CHAPTER – V

SUMMARY, RESULTS AND SUGGESTIONS

The final chapter of the report gives a snapshot of the research study and the results of the study followed by suitable suggestions and scope for further research. This chapter is divided into four sections namely, Summary of the Study, Results of the Study, Suggestions and Scope for Further Research.

5.1 Summary of the Study

Ever since the term ‘information literacy’ was first introduced by Paul Zurkowski in 1974, it has gained relevance and taken roots both within and outside the field of library science throughout the world. Information literacy is considered pivotal to the pursuit of lifelong learning, and central to achieving both personal empowerment and economic development. Information literacy is a key component and contributor to lifelong learning (Ramesh Babu, 2008). However, research in this area in Asian countries such as India is still in its preliminary stages since these countries have only recently become fully immersed in the information culture (Karisdappa & Rajgoli, 2008).

Lougee (2009) attributes the relevance of information literacy in the field of education to factors such as the emergence of information and communication technologies and the growing pressure to rethink the academia’s approaches to teaching and learning. Further, developing lifelong learners is central to the mission of higher education institutions (Association of College and Research Libraries, 2000).
Nevertheless, an individual to be information literate should possess information literacy competency. Information literacy competency ensures maximum utilisation of the information resources as well as optimisation of information handling capabilities. This research study was an attempt to understand the interplay of select personal and educational factors and information literacy competency among the full-time research scholars of University of Madras. The study attempted to answer the following research questions:

- What standardised tool could be presented to assess information literacy competency in the Indian context?
- What is the level of information literacy competency of the full-time research scholars of the University of Madras?
- What are the differences in information literacy competency and its dimensions, (if any), among the full-time research scholars that may be attributed to personal and educational factors?
- What is the strength of association between academic performance-related factors and information literacy competency and its dimensions (if any)?
- What is the effect of academic performance-related factors on information literacy competency and its dimensions (if any)?

The research work aimed to study the interplay of select personal and educational factors and information literacy competency among the full-time research scholars of University of Madras. The research objectives included:
i. To develop a validated tool to assess information literacy competency among research scholars in the Indian context.

ii. To measure information literacy competency of the full-time research scholars of the University of Madras.

iii. To find out the demographic and educational variables that explain the difference in information literacy competency and its dimensions.

iv. To find out the association between academic performance-related variables and information literacy competency and its dimensions.

v. To predict information literacy competency and its dimensions based on academic performance-related variables.

Various null hypotheses were framed and tested to understand the interplay between the independent variables of the study and information literacy competency and its dimensions.

This quantitative research study adopted the survey method to achieve the research objectives. It entailed the collection of data on a number of variables at a single juncture. In the conventional sense, this survey research adopted the descriptive design. This study was conducted among full-time research scholars of the University of Madras, India. The data for this study were collected from primary sources namely the individual respondents (the full-time research scholar) that constituted the unit of analysis. Research scholars pursuing their full-time research degrees (M.Phil or Ph.D programmes) in the University Departments and its affiliated colleges (both autonomous and non-autonomous institutions) at the time of the study constituted the universe. Data were
obtained through stratified random sampling technique from those scholars who fulfilled the criteria for sample selection. The final sample comprised of 500 individuals.

A structured, self-administered questionnaire was used as the tool of data collection. The tool used to collect the data comprised of four parts namely, Part I: Personal Information, Part II: Educational Profile, Part III: Academic performance and Part IV: Information Literacy Competency Assessment Tool.

The tool used for the study was constructed by the researcher solely for the purpose of the study. The tool is based on the ACRL standards to assessing information literacy competency. Based on the ACRL standards, a pool of items (totalling 90) were generated to measure information literacy competency and modified based on the opinions received from four experts in the subject library and information science. The tool was pre-tested on 30 individuals to get inputs regarding instrument design by interview method. A pilot study was carried out on 100 respondents during March and April 2009. The data so collected were subject to exploratory factor analysis (Principal Component method with Varimax rotation) to study the factor structure of the variable ‘information literacy competency’. The results of the factor analysis revealed that five factors with Eigen value more than one explained 42.24 per cent of the total variance (Refer Table 3.4 for details). Only 44 items loaded on the corresponding factors. The five factors were labelled as information management competency (factor 1), information search competency (factor 2), information need assessment competency (factor 3), competency of information search through technology (factor 4), and competency of ethical use of information (factor 5), all revealing different aspects of information literacy competency. On the basis of factor analysis, five indices of information literacy
competency were identified. Further, these scales surpassed the minimum recommended value of reliability (that is, 0.70 as suggested by Nunnally, 1978). The Cronbach alpha coefficient ranged from 0.76 to 0.95.

The data collected were subject to quantitative data analysis. SPSS (Statistical Package for Social Sciences), version 16.0 was used to analyse the data. Descriptive and inferential statistics were applied to the data so collected. The various statistical tests applied were (i) descriptive statistics, (ii) factor analysis (exploratory), (iii) coefficient of reliability – Cronbach alpha, (iv) independent sample t-test, (v) one-way ANOVA, (vi) contingency coefficient, and (vii) step-wise multiple regression. The results of the study are given in Section 5.2.

5.2 Results of the Study

The results of the study are presented in the following order – first, the profile of the respondents, and next measures of the variables of the study namely, information literacy competency and its dimensions namely, information management competency, information search competency, information need assessment competency, competency of information search through technology, and competency of ethical use of information. This includes details of the descriptive statistics, levels of information literacy competency and its five dimensions. Thirdly, results of various statistical tests applied to identify the variables that explain the difference in information literacy competency and its dimensions among the respondents are presented. This is followed by the results of associations between indicators of academic performance and information literacy
competency and its five dimensions. Finally, the results of step-wise multiple regressions carried out to predict information literacy competency and its dimensions are presented.

5.2.1 Profile of the Respondents

The following are the findings of the profile of the respondents.

- Almost two-thirds (63.4%) of the respondents are aged below 27 years. The mean age is 26.61 years and the median is 25 years while the mode is 23 years (For details refer Table 4.1.1)

- Majority (60.0%) of the respondents are females (For details refer Table 4.1.2).

- Only a little less than two-fifth (39.6%) of the respondents have any sort of work experience (For details refer Table 4.1.3). Out of the 198 respondents who had work experience prior to taking up full-time research, a majority of them (69.19%) pursued it the same area of study as their work experience.

- A little more than two-third (64.6%) of the respondents were pursuing their full-time M.Phil degree at the time of study (For details refer Table 4.1.4).

- At the time of enrolment in the present research programme, most (76.4%) of the respondents were post-graduates (For details refer Table 4.1.5).

- A little more than half (51.2%) of the respondents had been enrolled for their research degrees in arts subjects (For details refer Table 4.1.6).
✓ Equal number of respondents was from arts and science backgrounds (For details refer Table 4.1.7).

✓ Most of the respondents (64%) were attached with autonomous institutions. Almost one-third (30.8%) of the respondents were pursuing their programmes in the University departments (For details refer Table 4.1.8).

✓ Majority of the respondents (78.6%) have rated themselves as good performers, academically (For details refer Table 4.1.9).

✓ A little less than half (45.2%) of the respondents had presented papers. The mean number of paper presentations is 1.31 and the standard deviation is 2.39 (For details refer Table 4.1.10).

✓ Majority of the respondents (78.4%) had not published any papers. A look at the number of papers published revealed that the mean number of paper publications is 0.5 and the standard deviation is 1.53 (For details refer Table 4.1.11).

5.2.2 Descriptive Statistics of the Variables of the Study

The dependent variables of the study include information literacy competency and its five dimensions namely, (i) information management competency, (ii) information search competency, (iii) information need assessment competency, (iv) competency of information search through technology and (v) competency of ethical use of information. The salient details pertaining to the same are presented below:

✓ The mean values of the variables range from 16.27 to 182.60. The highest mean score of 182.60 is that of information literacy competency while the lowest mean score of 16.27 is that of competency of ethical use of information. The
consistency in responses (as revealed by the standard deviation) is high for competency of ethical use of information (standard deviation = 2.50) and low for information literacy competency (standard deviation = 19.68) (For details refer Table 4.2.1).

✓ A little more than two-third (65.8%) of the respondents have scored high on information literacy competency. However, a great majority (84.2%) of the respondents have high levels of information management competency. Almost one-third (29.6%) of the respondents have moderate level of information search competency. About seven-tenth (68.6%) of the respondents have high level of information needs assessment competency. An equal percentage of the respondents (45.6% each) have moderate to high levels of competency of information search through technology. Almost three-fourth (71.8%) of the respondents have high level of competency of ethical use of information (For details refer Table 4.2.2).

5.2.3 Results of the Tests of Significance of Differences between Groups

Student’s t-test and one-way ANOVA were applied to test how each of the personal and education-related variables explained the difference in information literacy competency and its dimensions among the respondents. The results are as follows:

✓ The t-values for information literacy competency and its dimensions across age groups were not statistically significant for the variables information management competency, information search competency and competency of ethical use of
information at 0.05 level. Hence, the relevant null hypotheses were accepted (For details refer Table 4.3.1).

✓ For the male and female respondents, the t-value for the variable ‘competency of information search through technology’ was statistically significant at 0.01 level and hence, the relevant null hypothesis was rejected (For details refer Table 4.3.2).

✓ The t-values for information literacy competency and its dimensions for respondents with and without prior work experience were statistically significant at 0.05 level and hence, all the relevant null hypotheses were rejected (For details refer Table 4.3.3).

✓ With regard to the course of study, the t-values for information literacy competency and its dimensions among the respondents were statistically significant at 0.05 level and hence, all the relevant null hypotheses were rejected (For details refer Table 4.3.4).

✓ Difference in information literacy competency and its dimensions among respondents based on similarity between area of study and prior work experience was statistically tested by applying ANOVA. The significance value for the results of the one-way ANOVA test for information literacy competency and its dimensions except for competency on the ethical use of information is less than 0.05. Hence four null hypotheses were rejected (For details refer Table 4.3.5).

✓ A statistically significant difference in the mean scores of information literacy competency and its five dimensions for the two categories of respondents were found on the basis of educational qualification of the respondents at the time of
enrollment and hence the relevant null hypotheses are rejected (For details refer Table 4.3.6).

✓ The t-values of information literacy competency and its five dimensions based on the present area of study were not statistically significant at 0.05 level and hence, all the null hypotheses were accepted (For details refer Table 4.3.7).

✓ The t-values of information literacy competency and its five dimensions based on the prior area of study were not statistically significant at 0.05 level and hence, all the null hypotheses were accepted (For details refer Table 4.3.8).

✓ Based on the institution type, one-way ANOVA test for all the dimensions of information literacy competency except for information literacy competency per se was statistically significant (For details refer Table 4.3.9).

✓ For the respondents with and without any paper presentations to their credit, the t-values for information literacy competency and its five dimensions were significant at 0.05 level and hence, the relevant null hypotheses were rejected (For details refer Table 4.3.10).

✓ For the respondents with and without any paper publications to their credit, the t-values for information literacy competency and its five dimensions were significant at 0.05 level and hence, the relevant null hypotheses were rejected (For details refer Table 4.3.11).

5.2.4 Results of the Test of Significance of Association between Variables

✓ The associations between the variables academic achievement during post-graduation and information literacy competency levels were tested by computing
the contingency coefficient. The contingency coefficient was significant for the variables information competency literacy level and its dimension namely information management competency (For details refer Table 4.4.1).

5.2.5 Results of Multiple Regression Analysis

Step-wise multiple regression was applied to predict information literacy competency and its five dimensions in terms of the three independent variables namely, academic achievement, number of paper presentations and number of paper publications. As academic achievement was a categorical variable, it was converted into dummy variable to facilitate regression analysis. The key findings are presented below:

✓ Regression analysis to find out the predicted value of information literacy competency based on the variables academic achievement, number of paper presentations and number of paper publications, revealed that only one variable namely, academic achievement served to significantly predict the variance in information literacy competency. The regression equation for predicting information literacy competency is as follows:

Information literacy competency = 174.69 + 13.76 (very good academic achievement) + 7.79 (good academic achievement) (For details refer Table 4.5.1a and 4.5.1b).

✓ An attempt was made to predict information management competency based on the variables namely, academic achievement, number of paper presentations and number of paper publications. Of the three variables entered, only one variable namely academic achievement served to significantly predict the variance in
information management competency. The regression equation for predicting information management competency is as follows:

Information management competency = 50.64 + 5.73 (very good academic achievement + 3.28 (good academic achievement) (For details refer Table 4.5.2a and 4.5.2b)

✓ The variables namely, academic achievement, number of paper presentations and number of paper publications were regressed to predict information search competency. Results revealed that only one variable namely, academic achievement served to significantly predict the variance in information search competency. The regression equation for predicting information search competency is as follows:

Information search competency = 34.57 + 3.64 (very good academic achievement) + 1.81 (good academic achievement) (For details refer Table 4.5.3a and 4.5.3b).

✓ It was attempted to predict information assessment competency on the basis of three variables namely, academic achievement, number of paper presentations and number of paper publications. Results indicated that the variable ‘number of paper presentations’ significantly served to predict information assessment competency. The regression equation for predicting information assessment competency is as follows:

Information assessment competency = 49.35 + 0.32 (number of paper publications) (For details refer Table 4.5.4a and Table 4.5.4b)
None of the variables namely, academic achievement, number of paper presentations and number of paper publications served to predict competency of information search through technology.

None of the variables namely, academic achievement, number of paper presentations and number of paper publications served to predict competency of ethical use of information.

5.3 Suggestions

Based on the research findings, the following suggestions are put forth for the various stakeholders:

1. Even though the overall percentage of information literacy competency is high among the research scholars, the competency of information search through technology is only moderate. Therefore, the research scholars need more training on using technology for information search like searching online resources, using various databases, online forums and so on.

2. It is also surprising to note that the competency of information search through technology is high among male research scholars compared to females. This may be due to the exposure that they get to use technology and other opportunities. So female research scholars may be focussed for the training on using technology.
3. It is understood that the information literacy competency of the Ph.D research scholars are high compared to the M.Phil research scholars. Hence Ph.D research scholars may be used to educate M.Phil research scholars on information literacy.

4. Since the mean score of information literacy competency of ethical use of information is low compared to all other competencies, research scholars may be oriented by their supervisors or their respective library staff about the implications of plagiarism and importance of following ethics in using information.

5. Information literacy competency programmes may be offered to teachers of schools and colleges also so that they can also teach their students.

6. Collaboration of teachers with librarians will help to frame a better curriculum of information literacy competency programme.

7. Respondents with paper presentations have higher mean score than their counterparts. Hence research scholars may be encouraged to prepare and present more number of papers in seminars/ conferences.

8. Research scholars who have published papers have higher mean score of information literacy competency compared to the research scholars who are yet to publish papers. Hence research scholars have to be motivated to publish papers.
9. Information Literacy programmes should be offered compulsorily in schools and colleges in India to enhance the information literacy competency of students.

10. Qualitative studies can also be conducted to assess information literacy competency.

5.4 Implications of the Study

The study has traced the interplay of select personal and education-related variables and information literacy competency among full-time research scholars of the University of Madras. A major outcome of the study is the preparation of the standardised tools for information literacy competency assessment in the Indian context. Further, the assessment of information literacy competency of the research scholars of University of Madras will be beneficial to other Indian Universities. The findings of the present study have thrown light on the concept of information literacy competency and its dimensions thanks to the process of scale development undertaken for the sole purpose of the study. The results have also highlighted the important variables that have a significant influence on the same.

5.5 Scope for Future Research

This study has paved the way for many research studies in future. Research may be undertaken for faculty members of the colleges and universities in future. This study may be conducted for any set of students as pre and post test after offering information
literacy programme to measure effectiveness of the programme. The same study can also be conducted in future by using interview schedule to get very accurate data from the respondents. In other ways, qualitative studies may also be conducted to see the actual competency of the respondents in terms of information literacy.

Information literacy competency is required for everyone in life. Hence this programme can be offered not only in academic institutions but also in workplaces and so on. Moreover, Information Literacy Competency Scale developed for this study can be used to study the competency of research scholars and students of other universities in future.

5.6 Conclusion

Information Literacy Competency is important not only for the individuals but also for the institutions and nation as a whole. Hence this present research study will make a significant contribution to the existing pool of knowledge in terms of information literacy. This study has attempted to bring out a standardised tool to assess information literacy competency. The findings will be of interest to academicians, academic administrators and policy makers.