INDEX

List of Tables
List of Figures
List of Abbreviations

CHAPTER -I: INTRODUCTION  1-14

1.1 Introduction  1
1.2 Definition of Library Effectiveness  2
1.3 History of Library Effectiveness  3
1.4 Measuring Library Effectiveness  4
1.5 Selection of Criteria for Measuring Library Effectiveness  5
1.6 Different Approaches or Models for Evaluating Effectiveness  5
   1.6.1 Organizational Level Approach to Assess Effectiveness  5
      1.6.1.1. The Goal Model  6
      1.6.1.2. Process Model  6
      1.6.1.3 The Open Systems or System Resource Model  7
      1.6.1.4. Multiple Constituencies Approach or Participant  7
1.7 Other Approaches to Measure Library Effectiveness  8
   1.7.1 System Theory Approach  8
1.8 Integrated Model of Library Effectiveness  8
1.9 Selection of Criteria for Measuring Library Effectiveness  8
1.10 Need for the Study  9
1.11 Statement of the Problem  10
1.12 Definition of Concepts  10
1.13 Objectives of the Study  11
1.14 Hypotheses  12
1.15 Scope and Limitations  12
1.16 Chapterization  13

CHAPTER -II: REVIEW OF LITERATURE  15-38

2.0 Introduction  15
2.1 Concept of Effectiveness of Library  15
2.2 Effectiveness of Library Resources and Services in Different Types of Libraries
   2.2.1 Agricultural Research Institutes 16
   2.2.2 Academic Libraries 16
      2.2.2.1 University Libraries 17
   2.2.3 Public Libraries 18
   2.2.4 Hospital Libraries 20

2.3 Models of Library Effectiveness 20

2.4 Determinants of Library Effectiveness 21

2.5 User Satisfaction as criteria for Assessing Effectiveness 23
   2.5.1 User Satisfaction and Assistance from Library Staff 24

2.6 Evaluating/Measuring Efficiency and Effectiveness of Library Services 24
   2.6.1 Effectiveness of Internet 28
   2.6.2 Effectiveness of Bibliographical Service and Automated Retrieval Systems 28
   2.6.3 Effectiveness of Reference Service 28
   2.6.4 Effectiveness of Inter Library Loan Service 30

2.7 Effectiveness and Evaluation of Library’s Performance 30

2.8 Evaluation of Library Effectiveness based on Library Collection 35

2.9 Effectiveness of Digital Library 37
   2.9.1 Set of Elements for Evaluation of Digital Libraries 37

2.10 Effectiveness of Library Websites 38

CHAPTER-III: HISTORY OF TECHNICAL EDUCATION IN INDIA AND KARNATAKA, PROFILE OF THE VISVESVARAYA TECHNOCAL UNIVERSITY RESEARCH CENTERS AND ITS LIBRARIES IN KARNATAKA 39-54

3.1 Introduction 39

3.2 Development of Technical Education under British Rule in India (Pre Independence period) 42

3.3 Development of Technical Education after the Independence in India (Post Independence Era) 44

3.4 History and Development of Technical Education in Karnataka 47

3.5 Role of Visvesvaraya Technological University (VTU) 49

3.6 Genesis of VTU and its Role Technical Education Development in Karnataka 51
CHAPTER-IV: METHODOLOGY

4.1 Introduction 55
4.2 Nature of Study 55
4.2.1 Data collection Tools 55
4.2.1.1 Questionnaire for Librarians 55
4.2.1.2 Questionnaire for Researchers 56
4.2.1.3 Instrumentation 56
4.3 Compiling the List of Candidate Indicators 56
4.4 Sample size 56
4.5 Data Collection 58
4.6 Time Period 58
4.7 Problems Encountered in Data Collection 58
4.8 Likert Scale 59
4.8.1 Sample Question Presented Using a Five-Point Likert Item 59
4.8.2 Examples of Likert Scaled Responses Used in Data-Gathering 59
4.9 Data Analysis 60
4.10 Chi Square Test/Contingency Table Analysis 61
4.11 Spearman's rho Correlation 62
4.12 Conclusion 62

CHAPTER -V: ANALYSIS AND INTERPRETATION OF THE DATA COLLECTED FROM THE VISVESVARAYA TECHNOLOGICAL UNIVERSITY RESEARCH CENTER LIBRARIANS WITH REGARD THE LIBRARY COLLECTION, FACILITIES AND SERVICES TO THE RESEARCHERS 63-109

5.1 Introduction 63
5.2 Demographic Profile of the Librarians of Research Centers 63
5.3 Age and Gender-wise Distribution of Respondents 64
5.4 Educational Status-wise Distribution of Respondents 65
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5</td>
<td>Professional Experience and Gender-wise Distribution of Librarians</td>
</tr>
<tr>
<td>5.6</td>
<td>Number of Library Staff</td>
</tr>
<tr>
<td>5.7</td>
<td>Annual Expenditure on Research Centers Libraries from 2007-2008 to</td>
</tr>
<tr>
<td></td>
<td>2011-12</td>
</tr>
<tr>
<td>5.8</td>
<td>Books and Journals Collection in Research Center Libraries</td>
</tr>
<tr>
<td>5.9</td>
<td>Bound Volumes and Project Reports Collection</td>
</tr>
<tr>
<td>5.10</td>
<td>Subscription of E-journals Databases</td>
</tr>
<tr>
<td>5.11</td>
<td>Library Users in Research Center Libraries</td>
</tr>
<tr>
<td>5.12</td>
<td>Seating Capacity in Research Center Libraries</td>
</tr>
<tr>
<td>5.13</td>
<td>Number of Books Borrowed Per Day in Research Center Libraries</td>
</tr>
<tr>
<td>5.14</td>
<td>Funds Allocated for the Purchase of Books and Journals in Research</td>
</tr>
<tr>
<td></td>
<td>Center Libraries</td>
</tr>
<tr>
<td>5.15</td>
<td>Measures Used in Acquiring Required Information Resources in</td>
</tr>
<tr>
<td></td>
<td>Research Center Libraries</td>
</tr>
<tr>
<td>5.16</td>
<td>Measures in the Effective Use of Library Budget in Research Center</td>
</tr>
<tr>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>5.17</td>
<td>Computerization in Library Activities in Research Center Libraries</td>
</tr>
<tr>
<td>5.18</td>
<td>Equipments Held in Research Center Libraries</td>
</tr>
<tr>
<td>5.19</td>
<td>Facilities and Services Provided by Libraries to the Researchers in</td>
</tr>
<tr>
<td></td>
<td>Research Center Libraries</td>
</tr>
<tr>
<td>5.20</td>
<td>Measures Used for Effective Maintenance of the Library Stack in</td>
</tr>
<tr>
<td></td>
<td>Research Center Libraries</td>
</tr>
<tr>
<td>5.21</td>
<td>Computerized Services Offered in Research Center Libraries</td>
</tr>
<tr>
<td>5.22</td>
<td>Subscription to E-Journals Databases in Research Center Libraries</td>
</tr>
<tr>
<td>5.23</td>
<td>Subscription to Different Types of E-Journals in Research Center</td>
</tr>
<tr>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>5.24</td>
<td>Methods Used in Managing Periodical Section in Research Center</td>
</tr>
<tr>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>5.25</td>
<td>Methods Used in the Provision of Reference Service in Research</td>
</tr>
<tr>
<td></td>
<td>Center Libraries</td>
</tr>
<tr>
<td>5.26</td>
<td>Internet Facility in Research Center Libraries</td>
</tr>
<tr>
<td>5.27</td>
<td>Purpose of Providing Internet Facility in Research Center Libraries</td>
</tr>
<tr>
<td>5.28</td>
<td>Steps Undertaken for Better Use of Internet Centre in Research Center</td>
</tr>
</tbody>
</table>
5.29 Existence of Networking Environment in Research Center Libraries 102
5.30 Use of Types of Network in Research Center Libraries 103
5.31 Use of Digital Library Software for Digitization in Research Center Libraries 104
5.32 Names of Digital Library Software Used in Research Center Libraries 105
5.33 Existence of a Copyright Policy to Deal with the Provision of its Resources in Digital Format 106
5.34 Use of RFID Technology in Research Center Libraries 106
5.35 Use of Bar-Coding in Research Center Libraries 107
5.36 Methods used for collecting Users Feedback about the Activities and Programs 108
5.37 Measures Used to Maintain Good Interpersonal Relationship with Users 109
5.38 Conclusion 109

CHAPTER -VI: ANALYSIS AND INTERPRETATION OF THE DATA COLLECTED FROM THE VISVESVARAYA TECHNOLOGICAL UNIVERSITY RESEARCH CENTER RESEARCHERS WITH REGARD THE EFFECTIVENESS OF LIBRARY AND INFORMATION SERVICE 111-216

6.1 Introduction 111
6.2 Demographic Profile of Researchers 111
  6.2.1 Age and Department-wise Distribution of Respondents 111
  6.2.2 Gender and Department-wise Distribution of Respondents 113
6.3 Subject-wise Distribution of Respondents 114
6.4 Research Center-wise Distribution of Respondents 115
6.5 Frequency of Library Visit 119
6.6 User Opinion about Convenience of Working Hours 120
6.7 Purpose of Visit to the Library 121
6.8 User opinion about Effectiveness in Accessing Library Resources 123
  6.8.1 Effectiveness in Accessing Journals 123
  6.8.2 Effectiveness in Accessing Books 124
  6.8.3 Effectiveness in Accessing E-journals 125
  6.8.4 Effectiveness in Accessing E-books 126
  6.8.5 Effectiveness in Accessing Abstracting and Indexing Resources 127
  6.8.6 Effectiveness in Accessing Government Publications 128
6.8.7 Effectiveness in Accessing Thesis/Dissertations/Projects  
6.8.8 Effectiveness in Accessing Patents/Standards  
6.8.9 Effectiveness in Accessing CD ROM databases  
6.8.10 Effectiveness in Accessing Conference/Workshop/Seminar Proceedings  

6.9 Methods used to Keep Abreast of Current Developments  

6.10 User opinion about the Effectiveness of Services provided in the Research Center Libraries  
6.10.1 Effectiveness of Literature Search Service  
6.10.2 Effectiveness of Abstracting Service  
6.10.3 Effectiveness of Current Awareness Service  
6.10.4 Inter Library Loan Service  

6.11 User Opinion about Adequacy of Facilities in Research Center Libraries  
6.11.1 Adequacy of Printer Facility  
6.11.2 Adequacy of Scanner facility  
6.11.3 Adequacy of Photocopier Facility  
6.11.4 Adequacy of Computer Facility  

6.12 Adequacy of Physical Infrastructure  
6.12.1 Individual Study Room Facility  
6.12.2 Adequacy of AV Viewing Room Facility  
6.12.3 Adequacy of Library Display Area  
6.12.4 Adequacy of Library Furniture  
6.12.5 Lighting Facility  
6.12.6 Air Condition Facility  
6.12.7 Seating Facility  
6.12.8 Provision of group study room facility  
6.12.9 Adequacy of Parking Facility  

6.13 Use Online Public Access Catalog (OPAC)  

6.14 Effectiveness of Computerized Services  
6.14.1 User Opinion about Effectiveness of Computerized Issue and Return
6.14.2 User Opinion about Effectiveness of Computerized reservation of books
6.14.3 User Opinion about Effectiveness of Computerized OPAC Search Service
6.14.4 User Opinion about Effectiveness of E-mail Notification
6.14.5 User Opinion about Effectiveness of Computerized Article Alert Service
6.14.6 User Opinion about Effectiveness of Table of Contents service
6.14.7 User Opinion about Effectiveness of New Arrival List Service

6.15 User Opinion about Effectiveness of Library Website
6.15.1 User Opinion about Provision of Accurate Information in Library Website
6.15.2 Provision of Useful Information in Library website
6.15.3 Provision of High Quality Information in Library Website
6.15.4 Relevancy of Information in the Library Website
6.15.5 Clarity in the Instructions in Library Website
6.15.6 Provision of Link to Institutional Repository

6.16 Use of Internet Facility
6.17 User Opinion about Methods Used in Provision of Internet in Research Center Libraries
6.17.1 Method of Keeping Working Hours of Internet Center for 24 Hours
6.17.2 Keeping Working Hours of Internet Center from 8 a.m. to 8 p.m.
6.17.3 Availability of Updated and Well-Maintained Computer Systems for Internet Access
6.17.4 Permission to Use Own Pen Drive/CDs for downloading data from Internet
6.17.5 Reservation of Separate Systems for Researchers

6.18 Extent of Use of Journals in Research Center Libraries
6.19 Effectiveness of Methods used in Journal Section in Satisfying Researchers’ Needs
6.19.1 Method of Regular Display of the Current Journals
6.19.2 User Opinion about Availability of Variety of E-journals
### 6.27.4 Effectiveness of Library Staff in Installing Confidence in Current Awareness Services 206

### 6.27.5 Effectiveness of Communication Skills of Library staff 207

### 6.27.6 Effectiveness in Provision of Services at the Promised Time by Library staff 208

### 6.27.7 Effectiveness of Library Staff in Keeping Users Well Informed 209

### 6.28 Reasons Contributing to the Effectiveness 210

#### 6.28.1 User opinion about Effectiveness in Provision of Quality Services 210

#### 6.28.2 Effectiveness in terms of Utilization of Library for Higher Duration 212

#### 6.28.3 Effectiveness in terms of Motivation of Library Staff 213

#### 6.28.4 User Opinion About Effectiveness with Regard to Co-operation of Library Staff 214

#### 6.28.5 User Opinion about Effectiveness in terms of Increase in Library Visits by users 215

### 6.29 Conclusion 216

### CHAPTER -VII: FINDINGS, SUMMARY AND CONCLUSION 217-258

#### 7.1 Introduction 217

#### 7.2 Issues Studied and Analyzed 218

#### 7.3 Verification of the Hypothesis 218

##### 7.3.1 The Facilities and Services in VTU Research Centre Libraries are Adequate 218

##### 7.3.2 The Utility and Provision of Electronic Resources in VTU Research Centre Libraries are Satisfactory 219

##### 7.3.3 The Initiation of Computerization of Library and Extent of its use by Researchers in VTU Research Centre Libraries is Limited. 219

##### 7.3.4 The Use of Network, RFID Technology and Barcode in VTU Research Centre Libraries is Limited 221

##### 7.3.5 The Methods Used in Acquiring Information Sources and Use of Budget in VTU Research Centre Libraries is Very Effective 221
7.3.6 The Methods Used in Maintenance of Stock, Managing Periodical Section and Providing Reference Service in VTU Research Centre Libraries are Very Effective

7.4 Finding of the Study

7.4.1 Librarian’s Opinion towards Provision of Library Resources, Services and Facilities in Research Centre Libraries

7.4.2 Researchers’ Opinion about Effectiveness of Library and Information Services in VTU Research Centre Libraries

7.5 Suggestions

7.6 Recommendations for Further Research

7.7 Conclusion

Bibliographical References

Appendices