SERIALS TITLE CHANGES AND SUCCESSIVE ENTRIES IN OCLC BIBLIOGRAPHIC DATABASE

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ABSTRACT

A random sample of OCLC serials bibliographic records, being changed at least once, was analyzed to find out if frequency of title changes varies significantly with variation in issuing source, country of publication, language, frequency, regularity, and subject content of serials. The title changes in serials published by different issuing sources, countries, languages, frequencies, regularities, and subject content were significantly different. Serials published by the Federal and state governments had a higher rate of title changes than serials published by nongovernmental bodies. Serials published in the United States had the highest rate of change. Serials issued in two to three languages were changed less frequently than serials issued in one, or more than three languages. Semimonthly, monthly, and bimonthly serials were changed more frequently than serials with other frequencies of publication. Serials published irregularly with a predictable pattern of publication were changed more often than serials issued regularly or completely irregularly. Serials in the fields of science and technology had a higher rate of title change than serials published in other fields.

INTRODUCTION

Serials are different from monographs for they continue and change. Monographs entries will usually stay unchanged, once they are made, but, almost all characteristics of a serial may alter during its lifetime.[1] Serials are "cranky, unpredictable, changeable, erratic, and individual to the extreme",[2] and as Edgar points out, they are difficult to treat.[3] Serials by definition are published in successive parts and intended to continue indefinitely. During the lifetime of a serial publication, its title or responsible body will probably undergo some changes. Unlike A.L.A. Cataloging Rules for Author and Title Entries, the Anglo-American Cataloguing Rules (AACR), both editions, require a separate entry for changes in either main entry or title of the serial.[4]

Because there are three conditions given in rule 21.2A of AACR2 for changes in the title proper, AACR2 is much easier to use in this respect.[5] Rule 21.2C of AACR2 indicates that, whenever the title proper of a serial changes, one should make a "separate main entry for each title."[6] There are other rules of AACR2 that address changes in serials. Rule 21.3B specifies making a new entry for serials: 1) if the name of a person or corporate body under which a serial is entered changes (as instructed by rules 22.2B for changes in personal names and 24.1B for changes in corporate bodies), or 2) if the main entry for a serial is under a personal or corporate heading and the person or corporate body responsible for the serial changes. These new entries are needed, even if the title proper remains unchanged.[7] This means that every time the person or corporate body responsible for a serial changes or the title proper of a serial changes there would be a new entry for the serial.

Successive entry method simplifies the description of complicated materials and is uniformly endorsed.[8] The Library of Congress (LC) implemented its policy of successive entry and discontinued its earlier policy of latest entry cataloging for serials in 1971.[9] The LC interpretation of the rules pertaining to serials indicates that the description of serials should be based on the first issue of the serial, the body of the entry remaining unchanged throughout the life of the serial. Minor changes should be recorded in the notes. However, if differences occur in the title proper, one needs to create a separate record when appropriate.[10] The entire serial is kept under one class number but not necessarily with the same subject headings. However, if the new form of the title begins with a different numbering system it is treated as an entirely new publication.[11]

LITERATURE REVIEW

Lubetzkey believed that "the very approach to the treatment of serials in AACR2 is fundamentally wrong." [12] Edgar identified some of the serials problems, including the problem of changes in their titles, one serial splitting into two or more titles, and one title merging with other serials to form a new title. "This change is almost human at times, with marriages, divorces, and offspring. And anyone who has tried his hand at serials cataloging knows there are far worse things."[13] Tate argued that instability of the corporate bodies, ambiguity of 'nondistinctive' rules and inconsistency of rules interpretations have "made serials cataloging a major headache" and have led to arbitrary entry of all serials under title.[14]

Howard examined the main entry for serials and offered a guideline based on ISDS (International Serials Data System).[15] Cannan discussed successive entry of serials and illustrated several examples.[16] Koel tested a sample of 5,617 bibliographic records of titles cataloged at Yale and found that of 448 serials updated from AACR1 to AACR2, 394 (88%) had the same entry in AACR2 as in AACR1; and only 54 records (12%) had a different entry under AACR2.[17] Roughton tried to measure the accuracy, completeness, and timeliness of the records in the OCK serials database and found that 68 percent lacked at least one of six fields basic to creation of serials records.[18]

Except for Roughton's article, the other works cited attempt to discuss various aspects of serials cataloging. What appears to be less researched is how the cataloging practice of serials is affected by changes in serials themselves. There seems to be less discussion about the changes in serials titles and possibilities of variation in other components of the serials, the availability of bibliographic information in online databases on serials after a title change occurs, and the additional efforts needed to modify a given record for local use. Title changes involve a great deal of effort, occupy many hours of serials librarian's time, and, particularly in the case of complex title changes, can be costly.[19] The literature does not provide objective data on the nature of serials title changes and their effects on serials cataloging. Such information not only could be useful for library administrators and online database managers in planning their serials operations, but also for changing, modifying, and updating the rules concerning cataloging and changes in serials.

HYPOTHESES AND QUESTIONS

The main hypothesis of this study is that there exists a significant difference between frequency of title changes in serials with differences in source, country, language, frequency, regularity of publication, as well as subject content of serials. This study also alms at providing objective data about the details of serials title changes and their impact on successive entries, including the availability of information, the completeness of information, and changes in the bibliographic records which are the result of the change in serial title.

This study attempts to answer the following questions:

- 1. What percent of serials is most likely to be found in the OCLC serials database? To what extent bibliographic records are complete? Do they have Library of Congress Classification (LCC) numbers? Are they cataloged according to the AACR2 provisions?
- 2. What is the percentage rate of title changes in serials? What is the average or approximate life span of a serial before a title change occurs?
- 3. Do title changes vary significantly with frequency, regularity, language of publication, country of publication, and subject content of serials?
- 4. Do the call numbers and subject headings change when their serial titles change?

METHOD OF DATA COLLECTION

The sample used in this study was taken from Ulrich's International Periodicals Directory [20] and its companion Irregular Serials & Annuals, An International Directory.[21] These two sources list 69,000 and 34,000 serials respectively. Pages 1679-2600, and 1457-1765 are respectively the title indexes of the publications listed in these two sources. From these title index pages, in both sources, a five percent sample randomly was selected. Each index page consists of four columns. One column of each page was systematically chosen for OCLC searching. All entries with ISSN numbers were searched in the OCLC bibliographic database, the statistics on the availability of bibliographic records, being recorded.

Only OCLC bibliographic records having linking notes, i.e., "780" (preceding title) and "785" (succeeding title) fields were retained for this study. Next, those bibliographic records showing a history of title change were retrieved in a second round of OCLC bibliographic database searches. All preceding and succeeding titles related to one original ISSN number were clipped together. Table 1 shows the number of records in the sample. The total number of records in the sample was 884 titles of which 548 (61 -99%) were available in OCLC; 336 records (38.01%) were not found in OCLC.

Table 1

Availability of Sample	Records in O	CLC Bibliographic	Database
Sample Records Searched	No of Records	Percent	
Found in OCLC Not Found in OCLC	548 336	61.99 38.01	
Total Records in Sample	894	100.00	=======

Table 2 shows that of 548 records found in OCLC, 179 (32.66%) had a history of title change, i.e., they had either 780 or 785 fields. Therefore, a total of 453 records was chosen as the core data for the database of this study.

Table 2

Distribution of	Titles With a H	istory of Title Change
Bibliographic Records Status	No of Records	Percent
Title Not Changed Title Changed	369 179	67.34 32.66
Total	548	100.00

ANALYSIS OF DATA

1. Description of Sample Records:

Analysis of 453 sample records with a history of title change showed that 216 records (47.68%) were cataloged with full-level of Library of Congress or National Library of Medicine (NLM) cataloging, 175 records (38.63) were full level cataloging by participating libraries in OCLD, and 63 records (13.91%) were cataloged in less than full as shown in table 3.

Table 3

Distribution of Selected Records According t o Completeness of Cataloging Information

=======================================	===========	=========
Cataloging Level	No of Records	Percent
0 (LC Complete Cataloging)	216	47.68
I (Participating Libraries)	175	38.63
5 (LC Partial Cataloging)	26	5.74
L (Non LC/NLM Added Cataloging)	13	2.43
1 (LC Cataloging Sublevel 1)	10	2.21
K (Less than Full Non-LC)	8	1.77
7 (Minimal Level Serials Cataloging)	7	1.55
Total	453	100.00
_======================================	===========	========

The records in the sample were mostly periodicals; that is, 281 records (62.032) were periodicals, 19 records (4.19%) were monographic series, and the type of the rest of the records was not known. Table 4 shows that 432 records (95.36%) of the records were cataloged with successive entry codes, as required by Anglo-American Cataloging Rules, and only 12 records (2.64%) were cataloged with latest entry, according to the A.L.A. Rules for Author and Title Entries. Furthermore, 300 records were cataloged according to AACR2 rules.

Table 4

Distribution of Selected Records According to Successive/Latest Entry Cataloging

============	=======================================	=======================================
Type of Serials	No of Records	Percent
Successive Entry	432	95.36
Latest Entry	12	2.65
Unknown	9	1.99
OIIXIIOWII	9	1.99
Total	453	100.00
============	=======================================	=======================================

Examination of 246 OCLC serials bibliographic records with publication status "d" showed that 36.99 percent of records were changed within five years and 17.48 percent changed within six to ten years. That is, more than 50 percent of records - changed within ten years after starting their first issue. The modal life span for a serial before a title

change was one to five years. The median age for title change was 9.22 years. Table 5 represents the lifetime of each serial before a title change takes place.

Table 5

Distribution of Selected Records According to Life of Publication

===========		.========	===========
Life of Serials	No of Records	Percent	Cumulative Percent
1- 5	91	36.99	36.99
6-10	43	17.48	54.47
11-15	36	14.63	69.10
16-20	23	9.35	78.45
21-25	14	5.69	84.14
26-30	9	3.66	87.80
31-35	6	2.44	90.24
36-40	5	2.03	92.27
41-45	5	2.03	94.30
46-50	4	1.63	95.93
51 and Over	10	4.07	100.00
Total Records	246 ========	100.00	100.00

The analysis of retrieved serials bibliographic showed there were 291 bibliographic records with "780" linking fields, of which 218 records (74.91%) were straight change, i.e., one title continued by another; 234 records had "785" linking fields, 176 (75.21%) of them being directly continued by another title. Other types of changes, such as one serial title being absorbed by another or one title merging with another to form a new title constituted approximately 25% of all changes. Table 6 shows the distribution of sample records according to the type of change.

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Table 6

Distribution of Sample Records According to the Type of Change

Type	780 Fie	======= ld 	785 Fiel	785 Field		
Change	No of Records	Percent	No of Records	Percent		
Continues/Continued by	218	74.91	176	75.21		
Continues/Continued by in Part	t 13	4.68	8	3.42		
Supersedes/Superseded by	26	8.93	13	5.55		
Supersedes/Superseded by in Pa	art 12	4.12	1	0.43		
Formed/Merged by Titles	11	3.78	20	8.55		
Absorbed/Absorbed by	8	2.75	8	3.42		
Absorbed/Absorbed by in Part	2	0.69	2	0.85		
Separated From/Split into	1	0.34	6	2.56		
Total	291	100.00	234	100.00		
=======================================	=======		=======	=======		

The number of title changes per record was analyzed to find on an average how often each record had changed. It was found that more than 50 percent of serials changed only once or twice, the rest changed three or more times. Table 7 shows that 153 (33%) of the serials with a history of title change, changed once, 171 (37.75%) changed twice.

 $\label{eq:Table 7} Table \ 7$ Frequency of Title Changes in Sample Record

=======================================	===========	=======================================
No of Times Serials	No of	Percent
Titles Changed	Records	
Changed Once	153	33.77
Changed Twice	171	37.75
Changed Three Times	66	14.57
Changed Four Times	30	6.62
Changed Five Times	18	3.75
Changed Six Times	7	1.55
Changed Seven Times	3	0.66
Changed More Than Seven Times	5	1.10
Total Records	453	100.00
=======================================	==========	==============

Comparison of the main entry of successive title changes showed that 39 records (8.61%) had a different main entry than their previous title. This does not include the change in the title itself. The majority of the records were entered under title, however, 80 records (17.66%) were entered under corporate bodies, 22 records (4.86%) under personal names, and seven records (1.55%) under uniform titles.

Statistics of the subject headings listed in these bibliographic records indicated that 355 records (78.37%) had one or more subject headings, and only 98 records (21.63%) had no subject heading. Comparison of subject headings in successive title changes showed that subject headings of 43 records (12.11%) changed after their titles changed. Furthermore, 284 records (80%) had Library of Congress Subject Headings (LCSH), 28 records (7.89Z) had Medical Subject Headings (MeSH), seven records (1.95%) had National Agriculture Library (NU) subject headings, one record (0.282) had National Library of Canada (NLC) subject headings, and ten records (2.79%) had more than one type of subject heading. Table 8 represents the number and type of subject heading.

Table 8

Distribution of Sample Records According to the Number of Subject Headings per Record

No of Subject Heading/Title	No of Records	Percent
0	98	21.63
1	162	35.76
2	126	27.81
3	30	6.62
4	20	4.42
5	9	1.98
6	5	1.10
7 and More	3	0.66
Total	453	100.00

2. Comparison of Title Changes:

Analysis of the records according to their government publication codes showed that 72 records (15.89%) were published by the Federal government bodies and 38 records (8.39%) were published by state agencies. The title changes in serials published by governmental bodies and those published by nongovernmental bodies were counted and a chi square test was applied to find out if the number of title changes in the three groups were statistically significant. The results of the test indicated that title changes in the three categories were statistically different. There were more title changes in serials

published by the Federal government and state agencies than those published by nongovernmental bodies.

Title Changes in Serials Published by Government Bodies

Table 9

Sample Records	No of Records	Percent	No of Title Changes	Adjusted Title Changes	Expected Title Changes
Federal Government State Government Nongovernmental bodies	72 38 343	15.89 8.39 5.72	297 142 1077	623 564 474	554 554 554
Total	453	100.00	1516	1661	1662
Chi Square = 20.3384	df	= 2	p >	· .001	

Analysis of the title changes by the country of publication code in sample records showed that serials published in the United States and Poland have changed more frequently than serials published in other countries, while serials published in Ireland have undergone fewer changes. A chi square test of title changes in different countries showed that the difference between scores of title changes were significantly different at .001 level with 23 degrees of freedom. Table 10 represents the comparison of title changes in serials published in various countries.

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Table 10 Comparison of Title Changes in Sample Serials Records Published in Different Countries

Country of Publication	======= No of Records	No of Title Changes	Adjusted No of Records	Adjusted Title Changes	Expected Title Changes	===== Rank
United State	s 107	601	19	134	61	1
Canada	88	301	19	65	61	8
Germany	36	85	19	45	61	14
England	30	105	19	66	61	7
New Zealand	16	38	19	67	61	6
Netherlands	13	46	19	67	61	6
Japan	11	30	19	52	61	12
Denmark	13	47	19	81	61	4
Poland	10	70	19	134	61	1
Scotland	10	28	19	53	61	11
Belgium	7	33	19	90	61	2
France	7	7	19	54	61	10
Ireland	6	9	19	28	61	16
Singapore	6	16	19	51	61	13
South Africa	6	27	19	85	61	3
India	3	11	19	70	61	5
Malaysia	3	9	19	57	61	9
Iceland	2	4	19	38	61	15
Russia	2	4	19	38	61	15
Switzerland	2	4	19	38	61	15
China	1	2	19	38	61	15
Dutch	1	2	19	38	61	15
Liberia	1	2	19	38	61	15
Chi Square =	219.932 ======	df	= 23	p > .0	01 ======	

Similarly, the same type of analysis was done with respect to the serials language of publication. There was a statistically significant difference between title changes in single language serials published in different languages. Serials published in French or Polish languages changed more frequently than those published in other languages. Similarly, there was a statistically significant difference between multilingual serials. Serials published in the English language with only one other language changed less frequently than those published in several languages. Table 11 shows the comparison between title changes in serials published in various languages.

Table 11

Comparison of Title Changes in Serials Published in Various
Languages

Language of Publication	Records	Title	No of	Title	Title	Rank
Single Langu	age Seria	ls:				
English German Danish French Polish Dutch Russian	340 30 8 8 3 2 2	69 26 34 18 7	56 56 56 56 56 56	129 182 238 236 196	197 197 197	_
Chi Square =	169.004	df	= 6	p > .0	 01 	
Single vs Mu	ltilingua	l Serials	:			
One Language Two Language Three Langua Four and Mor	s 32 ges 19		113 113	453 413 428 613		3
Chi Square =	53.6314 ======	 df ======	= 3 =======	0. < q	 01 ======	=====

Analysis of the frequency of the titles showed that 48 records (10.60%) had a history of frequency change as was reported in the 321 field. That is, 34 records (7.51%) changed their frequency once, four records (0.88%) changed their frequency twice, and two records (0.44%) changed their frequency three times during their lifetimes. In addition, 43 records (9.49%) changed their frequency when their titles changed. Scores of the title changes in 320 sample records with known frequencies of publication were analyzed according to their frequency codes to find out if there a relationship between frequency of publication and frequency of title changes in serials. It was found that title changes in semimonthly, monthly and bimonthly serials occur at a higher rate than serials with other frequencies. The difference was statistically significant at .001 level.

Furthermore, the data was analyzed to find out if title changes in regular and irregular serials were significantly different. The results of the chi square test indicated that title changes in normalized irregularity, i.e., serials published irregularly in a predictable pattern, were higher than regular or completely irregular serials. Tables 12 and 13 show the title changes in serials publications with various frequencies and regularities.

Table 12

Comparison of Title Change Scores in Serials with a Different Frequency of Publication

==========		=======	=======	=======	=======	=====
Frequency of Publication	No of Records	No of Title Changes	Adjusted No of Records	Adjusted Title Changes	Expected Title Changes	Rank
Annual	90	293	27	88	74	4
Monthly	81	280	27	93	74	2
Quarterly	71	227	27	86	74	5
Bimonthly	31	102	27	89	74	3
Semiannual	22	56	27	69	74	7
Three Times/	Y 13	40	27	83	74	6
Semimonthly	5	21	27	113	74	1
Weekly	2	4	27	54	74	8
Biweekly	2	4	27	54	74	8
Semi weekly	1	2	27	54	74	8
Three Times/N	М 1	2	27	54	74	8
Biennial	1	2	27	54	74	8
Chi Square =	61.3098	df	= 11	p > .00	01	
=========	======	=======	=======	=======	=======	=====

Table 13

Comparison of Title Change and Regularity of Serials

========	=======	=======	========	========	========	
Sample Records Status	No of Records	No of Title Changes	Adjusted No of Records	Adjusted Title Changes	Expected Title Changes	Rank
Regular	295	956	113	295	301	3
Irregular	42	152	113	265	301	4
Normalized	12	35	113	329	301	1
Unknown	104	373	113	309	301	2
Chi Square	= 11.928	4 c	df = 3	p > .	.01	
========						=====

Frequency count of serials with Library of Congress Classification number showed that only 330 records (72.85%) had LCC number while 123 (27.15%) records did not. A comparison of empirically obtained frequencies of title changes in different classes of the LOC with the theoretical frequencies calculated on the basis of the average of number of records per LCC main class indicated a difference in title change in various classes of LCC. The null hypothesis of no difference between classes was rejected when a chi square test was applied and it was accepted that there was a statistically significant

difference in the frequency of title changes in different subject areas. Class T (Technology) and class Q (Science) were found to have a higher change than other classes. There were relatively fewer title changes in class U (Military Science) and class P (Literature). The scores of title changes in various classes of LCC following table.

Table 14

Comparison of Title Change in Various Classes of the Library of Congress Classification

==========	======	======	=======	=======	=======	=====
LOC	No of	No of	Adjusted	Adjusted	Expected	Rank
Main	Records	Title	No of	Title	Title	
Classes		Change	s Records	Changes	Changes	
		004	1.0			
H (Social Science		224	19	62	57	5
Q (Science)	55	213	19	74	57	2
S (Agriculture)	39	135	19	66	57	4
T (Technology)	35	148	19	80	57	1
R (Medicine)	25	75	19	57	57	7
J (Political Sci	ence) 16	59	19	70	57	3
Z (Bibliography	16	47	19	56	57	8
K (law)	14	37	19	50	57	10
G (Geography)	13	40	19	58	57	6
P (Literature)	13	31	19	45	57	12
L (Education)	10	24	19	46	57	11
D (History: Gene	ral) 6	18	19	57	57	7
B (Philosophy	.) 5	14	19	53	57	9
A (General Works) 5	12	19	46	57	11
F (History: Amer	ica) 3	9	19	57	57	7
N (Fine Arts)	3	9	19	57	57	7
U (Military Scie	nce) 1	2	19	38	57	13
Chi Square = 33.	 41 	df =	 16	p > .05		

Examination of records showed that only 101 (22.29%) records had Dewey Decimal Classification (DDC) and 254 (77.71%) records did not have DDC number. A similar analysis was done for the main classes of DDC. Observed frequency for title changes in main classes of DDC departed significantly from the expected frequencies. Serials classed in art, science and technology had a higher rate of title change than other classes. Table 15 shows the results of comparison of title changes in various classes of DDC.

Table 15

Comparison of Title Changes in Various Classes of Dewey Decimal Classification

Main Classes of DDC	No of Records		Adjusted No of	Adjusted Title	Expected Title	Rank	
		Change:	s Records	Changes	Changes		
3 (Social Scienc	es) 86	276	20	64	68	5	
6 (Technology)	49	164	20	67	68	3	
5 (Science)	29	118	20	81	68	2	
0 (Generalities)	10	34	20	68	68	6	
9 (Geography)	11	27	20	49	68	7	
4 (Language)	4	10	20	50	68	4	
8 (Literature)	3	6	20	40	68	8	
l (Philosophy	.) 2	6	20	60	68	6	
2 (Religion)	1	2	20	40	68	8	
7 (Art)	1	8	20	160	68	1	
Chi Square = 161.515		df =	9 ======	p > .00.	 1 ======	====	

SUMMARY AND CONCLUSION

This study uses a random sample of selected ISSN numbers. The total number of serials with ISSN numbers in the sample was 884 titles. These titles were searched in the OCLC bibliographic database. The results of the first time search showed that 548 titles had bibliographic records in the OCLC, while 336 titles had no bibliographic records in the OCLC database. The serials bibliographic records that were found in the first search were examined and those records with a history of title change were separated. Bibliographic records listed in 179 sample records with a history of title change were searched in the second round and a total of 453 records.

Analysis of bibliographic records showed that 47.68 percent of records were cataloged with full-level LC or NLM cataloging, 38.63 percent were full level cataloging by other libraries, and 13.91 percent were cataloged in less than full. The median lifetime for serials was 9.22 years and 54.47 percent of serials changed within ten years of their inception. The analysis of types of change showed that 75 percent were either "continued" or were "continued by" another title.

More than fifty percent of the serials were changed only once or twice and the rest were changed three or more times. Main entries of 8-61 percent of serials bibliographic records were changed after their titles were changed. Main entries of 17.66 percent of records were corporate bodies, 4.86 percent personal names, and 1.55 percent uniform titles.

Analysis of subject headings showed that 78.37 percent of the records had one or more subject headings, 21.63 percent had no subject heading. The subject headings of 12-11 percent of records were changed after their titles were changed. In terms of type of subject heading, 80 percent had LCSH, 7.89 percent had MeSH, and 1.95 percent had NLA subject headings.

In part two of the analysis, 453 OCLC serials bibliographic records with a history of title change were analyzed to find out if the title changes varied significantly with frequency, regularity, language of publication, country of publication, and subject content of serials.

There was a statistically significant difference between the scores of the serials title changes in governmental and nongovernmental publications. Serials published by the Federal and state governments had a higher rate of title change than serials published by nongovernmental bodies. Serials published in the United States and Poland changed more frequently than serials published in other countries. The differences between scores of title changes were significant at .001 level.

There was a statistically significant difference between title changes in serials published in one language. Serials published in French and Polish languages changed more frequently than other languages. There was a statistically significant difference between title changes in multilingual serials. Serials published in the English language with only one other language were less frequently changed than serials published in one language only or in several languages.

Analysis of the changes in frequency showed that 10.60 percent of the records had a history of frequency change in addition to the title change, and 9.49 percent of records changed their frequency at the same time when their titles were changed. The difference between title changes in serials with different frequencies of publication was significant at .001 level. Semimonthly, monthly and bimonthly serials had a higher rate of change than serials with other frequencies. Title changes in irregular serials with predictable patterns of publication were significantly higher than regular and/or completely irregular serials.

There was a significantly different score for title changes in serials with different class numbers. Class T (Technology) and class Q (science) were found to have a higher rate of title change than other classes. There were fewer title changes in class U (Military Science). A similar analysis was performed for the main classes of DDC. Serials classed in art, science and technology had a higher rate of title change than other classes.

The analysis of data described in this study was limited to serials having ISSN numbers. Findings indicate that title changes in serials with different regularity, frequency, source and language of publication, and subject content are statistically significant. Furthermore, research may be designed to expand the present investigation to serials without ISSN numbers and to measure the effects of combinations of all or some of the above factors in serials titles changes.

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