

CHARACTERISTICS OF CITATIONS USED BY HUMANITIES RESEARCHERS

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ABSTRACT

Analysis of 5,610 citations from 104 master's degree and doctoral dissertations submitted to the University of Malaya between 1984 and 1994 in the humanities (religion and philosophy; history; language and literature) has been conducted. The average citation per dissertation in various humanities fields, are 56.7 for religion and philosophy; 102 for history and 45.3 for language and literature. Over 52% (2,927) of the citations were to books, 23.55% (1,321) to journal articles, 9.43% (529) to book chapters and 6.24% (350) to theses. A total of 4,766 (89.94%) authors of the citations were single authors and 700 authors formed the core authors contributing a total of 2,160 (36.59%) of total citations. The use by humanities researchers of a wider number of journals and book titles indicate that they need to use a greater number of sources for their research information needs. More than 50% of the citations aged between 1 to 20 years and some more than 100 years. Researchers use a high percentage of documents in the English language even though about 66% of the dissertations were written in the Malay language. The references by and large are of Malaysian or Asian in origin reflecting resource needs of these researchers.

Keywords: Humanities; Citation analysis; Authorship pattern; Journal ranking; Bradfords's analysis; Age distribution of literature; Half-life of citations; Language distribution of citations; Geographical distribution of citations; Subject distribution of citations; Bibliometrics.

INTRODUCTION

Citation analysis is an established research tool within the field of bibliometrics and is frequently used to evaluate and interpret citations used by authors, citations received by an article, authors, institutions and other aggregates of scientific activities (Rao, 1983). It involves the counting and analysis of citations used by researchers (Martin, 1967). A citation is a reference to previously published work that the author found to be relevant to an argument he is putting forward (Baird & Oppenheim, 1994). The reasons for works being cited

are diverse and well discussed (Garfield, 1979). In the field of humanities Frost (1979) studied citations in German literary critical works and classified the citation function as follows; (a) citing of primary sources (literary texts, letter) in order to support an opinion or factual statement on the specific author(s) or work(s), to support an opinion outside the central topic of the citing work, to support factual statements outside the central topic of the citing work; (b) citing of secondary sources (previous studies) to acknowledge pioneering work of other scholars, to indicate a range of opinions on a topic, to discuss

the meaning of a term; (c) citing to represent approval in order to support an opinion of the citing author, to support factual statements of the citing author, to develop an idea a step further, to acknowledge intellectual indebtedness; (d) citing to represent disapproval in order to disagree with an opinion, disagree with a factual statement, to express a mixed opinion; and (e) citing of both primary and secondary sources in order to refer to further reading and to provide bibliographic information on a specific edition. In the case of German literary critical works, it was found that citations were mainly to primary sources, to support an opinion or interpretation and were often used for positive purposes. Budd (1986) and Cullars (1990) noticed similar characteristics of citing function in American literary critical works, Italian and Spanish literary monographs. Budd reported 3.5% positive as opposed to 1.6% negative citations and Cullars found 5.7% positive and 3.6% negative citations. In all three studies, the most of the citations are value free.

The studies on the value of citation studies to libraries and information personnel in determining the optimum makeup of library collections, size of back files needed, the relations between citation frequency with subscription costs to obtain cost benefit analysis in the management of subscription budgets, to identify facets and milestones of the history of a subject field, are well documented in the library and information science literature (Garfield, 1972; McCain, 1992; Baird and Oppenheim, 1994). Citation studies is based on the principle that the actual use of sources is an indication of its relevance to current research and therefore produces empirical

data for a quantitative judgement about the ability of a collection to support research (Nisonger, 1983; Heidenwolf, 1994). An advantage of using this methodology is that, quantifying them does not cause them to change and it was found that trends and pattern of citations remain somewhat intact. It is particularly suitable when evaluating the performance of a research collection especially when based on items actually used by scholars, and thereby indirectly reflecting researchers' needs in research.

OBJECTIVE

The objective of this study is to examine the use of information sources by post-graduate research students as reflected by the references they listed out at the end of their dissertations. The study aims to answer the following questions:

- (a) What is the average number of references and types of literature used?
- (b) Who are the core authors whose works are frequently cited?
- (c) Do the literature used exhibit identifiable authorship pattern?
- (d) Do the spread of journal titles used follow the law of scattering as formulated by C.S. Bradford?
- (e) Which monographic titles are frequently used?
- (f) What is the age span of literature used?
- (g) What is the language distribution of titles used?
- (h) What is the geographical distribution of materials used?
- (i) Do the documents used fall within similar discipline areas or extend over other disciplines?

METHODS

The sample for this study comprises Master's and Doctoral dissertations submitted by humanities researchers to the University of Malaya between 1984 and 1994. A total of 259 dissertation titles were retrieved from the December issues of *Kekal Abadi*, the University of Malaya library quarterly newsletter between 1984 and 1995. The study used 40% of the titles from each of the three broad disciplines for citation analyses. The three disciplines followed the Library of Congress Classification Schemes for the humanities which includes; religion and philosophy (class B); history (class D) and language and literature (class P). This exercise provides a total of 104 dissertation titles (18 from class B, 17 from class D and 69 from class P). The higher number retrieved for titles in class P is due to a higher percentage of dissertations submitted in these disciplines (Goi and Zainab, 1997). The references found at the end of the 104 dissertations were input into a reference database so that quantitative analysis of components of the bibliographic references can be carried out.

RESULTS

(a) Total Number of Citations Used by Humanities Researchers

The 104 dissertation titles give a total of 5,610 citations for analyses. Table 1 shows the total number of citations in the three disciplines and the compositions are 1,057 (18.8%) citations from class B (religion and philosophy); 1,428 (25.5%) from class

D (history) and 3,125 (58.7%) from class P (language and literature). The average citation per dissertation in each discipline was 56.7 for class B, 102 for class D and 45.3 for class P. This indicates that historical researchers used more references than the researchers of other humanities disciplines.

Table 1: Total and Average Citations by Disciplines

Class	Total Number of Citations (N=5,610)	%	Average Citation Per Dissertation
B	1,057	18.8	58.7
D	1,428	25.5	102
P	3,125	55.7	45.3

The citations were then grouped according to types of documents. The results indicate that over 52% (2,927) of the citations were confined to books, 23.55% (1,321) to journal articles, 9.43% (529) to book chapters and 6.24% (350) to theses (Table 2). The remainder of the materials cited were government documents, (3.82%), conference papers (2.9%), and newspapers (0.8%). The results indicate that the humanities scholars use a wider variety of materials. The predominance in the use of books was similar to previous findings (Stern, 1983; Budd, 1986; Broadus, 1987). The results also show that the use of books tend to be higher for researchers in religion and philosophy, while journal articles are used at a higher percentage by researchers in the language and literature. Book chapters was the third most cited

Characteristics of Citations Used by Humanities Researchers

Table 2: Types of Documents Cited

Document Types	Class B N=1,057	% Class B	Class D N=1,428	% Class D	Class P N=3,125	% Class P	Total N=5610	% of Total
Books	725	68.59	693	48.53	1,509	48.29	2,927	52.17
Journal Articles	106	10.03	344	24.09	871	27.87	1,321	23.55
Book Chapters	43	4.07	132	9.25	354	11.33	529	9.43
Theses	33	3.12	97	6.79	220	7.04	350	6.24
Government Pub.	105	9.93	71	4.97	38	1.22	214	3.82
Conference Papers	25	2.36	47	3.29	92	2.94	164	2.92
Newspapers	8	0.76	10	0.70	31	0.99	49	0.87
Others	12	1.14	34	2.38	10	0.32	56	1.00

type of documents in history (class D) and literature and language (class P) but ranked fourth in religion and philosophy (class B). Government documents were cited more in religion and philosophy researches (105, 9.93%) compared to the other two disciplines (71, 4.97% for history and 38, 1.22% for language and literature). Researchers in language and literature cited more theses (220, 7.04%) compared to those in history (97, 6.79%), religion and philosophy studies (33, 3.12%).

Table 3 shows the documents used by disciplines. The table helps to indicate the top 5 types of documents most cited. Books and journal articles ranked first and second in all the three disciplines. Government documents ranked third in category B, fifth and sixth in category D and P respectively. Book chapters ranked third in the discipline of history, language & literature. Theses ranked 5th in the religion

and philosophy studies but fourth in history, language and literature.

Table 3: Ranking of Cited Document Types

Format	Rank		
	B	D	F
Books	1	1	1
Journal articles	2	2	2
Government Pub.	3	5	6
Book Chapters	4	3	3
Theses	5	4	4
Conference Papers	6	6	5

(b) Authorship Pattern of Citations Used

For the authorship analyses, only personal authors were considered. From the reference database, a total of 5,299 personal authors' names were retrieved from the 5,610 citations. The authorship patterns

were categorised into 4 groups; single author, two-author, three-author and more than three-author contributions.

Table 4 indicates that the majority, 4,766 (89.94%) of citations in the humanities were single-authored and the remainder (10%) were authored by more than one author. This pattern does not follow the authorship pattern in other disciplines, especially those in the sciences (Usha, et al., 1993). This may be an indication that researchers in the humanities undertake less collaborative research. This finding is similar to previous research such as that of Garfield (1980) who found that humanities scholars tend to work alone; Wiberley and Jones (1989) also found that out of 172 publications by 11 humanities scholars they monitored, only 8 were co-authored. Stone (1982) postulated that this may be due to the fact that humanities scholars have problems in communicating their exact needs.

Table 4: Authorship Pattern of Literature Used by Humanities Researchers

Authors	Total Citations N=5,299	%
1 author	4,766	89.94
2 authors	413	7.79
3 authors	65	1.23
>3 authors	55	1.04

Names of authors were retrieved from the reference database and fed into a frequency generating tool called bibliometric toolbox. The toolbox generates the frequency

count of the authors allocating them into cohort groupings showing the most cited authors in the humanities. Corporate authors were excluded.

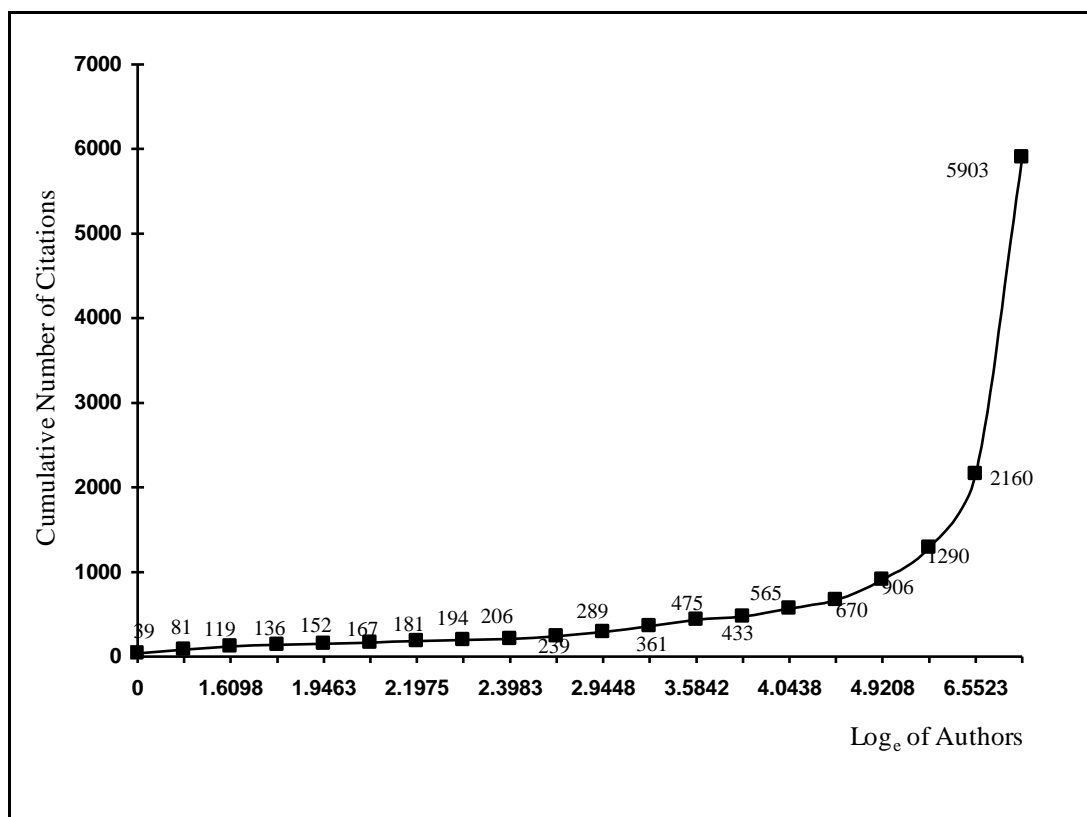
Table 5 indicates a total of 4,443 authors contributing to 5,903 citations. There were 700 authors who contributed a total of 2,160 (36.59%) citations. Each author in this group is cited 2 or more times by the humanities researchers. A total of 3,743 authors were cited only once. A bibliograph (Figure1) plotted based on the cumulative frequency count shows that the spread of the core authors in the humanities are broader than those in the sciences. The result indicates that humanities post-graduate students need to cover a larger group of authors' work to satisfy their research information needs. A total of 14 authors constitute the highest cited authors (cited at least 11 times or more) and these authors are categorised as the core contributors. Asmah Haji Omar tops this list with 39 citations, followed by Syed Muhammad Naquib Al-Attas (21); Nik Safiah Karim (21), Ahmad Ibrahim (19), Elizabeth Bowen (19), Jack C Richards (17), Koh Boh Boon (16), R.O. Winstead (16), Abu Ala Al-Mawdudi, (14), Awang Sariyan (13) S Pit Corder (12), M.B. Hooker (11) Ismail Hussein (11) and Lutfi Abas (11). When the authors were grouped by disciplines (class B, D and P) two authors, Syed Muhammad Naquib Al-Attas and Richard Olof Winstead were found to be cited frequently in both the disciplines of history, religion and philosophy. Because of this situation, both the authors achieve placement amongst the highest cited authors (14 authors) when the authors were taken as a whole.

Table 5: Authors Ranked by Cohort Groupings and Frequency of Citations

Rank	Cohort Groupings (A)	Frequency of Citations (B)	Running Number of (A) n=4,443	Running Number of (B) n=5,903
1	Cohort :1 Asmah Haji Omar	39	1	39
3	Cohort:2 Al-Attas, Syed Muhammad Naquib Nik Safiah Karim	21	3	81
5	Cohort: 2 Ahmad Ibrahim Bowen, Elizabeth	19	5	119
6	Cohort: 1 Richards, Jack C	17	6	136
7	Cohort: 1 Koh Boh Boon	16	7	152
8	Cohort: 1 Winstead, Richard Olof	15	8	167
9	Cohort: 1 Al-Mawdudi, Abu Ala	14	9	181
10	Cohort: 1 Awang Sariyan	13	10	194
11	Cohort: 1 Corder, S. Pit	12	11	206
14	Cohort: 3 Hooker, M.B. Ismail Hussein Lutfi Abas	11	14	239
19	Cohort: 5	10	19	289
27	Cohort: 8	9	27	361
36	Cohort: 9	8	36	433
42	Cohort: 6	7	42	475
57	Cohort: 15	6	57	565
78	Cohort:21	5	78	670
137	Cohort: 59	4	137	906
265	Cohort: 128	3	265	1,290
700	Cohort: 435	2	700	2,160
4443	Cohort: 3,743	1	4443	5903

Characteristics of Citations Used by Humanities Researchers

Figure:1: Bibliograph of Cumulative Frequency of Authors Cited by Humanities Researchers



(c) Spread of Journal Titles Used By Humanities Scholars

Table 6 presents a total of 456 journal articles contributing to a total of 1,321 citations. The journal titles are arranged by cohort groupings and number of contributions. The top ten cohort groupings of journal titles indicated that *Journal of the Malaysian Branch of the Royal Asiatic Society (JMBRAS)* tops the list as the most cited journal by humanities researchers.

Other journals which contributed to 11 or more citations are, *Dewan Bahasa* (64), *Dissertations Abstracts International* (41), *Language Learning* (35), *Sarawak Museum J* (27), *IRAL* (24), *TESOL Q* (23), *English Language Learning* (35), *Sarawak Museum J* (27), *IRAL* (24), *TESOL Q* (23), *English Language Teaching J* (19), *Borneo Research Bul* (18), *Dewan Sastera* (18), *Reading Research Q* (18), *RELC J* (16), *Asian Survey* (15) *Nineteenth Century Fiction*

Table 6: Journal Titles Ranked by Cohort Groupings and Frequency of Citations

Rank	Cohort Groupings (A)	Frequency of Citation (B)	Running Sum of (A) N=456	Running Sum of B N=1321
1	Cohort: 1 * JMBRAS	68	1	68
2	Cohort: 1 * Dewan Bahasa	64	2	132
3	Cohort: 1 * Dissertation Abstracts International	41	3	173
4	Cohort:1 * Language Learning	35	4	208
5	Cohort: 1 * Sarawak Museum J	27	5	235
6	Cohort: 1 * IRAL	24	6	259
7	Cohort: 1 * TESOL Q	23	7	282
8	Cohort: 1 * English Language Teaching J	19	8	301
11	Cohort: 3 * Borneo Research Bul * Dewan Sastera * Reading Research Q	18	11	355
12	Cohort: 1 * RELC J	16	12	371
13	Cohort:1	15	13	386
14	Cohort:1	12	14	398
20	Cohort:6	11	20	464
22	Cohort:2	10	22	484
26	Cohort:4	9	26	520
33	Cohort:7	8	33	576
38	Cohort:5	7	38	611
43	Cohort:5	6	43	641
62	Cohort: 19	5	62	736
86	Cohort:25	4	86	832
113	Cohort:27	3	113	913
178	Cohort:65	2	178	1043
456	Cohort:278	1	456	1321

* Journal titles are available at the University of Malaya Library

Characteristics of Citations Used by Humanities Researchers

(12), *Brunei Musuem J* (11), *English For Specific Purposes* (11), *J Educational Research* (11), *Modern Drama* (11), *Reading Teacher* (11) and *Sarawak Gazette* (11). It is also interesting to note that of these 13 journals, only 5 (38%) titles are local. This indicated the dependence on foreign journals for humanities research. When all the 11 journal titles were checked against the University of Malaya public access catalogue, it was found that the library was able to serve most core journal needs of the humanities researchers since all top 10 journals are subscribed by the library.

The journal titles in Table 6 are arranged in decreasing order of citation frequency, in order to assess whether Bradford's (1948) law of scattering applies to this set of journal titles. Bradford's law stated that by ranking journal titles in decreasing order of productivity, it is possible to divide the journals into three equal zones, each zone containing journals in the ratio of 1: n : n^2 By plotting the cumulative number of citations (Y axis) versus the logarithm of the cumulative number of journals in which the articles appear (X axis), it is observed that the resulting bibliograph (Figure 2) initially rise in an exponential nature which gradually follow a linear curve. The upward curving bottom of the bibliograph represents the small nucleus or most productive zone where the most relevant journals used in a discipline are found. The upper end of the curve represents the peripheral zone where relevant citations are widely scattered among a large number of journals (Arora & Sharan, 1994). For this study, the core journal titles (nucleus zone) comprises 20 titles contributing to a total of 464 references and achieve 11 or more citations

each. The core journal titles constitute about a third of total citations and about 4.4% of the journals covered 35% of total citations. The second group (moderate productive zone) comprises of 93 journals contributing 449 (34%) of total citations. The number of journals in the third group (low productive zone) is 343 and account for 31% (408) of total citations.

To summarise, the three zones contained roughly the same number of citations; (a) the top 20 journals produced 464 citations (zone 1); (b) the next 93 journals produced 449 citations (zone2); (c) the last 343 journals produced 408 citations (zone 3). The number of journals in the three zones is in the proportion of 20:93:343. A rough approximation of value $n=4.3$ is found for journal literature covering the topic under this study. Bradford (1948) studied the literature in applied geophysics and lubrication forward the value of n to be 5. The results of this study seems to comply with Bradford's three zonal analysis of journal spread in a discipline that 5% of journals titles contribute to more than 35% of the total citations and more than 64.9% of the citations were contributed by 95% of total journal titles.

(d) Monographic Titles Which are Frequently Cited

The monographic works cited by the researchers were retrieved separately and analysed. A total of 2,711 monographic titles were used and out of these 93% (2,547) were cited only once and a total of 164 titles were cited more than once. Only 1 title was cited 7 times (0.04%), 2 titles cited 5 times (0.07%), 8 titles cited 4 times (0.30%), 25 titles cited 3 times (0.92%) and 128 titles cited twice (4.72%) (Table 7).

Figure 2: Bibliograph for Journals by Frequency of Citations in the Humanities

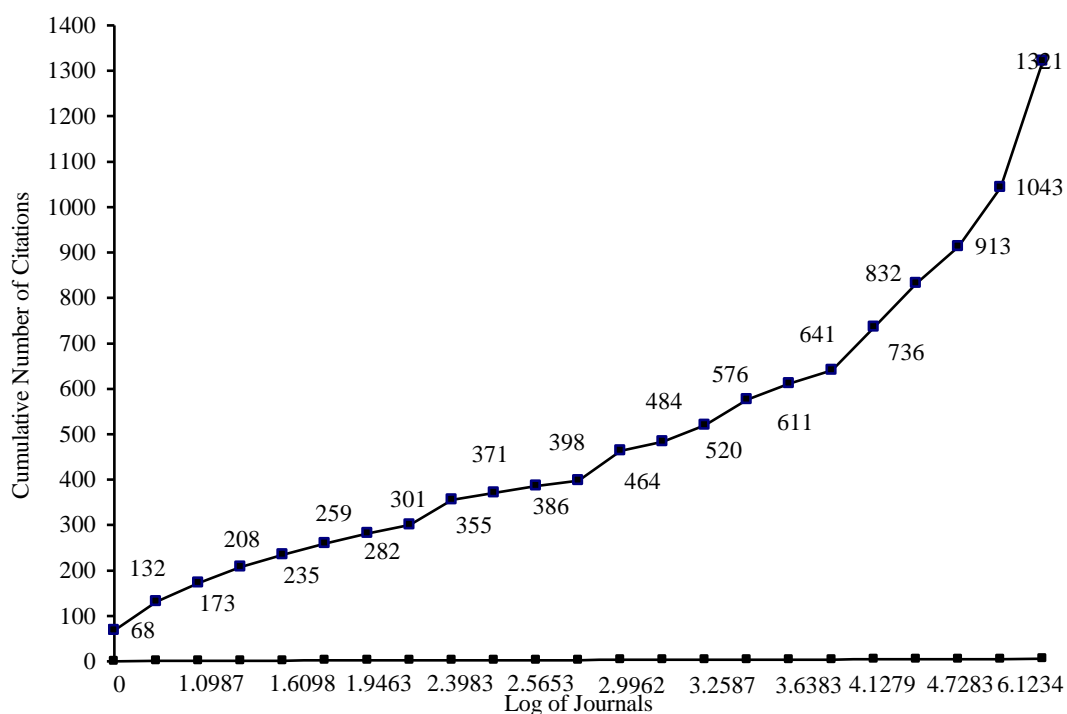


Table 7: Frequency of Monographs Cited by Humanities Researchers

Rank	Titles by Group	Frequency	%
1	Cohort: 1 Teuku Iskandar. Kamus Dewan	7	0.04
2	Cohort: 2 Bloomfield, Leonard. Language Winsteadt, R.O. A history of classical Malay literature	5	0.07
3	Cohort: 8 Asmah Hj Omar. Language and society in Malaysia Asmah Hj Omar. Nahu Melayu mutakhir Chomsky, Noam. Syntactic structures Corder, S Pit. Introducing applied linguistics Goh Cheng Teik. The May 13 th incident & democracy in Malaysia Hamka. Sejarah umat Islam Shellabear, W.G. Sejarah Melayu Thio, Eunice. British policy in the Malay Peninsular 1880-1910.	4	0.30
4	25	3	0.92
5	128	2	4.72
6	2547	1	93.95

Characteristics of Citations Used by Humanities Researchers

(e) Age Distribution of Citations Used by Humanities Scholars

The citations are sorted in accordance to the year of publication and than banded in 10 ten-year categories (Table 8). There are 13 citations without dates and therefore not included in the analyses. The total citations covered are 5,598 (1,048 in class B, 1,326 in class D and 3,124 in class P). The oldest material used by humanities researchers was published in 1823 (1834 in class B, 1823 in class P). The latest publication referred to was published in 1993. The age of the citations used spread over 170 years. The humanities researchers under study were found to cite documents published more than 100 year ago. More than 50% of the citations were to publications published within 1-20 years. The trend is similar in the individual disciplines (53.53% in class B, 56.38% in class D and 58.77% in class P).

(f) Language Distribution of Citations Used by Humanities Scholars

The language distribution of cited documents were grouped into 7 categories, Arabic, Chinese, English, Indonesian, Malay, Tamil, and Others. Documents in the English language are cited most accounting for 66% (3,703). The pattern is similar in all the three disciplines (class D= 70% citations to English language documents; Class B=42.8%, class P=70%). The second most cited is the Malay language.

(g) Geographical Distribution of Citations Used by Humanities Researchers

An analysis of the geographical distribution of citations used were confined only to monographs and journal citations. The geographical distribution for monographic citations shows that 42.8% (1,253) of the

Table 8: Age Distribution of the Citations Used by Humanities Researchers

Age of Citations (Years)	Frequency of Citations	Cumulative Of citations	Cumulative %
1-10	1204	1204	21.5
11-20	1997	3201	57.2
21-30	1327	4528	80.9
31-40	540	5068	90.5
41-50	186	5254	93.9
51-60	96	5350	95.6
61-70	88	5438	97.1
71-80	49	5487	98.0
81-90	51	5538	98.9
91-100	21	5559	99.3
>100	39	5598	100

monographs cited were published in Asia. (Table 9). The same trend is observed for the three disciplines where researchers cite at least 38% of publications published in the Asian Region (40.3% in class B, 54.4% in class D, 38.7% in class P). Publications from the United Kingdom constitute the next most cited material. The geographical distribution of journals cited indicates a different trend. Humanities researchers cite more journals published from the USA and Canada (593, 44.9%) than the Asian region (489, 37%) (Table 10). Documents published in Malaysia and

cited by the humanities researchers are further broken down by type of disciplines. About 50% (626/1253) of the monographs and 44.7% (219/489) of the journals cited by the humanities scholars originating from Asia, were published in Malaysia. Researchers in the language and literature discipline (class P) cited 8.9% (259) monographs and 6.8% (90) journals published in Malaysia. Historical, religious and philosophical studies respectively cited 7.1% (209); 5.4% (158) monographs and 5.8% (77); 4% (52) journals published in Malaysia.

Table 9: Geographical Distribution of Monographic Citations by Broad Disciplines

Geographical Area	B		D		P		Total	
	N=725	%	N=693	%	N=150	%	N=2927	%
Asia	292	40.3	377	54.4	584	38.7	1253	42.8
UK	103	14.2	127	18.3	414	27.4	644	22.0
USA & Canada	77	10.6	123	17.8	442	29.3	642	21.9
Middle East	240	33.1	46	6.6	4	0.3	290	9.9
Europe	11	1.5	13	1.9	58	3.8	82	2.8
Others	2	0.3	7	1.0	7	0.5	16	0.6

Table 10: Geographical Distribution of Journals Cited by Broad Disciplines

Geographical Area	B		D		P		Total	
	N=106	%	N=344	%	N=868	%	N=1321	%
USA & Canada	6	5.7	86	25.0	498	57.4	593	44.9
Asia	90	85.0	220	63.9	179	20.6	489	37.0
UK	7	6.6	20	5.8	140	16.1	167	12.6
Europe	1	0.9	15	4.4	43	4.9	59	4.5
Others	1	0.9	3	0.9	7	0.9	11	0.8
Middle East	1	0.9	0	0.0	1	0.1	2	0.2

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(h) Subject Distribution of Citations Used By Humanities Scholars

Subject distribution of the citations were analysed according to individual disciplines and confined to books, journal articles, conference papers, theses and book chapters. Only citations in Chinese, English, Indonesian and Malay Languages were considered. Analysis involves comparing to what extent citations in a given discipline are confined within the discipline itself compared to the percentage of citations from other subject disciplines. Citations from religion and philosophy studies were grouped as B (religion and philosophy) and NB (non religion and philosophy); citation from historical studies were grouped as H (history) and NH (non-history) and citations from language and literature studies were grouped as LL (language and literature) and NLL (Non-language and literature). The results indicated that for all three disciplines, over 50% of the documents cited were from within the disciplines. In the language and literature studies, documents cited were confined within the discipline itself (89.6%; 2,637) out of a total of 2,943

citations. In both class B and D similar pattern were indicated (class B, 55.89% within discipline; class D, 58.1%) This may be an indication that researches in the three humanities disciplines were mutually exclusive in nature (Table 11).

CONCLUSION

This is an empirical study to find out the information use pattern of humanities researchers. The humanities researchers provide a fascinating area of study because their behaviour seems somewhat different from that of scientists and social scientists. It is hoped that by studying the quantity and type of references humanities researchers use in their dissertations would increase the understanding of the types of materials library need to acquire in order to service these researchers better. A total of 5,610 citations were retrieved from the bibliographies appended to 104 Master's and Doctoral dissertation titles submitted to the University of Malaya between 1984 and 1994. The citations were analysed as a whole as well by three broad disciplines; history, religion / philosophy and language / literature.

Table 11: Subject dispersion of Citations Used By Researchers By Broad Disciplines

Class	N=696		N=1251		N=2943	
	B	NB	H	NH	LL	NLL
B	389 55.89%	307 44.1%				
D			727 58.1%	524 41.9%		
P					2637 89.6%	297 10.1%

The average number of cited documents were 102 in history (D), 58.7 in religion and philosophy (B) and 45.3 in language and literature (P), indicating that historians have the tendency to refer to more documents for their research on an average. The type of documents referred to are mainly books and journal articles together with a wider range of materials such as conference proceedings, book chapters, theses, newspapers, government documents and other archival and primary materials. In this study the sample indicated that citations to books far outnumbered other types of sources with 52% of total citations. This result is similar to previous citation studies (Simonton, 1960; Stern, 1983; Heinzkill, 1980; Budd, 1986; Cullars, 1992) which observed between 64% and 82% use of monographs. Citation to journals ranked second on the list of sources cited by humanities researchers in this study (23.55%). This finding is similar to earlier studies (Stern, 1983; Heinzkill, 1980; Budd, 1986) which found journal use for their sample in the range of 15.1%, 20% and 26% respectively. Theses use accounts for about 6.24% of total citations in the present study. This is quite high compared to earlier studies of citations in the fine arts (Cullars, 1992), Italian and Spanish literature (Cullars, 1990), French and German Literature (Cullars, 1989) and American literature (Budd, 1986) which found smaller percentages of theses use (between 0.2% and 2%).

The majority of citations used are single authored works (89.94%). The ratio between multi- and single-authored papers is approximately 1:8. The high incidence of single-authored papers seems to characterise the working habits of humanities

scholars who prefer to work alone (Stone, 1982; Stevens, 1956).

The core authors of the citations used by humanities researchers total 700 (1.58%) who contribute to 2,160 (36.59%) of the total citations. The result indicates that core authors in the humanities are larger in numbers, conforming to typical historical research method, which requires a large number of infrequently used titles (Stevens, 1953b). In all 14 authors occupy the top 10 positions of whom 8 are locals. This supports the conclusion that the humanities researcher is more local or regional in orientation. This is also supported by two more findings in this study: (i) the analysis of citations by subjects indicated strong local bias, and (ii) the geographical distribution of citations also indicated a high percentage (40%) of documents of Asian origin.

The need to use a wider range of materials both current and retrospective is reflected by the spread or scattering of the journals and the age distribution of the sources used. The journals used by researchers in this study encompass a wider number of titles and as many as 20 titles form the nucleus; 93 titles figure in zone 2 and 343 titles in zone 3 of Bradford Bibliograph. The spread is therefore wider than those found in the cito-analytical studies in the science disciplines (Stevens, 1953a). This is clearly indicated in Table 12 which compares the results of journal dispersion studies in selected science disciplines, US history and those found in the present study. The dispersion found in this study is somewhat similar to those on US history than in the science fields.

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Table 12: Journal Dispersion in Five Studies Summarised by Stevens (1953a) and the Present Study of the Humanities

Subject Field	No of Citations	No of Journals with % of Citations			
		25%	50%	75%	100%
Chemistry	3633	2	6	24	247
Biochemistry	17198	3	12	56	851
Physics	1279	1	3	17	134
Electrical engineering	17991	3	9	39	-
US history	452	14	54	149	259
Humanities (present study)	1321	11	51	116	278

The wider spread of journals used by humanities researchers may be due to the dependence on historical research method which requires comparatively a larger number of journals of which only a few titles are used often. The same trend is indicated in their use of monographs which are more often than not cited only once.

The recency of the document is not very important for the humanities researchers since they use both current and older documents. The humanities researchers in this study used documents with a spread of over 170 years, where the oldest document is dated 1823. This shows that humanities researchers are not likely to ignore documents because of their age since their works are less susceptible to obsolescence (Frost, 1979; Weintraub, 1980; Koenig, 1978). In the present study about 78.5% of citations pertained to documents more than 10 years old which supports previous findings (Cullars, 1988; Budd, 1986).

The predominant use of English language sources is clearly indicated by this sample of citations analysed (66%) even though

the majority of the dissertations were written in the Malay language (61%). This may be due to the fact that the availability of Malay language scholarly literature is still not sufficient to support total humanities research needs.

This leads to the question, what are the implications of these results to the library? It is concluded that the results provide useful clues to the library manager that the acquisition of material for the humanities researchers must be wide ranging extending from original texts to microforms. However, it is not possible to expect the library to possess all needed materials. In this context librarians may help by doing the “detective work” for the researchers, identifying which collection or libraries holds the original or archival works needed by the researchers they serve. In other words, the librarian who serve the humanities scholars must strive to know not only the subject matter of their researchers but also find out the locations of specialised collections within and outside the country which may be available in libraries, private collections or antiquity bookshops. The librarian himself must develop

the “nose” for items which may be of future research value. This may involve collecting “ephemeral” items, such as art brochures, posters, advertisements, popular journals, comics, school magazines, records, tapes, book auctions records, etc. For a collection which serves humanities scholars, this acquisition policy must be clearly defined and not developed ad hoc, dependent on the interests of the present librarians in charge. Librarians in this situation should pro-actively inform their researchers of possible acquisition of specialised collection so that recommendations for purchase are jointly undertaken by the library and the researchers they serve.

Another area which libraries can help is through the publication of specialised catalogues or bibliographies and providing detailed bibliographic description for humanities items. Unlike documents in the science and technical fields which bear more informative titles, documents in the humanities often bear less descriptive titles. In such a situation, detailed summary of contents for monographs and articles included in the catalogue may be extremely useful. This practice has the added effect of increasing the subject knowledge of the humanities cataloguer. It is useful if libraries could undertake to publish bibliographies or catalogues in special subject areas since previous studies have indicated humanities researchers tend to find more use of specialised bibliographies and indexes than general ones (Wiberley and Jones, 1989).

The library may also help by providing a more flexible circulation and reprographic services, adjusting use policy of special collections for the serious humanities re-

searchers. Perhaps with these endeavours, the humanities scholars would gradually come to regard the library and the librarians serving them as important resources for their research.

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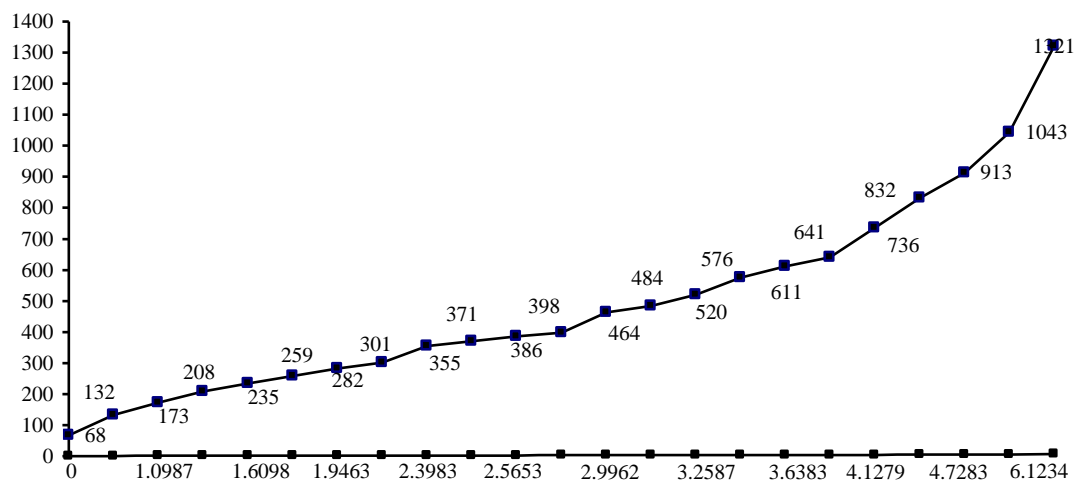
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