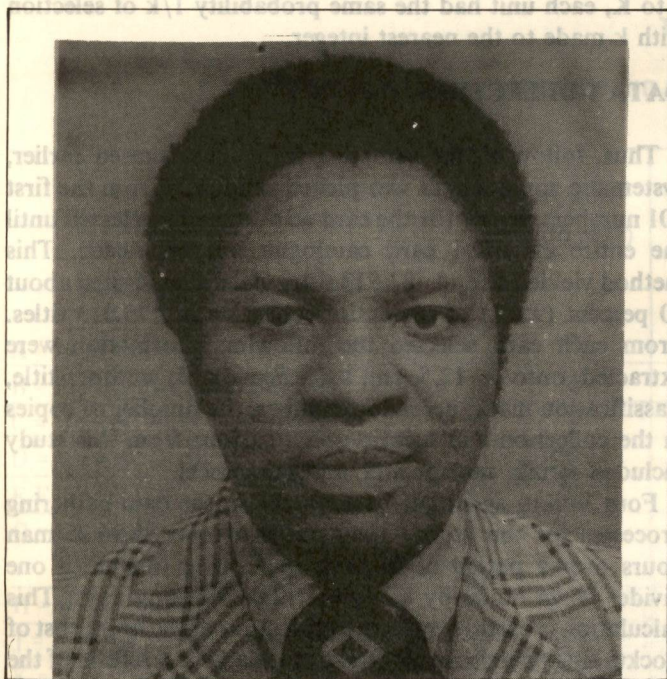# STOCKTAKING IN ACADEMIC LIBRARIES: A PILOT STUDY OF AHMADU BELLO UNIVERSITY LIBRARY

PREAMBLE

Stocktaking, in libraries can be likened to the weather, which everydoby talks of, but does little about. True enough, librarians talk to one another about the need for stocktaking and its importance to effective resource management, but there is neither a consensus on the best methods to employ with the barest error at lowest cost, nor the most desirable frequency for stocktaking. Albeit, most librarians believe that a systematic inventory is the best way to document the loss rate in libraries.

Other alternative methods of ascertaining the missing books, such as statistical sampling are more often than not ignored by concerned librarians not versed in mathematical methods of analysis. The necessity to evolve a simple, but accurate means of stocktaking for the purposes of determining missing books is as desirable, if not more today than ever before, especially, in the face of dwindling library support and general declining global economy.

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The Kashim Ibrahim Library Project

This project was undertaken with the assumption that in the face of the current state of global economic decline there is a need to reduce drastically the loss rate of library materials. Book loss is also viewed as an undesirable cankarworm that gradually diminishes library effectiveness. Again, given the uncertainty prevalent among library staff regarding the extent of missing books, it was assumed that there is a need to evolve a method to concretise evidence as to how many books are missing as well as pinpoint areas in which book losses are greatest.

Purpose of the Study

The purpose of this research was to evolve an acceptable methodology for academic libraries.

(a) to determine book losses;
(b) to determine loss rate per subject;
(c) to determine how many books are missing in the collection;
(d) to pinpoint the subject areas where book losses are highest, and
(e) to determine possible areas of highest usage through book losses.

Inadvertent removal versus intentional removal of materials

It is logical to acknowledge at this point that all the removal of materials from libraries is not necessarily intentional. Several operative, factors such as forgetfulness, haste, library staff laxity can be adduced, other than intent, which otherwise will be classified as outright theft.

Today, the use of electronic control system can, to a large extent, eliminate inadvertent withdrawal of uncharged library materials. Outright theft, on the contrary, involves intent, which is often demonstrated by removal of identifying marks and efforts to dispose of the item in question by means other than return to the library.

But, like Richards (1979)[1] once asserted, long term retention of a book may follow inadvertent or intentional removal. This is one of the most obvious converse relationships between loss and theft. However, the effect to the library is, nevertheless, the same: denial to the library constituency of its right of access to the material in question.

After a certain period, inadvertent retention (loss) may rightly be considered as theft. At such a point of equilibrium, the effect of loss becomes more apparent and identified offenders should be chased with a view to recovering the items and administering appropriate punitive measures.

A review of stocktaking in Libraries

A review of the related literature on the system of determining missing books by checking records of books possessed by the library with copies on the shelf shows a deep concern among librarians for losses. This concern, unfortunately, seems to have been met by little action. The paucity of literature in this area is a pointer to this assertion.

While various reasons could be advanced for the lethargy to stocktaking, library literature already shows that many librarians have many unresolved questions on the issue. Such questions, to mention a few, include whether their libraries really need periodic inventory. Some librarians wonder if their losses are not too low to justify the extensive costs in staff time, and the distruption of regular services.

Indeed, if a library's losses are small, an inventory is probably an expensive luxury. But without any confirmative data, a complacent assumption that a library's book losses are small may probably be inversely expensive too. Conversely, some librarians are aware of the fairly high loss figures, but remain unconvinced that such losses justify an expensive, time consuming inventory.

Others as noted by Mangino, (1979)[2] assume that the generality of the missing books are probably outdated and would have been weeded anyway, and that their current purchases would make up for the losses. In Nigeria, unproven assumptions like this will be most unrealistic of the true situation as regards negative selection and new purchases because only few libraries can afford to part with what they have, moreso because the number of new books added to the collection is at its lowest ebb ever.

In fact, the majority of materials trickling into Ahmadu Bello University libraries are mostly United Nations depository materials. The earlier foreign exchange bottleneck and the subsequent Foreign Exchange Market system (FEM) operating in the country, have made journal and book purchases quite difficult. Thus, making up book losses from new acquisitions is easier said than done.

As the Montclair Public Library experiment demonstrated, however, it appears that whatever excuses and defences advanced by librarians against inventorying for book losses are comforting falacies. Montclairs first inventory after 40 years of existence showed that 60 percent of their missing books were not outdated. In addition, all the missing items had appeared in at least one list of best books and were considered by the library as top priority purchases.

In this same study according to Mangino (1979)[3] the lost books were found to be the "classics" the basic titles making up the core collection in every field. They included titles on required reading lists, and those used for day-to-day assignments. Ofcourse the items were well reviewed and included materials of current interest in the environ, as well as highly recommended "how to books" of all types.

Again, some librarians argue that the reserve system of their library can easily detect whatever losses the library suffers. Frizdale (1979)[4] study contended this assumption and submitted that the reserves do not necessarily bring losses to light. He added that although the books in question were sought after, they were neither placed on reserve by the users nor the librarians.

Stocktaking in Kashim Ibrahim Library

Like many academic libraries, stocktaking had never been a regular exercise in Kashim Ibrahim Library (KIL). According to KIL archival sources, the first inventory was carried out in 1971, nine years after Ahmadu Bello University was established.

The second and last one was undertaken in 1975 between 1st July and 31st August. Unlike the 1971 exercise which was comprehensive, the 1975 stocktaking was not exhaustive. Only 100 book cards were hand picked by the selector within each classmark A-Z. The library was not closed for the exercise which involved a total of 20 people. These 20 participants comprised five summer student, eight library assistants, five senior library assistants, and two senior staff members who supervised, co-ordinated and analysed the data collected.

Participants were assigned slips and given definite instruction for searching. From all indications no scientific method was adopted for data collection. Such uncontrolled data gathering limits the acceptability, generalisability as well as reliability of findings.

It also makes replication difficult, if not impossible. This faulty design framework notwithstanding, the 1975 stocktaking found 4.7 percent of the total stock in KIL

missing. Unfortunately, details of subject areas were not found for the purposes of comparative analysis with the present study.

METHODOLOGY

The data for this pilot inventory were gathered through random systematic sampling technique. In this regard, the entire holdings of Kashim Ibrahim Library as represented by its classified card catalogue constituted the population. In order to obtain a representative and random sample, the selection from the classified catalogue consisted of taking every Kth sampling unit after a random start r, where N, the population size represented the integral multiple of the desired size, n.

The required sampling interval $K = N/n$ was also an integer. The zonal length or interval for selecting other elements in the population after the random start was calculated using the formula $I = N/n$ where N = population size and n = sample size. It is pertinent to note that when a number was drawn from 1 to K, that random start r, for the interval determined the Unit which was selected in each implicit strata.

The interval k, divided the population into zones of K units each, and one unit with same location in each zone was selected. Because the first number was drawn at random from 1 to K, each unit had the same probability $1/k$ of selection with k made to the nearest integer.

DATA COLLECTION

Thus, following the sampling frame enumerated earlier, systematic zonal length was picked randomly from the first 101 numbers. Every 101 card was thereafter selected until the entire classified card catalogue was exhausted. This method yielded a total of 1,713 titles which constituted about 10 percent (9.9%) of the entire collection of 173,013 titles. From each card selected the following information were extracted onto a 12.5 cm by 7.5cm card; author, title, classification mark, accession number, the number of copies in the collection and locations. Exclusions from this study included serials, newspapers, and pamphlets.

Four library assistants participated in the data gathering processes for this study. They put in a total of 96.25 man hours over a period of 29 days. Quantified further, if one divides 96.25 hours by 8 it gives 12.03 working days. This calculation is useful for the quantification of the naira cost of stocktaking exercise in libraries, especially as a refutal of the argument on cost.

The study was undertaken in the months of August and September, 1986. These months were considered suitable because the regular students were on long vacation. During this same period, the issues emanating from the manually operated Browne circulation system in Kashim Ibrahim Library were thinnest. Therefore, it was relatively easy to run through these issues uninhibited for possible location clues for books not found on the shelves.

The Search for Sampled Items

After drawing 1,713 samples from the classified card catalogue, with relevant information, the slips were numbered serially to provide running count of the number of cards, as well as serve as an identification mark for each card. When this was completed, the process of locating the items began. Location process was carried on in such a way that

ensured that any sets of cards designated for search had every possible location explored in one day.

The instruction on the other side of the slips carrying information about samples specified the areas to be searched. These locations included the open and closed stacks, current issues, overdues, interlibrary loan files, branch libraries, reserve book room, book mending unit and the bindery. The cards are to be returned bearing any petinent information, such as missing, not found, mutilated and frequency of use as shown on date due slips for open shelf materials. No useful data emerged from the date due slips.

Below is a complete tabulation of the findings following the A to Z Library of Congress classification, under sub-headings of items searched, items found and percentage of books missing as a correlate of items in the collection.

Findings and Discussions

The data collected showed that as at October 1986, Kashim Ibrahim Library had a total of 173,013 classified titles in its collection of 302,376 volumes in 1986. A total of 1,713 or about 10 percent of these items randomly selected were searched at all possible locations and 1,360 or 79 percent were found. 353 items or 20.6 percent of the samples were missing. An examination of the subject by subject analysis of missing items showed that 50% of the samples drawn in the general works were missing.

While the sample was small forming only 29 percent of the total sample, one wonders why that high percentage should be missing given the fact that, as a matter of policy, general works are never given out on loan to readers. They are used only for reference and strictly within the library, except rare occasions where certain items are given out overnight only. This preliminary revelation makes the reference collection/general works of the library the foremost candidate for total stocktaking to determine actual loss rate of items designated general works.
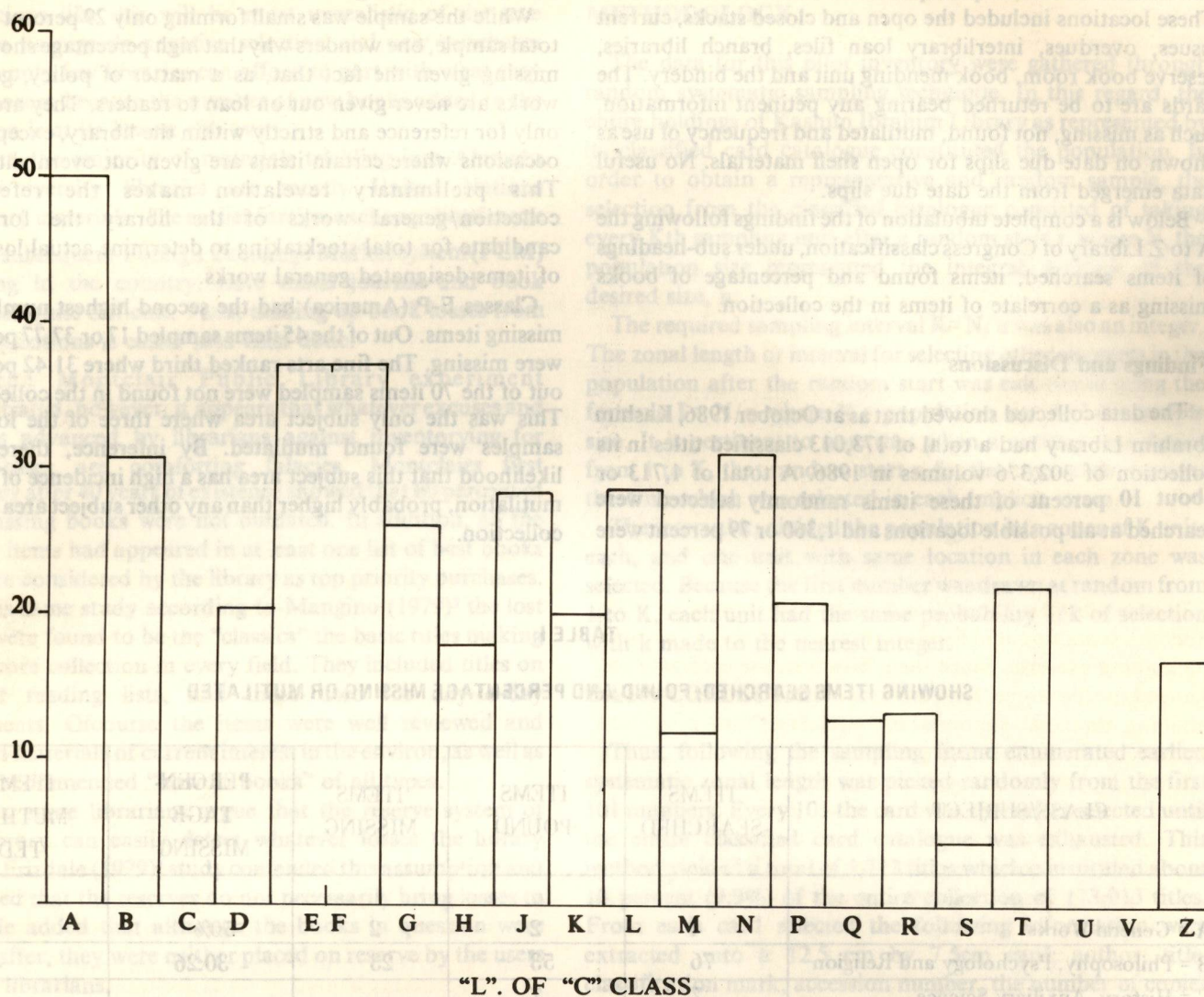
Classes E-P (America) had the second highest number of missing items. Out of the 45 items sampled 17 or 37.77 percent were missing. The fine arts ranked third where 31.42 percent out of the 70 items sampled were not found in the collection. This was the only subject area where three of the located samples were found mutilated. By inference, there is a likelihood that this subject area has a high incidence of book mutilation, probably higher than any other subject area in the collection.

TABLE I

SHOWING ITEMS SEARCHED, FOUND AND PERCENTAGE MISSING OR MUTILATED

CLASS/SUBJECT	ITEMS SEARCHED	ITEMS FOUND	ITEMS MISSING	PERCENTAGE MISSING	ITEMS MUTILATED
A = General Works	4	2	2	50%	-
B = Philosophy, Psychology and Religion	76	53	23	30;26	-
C = History, Auxiliary Science	7	7	-	-	-
D = History, General	160	127	33	20.62	1
E-F = American	45	28	17	37,77	-
G = Geography, Anthropology Ethnology Sports	60	44	16	26;66	-
H = Social Science	232	189	43	18;53	=
J = Political Science	57	41	16	28.07	-
K = Law	15	12	3	20	-
L = Education	89	64	25	28.08	-
M = Music	9	8	1	12. 7	-
N = Fine Arts	70	48	22	31.42	2
P = Language, Linguistics and Literature	262	205	57	21.75	-
Q = Science	283	245	38	13.12	-
R = Medicine	68	59	9	13.23	-
S = Agric	153	119	34	4.54	-
T = Technology & Engineering	153	119	34	·22.22	-
U = Military Science	4	4	-	-	-
V = Naval Science	1	1	-	-	-
Z = Library Science and Bibliography	74	62	12	16.21	-
TOTAL	171,297	1,360	353	20.6	

TABLE II

SHOWING GRAPHICAL REPRESENTATION OF ITEMS SEARCHED AND PERCENTAGE MISSING BY SUBJECTS A-Z

"L". OF "C" CLASS

Philosophy, Psychology and Religion ranked fourth with 30.26 percent missing items, while Education was fifth with 28 percent missing items. Political science came sixth with 28 percent of samples missing while the G class: Geography, Anthropology, Ethnography and Sports came next with 26.66 percent. Technology and Engineering ranked eighth with 22.22 percent of items sampled missing while Language, Linguistics and Literature followed with 21.75 percent.

Overall, only classes D (auxiliary sciences of history, U (Military science, V (naval science and S (agric science) 4.22% had less than 5 percent missing items in this study.

Why take stock?

The advantages of stocktaking as revealed by this study are numerous. Apart from discovering of missing materials, stocktaking is the best and most quantitative way to have an in-depth look at each area of the collection. It can be used also to discover heavily used areas, and other areas in pristine conditions due to non-use. The ramifications of inventory findings can effectively modify a librarians priorities in budget formulation and allocation, resource management,

book selection and weeding, rebinding, purchases, security measures, and book replacement policies.

It was the attendant advantages of stocktaking coupled with the growing grave vine on missing books in Ahmadu Bello main university library (KIL) that prompted this study. With the outcome of the preliminary study, if one takes an arbitrary figure of 5 percent as the minimum loss rate permissible before a subject area qualifies for a comprehensive stocktaking to determine actual loss, then most subject areas of KIL should be examined in detail to pinpoint actual loss rate.

How Much Loss is too Much loss?

At this juncture, one may ask, how much loss is too much loss in academic libraries. Incidentally, there is paucity of information in library literature on how much loss is too much loss or what percentage loss is permissible annually in academic and research libraries.

No doubt this will vary from library to library and the calculation will depend on diverse factors notwithstanding, a 5 percent annual loss in a subject area is high enough to

necessitate further investigation for the purposes of identifying and quantifying actual loss, causes and sources of loss with a view to preventing and reducing the loss rate and replacing missing items to disencumber users' inaccess to lost items and strengthen library effectivensss.

Probing the question of permissible loss rate further, the 1970 British National College Library survey put the standard loss rate at 27 percent, from the open shelf. In this same year the British national theft loss average, was 1 percent. Revill (1970)[5]. Again, Broadhead (1973)[6] submitted an average annual loss rate of 1.5 percent in academic libraries. Kashim Ibrahim Library submitted 4.7 percent loss rate in the 1974 corresponding period.

Comparatively recommending 5 percent as the highest permissible annual loss rate in a subject area may not be as arbitrary as it sounds given the limited sophistication in theft prevention, and the limited resources at our disposal, 5 percent annual loss rate should be the maximum academic libraries should tolerate. Whenever, this figure is higher, serious delibrate measures should be taken to bring it down and curb the laposes in the security system.

CONCLUSIONS

Kashim Ibrahim Library had its last stocktaing in 1975, Student assistants could comfortably be hired then to assist in stocktaking exercise. Since then, however, the economy has changed for the worse. Because of the stringent economy and declining financial supports for students, library use has skyrocketed in the last few years.

Similarly, book theft, book mutilation, book loss and other library malpractices like overdue, have been on the increase. Unfortunately however, and as logical as the last sentence may sound, it is at best an educated guess. This assumption can only be proved by direct inventory or research study.

In this regard, the adoption of a random systematic sampling Daniel (1983) in this preliminary study has allerted Kashim Ibrahim Library of the probable rate of book loss. The subject areas poinpointed also led to a decision to undertake a comprehensive inventory of areas identified to have 5 percent and above.

The total cost of this study is quite minimal compared to the cost of stocktaking... This pilot inventory was comfortably undertaken in-house with the aid of two library assistants cards were cut to size locally by the Bindery Division of the library and typing was limited to final stage to further reduce costs.

As regards the determination of the actual number of books missing by subject, this method was found suitable.

For example the 20.6 percent average loss in Kashim Ibrahim Library can be translated into actual figures using the zonal interval length of the sample. The statistical treatment of data is equally devoid of statistical jargons to accommodate the less mathematically inclined librarians.

The general works in Kashim Ibrahim Library which had the highest record of use in the corresponding periods. The method of arrangement in the library clearly accounts for this. Because all reference works, indexes, abstracts and bibliographies of all the subjects offered in the university are classified and housed separately from the individual subjects, their use becomes logically higher than the use made of individual separate collections. Thus, inspite of its restricted circulation policy, several titles were still missing from the collection.

Compariatively, the bibliographic collection which Branden (1968)[7] found to have the highest use percentage was confirmed by this study. Again, her highest loss percent by subject was 42.06 while this study's highest subject loss was 50 percent.

RECOMMENDATIONS

Based on the data collected and analysed in the study the following are submitted as recommendations:

1. An average of 5 percent annual loss should be the maximum tolerable by academic libraries given the present state of economy. Anything higher should be investigated thoroughly with a view to identifying causes of loss and loopholes in the security system.

2. The systematic sampling method adapted for this study should be applied for determining loss rate in selected subject areas with a view to determining the break-even point for comprehensive stocktaking.

3. Stocktaking should be made a regular exercise in academic libraries since this statistical method is relatively cheap, less cumbersome and unladdened with statistical jargons.

4. Stocktaking should be done during summer vacations when issues are at their lowest figures.

5. A comprehensive stocktaking of Kashim Ibrahim Library holdings should be undertaken immediately to determine actual loss which from all indications according to this study is higher than expected thereby confirming the rumours of several missing valuable materials in the most used areas of the library such as Africana and Reference.

6. Book loss should attract more attention from library authorities since unlimited losses can diminish library effectiveness.

REFERENCES

1. Richards, James H. Jr. "Missing in action." *Journal of Academic Librarianship* Vol. 5, No. 5, (1979), pp. 266 - 269.
2. Mangino, Arlene. "Inventory: luxury or necessity?" *Wilson Library Bulletin* Vol. 52, No. 7 (March 1978), pp.374-375 .
3. Ibid.
4. Frizdale, Dorie Ann. "Missing link" *Wilson Library Bulletin* Vol. 52, No. 9 (May 1978), p. 733.
5. Revill, Dor. The Theft problem in Libraries. *New Library World* Vol. 76. (1975), p. 123 - 4.
6. Broadhead, R. M. Theft. *New Library World* Vol. 74 (1973), p. 236.
7. Daniel, James O. "The relationship between methods of Instruction and frequency of library use by students and faculty in three universities in Nigeria. Ann Arbor Mich. (U.SA), University Microfilms International, 1983, p. 46.
8. Branden, Irene A. Pilot Inventory of Library Holdings *American Library Association Bulletin* (October 1968), p. 1129-1131.