage KM initiatives, to help for successful adoption of Knowledge Management in University or research Institutes for research community. However, this research, recommendations and suggestion can be a platform for further investigation, improvement and refinement of the KM model. These can focused to provide in order to improve the implementation and application of KM in university research for the research community.

This study provides a platform for further development and modification of the KM model and KM System, so that the proposed KM model and KM System can be used in practice more efficiently and effectively in university research. More efforts can also be conducted to improve the awareness of the importance of Knowledge Management in university level research, to encourage the more implementations of KM Systems for the benefit of the research community.