Chapter 3

METHODOLOGY

This study was conducted to analyse the degree of overlap and duplication in Computer Science journal collections in selected Malaysian university libraries. Descriptive research methodology is applied in this study by comparing the titles listed in the *JCR (Journal Citation Reports)* against the availability of journal titles based on serial titles found in the OPAC (Online Public Access Catalogue) of each selected university libraries. Besides this, comparing the availability of journal resources in a library with a standard list is one of the popular methods used to evaluate serial collections.

The data for this study was obtained after thorough searching through electronic databases in order to collect information on previous studies in journal overlap and duplicates. The keywords used to search for the relevant reading materials were overlap, duplicate, journal / serial overlap, journal cancellation project, cooperation, resource-sharing and consortium. These keywords were used to perform searches in *Library and Information Sciences Abstracts (LISA Plus), Education Resources Information Centre (ERIC),* and *Dissertation Abstract Ondisc (DAO).*

3.1 Institutions and participants

The institutions chosen for this research were Universiti Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), University Sains Malaysia (USM), and Universiti Teknologi Malaysia (UTM). These five university libraries were selected because they are established universities for more than 15

years. All these five universities offer Computer Science degree programme and it is assumed the programme offered in this field too are well – established. Therefore, it is assumed that these university libraries need strong and quality serials collection in Computer Science in order to provide for scientific research in this field. The quality journal sample in Computer Science was taken from the ranked titles listed in the *Journal Citation Report (JCR)* published by the Institute of Scientific Information.

Information about the list of Computer Science journal titles from the *JCR* also include each journal's impact factor and cited half life. The list of journal titles was arranged according to the ranking by impact factor. Data collection for this study was done from June 2000 till September 2000. For this study, the list of titles listed in the *JCR* for the year 1998 was considered. The listing of computer science journals were divided under seven categories:

(1) Artificial Intelligences – 62 titles

(2) Cybernetics – 16 titles

(3) Hardware and Architecture – 47 titles

(4) Information Systems – 59 titles

(5) Interdisciplinary Applications – 71 titles

(6) Software, graphics, programming – 68 titles

(7) Theory and Methods – 64 titles

There are 387 Computer Science journal titles listed by *Journal Citation Reports*. This was taken from the 1999 *JCR* CD-ROM version subscribed by Universiti Malaya's Library. The journal titles were then checked against the serials holdings data of each of the 5 participating libraries. The search was complicated by the

different OPAC systems in use at each of the libraries. The OPAC systems used in selected university libraries are:

1. Universiti Malaya – OLIS

    - http://www.umlib.um.edu.my or telnet : 202.185.96.1

2. Universiti Kebangsaan Malaysia – GEMILANG

    - http://gemilang.ukm.my

3. Universiti Sains Malaysia – KRISALIS

    - http://www.lib.usm.my

4. Universiti Teknologi Malaysia – INFOLAN

    - http://www.psz.utm.my

5. Universiti Putra Malaysia – VTLS

    - http://www.lib.upm.edu.my or telnet : 202.84.24.4

3.2 Data Collection

Each journal titlelisted in the *JCR* was checked against the holdings status of journal in every selected library to determine titles which are commonly held and titles which are unique. The bibliographical details of each titles was also noted such as the ISSN and circulation frequency. The ISSN as a primary matching criterion is an important identifier tool to determine the correct match of each title. The second matching criterion was the title. These two criterion are necessary as in serials bibliographic description, similar titles occur more frequently compared to monographs. For each matching title, the details of description was noted, such as subscription date, availability of issues, circulation frequency and the form of journal available (printed or electronic version).

The amalgamated data were recorded in the form of a database in MS Excel. The titles were listed alphabetically with fields for each library coded as 1 when the particular library held a title and 0 when it did not hold the title. The total of journal titles in each subject category is the availability of journal holdings in each library. It will be presented in percentages according to a scale of measurement which ranges from excellent (80% and above) to very poor (below 30%) (Table 2.1).

Table 2.1: Scale of Measurement

Percentage of availability	Grade
80 % and above	Excellent
60 – 79	Very Good
45 – 59	Good
30 – 44	Poor
Below 30 %	Very Poor

For the study on the cost of journal overlaps, the price of each journal is taken from *Ulrich 's International Periodicals Directory* (1998 – to the present). Most of the Computer Science journal titles listed by *JCR* are in English. For the purpose of this study, all cost calculations will be based on subscription prices for institutions unless only one price is available. For the simplicity of this study, the price based will also be on the non-member rates. All subscription prices are quoted in US dollars (USD = $) unless stated differently. If the price of the journal is in a different currency, it will be converted to US dollars based on the exchange rate at the time of this study. The purpose of having the standard currency is to have an accurate calculation on journal cost of overlaps (Table 2.2).

Table 2.2: Exchange Rate for US Dollar

1 US dollar .... 2.16000 Deutsche mark	
1 US dollar .... 1.09890 Euro	
1 US dollar .... 7.22500 French franc	
1 US dollar .... 0.68966 Sterling pound	
1 US dollar .... 1.69000 Swiss franc	

The list of 387 journal titles was downloaded from SCI *JCR* 1998 edition CD-ROM version into text file and can only be opened using the MS Excel programme. By using the text import wizard, the saved records can be opened as an Excel file without the lost of titles and other information. The file was edited to include information such as the journal titles, ISSN number, impact factor and cited half life.

Descriptive statistics will be applied to analyse the data to evaluate the degree of overlaps or duplicates. Percentage will be calculated and data presented in the form of tables and pie charts for comparisons among university libraries and different subject categorisation of Computer Science. All journal titles will be in abbreviation in every table. Full titles of journal with their ISSN number is given in the Appendix.