ABSTRACT

Introduction to the Research Problem

Academic Research is typically conducted in educational institutions, where it is free from any hindrance like those experienced in industry, government agencies, or think tanks. In industry research the obstacles can be like pressure to turn a profit, instruction to work on specific subjects or promote a certain ideology, and structure to meet deadlines. The academic research is a unique privilege and an extraordinary pursuit. A key to create the wealth of a nation is applied research, which, in turn, traces back to academic research. Developed nations have universities as powerhouse to country. Now developing countries are also trying to imitate themselves in the same way to develop universities for high quality research in the benefit of country. Indian government is also trying to put forward the same strategies through different policies. Still the steps taken by Government of India in last few decades for the research may not be up to the mark to show the global reach of the Indian research.

The researcher has seen an article in ‘Times on India’, published on March 11, 2011 regarding Research output of different countries. Title of the Article was ‘The Study of India’s Research output and Collaboration’, by Thomson Reuters. As we all know that India stand at 2nd position as World’s Largest Populated Country. But contradictorily, our contribution in world’s research output is just 3.5% which is very less as compare to proportion of population and research output given by other countries like Japan, Taiwan, UK, US and so on. This article motivated Researcher to think about the Indian Research Status and search for the different ways to improve the Research Quality and Quantity. This was discussed with Research Scholars and seniors. Then researcher has visited different online websites, research databases, for searching research papers and articles specifically focused on the academic/university research. After enormous discussions and going through various literatures, Researcher got an idea about the current situation of Indian Research and different research data management tools used in different Universities and Autonomous organizations.

The researcher himself as a research community member sensed that there is a lot of challenges he has faced during his research at M. Phil. Dissertation. He has also
gone through various university ranking websites, newspaper articles, magazines and different letters which have written about the India’s current global research contributions and quality of research which is pointing towards the needed improvements. Hence the researcher has focused this research especially on academic research and entitled it, ‘An Empirical study of challenges in Management Science Research Practices with special significance to the need of Knowledge Management’.

Research Methodology

Then the researcher was curious to study the challenges faced by research scholars. So he followed the scientific research methodology and decided to conduct this qualitative and quantitative based descriptive empirical research. This research study follows the survey based method to study the challenges faced by research scholar during their research. After the available literatures’ extensive review and secondary data, the researcher has defined the Objectives and Hypotheses for this research and this includes:

Research Objectives:

Main Objectives:

1. To study the challenges in Management Science Research Practices.
2. To study the role of online information resources and publications in Management Science Research Practices.
3. To study the need of the Knowledge Management in Management Science Research practices.

Subordinate Objectives:

I) To review current practices of KM in the Institutes and University. A critical review of important KM literature is carried out to highlight technological, cultural and managerial aspects of KM implementation and application in the context of academic research.

II) To analyse and evaluate existing models of KM in the University or Institute, and discuss problems those negatively affect the successful implementation and application of KM in the academic research context.
III) To develop a new conceptual KM model that enables ideas and suggestions of research scholars.

IV) The proposed KM model formulates a strategic framework for KM System.

V) To recommend the future development, implementation and application of KM System at University and Institute levels.

Research Hypotheses:

H 1 - Research scholars are facing challenges during their research Practices

H 1- a) Research Scholars are facing key challenges like time constraints and stress of workload.

H 1- b) Research scholars are suffering from lack of information resources and facilities.

H 1- c) Review of Literature, Primary data collection, Secondary data collection and Research Methodology Selection are the major hurdles faced by the research scholars during their research process.

H 2 - Research Scholars are not aware about using online research tools in their research process.

H2 – a) There is a significant relationship between use of online research applications and number of online research publications.

H2 – b) Research scholars are unable to get current research status of their research topic on Internet.

H 3 - There is a significant need of Knowledge Management System for Research scholars.

H 3 - a) There is a need of online system to share idea and knowledge among research scholars.

H 3 - b) There is a need of online system for direct interaction with expertise for guidance during research process.

H 3 - c) There is a need of online system for research scholars to search and access various types of research publications.
H 3 - d) There is a need of online System with Online Group Formation facility from various universities / Institutes.

H 3 - e) There is a need of online system with national level Unique Research Scholar Identification Number facility for research scholars.

H 3 - f) There is a need of online training on Research Methodology and Research Tools (IBM SPSS, R, Mat Lab, etc.) for Research scholars.

H 3 - g) There is need of online system to help research scholars in their research process and to improve the quality and quantity of the research.

Data Collection

This research follows required scientific steps for designing survey and questionnaire. The data collection has been completed through the web based survey and direct survey. The research collects responses of the research scholars to study the challenges faced by them at different ten stages during their research as given below:

1. Identification of Research Issue or topic:
2. Construction of Research Title
3. Literature Review of the Research
4. Secondary Data Collection
5. Research Methodology Selection
6. Research Design (Questionnaire / Experiment Design)
7. Primary Data Collection
8. Data Analysis and Interpretation
9. Research Conclusion, Suggestions and Recommendations

The research questionnaire also revealed various specific challenges that might be faced by the research scholars as per the information obtained from the secondary data and literature review. The challenges are as given below:

I) Lack of training of Research or Research Methodology
II) Lack of Research Level Interaction with expertise in your discipline
III) Lack of Literature's availability and access
IV) Lack of confidence doing research
V) Lack of code of conduct in Research / Research Process
VI) Cost associated with Research Work & Research Publications
VII) Time constraints and stress of workload

The researcher has also tried to collect the visions of the research scholars as solutions for these challenges. The solutions are provided in questionnaire in the terms of online system facilities for them. These embedded facilities within the questionnaire are based upon the KM aspects for the research community. The researcher has tried to take the opinions of research scholars by theses online system facilities to study the need of the knowledge management for the research community. Hence the questionnaire is designed in such way that the research scholars will think and provide their views about their research, research topic, research topic verification, available resources, online and library information resources, challenges faced by researchers at different stages of research, different specific challenges faced by research scholars and finally the solutions to their challenges through online system by embedding various features for the research scholars. The provided solutions as an online system features in the questionnaire are as follows:

1. Online System for researchers to share ideas and knowledge.
2. Direct Interaction with expertise for guidance
3. Online access to various types of research publications. (Research Articles/ Papers/ Theses/ Dissertations/ etc.)
4. Easy and advanced search options for searching related information.
5. Online Groups formation facility from various Universities / Institutes.
6. National Level Unique Identification Number for every researcher.
7. Online training of Research Methodology for researchers.
8. Online training of Research Tools for researchers. (IBM-SPSS, R, Mat Lab, etc.)

The researcher limits the scope of the research only up to the management science departments and institutes under the affiliation of universities within Maharashtra (India). The data has been collected through web survey and direct survey. The research methodology followed by this research has been described in Research Methodology chapter. This illustrates the research design, sample design, process taken in the survey and questionnaire administration as well as an
introduction to the data analysis strategy made for the hypothesis testing. Finally, the ethical considerations pertaining to the collection of data were discussed in short.

**Data Analysis and Interpretation**

The collected data has been coded, screened and analysed as per the planned data analysis strategy using IBM SPSS Ver. 21. The data analysis strategy and descriptive statistics have been explained. The hypotheses testing have been completed by using various statistical tests that is Sign's Binomial Test, Friedman Chi-Square Test, Chi-Square Test and MANOVA test. This research analysis has given very interesting results. The highlights of the data analysis to mention here is that the most of the research scholars have faced challenges at each and every stage of research. The research stages are not having equal magnitudes of difficulty levels, means that the literature review, primary data collection, secondary data collection and research methodology selection are major hurdles for the research scholars. The research scholars have agreed that they are facing lot of specific challenges as given above but the most of the research scholars agreed that the time constraints and stress of workload is a major challenge for them during their research. They clearly mention that the research information is available to them through Internet, but it is very difficult to search the information resources related to their specific research topic on Internet. Hence they have agreed that the available research tools, applications and information resources are not sufficient. Further the data analysis interprets about the library resources, research publications, use and awareness of online research tools or applications like Mendeley, Research Gate, Google Scholar and Academia.edu. This study gives an idea about the online solutions selected by research scholars as a perfect solution for their research related challenges. This provides clear idea about the need of the knowledge management. The research gives very positive feedback for the need of the knowledge management and suggests this as a best solution for them. The most of the research scholars have agreed the mentioned facilities as a better solution for them. This study statistically proves the stated hypotheses related to the objectives and provides evidences for this research.

**Proposed Conceptual KM Model for Research Community**

The importance of Knowledge Management and its need for the research community and university has been elaborated in this work. This study introduces
about the positive effects of KM on university research and competitive advantages for research scholars have been described. Further the concept of the Research Knowledge Exchange Network (RKEN) under the university has been expressed for the implementation of the KM System. The RKEN explains different components and members of this network system. It also explains different authority levels of this network. It shows the pathway for playing role in this RKEN by UGC, university, research groups and individual research scholars. The research provides the detail information about the National Knowledge Network – NKN Programme. It provides National Knowledge Network (NKN) purpose, structure, applications.

The important objective of this research is to provide a KM solution for the research community. The literature review to develop the required background to develop the KM model, to identify the various aspects of KM that can be utilised for research community has been explored. The investigation has been conducted to know the existing KM models, tools and techniques implemented in R&D organizations, universities and Higher Education. The researcher has studied various teaching-learning methods which can be easily adopted for the research community in the KM implementation like Active teaching & learning, Higher Order Thinking Skill (HOTS), etc. Finally the researcher found that HOTS is adequate method which could be implemented effectively for the KM Model. Hence, the researcher has proposed HOTS based conceptual KM Model for the research community at university level. The researcher has not stopped on just proposing conceptual KM Model; he has tried to provide the KM Process for the same. The conceptual KM Model is not sufficient and it requires ICT aspects and online application point of view study to know, how it can be implemented, what kind of facilities and utilities should be incorporated in the future KM System, etc. The researcher has studied further on same aspects and proposed here the conceptual layered structure of KM System and also explains detailed layer wise utilities and facilities of the KM System. The detailed architecture of the KM System has been explained further.

The University level KM System is not sufficient to develop the research at national level in India. It should be extended nationally. Keeping these points in mind the researcher has promoted the National Level Model for the integration of the University level KM System. It explains the National Level Integration of KM System to building Nationwide Research Community. The research explains the use
Conclusions and Recommendations

Finally the Chapter - Conclusions and Recommendations of this research study elaborates the final conclusions. The research has achieved its main goal of studying the challenges faced by management science research scholars following the scientific process of research. 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.

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.

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. In this each and every measured variable is explained in detail in descriptive statistics and conclusions.

The researcher has explained few subordinate or dependent objectives of the main objectives. These objectives are focused to provide 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 chapter further gives suggestions for the university, UGC and Government of India for the implementation of the KM Model and KM System in the university as a pilot project. This also provides future scope of the research and the researcher recommendations for the same.